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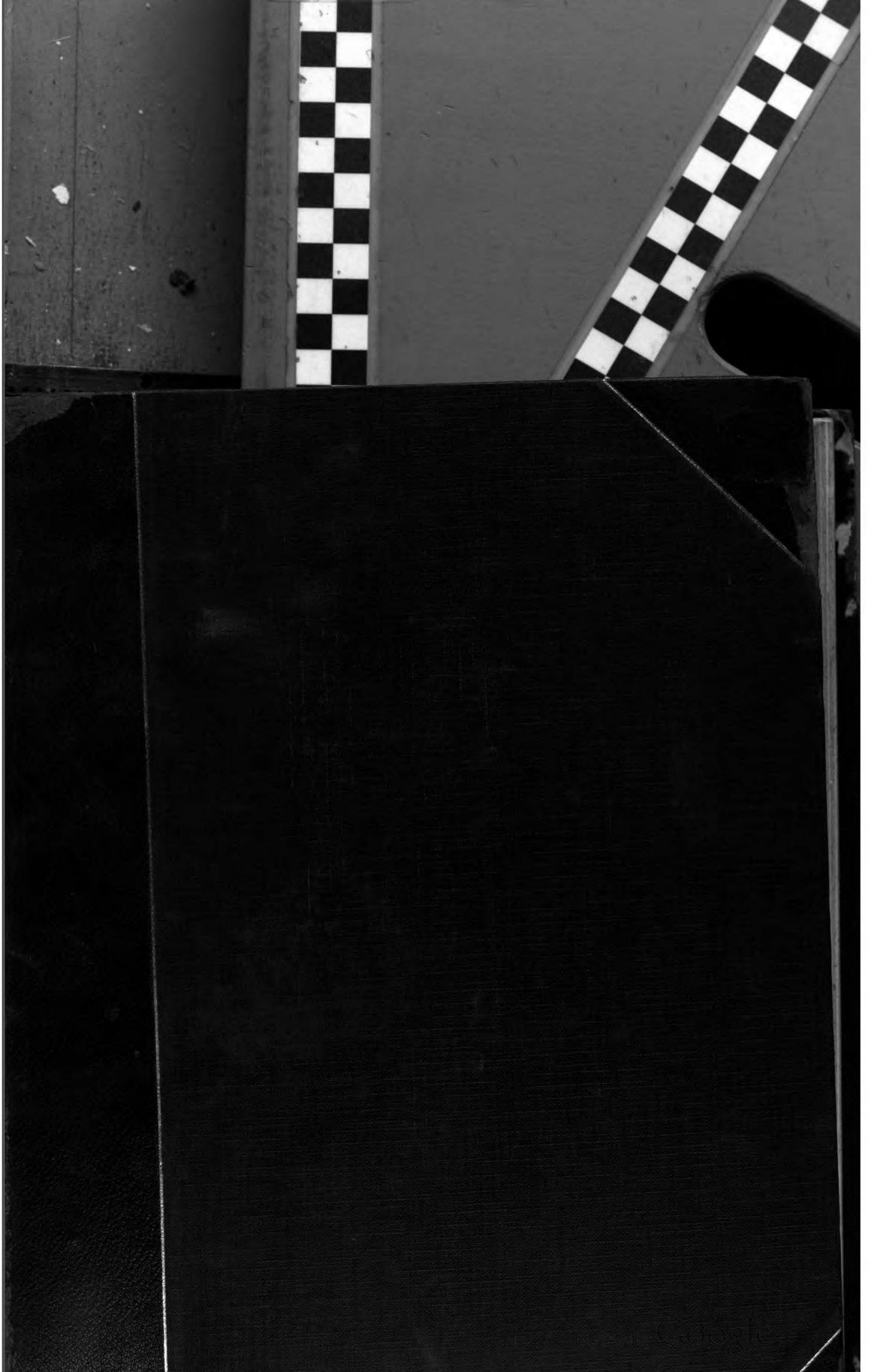
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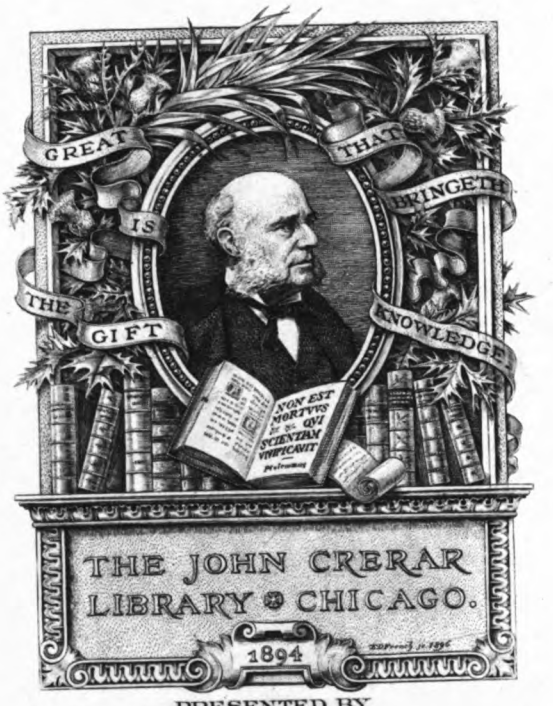
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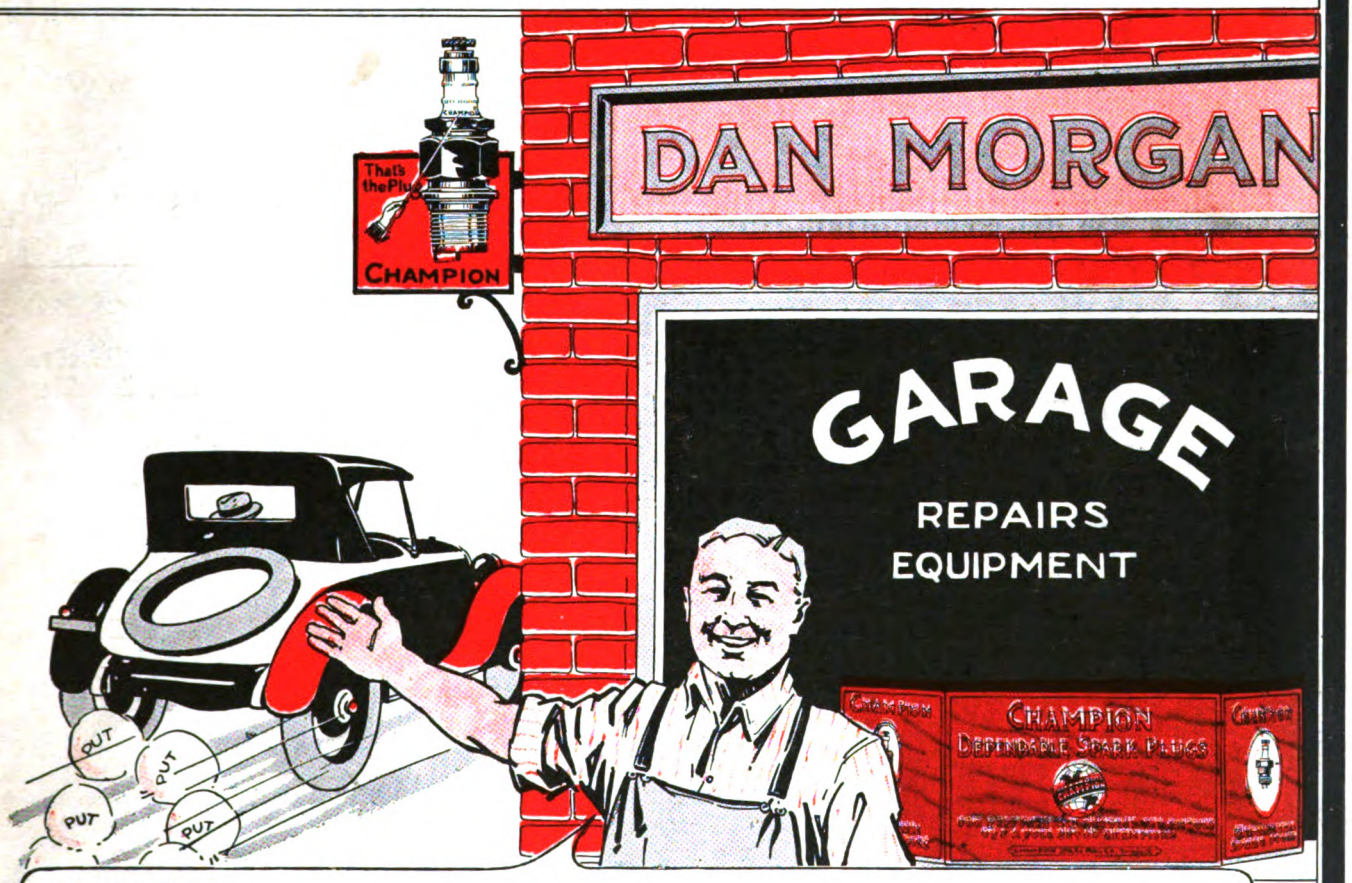
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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Dan Morgan's Customers Buy Full Sets



Mr. Car Owner:

If you need a new spark plug, let me suggest a full set of CHAMPIONS, and keep the rest of your old ones that are still working for your spares. **There goes a satisfied customer.** I just fitted his car with a full set of CHAMPIONS when he thought he needed only one, but he knows now that a single plug could not give "Full Service to his Engine," and that it is real economy to buy a full set, for your engine can only give full service when each cylinder is doing its share. If you are to get the best firing conditions, you must have a full set of plugs of exactly the right design for your engine. Your cost is nothing compared to your saving in gas and oil, as the increased mileage per gallon with a new set will show this saving for you within a few hundred miles driving. After this, you will be making money on your investment.

Mr. Dealer, Dan Morgan's customers appreciate this suggestion. Why not continue the good work to *your* trade?

Champion Spark Plug Co., Toledo, Ohio

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BLACK & DECKER

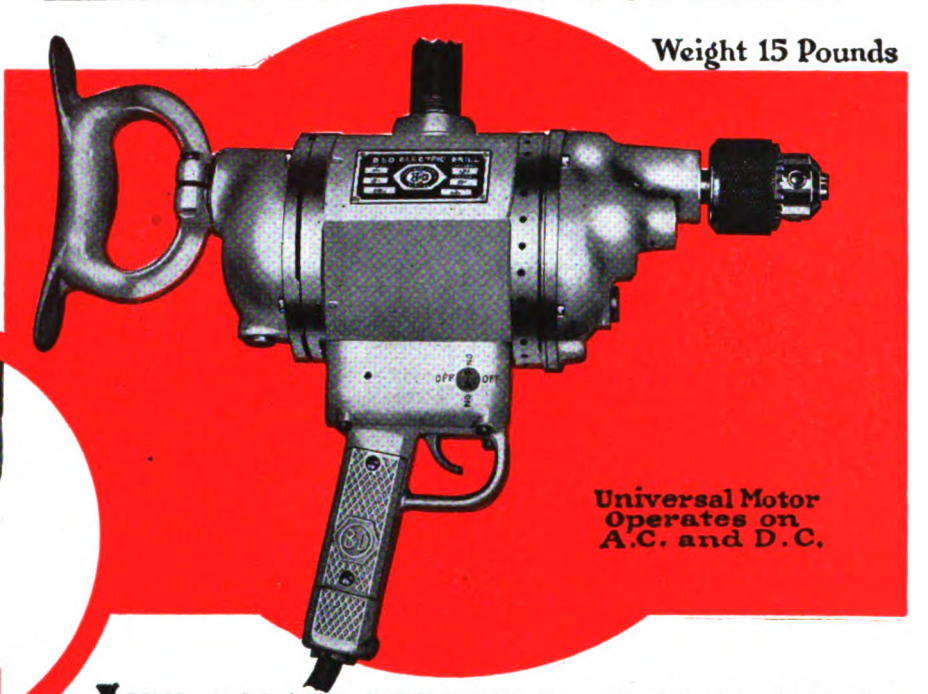
SPECIAL HALF-INCH DRILL

"With the Pistol Grip and Trigger Switch"

$85.00

Weight 15 Pounds

"THE WELL EQUIPPED SHOP GETS THE BUSINESS"



Universal Motor Operates on A.C. and D.C.



By removing two screws cover plate of switch handle may be lifted off, exposing terminal block to which electric cable and motor leads are attached by means of SCREW TERMINALS. Cable may be renewed quickly and easily without soldering.

A little thing which means a lot to the busy mechanic.

LIKE all BLACK & DECKER Portable Electric Drills this SPECIAL HALF-INCH DRILL is powerful, durable, comfortable to handle and perfectly controlled.

"The Pistol Grip and Trigger Switch" not only provides a large comfortable grip and instant control of the switch, but reduces the breakage of expensive drill bits, because the switch may be operated at critical times, such as when bit is breaking through the work, without disturbing the position of your hands. *"The Pistol Grip and Trigger Switch"* control is instinctive—practically automatic.

THE BLACK & DECKER SPECIAL HALF-INCH DRILL fits the BLACK & DECKER BENCH DRILL STAND, or POST DRILL STAND, and can be secured from your regular jobber.

SPECIFICATIONS

HOUSING—Aluminum Alloy.
MOTOR—Universal. Operates on Direct or Alternating Current.
AIR COOLED—Die Cast Aluminum Alloy fan keyed to armature shaft.
GEARS—Double Reduction, stub tooth, chrome nickel steel heat treated. Run in grease like an automobile transmission. (No brass gears are used on any Black & Decker tools).
CONTROL—*"With the Pistol Grip and Trigger Switch."* Improved switch handle with removable plate and screw terminals.
CHUCK—Three-jaw geared nut chuck for straight shank drills up to ½ inch.
NO LOAD SPEED—475 R. P. M.
NET WEIGHT—15 pounds.
EQUIPMENT—Drill is complete with 15 feet duplex electric cable, attachment plug, combination spade handle and breast plate, detachable side handle.
PRICE 110 VOLTS - - $85.00
(For Denver and West add $2.00 transportation charges.)
Can be supplied for 220 or 32 volts at small additional cost.

Guaranteed by

THE BLACK & DECKER MFG. CO.

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NEW YORK
ATLANTA
PITTSBURGH
SAN FRANCISCO
PHILADELPHIA
KANSAS CITY
DETROIT
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MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

Reg. U. S. Pat. Off.

239 West 39th St., New York City Phone Bryant 8760

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Service Stations, and Service Dealers, know that when an owner once proves the service value of

DIXON'S 677

in his gear boxes, he becomes a customer for life.

A little higher in price, a little harder to make the first sale —but well worth the price and the effort.

Write for trade prices.

JOSEPH DIXON CRUCIBLE COMPANY

Jersey City, N. J. D X N Established 1827

Makers of Quality Lubricants

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LEE Tire Dealers have many reasons for congratulation.

First: they have the only *Puncture-proof* pneumatic on the market. In addition, they have a complete line of consistently high-grade regular pneumatics. They are backed by a liberal manufacturing and sales policy that is uniformly generous to the consumer and fair to the dealer. These features are not combined in any other line of tires, yet all are covered by the **LEE Exclusive Dealer Sales Franchise.**



Fabric, Cord, Puncture-proof—a different type of tire for each kind of use. None but Lee Dealers can render anything like this selective service.

Distributors in all Important Cities

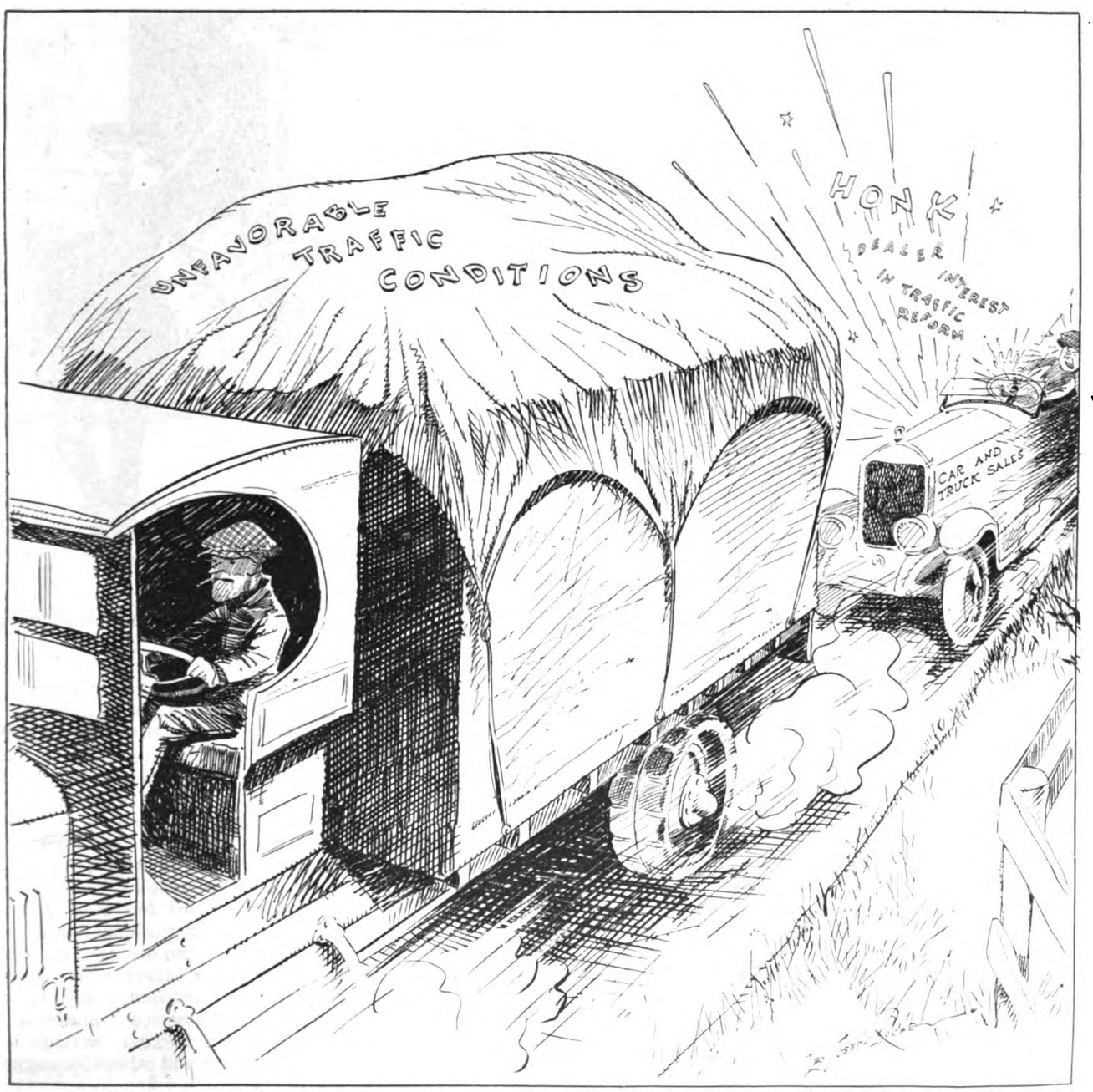
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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXII New York, U. S. A., Wednesday, July 5, 1922 No. 1

Give Him the Horn



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Right Traffic Control Will Help Sell Cars and Trucks

Dealers Will Find It Worth While to Be Active in Their Communities to Prevent Danger and Congestion, Also Too Much Regulation, Leading to Hysteria

DOWN the boulevard bowls a motor car. Father is at the wheel and the whole family is with him. Wonderful driving along the boulevard, father says. But the boulevard eventually runs into a business street that hooks up on the farther side of the downtown section with another boulevard extending out to the district where Uncle John lives. Father finds it tough going through the business section. Traffic is heavy and not regulated any too well. Father's trip to Uncle John's is spoiled. He storms about the delays and difficulty of driving. When he finally gets back home in the evening he tells all his neighbors about his experience and says he has a good mind to give up the car. He does what everyone does—makes a lot of fuss about something that has annoyed him.

Sales resistance created! Father won't give up the car, but he won't drive as much as he would if it was easier to get to the far side of town, where Uncle John and other relatives and friends live. Father's story of his driving troubles impresses some neighbors and friends who had been thinking of buying cars. They decide to use taxicabs for a while longer and let somebody else worry about driving.

SO much for Incident No. 1. Now for No. 2.

In a residential district a swiftly moving light truck approaches a street intersection. There is no dummy cop, no guiding line on the pavement and no "Slow" sign, but there are trees and shrubbery that obstruct the view. The truck driver, taking a chance, clips the corner at the left and smashes into a full-loaded passenger car coming his way. Everybody gets a shaking up, the car and truck are damaged and the newspapers remark that the people in the car "miraculously escaped death."

More sales resistance! Something else for people to talk about who say motoring is dangerous. Another reason why a person or two and maybe more, who saw the accident or read about it, decides to get along without a car.

There is Incident No. 2. Now let's look at No. 3.

There have been two or three serious motor car accidents in Yourtown, we'll say. The newspapers have given them a good deal of publicity and editorially are demanding punishment of speeders. The judges tighten up on traffic violation cases and begin to hand down stiff sentences, which the newspapers and popular clamor approve. The town gets excited about "automobile criminals."

Still more sales resistance! Fair-minded citizens of Yourtown want life and property protected on the streets and they want reckless driving repressed, but hysteria puts penalties on drivers who are far from reckless in the handling of their cars. There is a wave of popular sentiment against the motor car in the city streets. More prospective sales and possible sales go a-glimmering.

These three incidents picture three of many things that may occur to build up unnecessary sales resistance for the automotive trade. They suggest that safe but sane regulation of traffic on city streets and country highways, regulation that concedes the purpose of the motor vehicle to take persons and commodities to their destinations conveniently and speedily, is the concern not merely of public officials but of the automotive trade. They suggest that *in any city or town, any county or State where traffic control is not what it should be, either failing to assure safe yet prompt movement of vehicles or hedging them about with burdensome regulations, the automotive trade should be active to demand reform and to help bring it about.*



Some cities of the country have highly effective systems of traffic control, protecting both motorists and pedestrians but at the same time giving cars and trucks the right to travel at reasonably rapid rates. Some States have practical regulations for rural highways, setting up the necessary safety standards without making a mockery of the speed capabilities of the automotive vehicle.

During the next few months Motor World will print occasional articles on the traffic problem, describing the systems prevailing in some of the more progressive cities and States for the benefit of automotive tradesmen desiring to take a hand in their local traffic problems and otherwise suggesting public spirited and also profit encouraging activities for dealers along

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traffic lines. This article introduces the series and presents the suggestions of Fred M. Rosseland, chief of the Public Safety Division of the National Safety Council, regarding Fundamentals of Traffic Control from a Safety Standpoint. Mr. Rosseland says:

No edition of a newspaper seems complete nowadays without one or more accounts of automobile casualties. Every city has a traffic problem —the larger the city the greater the problem—which must be adequately met, first to save lives and limbs, next, to prevent costly congestion and delay, and finally, to avoid daily accounts of fatal and near-fatal automobile accidents exerting a negative influence on the wider use of automotive vehicles.

In a comparatively stagnant market an automobile sales manager may have a number of good reasons for "slow" sales; and from an economic standpoint he is probably right. But how many sales managers consider the important psychological bearing of automotive accidents on their business?

Two Angles of Problem

There are two angles to the problem of traffic control from the accident prevention viewpoint that are important in any consideration of the subject.

First, we have the indisputable fact that congestion of automobile traffic—usually because of lack of adequate system—is not only the cause of accidents imperiling lives and limbs, but is also taking the joy out of motoring. A driver, whether of five months' or five years' experience, finds little pleasure in driving in congested streets and highways at a speed varying between 6 and 10 miles, and with frequent stops. To drive a car that can do 25 miles an hour comfortably and safely under such conditions means a continual strain on brain, body and nerves.

The Danger Element

Secondly, we have the proposition that a husband and father, whether or not an experienced driver, feels that he is placing the lives of his loved ones in jeopardy when he ventures forth into crowded street traffic. Many a family foregoes the pleasure of an automobile because of the feeling that the streets are too congested for safe driving. The owner of the car may be otherwise courageous but no one would accuse him of cowardice for feeling as he does. The number of people killed each year in automobile accidents, the greater number injured through the same cause annually, and the still larger number less seriously injured in accidents not recorded, are often alone sufficient to make a thinking man hesitate before he invests in an automobile.

The physical and mental discomfort of "piddling" along at a slow rate, with much use of the brakes and the psychological effect of newspaper reports and eye-witness contacts with accidents represents a serious handicap to the automobile salesman which will help to increase sales resistance until a determined concerted effort is made to control traffic.

The business people as well as the public at large benefit from public safety work directed at traffic conditions. Entirely aside from humanitarian motives, or what not, automobile dealers, from a business standpoint if no other, will interest themselves in the work to make the public thoroughfares safer now being carried on by the National Safety Council, local safety councils and public officials. Every community should be organized for public safety, as it is only through energetic work properly directed that traffic can be properly controlled.

Adequate traffic regulations should be made and enforced. To enforce legal restrictions adequately it is necessary to have mass opinion behind them. It is in the power of automobile and truck dealers to help create this atmosphere by instigating and actively participating in public safety activities. Good and just laws must be made for those who own and operate cars. Good and just laws must be made for pedestrians and other users of the streets. And harmony must be uppermost in bringing to the attention of the automobile buying and operating public the importance of public safety.

And the lesson of this is that every safe drivers' club, every public safety movement for fewer accidents in the home, at the bathing beach, on the street and elsewhere should have the stanch support of all business men. A prospective customer may hold the accident hazard of crowded, uncontrolled traffic as a prohibitive argument against his owning an automobile. If the dealer can show the progress being made to safeguard this selfsame individual this objection is readily met. Safety activities, whether industrial or public, require co-operative action and bring benefits to all. Why not try it?

The job is not difficult. City governing authorities usually welcome suggestions from citizens. Particularly are they likely to welcome assistance and advice from an aggressive, well organized association of automotive tradesmen, who are likely to have some first-hand knowledge of the things that should be done to improve traffic conditions.

MOTOR WORLD'S next traffic article, to appear shortly, will tell about the traffic control system and street safety campaign in Detroit, whose activities and ideas have been the model for several other cities. The article will be attractively illustrated.

Big City Traffic Control at Work



This is one of the towers that control the uptown-downtown-crosstown flow of traffic on Fifth Avenue, New York. Colored signal lights on the towers, which are manned by traffic policemen, flash the "Go" and "Stop" signals to vehicles and other officers on the ground control the pedestrian crowds

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You Can Be One of the Better Sort of Tire Dealers—It Pays

A Remarkably Good Story of a Fort Wayne Dealer Who Puts Sound Merchandising Effort Into His Business and Reaps Real Profits

H. H. PIERCE, owner of the Pierce Tire Co., Fort Wayne, Ind., is a firm believer in telling folks about your business if you want to sell goods.

As the result of this belief Pierce features these forms of promotion work:

Newspaper advertising.
Direct mail advertising.
Window displays.
Telephone solicitation.
Personal canvassing.

And as the result of this continued telling of folks about his business his trade has doubled within the past year or so.

Let us examine the various forms of promotion work engaged in by Pierce to see what he does in order that other tire dealers may gain pointers from his experience.

NEWSPAPER ADVERTISING. Pierce uses one insertion a week in the local newspapers, using good size space for each insertion. Contrary to the usual custom of tire dealers, Pierce uses the Thursday issues of the local newspapers instead of the Sunday issues.

"The reason I use the Thursday issue," says Pierce, "is because on Sunday the papers are so jammed with all sorts of advertising that my ads have to compete with a whole lot of other advertisers. On Thursdays this isn't the case. On Thursdays the papers run merely their regular normal amount of advertising, and so the competition isn't so strong. Also, I've found by inspection of the papers that comparatively few other automotive concerns use the papers on Thursdays. So my tire ads stand practically without competition. Of course, I might use the Monday papers, when the advertising is very limited. If I did so the ads would stand out just that much stronger, of course. But I figure that Monday is a mighty busy day for most people. Some of them don't get back from week-end trips until about noon Monday and, consequently, have no time to read the papers. And others have a busy day of it answering the big Monday mails and so on. Consequently I figured that though competition for my ads would be smaller on Mondays, there would be fewer people to read them, and there you are. Now Thursday comes at the psychological time of the week for a tire ad. It is just when people are figuring on week-end trips and are in the mood for buying new tires for the trip, and it is the time of the week when there is no particular rush. So I run my ads on Thursday, and the results are very satisfactory, indeed."

Pierce, it might be noted here, uses the regular ready-made ads furnished by the tire manufacturer, and these are inserted in the newspapers on a fifty-fifty basis, the tire manufacturer paying half the cost of the insertion. Pierce figured that the tire companies employ expert copy writers who are skilled in turning out copy that will sell the tires, so it is much the best plan to use the ready-made ads than to try to frame up ads of his own.

DIRECT MAIL ADVERTISING. "I am a firm believer in the efficacy of direct mail advertising," says Pierce. "The company manufacturing the tires I sell sends me all the letters, bearing the name of my firm and address at the top, that I want. These letters are carefully prepared and when properly filled in look like personally typed messages.

Prepares Own Lists

"I send out several hundred of these letters each week to lists which I get up myself out of my knowledge of the town by reference to the telephone book. I check up carefully on these letters and find that the results they achieve are quite satisfactory. I do not buy the lists of local and county license holders from the list companies which make a specialty of furnishing these names, as I've found by experience that circularization to these lists is not always as result-getting as where I send letters to the lists that I prepare myself.

"It is very seldom that we send any direct mail advertising to present patrons. Practically all of our direct mail advertising goes to people who should patronize us but who don't. We find that where regular patrons, or people who have previously patronized us, do not come in for a long time we can do better in getting their patronage back by calling them up on the phone or by going around to see them personally.

"We rely very heavily on direct mail advertising in getting business and would feel that we were passing up a mighty good bet if we failed to send out a considerable quantity of letters to live prospects from month to month."

WINDOW DISPLAYS. The window displays at the Pierce Tire Co. are always interesting and are always fresh and clean.

As a general thing the displays are made up from the regular equipment sent out by the manufacturers of the tires handled by the firm. Once in a while some local touch is given to the windows by the use of an appropriate local photograph, or a window card calling attention to some local event which is hooked up with the store, but as a general thing the displays are the standard ones suggested by the promotion departments of the tire manufacturers.

Pierce believes that effective window displays are very important in the merchandising of tires.

"We are on an important corner," says Pierce, "with local and tourist automobiles passing the store on both streets. Consequently it is certain that a big

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percentage of all these passing motorists will see our show windows. Now if our windows are attractive, clean and fresh in appearance, it is a certainty that these passing motorists will be very favorably impressed by our store and will feel like stopping and patronizing us if they are in the market for tires or for any of the accessories we handle.

"But, on the other hand, if our show windows were dingy, unattractive and not properly dressed, these motorists would pass on without even giving a thought of stopping and patronizing us.

"I may be wrong in the matter," continued Pierce, "but it is my opinion that an attractive window display is of more importance in the selling of tires than an attractive store. It is the window display which, quite frequently, gets the people into the store. And it is quality, price and salesmanship which sells the people after they are in the store, and not the store's appearance. Of course, an attractive store is of great importance and is a big help in selling tires, but I consider attractive window displays of more importance."

Weekly Window Displays

It is interesting to note that part of the routine in the conduct of the Pierce Tire Co. is *a weekly change of the window displays, a weekly washing of the window glass, a daily dusting of the articles shown in the windows and a nightly lighting of the displays.*

TELEPHONE SOLICITATION. The telephone is used extensively by the Pierce Tire Co. in securing business. Every week Pierce prepares a list of prospects who can best be reached by the telephone, and either Pierce or his secretary calls up every person on this list during the week and solicits their business.

It is mainly solid truck tire business which is solicited over the phone, as it has been found by experience that personal solicitation is more effective in selling pneumatics.

Two classes of prospects are called on the phone. The first of these are former customers who haven't purchased anything at the store for some time and who should be in the market. The second class consists of prospects who have never purchased anything at the store.

Selling by Phone

In soliciting the first class over the phone, this is the line of conversation generally used:

"This is the Pierce Tire Co. Of course, you would get extra long mileage out of the tires you've bought from us, but we're wondering if you aren't just about ready to buy some new tires."

The result of this sort of an opening is that the prospects thus called nearly always give a definite time when they will be in the market for tires. A note is then made of this date—if no immediate sale is made—and these prospects are solicited again at the proper time either by the phone or by a personal call.

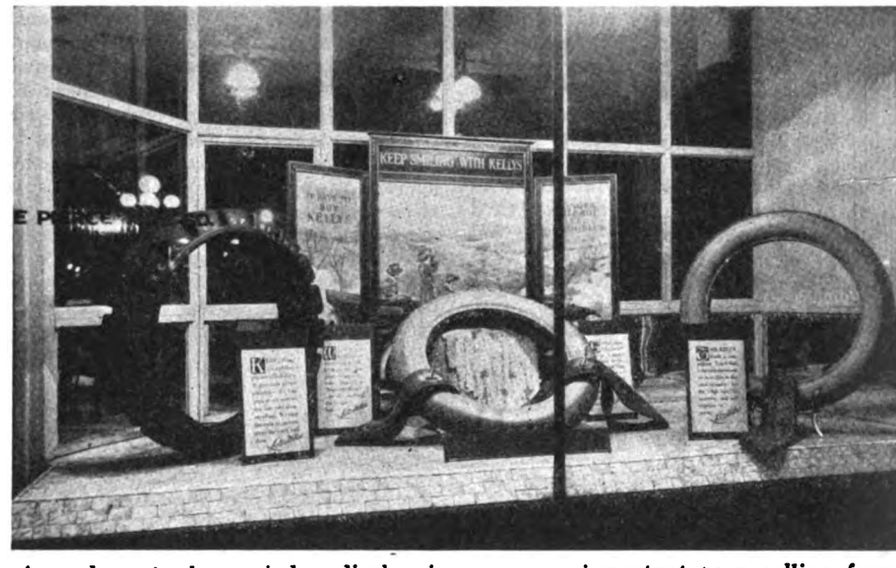
Then the second class of prospects are called. This is the sort of an opening that is used with these prospects: *"This is the Pierce Tire Co. We'd like to have you try out some of the long mileage truck tires we're selling."*

This opening nearly always leads to a further conversation which generally ends in an appointment for Pierce or one of his salesmen to go around and see the prospect. And, of course, numerous sales are made as the result of these calls.

Spare moments when there are no store customers to wait on or office work to be done are utilized by Pierce and his assistants in phoning prospects.

The telephone is a very important and very successful phase of the promotion work conducted by this tire company.

Good Window Displays Sell More Tires



A good, neat, clean window display is even more important as a selling force than a big store, says H. H. Pierce, owner of the Pierce Tire Co. in Fort Wayne. This is one of Pierce's windows, using only the tires and merchandising material furnished by the factory

PERSONAL CANVASSING. Although the Pierce Tire Co. does a large amount of personal canvassing, this is never done on an indiscriminate basis. It is either done in a certain section, such as an office building, where the tenants are all particularly prosperous, or is done on the basis of a definite list prepared by Pierce from the telephone book.

Also all prospects who have sent dates when they may be in the market for tires are solicited at the proper time, their names being kept in the proper order by the use of a simple card index file.

When personally canvassing for business Pierce uses a regular buiness card and generally opens his sales talk in about this fashion:

"Good morning, Mr. So-and-So, I've come to save you money on your tires."

This introduction generally brings forth some such answer as this from the prospect:

"How?"

"By selling you more mileage for the money," Pierce then replies.

And with this start Pierce goes into an exposition of the superior qualities of the tires he handles.

"I've found," says Pierce, "that in personal solicitation of this character, the most effective argument in selling tires is that of superior quality which, of course, means more mileage.

"In selling quality to prospects I bear heavily on two points—first, the method of manufacture and the goods going into the tires; and, second, the mileage which users of the tires we sell are constantly rolling up.

"In putting over the first point with sufficient emphasis, the books and advertising literature sent out by the tire manufacturers are of very great help, while in putting over the second point in a telling manner, the typed records of some of the mileages attained by local users of the tires I sell is also extremely effective.

"It is my experience in selling tires that nowadays tires are bought on a quality basis and not a price basis. A man, for instance, is willing to pay the top price for a tire when he knows that in putting it on his car he is ridding himself of tire troubles for many thousands of miles. So many men have had trouble with tires which they purchased on a strictly price basis that the higher class trade, at least, wants to steer away from tires which are offered on a price basis alone."

Direct Selling

Pierce and his salesmen are constantly engaging in personal solicitation work of this sort, and this personal canvassing is held responsible by Pierce for a big share in building up the business of the company to its present point.

So much for the main promotion methods used by the Pierce Tire Co. and now for the consideration of some other phases of the business.

Pierce keeps two sets of prospect cards, the first set indexed alphabetically and the second set indexed according to the

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date on which the prospect is to be again solicited for business.

By keeping these two sets it is possible to find a prospect's card whenever it is needed, as, for instance, when a prospect calls up on the phone and tells the store to send out a tire and then rings off without giving sizes or other information. Also by having the cards indexed according to the times when the prospects are to be again called on, the store has a constant incentive to get out and hustle, as each day there is a live list of prospects thus revealed who ought to be solicited.

On these prospect cards there are the name and address of each prospect, kind of car and size of tires used and make of tires now on the car, condition of the tires and any remarks which will help in selling the prospect, such as time when prospect is to be called on and so on.

As soon as these cards are made out, they are placed in their proper position in the files at once. In this way there is no accumulation of cards on desks or around the store awaiting proper attention.

Pierce keeps a perpetual inventory in his store, using for this purpose a card for each size and grade of tire carried in stock—about 120 in all.

On this card—which has been adapted by Pierce from the forms used by factory tire branches—there is space for receipts and dates when tires are received and space for daily sales with dates and order numbers on which all data about sales appear.

These cards are checked up with the stock on hand every two weeks—this work taking from a half hour to an hour. And in this way Pierce at all times can tell the exact condition of his stock. Discrepancies between goods actually on hand and which the inventory shows should be on hand appear at once, and records are then gone over to see where the trouble is. Through the working of this system Pierce has kept an absolutely correct check on his stock for years without any lost tires at all.

When a sale is made, an order or sales record is made out in duplicate. If the sale is for cash, the original of this order is stamped paid and handed to the customer. If the sale is not for cash, the original is still given to the customer with a notation about terms of payment. The duplicate goes to Pierce's desk for entry on his perpetual inventory records.

Pierce makes the needed entries on his perpetual stock record each day, thus keeping it up to date. The duplicate sales slips from which the stock records are made are then filed in numerical order. Then when any discrepancy on the stock record does occur, it is a simple matter to refer at once to the right sales record in order to get first hand information which will lead to the correction of the inventory.

Accounts receivable are also made up by Pierce from his duplicate sales records. Where these duplicates show that the sale was on credit, a bill is immediately made out by Pierce in duplicate, the original being mailed to the purchaser at once and the duplicate going into Pierce's accounts receivable file. These bills are all numbered in duplicate and are filed numerically so that it is impossible for any accounts receivable to get lost. Also when customers send in their checks with the bills in payment, the account can be at once located by number and the duplicate bill marked paid.

In this way when statements of account are rendered each month, Pierce goes through the duplicate bills for the month and sends out statements to those people who haven't paid. Long past due accounts are transferred to a separate sheet so it isn't necessary to go over more than a couple of months' bills in order to render the statements.

This bookkeeping and prospect-following is all handled by Pierce in an hour or so of work each day. He has found the system successful in cutting down office work to a minimum and in keeping an accurate check on stock and in getting results. Perhaps it would be found equally successful by other tire dealers.

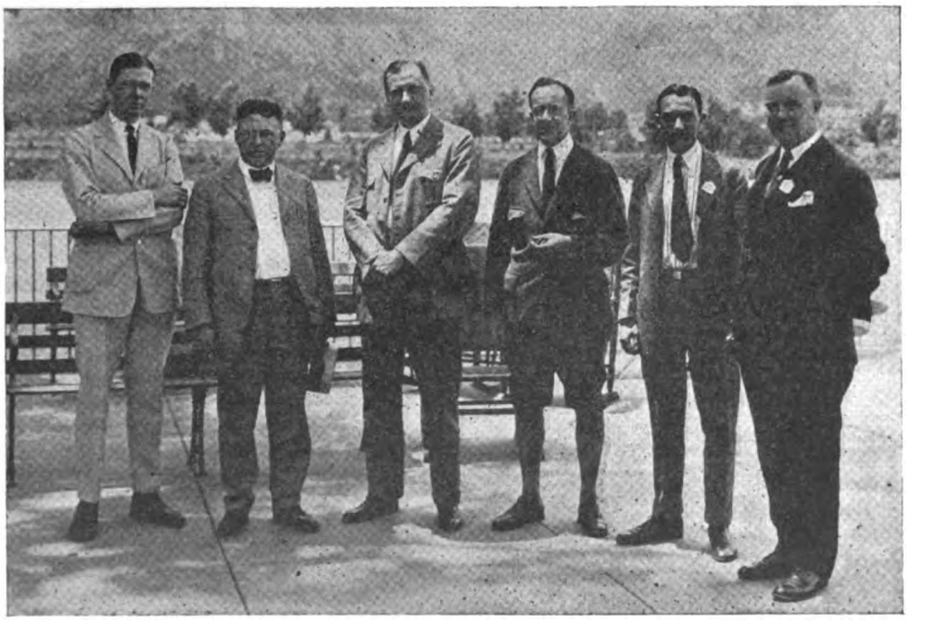
A. E. A. Handbook Result of Three Years' Work

THE Standards Handbook of the Automotive Equipment Association, which was shown at the Colorado Springs Convention and which has been mailed to members, represents three years' work on the part of the standardization committee headed by Fred R. Hall. It is intended to acquaint the trade with approved practices in labelling, packing and shipping products of the industry and to bring about elimination of unnecessary sizes and styles of various articles.

The book has three sections. The first tells the story of the A. E. A., giving detailed information about its organization, code of fair trade practices and the like. The second section is devoted to standard and recommended commercial practices, giving information on unit packages, inner packages, shipping cases, better packing in order to increase the merchandising possibilities of accessories, more complete marking of unit packages, inner cartons for re-shipping purposes, etc.

The standardization work is expected to be of direct benefit to dealers, reducing the number of sizes and styles they will have to carry in stock and facilitating the handling of their stocks.

In the third section is reprinted pages containing standard and recommended practices of the Society of Automotive Engineers. This section gives among other information the proper nomenclature of all parts of the automobile.

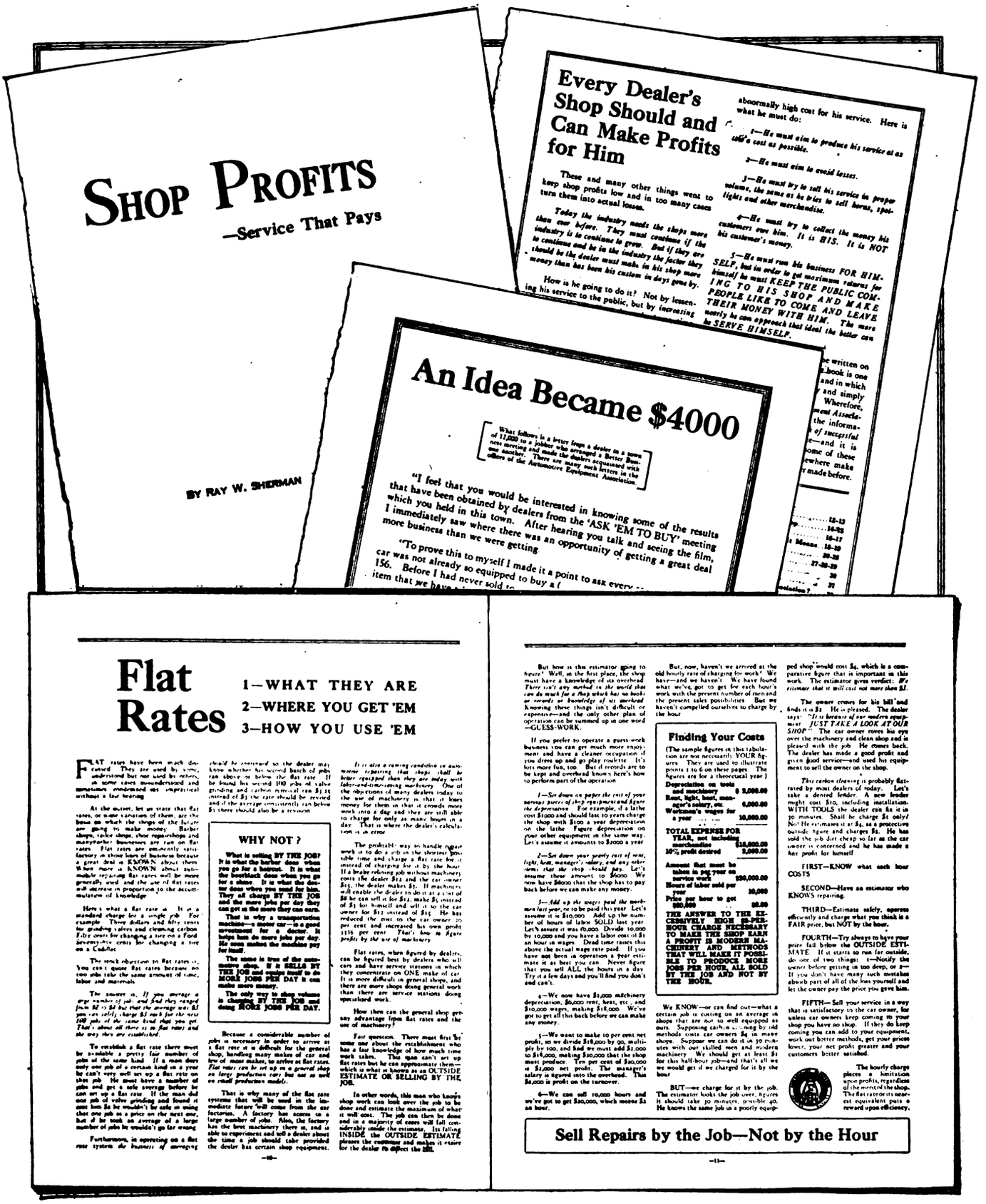


STANDARDIZATION COMMITTEE OF THE A. E. A.

This committee, which has been at work three years on the task brought to completion by the publication of the Standards Handbook, posed for a picture on the lake front at the Broadmoor Hotel, where the Colorado Springs convention was held. From left to right the members are: Charles P. Hughes, A. E. A. secretary of committees; W. A. White, Orr Iron Co., Evansville, Ind.; George B. Shearer, Jr., Gaul, Derr & Shearer Co., Philadelphia; Fred R. Hall, Northwestern Chemical Co., Marietta, Ohio; R. A. Picard, Metal Stamping Co., Long Island City, N. Y. The man at the right is F. E. Sparks of the American Chain Co., Chicago, chairman of the Railroad Classification Committee

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A Big Brother of "Ask 'em to Buy"



"SHOP PROFITS", the new A.E.A. book for distribution to dealers and garagemen, was presented at the Colorado Springs convention. It supplements the A.E.A. films and the book, "A Greater Business."

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How a Jobber Put New Life Into a Drooping Summer Sales Curve

The Story of a Summer Selling Plan That Singled Out and Revived Dormant Customers and Increased Sales

GOOD merchandisers are planning now the things they are going to do to stimulate buying when the usual slackening of trade comes late in the summer. Many of them have learned from past experience that much of the summer slump can be avoided in the sale of accessories and shop equipment if a strong selling campaign is instituted and aggressively pushed.

Such plans, to be successful, do not necessarily need to be new or brilliant. All is needed is some simple system of getting the selling message to the customer.

Advertising of the direct mail type has been particularly successful in lessening the customary late summer slump in the automotive equipment business. But, because of the cost of such efforts, it is most important that the mailing lists contain no dead wood and that the "copy" anticipates the needs of the buyer and presents the products that meet those needs intelligently.

THE following plan employed by the Auto Parts Co., St. Louis, jobber of automotive equipment, will serve as an example of how such a plan can be applied in practice, and to show how admirably it worked out. It is given here not as a new system of reviving business, but simply with the hope that it may contain some suggestions that will be of value to others, especially to those firms who may have a goodly number of unresponsive customers on their mailing lists.

The Auto Parts Co. believes in advertising, and maintains a regular campaign throughout the year. In addition to this, two catalogs are issued and two formal circular letters are mailed as a follow-up plan each year. These are mailed to the trade within the nearby territory. Naturally, the company maintains a carefully arranged card index file of all firms in the territory. These also record the sales which have been made to each customer, and each bears an index number which corresponds to a separate file which holds the correspondence, etc. There is nothing new about this, but the system made it easy for the Auto Parts Co. to determine just which ones were the *paying customers*.

Last summer, while looking for needless expenses, the company decided there were too many dead ones on this mailing list, and that they should be destroyed. It was argued that the saving of postage would pay for the work. Something like $750 could be thus saved to the firm in printing and postage. Out of 3000 dealers in Missouri and Illinois, who were on the mailing list, less than half were known to be buying anything from the house. While others were sending in as many as four or more orders a week.

P. H. Hale, the advertising manager, did not see the wisdom of this plan. He had never been contented with the follow-up plan of his firm, and he had several plans in his mind that he felt sure would produce results, if the trade was properly canvassed. All he asked was a free hand to go after the business. After some discussion, plans were agreed upon, and he was told to go ahead within certain limits.

The first move was to separate the cards. This was done without removing them from the regular filing cabinet. Clerks checked the file cards in red and blue inks. Any card showing even one sale within a year's time was marked with a blue check. While the rest were checked in red ink. To all dealers listed on the blue-checked cards a series of regular Government post cards were sent, twice a month. Each one of these boosted some regular specialty handled by the house. Brevity characterized these cards, which carried the name and prices in bold type. *The idea was to try to catch the dealer's eye with something* which he was likely to need. Only staples were thus offered at the regular list prices, and these were goods that were sure to be carried regularly in stock.

To reach the trade listed on the red-checked files, a carefully prepared letter was sent out. Hale tried to put himself in the customers' place when he wrote it. He had previously prepared a list of goods offered at attractive prices. The house had been searched for the best goods to place on this list, and several family meetings had threshed out the question of what was likely to take with trade.

The letter was as brief as it could be made. It stated that the firm carried a large assortment of goods in stock. No space was wasted in boosting the firm's standing. The past advertising was supposed to have long since established their reputation. The announcement was made that hereafter a regular bulletin of special bargains would be issued about twice a month to the trade. Several of the

Summer Selling

RIGHT now some jobbers and some dealers are preparing selling campaigns to be launched just as soon as the first signs of summer business stagnation appear.

They are planning to cash in on experiences of the past by going to customers with a selling appeal offering desirable items at good prices just when the "dog days" begin to weaken the "pep" and energy of the automotive equipment merchants and the interest of the buyers.

This story tells how the Auto Parts Co., a St. Louis jobber, revived interest and sales during the Summer months with direct mail effort to a carefully selected and classified mailing list.

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firm's specialties were mentioned and prompt service was assured on all orders.

The result accruing from the plan of attack on the hitherto indifferent trade, was gratifying. *It proved beyond a doubt that there was business to be had if one went after it in the right way.* It also showed what could be done even in dull times.

But this experiment did more than make a neat little profit for the firm, *it opened up new accounts* which naturally could be expected to increase in size. It encouraged the firm to go after bigger things, and to branch out on new lines. Any live firm would do the same when they see business coming its way. It is the lack of vision, or confidence, on the part of some that makes them hang back at this time. Half-hearted methods will avail nothing. Some may have tried some such plan recently and failed to get results. If so, something was wrong with the system. There was a weak point in the offer, or the prices were off somewhere.

Why not call a family meeting of your force and freely discuss the whole thing? Some family meetings are a farce because the heads of the firm will not tolerate any adverse criticism from their subordinates, and no one dares oppose any suggestion from the boss. It may not be pleasant to have a salesman shoot holes in a pet hobby, but if the man's remarks are honestly given they deserve to be considered. He may have an angle of vision which the boss had failed to see. It is not unlikely that his view is practical, but possibly might be improved upon. He is perhaps closer to the practical side of the business than others, because he is bucking up against actual conditions every day. In a general way success can be achieved by common-sense methods and a knowledge of the actual needs of the trade.

Here are the actual results, in cash, of the plan the Auto Parts Co. tried out: At the end of the first month, which was September, 1921, it was found that 42 new customers had been gained from the list that had been checked in red. Had the list of unresponsive dealers been junked and only the regular customers solicited, *this business would have been lost to the firm.* There were new cards made out for these 42 new customers and they were checked in blue ink. *They ceased to be a liability and henceforth were an asset to the firm.*

The orders received could not be called big orders, nor were they uniform. They averaged $7.67 each, or a total for the month of $322.14. The campaign was continued, and the following month, October, showed an increase. The number of customers amounted to 51 new ones. In addition to this, 16 of the new September customers sent in repeat orders. How many others drove into St. Louis and purchased goods direct cannot be determined, though some are known to have done so. The cost of what the firm terms their advertising follow-up system was normal.

Each bulletin issued represented an outlay of only $40 in all. This included postage, stationery, addressing, running the sheets off on a duplicating machine, and general clerk hire, etc., all of this work having been done in the office, without any extra help or expense.

The orders continued to come in regularly, despite the fact that it was getting near the end of the year. In November 43 new customers were added to the list, and 31 repeat orders were received. The average amount of each order increased to $8.27 with the usual number of large and small orders. The month of December brought in an additional 43 new customers, which, like the others, were checked in blue ink. The repeats for the same period were 35 orders. The average being $8.06 an order. All of which satisfied the firm as to the results.

The total for the four months' effort resulted in 106 new customers in Illinois and 73 in Missouri, or 179 in all. As there were 1750 names on the mailing list of the so-called dead ones, this is a trifle over 10 per cent of the prospects who received the bulletin. Not so bad, considering all things. All, too, at a time when the croakers are crying loudly that there was no business to be had. While the timid were saying that it was wasting time and money trying to stir up business.

But this is not all the company accomplished. The response from their regular customers, which they canvassed with the regulation post cards, was most gratifying. These were also issued semi-monthly and were merely a form of brief reminder of staples always carried in stock. The total for the four months was 786 orders directly traceable to these cards. These orders were in addition to other orders that had been received from these same customers during this period. It can, therefore, be readily seen that all of this business would have been lost to the firm, had they not followed up their past advertising with their bulletin. Summed up briefly, all this goes to prove that business can be secured if you go after it in the right way.



The alert merchandiser is not going to let business slumber this summer. He is planning NOW the things he is going to do to keep his customers awake and interested with a special summer selling appeal

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Trask Steamer in Canada

DETROIT, July 2—The Detroit Steam Motors Corp., manufacturing the Trask Detroit Steamer, will open a plant at Windsor, Ont., under the name of the Windsor Steam Motors, according to A. B. Muir of this city. The company intends to enter not only the Canadian domestic market, but to avail itself of the Canadian British tariff preference in seeking export sales, Muir said.

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What Foreign Trade Means to Business

Does It Matter Here if an Austrian Family Buys Less Bread or a Man in India Gets Along With Fewer Shirts?— It Does, and So Do Many Other Things That Are Translated into the Language of the Every-day Business Man in This Story

By JAMES DALTON

WHEN James R. Howard, president of the American Farm Bureau Federation, was asked recently by a New York Banker what were the greatest agricultural problems confronting the American farmer, he responded:

Transportation, including merchant marine;

Industrial production;

International exchange;

The balancing of European budgets;

German reparations;

Solution of the Russian problem.

Howard is a shrewd, far seeing man and he has visualized the inescapable interdependence of world commerce. He knows that if every man, woman and child in Austria, for example, can dig up enough cash to pay for two loaves of bread a week where they have been buying only one, it will mean higher prices for the wheat grower in Kansas.

He knows that if each of the male natives of India buys two cotton shirts a year instead of one, it will mean a stronger market for American cotton.

Too many people are prone to regard the farmer as a hick just because he wears overalls. As a matter of fact the average of hicks is higher in the cities than in the country.

You can find more farmers, for instance, than you can business men who can tell you exactly what the collapse of Communism in Russia means to America. They have a very clear idea of what it will spell, ultimately, not only for themselves but for industry generally.

Farmer Studying National Problems

The farmer has found it profitable to study national and world problems in relation to his own products and his own markets. The rank and file of men in the automotive and other industries would find it worth their while to take time every day to keep abreast of what is going on.

It may be difficult for the automobile or truck dealer in Oscaloosa or Cottontown, Ga., to figure out what concern it is of his whether the natives of India buy more shirts or the natives of Austria more wheat, but it is likely to make a material difference in the volume of his sales. If wheat and cotton prices go up 10 cents or 10 per cent it may be the determining factor in purchases of cars and trucks by the growers or planters in his territory. There are great stretches of the country where it may mean comparative prosperity or depression.

Leaders of the automotive industry sometimes get a bit discouraged because so little interest is manifested by the rank and file in problems of the highest importance. The Indianapolis sweepstakes may be more interesting than the financing of highway construction, but the relative importance is as 0 to 100.

Need More Dealer Interest

Many dealers from all parts of the country will go to Indianapolis to watch the "speed demons" in their merry-go-round, but when the Chamber of Commerce of the United States gave over one of the sessions of its recent annual convention at Washington to a consideration of highway financing, one of the most vital problems of the industry, the attendance numbered thirty-five. Twenty-four men were there when the meeting was called to order, and the rest drifted in later. Representatives of the automotive industry numbered a few more than the representatives of the brick and cement interests. Not even one dealer from Washington was present.

These meetings of the Chamber of Commerce offer little in the way of jazz entertainment, but they provide a carload of food for thought. The session at Washington was regarded by President Harding as of sufficient importance to justify him in breaking up an extraordinarily busy day at the White House so that he could address the convention. His coming may have been due to the fact that previous speakers had voiced polite disgust at the proposal to build a tariff wall around the country and in discussing European conditions had expressed sentiments reminiscent of League of Nations advocates, but he came nevertheless.

Two members of the Cabinet, Secretaries Hughes and Hoover, also were speakers.

The convention had one of those well known "keynotes," and it was world trade. The same key was struck at Atlantic City last year. It is significant that the greatest commercial organization in the world considered foreign problems more pressing than domestic questions in the midst of a deep business depression, and stuck to the same general theme when the country was recovering its prosperity.

One of the most striking addresses of the convention, even including the President and the Cabinet officers, was made by Howard of the Farm Bureau Federation. He applied the problems of Europe, the tariff and transportation to the farmer and demonstrated how they are affected, but the speech could have been made with equal logic by a representative of the National Automobile Chamber of Commerce, with a slightly different application.

Every automotive dealer should know something about all phases of transportation, and he should know a great deal about highway transport.

Every automotive dealer should know something about the relation of European problems to American exports, because the volume of exports determines the degree of prosperity the country shall enjoy. If the total volume of exports rises 15 per cent, it will mean an even greater increase in the volume of automotive sales in this country, for the increase in earnings works back all along the line from exporter to producer. It is safe to say that quite a few cents of every dollar of profit in the field of foreign trade are spent for something automotive.

Our Obligation to Europe

Listen to Howard for a minute:

"So keenly do the farmers of the country realize not only our moral obligations to Europe in the time of their distress, but our own economic dependence upon their welfare that we insist upon such liberal grants of credit as can be safely

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accorded them, and object to any tariff barriers which would prevent an easy flow of world commodities." he says.

"In recent years exports, particularly when compared to our total population, have been falling off due to increased domestic demand. We are still, however, exporting more than one-half our total cotton, almost one-fourth our wheat, as well as vast quantities of other cereals and pork products.

"There is no limit to the agricultural possibilities of America, and we ought always to produce a food surplus. Our national safety, in fact, depends upon it. But if we produce a surplus we must have for that surplus not only a market but a profitable market. It is because that market lies almost exclusively in Europe that the American market has so vital an interest in the reconstruction of Europe.

"Men may theorize about national self sufficiency and point to the certainty of home markets as compared with foreign, but trading between nations proceeds inevitably and it is not within reason to presume that it will ever end. Indeed, it never should. National seclusion would spell national decadence. The man who takes no part in the affairs of his community is no less undesirable than the nation who wraps her cloak of righteousness about her and withdraws from world society.

"I think it will be fairly clear from what I have stated that the agricultural interests of our country will not be best served by tariff walls so high as to become artificial barriers to the freest possible exchange of commodities. It is only as Europe can sell to us that they will be able to absorb our agricultural surpluses.

"So nicely are those human relationships which we call economics adjusted that every human affair throughout the world affects every one of us just as every particle of matter in the universe affects every other particle. Thus the reparations adjustments of Germany are reflected in every farmstead of America. Our interest in foreign finance and foreign exchange is as great, and possibly greater, than any banking or exporting house.

Improvement of Farm Prices

"The improvement in farm prices are to a marked degree coincident with an improvement in foreign exchange as indicated by easier exchange rates. For example, take May wheat in the Chicago pit December 7, which was low point for that period at 1.09½, compared with May at 1.41½, the improvement was 29 per cent. Between those same dates British sterling advanced 9 per cent, the French franc 23 per cent and the Italian lire 26 per cent.

"Thus the agricultural gloom of December dispelled by the smiles of May is directly reflected in the mirror of international exchange."

After that it might be interesting to know what Silas H. Strawn, chairman of the board of Montgomery, Ward & Co., the big Chicago mail order house, has to say on the subject. Here is a summary:

"More than one-third of the people of the United States live upon farms or are dependent upon agriculture. Their prosperity depends not so much upon the amount which they produce as upon the price which they receive for their products. While to a certain extent the price is influenced by domestic demand, the foreign demand is the determining factor. This is as true of the United States as it is of Great Britain or any other large producing country.

"In proportion to the reduction of the price of farm products, is the purchasing power of the farmer diminished. The inability of the farmer to buy ramifies through every industry and embraces every article of human consumption. For a hundred years our whole economic development has been adjusted to meet a continuously increasing foreign trade.

"To isolate ourselves, and cut off our foreign trade, would result in such intensive competition as to precipitate an economic panic in this country the like of which has never been seen."

The following summarizes the views of C. H. MacDowell, president of the Armour Fertilizer Works, Chicago, and it will be seen they closely parallel those of Howard and Strawn:

"The recovery and maintenance of a steady European market for our raw materials is one of our most important problems. Foreign commerce is our economic safety valve. Ill informed or locally selfish interests make it out that less than 10 per cent of our commerce is foreign; that it is not important, so why worry about it—take care of our home requirements and be happy; on to the ball game! We are practically self-contained—they say—and we are, if we care to pay the price. Both we and Europe would pay dearly by our adopting such a policy. We can easily go a good way along this road without knowing it, and then wonder what ails us.

"There is but one broad market to-day for our surplus cotton, copper, wheat, oil, coal, packinghouse products, naval stores, our sulphur, timber, phosphate rock and many other things. This market is Europe.

"Take cotton. More than 50 per cent of our crop is usually shipped to Europe. What effect did the decreased European buying power have on the distribution and price of American cotton in 1914 or late in 1920 and during part of 1921? How did it affect the 1921 crop? Our cotton growers became demoralized. Hard times and an almost complete elimination of buying power followed.

"How has increased European consumption of our cotton affected prices and Southern feelings since then? Values have advanced. The planter is feeling better and more hopeful. He is planting cotton.

Southern Prosperity

"The prosperity of the cotton South is dependent on a broad European market. Both Southern and Northern industrial prosperity is intimately connected with the buying power of the cotton grower. America is vitally interested in shipping cotton to Europe. If the South cannot market its cotton when grown on a fairly large scale, at a profit to the grower, it will reduce production and we will pay more for our shirts.

"And so it is with other raw materials. Large production through export decreases the cost of what we consume at home. A full export demand helps many sections not directly interested in the material exported."

Dwight W. Morrow of J. P. Morgan & Co. feels the same way about it. He says:

"Under the present organization of society, where large scale production is the practice in every civilized country in the world, our foreign and our domestic trade are so inextricably bound together that no man can tell how much of the domestic trade that he engages in is a part of the processes which go into our foreign trade.

"The most arresting economic fact in the history of the last 150 years has been the widening of the areas of exchange by the increased means of communication. One hundred and fifty years ago the work of any one man would affect only the few people in the neighborhood. Almost everything that man consumed was produced close to his home. With the coming of the railroad and the steamship and the telegraph and the telephone our economic areas have kept growing wider and wider. Our foodstuffs are no longer produced in the community in which we live; the product of our own labor may go to the remote corners of the world."

The average automobile dealer will admit without argument that he is interested in anything which concerns his business. Can he contend, in justice to himself, that he has no interest in the big problems of the world and nation even though, from a cursory examination, they may seem far afield from his shop or showroom?

The World—and Your Business

A BRISK demand from abroad may raise the price of cotton 10 per cent. This 10 per cent may start buying of automobiles, trucks, tractors and equipment in a great section of the country where buying had been at a standstill—for lack of the very profit that the 10 per cent higher price provides.

This is one illustration—just one—of the effect of foreign trade on domestic business. Yet a great many business men think of foreign commerce—if they ever think of it at all—as something far away from their interests. This story has been written with the hope of bringing the subject a little nearer home.

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Editorial Notes

Giving Away Profits

A TRIP out into the smaller towns and cities—and some not so small—reveals that even in the past two months of heavy demand many automobile dealers have been giving away part of their profits, not only by over allowances on used cars but by "throwing in" extras as inducements for new car purchases. Every little while some one rises up to say that the trade has ceased to give away tires and bumpers and like accessories, but when we find dealers doing it in times such as the present selling season there is no use pretending that the millennium has arrived.

This is a type of foolishness that might be discussed in dealer meetings as profitably as long trading. Extra equipment should be and can be sold with nearly every new car and many used ones. Giving it away is not only cutting into the legitimate profit on the car but throwing away the chance for added profit on the accessories. It wouldn't happen if dealers would know each other well enough to understand that none can afford such practices.

A Closed Equipment Show

UNDOUBTEDLY it has been with mixed feelings that the industry has received the news that the 1922 business exhibit of the Automotive Equipment Association, in Chicago, will be a "closed show." None but members and their employees will be admitted. This means, in effect, that manufacturer members of the A. E. A. will show their products to jobber members. The rest of the trade will be out in the cold.

The closed show was agreed upon for this year as an experiment. Jobber members unanimously favored it at their divisional meeting at the Colorado Springs convention. Members on the manufacturers' side were fairly well divided, but, without a vote in the convention, accepted the jobbers' recommendation and let the tentative closed show decision stand. The jobbers felt that an exhibit conducted by the association should be for the benefit of association members, that it should not be open for the transaction of business by non-member jobbers. Manufacturers who sided with the jobbers declared they had all they could do, during the five days' exhibit to talk with the representatives of member jobbing houses interested in their exhibits. Other manufacturers felt that after they had financed the show by purchase of space they ought to have the privilege of exhibiting to all interested jobbers, regardless of their association affiliations.

Previously it has been the custom to issue exhibit guest tickets both to manufacturers and jobbers recommended by members. Only member manufacturers were exhibitors, but the entire trade, to the extent that it was interested, could view the exhibits and talk business.

The closed show idea is in sharp contrast to most of the shows in the automotive industry, which are open not only to the trade but to the public. The automobile shows, of course, are intended to appeal to the public and are local in character. Even the "National" shows in New York and Chicago, which draw men in the trade from various parts of the country, are local in their appeal to the people generally. The automotive equipment show has been a national trade show, but it will lose that identification when it caters exclusively to an association membership.

There are some members of the A. E. A. who have argued that at certain hours of certain days the show should be open to the retail trade. This would serve only a virtually local purpose, as retailers would not travel long distances to attend such an exhibit. However, the suggestion shows how far some manufacturer members are from favoring a closed show of the kind decreed for the next exhibit. They didn't say much at the convention, but they expressed themselves in private and there is nothing uncertain about their opinions.

At a time when the A. E. A. is doing a work in the interest of the entire trade as well as its membership, through the merchandising campaign, a closed business exhibit will probably seem out of place to many men in the industry, as it does to some of the membership. The show itself, however, rather than opinions regarding it, will prove whether the closed plan is a mistake.

Equipment Time Sales

THE small dealer and garage trade is benefiting by the growing practice among jobbers of extending credit on shop equipment sales. Jobbers are finding that many a small customer is a thoroughly good risk for a time payment purchase of machinery often running into several hundred and often two or three thousand dollars. Such a sale provides the shop operator with the equipment he needs better to serve his customers and make a profit for himself. At the same time the jobber increases his volume of equipment sales and generally of replacement materials sales, because the better equipped shop does more work and needs more of the items the jobber sells. Sometimes the dealer or garageman becomes also a better accessory customer because time-saving machinery gives him more time for selling merchandise.

If you need a piece of machinery and haven't the ready money to buy it with ask your jobber about credit accommodations if he hasn't already offered them to you. Under the right circumstances a time-payment transaction on a piece of equipment that is actually needed is good business for both jobber and shop operator.

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Make the Used Truck an Asset, Not a Liability

A Conservative Appraisal Is the Best Insurance Against Loss, Says This Louisville Dealer

Editor Motor World:—Much has been written and little said on the subject, and many a factory and dealer is in trouble—the factory because the dealer cannot order more trucks, the dealer because he cannot replenish his bank account, supplementing it by further loans from the bank. Bankers have come in some sections to think that a stock of used cars or trucks is a liability instead of an asset, and for the benefit of some of the newcomers in the business, my experience has been about as follows:

Don't trade in a piece of junk, except as junk. Allow me to state that very few business firms ever part with a truck until it is practically junk. After the fourth or fifth year of a motor truck, it has seen its best days (though there are exceptions). You should know when you are trading it in that the reason you are getting it is because it is past successful operation economically.

My head mechanic would often come and say, "Mr. Schultze, that truck you took in is a bird—with a little work done on it, I can tune up the carbureter and probably put in a new needle valve, grind the valves, take up the bearings, give it a coat of paint, and you can make two or three hundred dollars out of the deal."

Now take my advice, and when he says that, get a gun and shoot him, because nine out of ten times when he takes off his carbureter and magneto he finds they are shot, and thirty to fifty dollars will have to be invested in them to put them in shape, and the connections will all be so badly worn that he will have to put in new ones. When he drops the crankcase to tighten up his bearings, he finds scored cylinders or else the crankshaft out of round, badly worn pistons, bearings practically gone, and by the time he gets through with this job, putting it in condition by regrinding the cylinders and new pistons, with the work of truing up the crankshaft and putting it in first class condition, it will have cost you $250 to $300, and you cannot get more than $50 over what you paid for it.

Try to hold all trade-ins as near to $300 as possible. This, of course, doesn't apply to all deals. Some dealers claim that they come out even and usually make money on trade-ins. If they included 10 per cent for overhead and 5 per cent for selling cost they have usually lost money.

Some factories ask $800 to $1,000 more for a two-ton than other real competitors and then confidentially give their dealers the right to ship these trucks to the factory, where they, no doubt, go to the graveyard, and the graveyard is the only solution, in my opinion, of the used truck over five years of age. It is out of the way, forever, it won't give the factory or the dealer any troubles, and a new truck will be sold to replace it. Many business firms buy these trucks merely to help out. Their expense of operation is so enormous and they soon forget the price they paid for it, and they begin to figure that trucks are too expensive for their business, and your trade-in has lost you and the factory a truck user.

Another great temptation is removed from the dealer. His bankers will often ask him for a statement of his assets, and he in perfect honesty will value these cars at what he took them in. When he really is forced to sell them at one-half the price, he has made a misstatement to his bank, without intending to, which as soon as they find out will very greatly cripple him in his business relations.

The truck manufacturers should hold meetings every three months to devise means and ways of meeting the situation from a business standpoint, for as the dealer gets in further, the worse off he gets. The manufacturer must look upon the dealer as his best business asset, help him in every way possible and particularly emphasize the fact that he must sell motor trucks profitably.

The factories that urge the dealers to put excess trucks on the floor, getting him tangled in his finances, are merely digging two graves—theirs and the dealers.

The trade-in proposition, if not handled properly, may make it necessary for motor truck manufacturers to put in branches. The only proper method of considering this is from the standpoint of getting these old trucks out of the way forever, and it is far better for both to lose a little money on them and wreck them and thereby create another new sale and profit, than it is for the factory to sidestep the trade-in and put it on shoulders that cannot bear the burden.

At the present time I know of fifteen two-ton trucks that I could sell in Louisville on trades. If I tried to sell them, say a two-ton truck at $2,500, I could not afford to allow more than $350 on a trade-in, but the man that is asking $3,400 for a similar design of truck can offer $900 for the same trade. In nine out of ten cases, the purchaser will fall for just this situation and buy the higher priced truck to get the bigger trade allowance.

The factory should urge dealers to hold prices, cut out the trading, except at a very nominal price, and should co-operate in every way with the dealer to help him sell trucks to people that will stay sold.—Sid Schultze, car and truck distributor, Louisville.

Write to Motor World About It

This page every week is devoted to discussions of topics of the trade by Motor World readers. Have you a suggestion to overcome a difficulty or improve some condition within the industry? Write to Motor World about it.

Say It With Orders

If You're Out on the Road
A-Bucking the Goad,
Scouting for "Biz" in Your Borders,
And Need More "Green Moss"
To Carry On—Write the Boss—
But Listen, Buddy—"Say It With Orders."

When Business Is Bad
And You Would Be Glad
To Make Yourself Solid as Solder,
You'll Surely Be Right
The Harder You Fight
And Continue to "Say It With Orders."

When You're Well on the Way
To Increase in Your Pay,
Avoid Pulling Strings Like the "Warders."
You'll Suffer a Loss
By Arguing With the Boss.
Here's the Secret—Just "Say It With Orders."

With the House of Success
The Opinion Will Be "Yes."
"We Would Make Our Activities Broader."
Then YOU'LL Be the Bird
With Whom the Boss Has a Word
If You've Constantly "Said It With Orders."—O. J. COE, Manager, United Motors Service, Atlanta, Ga.

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Schedule of Flat Rate Operations for the Hupmobile Model R

Time Limits and Mechanical Procedure to Be Followed to Complete Work in the Limits Given

Group 15—Wheels (Continued)

13—Replace one hub cap 0.2
- A—Remove old and install new hub cap.
- B—Front wheel hub cap must be packed with cup grease.
- C—Turn down and repack until grease comes out inside of wheel hub.

15—Replace one rear wheel assembly 2.0
- A—Block up rear axle securely so tire is clear of floor and remove tire and rim.
- B—Remove hub cap and nut and pull wheel.
- C—Disassemble bearing, dust washer and retainer and tire rim clamp bolts.
- D—Assemble bearing, dust washer and retainer and tire rim clamp bolts to new rear wheel assembly, using new parts if needed.
- E—Lubricate bearing with cup grease.
- F—Install wheel with key ways of shaft and wheel lined up.
- G—Tighten wheel on taper, then drive key in position.
- H—Install new rear wheel key if needed—must be tight fit.
- I—Install axle shaft nut—must be tight fit.
- J—Install cotter and hub cap.
- K—Install tire and rim and tighten securely.
  Brake band must not drag and wheel and tire must run true when job is completed, within ⅛ in. and ¼ in. respectively.

16—Replace one rear wheel hub or brake drum on both 1.7
- A—Block up rear axle securely so tire is clear of floor.
- B—Remove hub cap and nut and pull wheel.
- C—Disassemble bearing, dust washer and retainer.
- D—Remove hub and brake drum.
- E—Install new hub and brake drum as required using new bolts and nuts.
- F—Rivet ends of bolts slightly.
- G—Assemble bearing, dust washer and retainer and lock securely—use new parts if necessary.
- H—Lubricate bearing with cup grease.
- I—Install wheel with key ways of shaft and wheel lined up.
- J—Tighten wheel on taper, then drive key in position.
- K—Install new rear wheel key if needed; must be tight fit.
- L—Install axle shaft nut—must be tight fit.
- M—Install cotter and hub cap.
  Brake band must not drag and wheel must run true within ⅛ in. at felloe band when job is completed.

22—Stop grease leak from rear wheel 2.0
- A—Block up rear axle securely so tire is clear of floor.
- B—Remove hub cap and nut and pull wheel.
- C—Remove old felt washer retainer and washer.
- D—Install new washer. If fitted with old style one piece washer retainer replace with new style two piece retainer.
- E—Drill 13/64 in. hole ⅝ in. deep for lock screw.
- F—Spot-face ⅝ in. diameter.
- G—Tap ¼ x 28 SAE thread ½ in. deep.
- H—Lock retainer with lock washer and hex head ¼ x 28 SAE cap screw ½ in. long under head.
- I—Clean grease from wheel, brake drum, brakes and adjacent parts with gasoline.
- J—Drill ¼ in. hole through bottom of axle housing, outside of hole, to come flush with inside of rear spring leaves.
- K—Install felt washer No. 40230 over axle shaft against end of housing.
- L—Install wheel with key ways of shaft and wheel lined up.
- M—Tighten wheel on taper, then drive key in position.
- N—Install new rear wheel key if needed—must be tight fit.
- O—Install axle shaft nut—must be tight fit.
- P—Install cotter and hub cap.

40—Adjust front wheel bearings ... 0.4
- A—Raise front axle so tire clears floor.
- B—Remove hub cap and cotter key.
- C—Tighten nut so wheel will just balance when stopping.
- D—Back nut off one notch. Left hand thread on left steering knuckle.
- E—Install cotter key.
- F—Fill hub cap with cup grease and install.

41—Tighten both rear wheel nuts ...0.5
- A—Remove hub caps and cotter keys.

This flat rate schedule started in the June 21 issue, was continued in the June 28 issue and is concluded in this issue.

This is the eighth flat rate schedule published in Motor World. The others were: Paige, Overland Four, Studebaker, Dodge, Dort, Buick and Chandler.

- B—Tighten each nut with special long wrench.
- C—Cotter key securely and replace hub cap.

42—Fit oversize key in one rear wheel 1.0
- A—Block up rear axle securely.
- B—Remove hub cap cotter key and nut and pull off wheel.
- C—Clean up key ways in both hub and shaft with file if necessary.
- D—Fit oversize key tight in keyways and with not over 1/64 in. top clearance in the hub.
- E—Remove key and drive wheel tight onto shaft.
- F—Drive in key.
- G—Install nut—must be tight.
- H—Install cotter key securely.
- I—Install hub cap.

43—Stop grease leak from one front wheel 0.5
- A—Block up front axle securely.
- B—Remove wheel.
- C—Replace old felt washer with new one, using new retainer if needed.
- D—Lubricate—install wheel—adjust bearings and cotter key nut—must have 1/64 in. end play.
  Wheel must balance when stopping.

44—Change tire and rim assembly ..0.4
- A—Raise tire clear of floor.
- B—Remove valve stem, cap and nut.
- C—Remove clamp nuts.
- D—Remove tire and rim.
- E—Install tire and rim.
- F—Install clamps securely. Rim must run true within ¼ in. when job is completed.
- G—Install valve stem nut and cap.

45—Replace one rim tire or tube 0.3
- A—Remove rim from tire and tube.
- B—Assemble rim in tire and tube using new parts as ordered. (Use operation 44 if required.)

46—Tighten rim lugs on one wheel.. 0.2
- A—Raise wheel clear of floor. Rim must run true within ¼ in. when work is completed.
- B—Tighten all lugs and valve stem nut and cap securely.

47—True up rim on one wheel 0.3
- A—Raise wheel clear of floor.
- B—Mark point where rim runs out.
- C—Loosen lugs on opposite side of wheel from mark.
- D—Tighten lugs near mark. Rim must run true within ¼ in. when work is completed.
- E—Tighten all lugs and valve stem nut and cap securely.

Group 15A—Wire Wheels

1—Tighten all wheels on hubs 0.3
- A—Tighten all hub caps securely. See that lock in each hub cap is out so that it fits in notch in wheel hub.

2—Replace one hub cap 0.2
- A—Remove old hub cap. Right wheels and spare require caps with right hand thread—left wheels require caps with left hand thread.
- B—Install new hub caps—must be tight. See that lock in cap is out so that it fits in notch in wheel hub.

3—Change one wheel and tire assembly 0.3
- A—Raise wheel clear of floor.
- B—Remove hub cap and wheel.
- C—Install spare wheel and tire assembly.
- D—Install hub cap—must be tight. See that lock in cap is out so that it fits in notch in wheel hub.

4—Replace one wheel 1.0
- A—Raise wheel clear of floor.
- B—Remove tire lock ring and valve stem cap, nut and spacer.
- C—Remove tire and tube.
- D—Remove hub cap and wheel.
- E—Install new wheel—grease taper fit between wheel and hub.
- F—Install hub cap—must be tight. See that lock in cap is out so it fits in notch in wheel hub.
- G—Mount tire and tube.
- H—Install tire lock ring.
- I—Inflate tire to proper pressure.
- J—Install valve stem spacer, nut and cap.

5—Repair one wheel 0.5
(May require operation 3 once or twice)
- A—Send to maker's service representatives with purchase order covering necessary repairs.
- B—Get back when repaired and notify owner.

6—Line up front wheels. (Use operation 1) 0.5

7—Replace one or both bearings on one front wheel. (Use operation 6) 0.7

8—Stop grease leak from front wheel 0.5

9—Replace one front wheel hub. (Use operation 6) 0.7

10—Tighten rear wheel axle shaft nuts. (Use operation 41) 0.3

11—Fit oversize key in one rear wheel hub. (Use operation 42) 1.0

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12—Stop grease leak from one rear wheel 2.0

13—Replace one rear wheel hub or brake drum or both. (Use operation 16) 1.7

14—Stop grease leaks from one rear hub cap 0.5

A—Remove hub cap.
B—Remove rear wheel to axle shaft nut.
C—Pack end of keyway in hub and shaft with waste.
D—Install axle shaft nut—must be tight.
E—Install hub cap—must be tight. See that lock in cap is out so it fits in notch in wheel hub.

Group 16—Lubrication

1—Dope all Alemite fittings without pulling any spring bolts 1.0

A—Clean outside of following Alemite fittings thoroughly and dope with standard or high pressure Alemite gun.
12. spring bolts.
4. front axle.
1. steering gear housing.
1. steering column (may possibly require four gunfuls).
2. clutch and brake pedals.
1. clutch release bearing—cars over R 55,000 (four half turns of gun only).
2. universal joints only when provided with Alemite fittings—(do not fill so full that grease enters leather boot).
4. brake shafts on rear axle (May possibly require one full gun).
1. Grease must come through both sides at each spring bolt.
2. Jack up front axle when greasing steering knuckle pivot pins—grease must come through thrust washers.
3. Grease must come out at both ends of each brake shaft cross tube.
4. If grease can be felt in universal boots remove by inserting screw driver under small end of boot and squeezing out grease.

2—Clean one spring bolt to permit lubrication 0.3

A—Remove nut and star washer.
B—Drive bolt out far enough to expose cross hole at center.
C—Clean cross hole and force grease through with high pressure Alemite gun.
D—Remove Alemite fitting and turn bolt so cross hole is at one side, that is, not on top or bottom.
E—Drive bolt into place and replace Alemite fitting, star washer and nut. Spring action must be free.
F—Dope thoroughly—grease must come through on both sides.

3—Clean one steering knuckle pivot pin to permit lubrication 0.8

A—Block up front axle securely.
B—Remove lock pin and pivot pin. Pivot pin must be driven upward on cars below R 20,000.
C—Clean grease passages thoroughly.
D—Reassemble, riveting lock pin securely.
E—Dope thoroughly—grease must come out at thrust washers.

4—Dope rear axle and transmission 0.3

A—Remove filler plug on axle housing.
B—Fill to level ¾ in. below bottom of filler hole and replace plug securely. Drain down to above level if necessary.
C—Remove transmission filler plug.
D—Insert wire through filler hole—must go down 8½ in.
E—Fill to depth of 4 in. to 5 in. from bottom and replace filler plug securely.

5—Dope both front wheels 0.4

A—Remove hub cap from one wheel and install special hub cap in which Alemite fitting is mounted.
B—Dope until grease just starts to come through felt washer on inner side of wheel.
C—Replace standard hub cap securely.
D—Repeat above on other wheel.

6—Dope both universal joints 0.4

A—If joints are equipped with Alemite fittings dope until grease can just be felt inside leather boot.
B—On joints having standard plugs proceed as follows:
1. Remove plug and install Alemite fitting.
2. Dope until grease can just be felt inside leather boot.
3. Remove Alemite fitting and replace plug securely.
4. Repeat on other joint.
C—If grease can be felt in boot, remove by inserting screwdriver under small end of boot and squeezing out grease.

7—Dope fan—cars before R 56,000 approximately 0.5

A—Remove fan assembly from car.
B—Disassemble and pack hub full of grease.
C—Reassemble — bearings must have 0.10 in. end play.
D—Replace fan assembly on car, adjusting belt to proper tension. Tighten spindle nut securely.

8—Oil fan—cars after R 56,000 approximately 0.1

A—Remove filler plug.
B—Fill fan hub full of clean cylinder oil.
C—Replace plug securely.

9—Lubricate clutch release bearing .. (See operation sheet 4 or 5 of group 10)

10—Oil spring leaves 0.3

A—Jack up frame sufficiently to take all weight off of one spring.
B—Oil leaves freely, using long oil gun.
C—Remove jack and repeat on the other three springs.
D—Wipe off surplus oil.

11—Graphite spring leaves 2.5

A—Block up frame securely to take all weight off one spring.
B—Remove rebound clip bolts.
C—Spread spring leaves and coat thoroughly with graphite and oil or a prepared graphite and oil or graphite and grease compound.
D—Replace rebound clip bolts securely —rivet ends slightly.
E—Repeat on the other three springs.

12—Lubricate clutch studs 0.6

A—Remove lower and center toe boards.
B—Oil all six studs thoroughly with clean cylinder oil.
C—Push down clutch pedal a few times while oiling each stud.
D—Replace toe boards securely.

13—Replace one Alemite fitting 0.2

14—Grease and oil everything ..... 2.5 (Does not include changing engine or lubricating electrical equipment.)

A—Clean outside of following Alemite fittings thoroughly and dope with standard or high pressure Alemite gun.
12—Spring bolts.
4—Front axle.
1—Steering gear housing.
1—Steering column (may possibly require four gunfuls.)
2—Clutch and brake pedals.
1—Clutch release bearing — cars over R 55,000 (four half turns of gun only).
2—Universal joints only when provided with Alemite fittings—do not fill so full that grease enters leather boots.)
4—Brake shafts on rear axle. (May possibly require one full gun.) Grease must come through both sides at each spring bolt.
2—Jack up front axle when greasing steering knuckle pivot pins —grease must come through thrust washers.
3—Grease must come out at both ends of each brake shaft cross tube.
4—If grease can be felt in universal boots, remove by inserting screwdriver under small end of boot and squeezing out grease.
B—Remove filler plug on axle housing.
C—Fill to lever ¾ in. below bottom of filler hole and replace plug securely. Drain down to above level if necessary.
D—Remove gearset filler plug.
E—Insert wire through filler hole—must go down 8½ in.
F—Fill to depth of 4 in. to 5 in. from bottom and replace filler plug securely.
Dope both front wheels.
G—Remove hub cap from one wheel and install special hub cap in which Alemite fitting is mounted.
H—Dope until grease just starts to come through felt washer on inner side of wheel.
I—Replace standard hub cap securely.
J—Repeat above on other wheel.
Dope both universal joints.
K—If joints are equipped with Alemite dope until grease can just be felt inside leather boot.
L—On joints having standard plugs proceed as follows:
1. Remove plug and install Alemite fitting.
2. Dope until grease can just be felt inside of leather boot.
3. Remove Alemite fitting and replace plug securely.
4. Repeat on other joint.
M—If grease can be felt in boot, remove in inserting screwdriver under small end of boot and squeezing out grease.
Dope fan—cars before R56,000 approximately.
1. Remove fan assembly from car.
2. Disassemble and pack hub full of grease.
3. Reassemble—bearings must have .010 in. end play.
4. Replace fan assembly on car, adjusting belt to proper tension. Tighten spindle nut securely.
N—Oil fan—cars after R56,000 approximately.
1. Remove filler plug.
2. Fill fan hub full of clean cylinder oil.
3. Replace plug securely.
O—Lubricate clutch release bearing—cars under R55,000.
1. Remove filler plug from transmission and fill with cylinder oil to within 2 in. of top.
2. Install special filler plug in which tire valve is mounted.
3. With engine running apply 100 lb. air pressure to transmission and push down clutch pedal repeatedly until noise in clutch release bearing, if any, disappears. This may require air pressure for as much as three minutes.
4. Remove special filler plug and replace standard plug securely.
Oil spring leaves.
P—Jack up frame sufficiently to take all weight off one spring.
Q—Oil leaves freely, using long oil gun.
R—Remove jack and repeat on the other three springs.
S—Wipe off surplus oil.

Group 17—Frame

1—Replace frame 50.0
2—Rerivet one bracket or one end of one cross member without disassembling 1.2
3—Straighten one end of one side rail without disassembling ... 4.0
4—Straighten one end of one side rail when disassembling is required 6.3

Group 18—Body—Open

1—Tighten body to frame bolts 0.8
2—Stop rattle at one door 0.2
3—Replace one half of one door hinge 0.4
4—Shim body to get correct clearance around one door 1.0
5—Stop any body squeak ....
6—Stop rattle of robe rail 0.4
7—Replace robe rail 0.4
8—Tighten toe and floor boards 0.3
9—Stop rattle at dash 0.6
10—Install any necessary tacks in body upholstering 0.5
11—Replace one door 3.0
12—Repair upholstery ....
13—Repair body ....
14—Paint body only ....
15—Paint body and chassis ....

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16—Paint car complete ....
17—Replace one door bumper 0.2
18—Replace either roadster baggage compartment lock 1.0

Group 18A—Bodies—Closed

1—Tighten body to frame bolts. (Use operation 18-1) 0.8
2—Overhaul one door lock ....
3—Replace one door hinge ....
4—Overhaul one window lift—slide type ....
5—Overhaul one window lift—crank type ....
6—Stop rattle at one window guide ..
7—Repair or replace robe rail .... ..
8—Tighten toe and floor boards ... 0.5
9—Stop rattle at dash. (Use operation 9) 0.6
10—Replace one windshield glass .. ..
11—Replace one window glass .... ..
12—Repair upholstery ....
13—Repair body ....
14—Paint body only ....
15—Paint body and chassis ....
16—Paint car complete ....
17—Replace one door bumper 0.3
18—Replace old style with new style door bumpers ....
19—Replace coupe deck lock 1.0

Group 19—Windshield

1—Tighten windshield to body 0.4
2—Replace windshield to body cushions 1.0
3—Stop squeak at windshield to body bracket ....
4—Replace one windshield glass... ..
5—Replace any part of windshield requiring disassembling 2.0
6—Replace windshield assembly.... 1.0
7—Replace lower windshield weather strip 0.3

Group 20—Top

1—Dress top and curtains 2.7
2—Repair top or side curtains .... ..
3—Replace necessary curtain fasteners on top, body, windshield or curtains 0.8
4—Replace top complete ....

Group 21—Fenders and Running Boards

1—Remove one front fender 1.2
2—Install one front fender 1.8
3—Remove one rear fender—touring or sedan 0.8
4—Install one rear fender—touring or sedan 1.2
5—Remove one rear fender—coupe or roadster 1.5
6—Install one rear fender—coupe or roadster 1.5
7—Enamel one fender 2.7
8—Bump out and re-enamel one fender 4.7
9—Bump out fender on car 1.0
10—Tighten all fender bolts 1.0
11—Take rattle out of one fender... 1.5
12—Take squeak out of one fender.. 0.5
13—Replace headlamp tie rod 0.5
14—Replace one runningboard assembly 2.0
15—Replace one runningboard bracket 0.7
16—Replace one runningboard binding 0.6
17—Replace one runningboard matting 2.0

Group 22—Hood, Hood Sills and Splash Pans

1—Line up and fit hood 0.5
2—Remove hood 0.2
3—Install hood 0.5
4—Install one piece of hood lace .. 0.3
5—Replace one hood corner leather or fastener bumper 0.3
6—Replace one hood handle or fastener clamp bracket 0.5
7—Replace or tighten one hood fastener 0.3
8—Enamel hood ....
9—Bump out and re-enamel hood .. ..
10—Tighten bolts in one hood sill .. 0.3
11—Replace one hood sill 0.5
12—Enamel one hood sill or front splash guard ....
13—Remove one front splash guard 0.4
14—Install one front splash guard ..0.6
15—Bump out and enamel one splash guard ....
16—Tighten front splash guard 0.4
17—Tighten engine to frame pan ... 0.4

Group 23—Tire Carrier

1—Replace tire carrier assembly, one bracket or cross tube 3.0
2—Replace tire carrier ring 1.0
3—Replace or straighten cross tube rod 0.5
4—Take rattle out of cross tube .. 0.4
5—Straighten cross tube on car ... 0.5
6—Replace spare rim clamp bolt .. 0.6
7—Take rattle out of tire carrier.. 0.4
8—Replace one tire wheel carrier brace 0.3

Group 24—Miscellaneous

1—Wash and polish—open car 1.7
2—Wash and polish—closed car .. 2.0
3—Simonize—open car 3.3
4—Simonize—closed car 4.7
5—Inflate all tires 0.2
6—Install license tags on new car .....No charge
7—Replace license tags 0.2
8—Take out rattle by tightening .. 7.0

A—Tighten all spring rebound clips—eight rear and six front. Shorten spacers if necessary.
B—Tighten all spring to axle clip nuts—sixteen.
C—Tighten all spring shackle bolts—four each front and rear. Spring action must be free and nuts properly locked—use new star washers if necessary.
D—Shim all four spring front bolts as required.
E—Tighten tie rod clevis bolts and clevis clamp bolts. Steering must be as free as before tightening.
F—Tighten radiator to frame.
G—Tighten hood ledges to frame.
H—Tighten head lamp bracket to fender bolts.
I—Tighten all fender bolts.
J—Tighten running board brackets to frame and running boards to brackets. Be sure spacers are tight.
K—Tighten body to frame bolts.
L—Tighten gasoline tank brackets to frame bolts.

Standard-8 Uses Airplane Lubrication System

THE Standard 8, Model 98, is using an airplane system of lubrication. The oil is carried in a separate crankcase. This separate department is a 3-gallon container, anchored to the frame, under the right front fender. Oil flows by gravity through a flexible tube to the crankcase, whence it is pumped upwards to the cylinders, bearings, rods and other moving parts. It then drops to the base of the engine and is pumped back into the container, being cooled and refiltered before again making its circuit through the engine. Another feature of the system is that the oil tank can be filled without lifting the hood. The oil filler and gage are in the hood board, and are visible at all times.

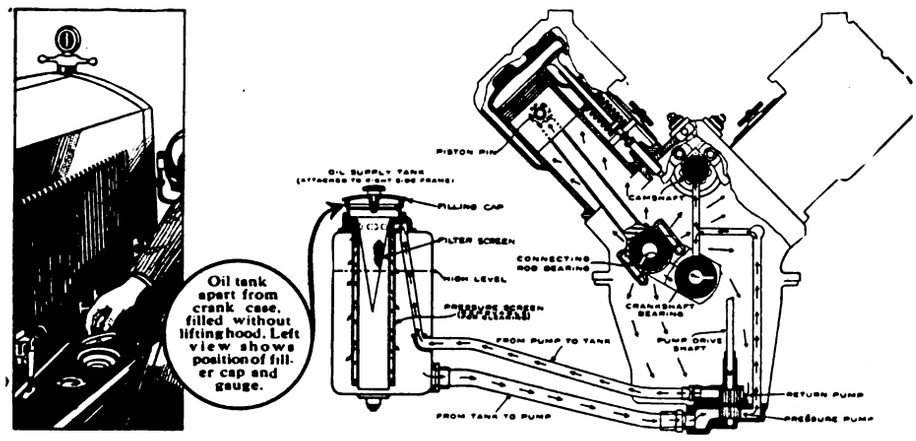


Diagram showing operation and principle of airplane lubrication, as used on the Model 98 Standard 8

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Counter Register Eliminates Lost Records

A System That Protects the User from Loss Through Failure to Bill Customers for Labor and Material

A RIGID check on the sale of parts and labor is maintained by the C. & S. Motor Corp., Utica, N. Y., through the use of Standard counter manifold registers. The original record of every transaction is made on these registers. Leaks resulting from lost records have been entirely eliminated.

Three registers are used in the service and parts departments, and each provides triplicate records. The repair order is made out on one, a second is used for parts requisitions, and the third is used for invoices and counter sales of parts and accessories; also is used combined with a cash drawer.

The face of the repair order is shown at 1 in the illustration. This order is signed by the customer. The original goes to the office, the duplicate to the customer showing him what he signed for, and the triplicate, which is printed on heavy manila paper, is placed in an open face holder and attached to the car, as instructions to the foreman or mechanic what work to do.

Time cards bearing a number and mechanic's name are made out in the shop as work is done. These cards are forwarded to the office. Material required for the work is drawn from the stockroom on the requisition shown at 2. The original of this requisition goes to the office, the duplicate is placed in the holder containing the triplicate of the repair order, and the third is retained by the stockroom for its perpetual inventory record. This form has two amount columns so that both the cost and selling price of the material may be inserted.

The reverse of the office copy of the repair order is shown at 3. This form is filled out in the office from the time cards and the parts requisitions. When the job is completed, the shop copy of the order and the copies of the parts requisitions in the holder with it, are forwarded to the office. The invoice is made out on the form shown at 4. Only two items show on the invoice, total labor and total material, which are taken from reverse side of office copy of repair order. The material charges are supported by the duplicate or customer's copies of the requisitions, which are attached to the invoice.

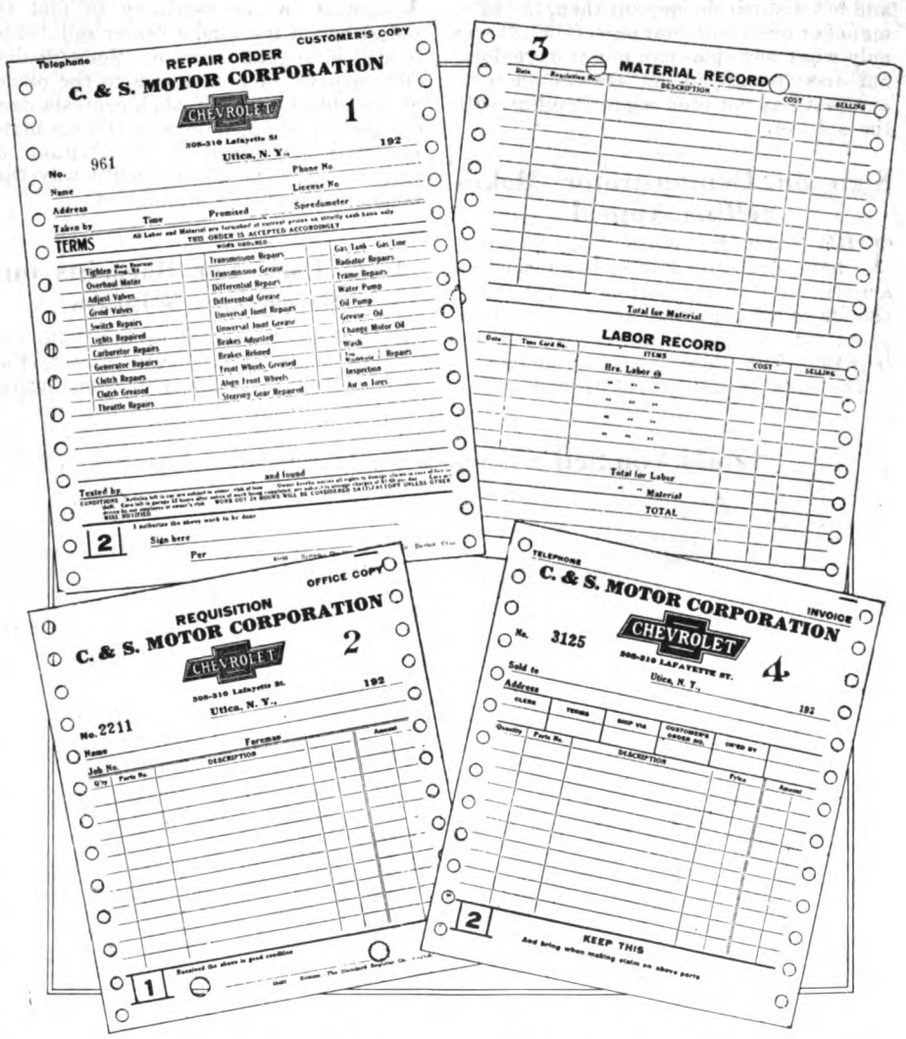
The form at 4 is also used to record parts and accessory sales over the counter. Articles sold in this way are itemized on this form. In making inventory records, the stock clerk disregards the copies that record material sales without itemizing the articles sold. This material is covered by the shop requisitions and inventory records on it is made from them.

The form shown at 4 is also used to cover the purchase of material from other merchants for use in repairing customers' cars. Unless a memorandum is made at the time the material is purchased, there is a possibility that the customer will not be charged with the material. By making out a memorandum bill to him on the counter sales register at the time the material is purchased, as per job number, this possibility is avoided as the copy of this bill goes to the office and is entered on the reverse side of the office copy of the repair order.

With this system, the C. & S. Motor Corp. incurs no losses due to failure to bill customers for labor on material purchased. The forms on each register are numbered consecutively. If the office loses its copy of a record, the gap in the numbers shows the loss. And the information on the lost copy can be obtained from the duplicate in the shop or parts department.

In this installation of Standard registers, no provision is made for a locked-in record. In some models of this make of register, a copy of all transactions, consecutively numbered, is made which rewinds, and the record is locked in the machine. The management has the key to the register and can inspect it at any time and make comparisons with the original. This prevents changing the record after the form has been removed from the machine.

Forms Used by Service and Parts Departments



These forms are all made out in triplicate. 1—The repair order; 2—the parts requisition; 3—Reverse of repair order; 4—Invoice used for labor and material sales

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Urged Buyer to Finance His Own Purchase

Suggesting Use of Bank Book as Collateral Security Helps This Salesman

H. RAYMOND AUGUR, sales manager for the Williams Motor Sales Co., Dodge dealers, Springfield, Mass., finds that his previous experience in a savings bank is an asset in car selling. He has an angle on thrift and the systematic disposal of monthly income that he is enabled to make helpful to his customers on numerous occasions. In such a simple matter as showing a prospect how he can pay in a stipulated amount immediately without losing interest at the bank, he has been enabled to close a deal in a number of instances. The party would say, "I don't want to draw out my money now, for the interest won't be declared for several weeks, and I shall lose six months' interest." By explaining that he could easily employ his bank books as collateral for a loan and not disturb the deposit then, the sales manager overcame that objection. It was only what any salesman might have done, but such points do not always occur to one that has not been made familiar with the subject.

Sign on Demonstrator Makes Selling Appeal

THE Crawford Auto Co., Birmingham, dealer in Fords, has placed an artistic sign on the bottom of the windshields of all cars that are used as demonstrators in small towns near Birmingham. The sign is easily removed.

The sign reads: "$181.07 and $35.80 per month for twelve months buys me. I'm from Crawford's; Phone Main 4391; 2225 1st Avenue, Birmingham, Alabama. Ford Dealers."

Don Maring, manager of Crawford's, explains the usefulness of this sign as follows: "The people in the small mining and rural towns around Birmingham do not know that a car can be bought on time, and they do not know when a car comes into the town whether it is a demonstrator or a private car. This little sign tells the whole story and is an introduction for the salesman to all the prospective customers in the towns."

Oldest Car Contest

IT is always interesting to institute a contest in the territory to find the oldest car of the kind a dealer sells which is still in regular service. Some dealers offer a prize of a new tire to the owner of the oldest car. By such contests dealers get some splendid advertising material and also focus local attention on the cars they handle in such a way that business usually is stimulated.

Lists Used Car Bargains on Salesroom Window

THE Fort Wayne Overland Auto Co., 126 West Washington Street, Fort Wayne, Ind., has this sort of an inscription painted on its main show window:

"USED CAR DEPARTMENT.

"To-day's best offers: ——"

This is painted in brilliant colors and quite large so that it is sure to attract attention. Then, each day, the concern lists some new offers or some old offers with different phraseology for listing them. In this way the most prominent sort of a display is given to the used car advertising, and the advertisements are kept constantly new and fresh and interesting.

Phone Calls Ask If Service Satisfies

THE Columbus Buick Co. calls on the telephone all owners who have had work done in the service station and inquire if it was satisfactory. In about two or three days after the car has left the service station an office employe, a girl who is noted for her tact, does this work. She tells the owner if it is not satisfactory to bring the car back for further work. It is found that this system is a good thing toward building up good-will among the owners of Buick cars.

Used Truck Rentals Help Pay

A TRUCK dealer in Little Rock, Ark., who has a few used trucks on hand, is making them help pay the overhead on handling them by renting them to parties of young people who wish to go on week-end picnics. By advertising this feature of his business and keeping in touch with the wholesale organizations of his town, he has been able to secure several jobs week-ends for his used vehicles. The parties pay a good rental for the trucks which includes payment for the time of the driver.

Sign on Used Car Gives Buyer Facts

IT would help you a lot in selling more used cars if a tag were attached to each used car on which would appear all these things:

Original price and present price.

Present condition and description of work done to bring car into its present good condition.

Complete pedigree (if possible).

Oil and gasoline mileage purchaser can expect to get.

Putting everything down in black and white like this would visualize the whole proposition to prospects much more successfully and would, therefore, help a lot in selling more cars.

Could You Sell a Huckster a Truck Like This?



This Ruggles truck is a traveling store in Columbus. The body was mounted on a 1-ton chassis. C. H. White, the Columbus fruit and vegetable dealer, fitted the truck with an electric bell which he rings to attract attention, instead of shouting his wares. The special body is 5 ft. high with glass windows on all sides. It was painted marble white, which gives it a neat, clean appearance and considerable attractiveness when contrasted with the vari-colored fruits and vegetables

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Emergency Road Service Builds Tire Business

Combination of Aggressive Merchandising and Good Service Insures Permanent Business

TWELVE miles from Denver, on their way to Estes Park, with both road and weather conditions favorable, and with an early start and high hopes for a perfect day in the mountains; but stranded because needing a tire. Such was the recent fate of a Denver motorist, his family and some Eastern guests on their way to one of Nature's scenic treasure spots in the Colorado Rockies.

But the gloom didn't last long. A fifteen-minute walk to a farmhouse, a telephone call to one of Denver's alert tire firms and a half-hour of waiting for the delivery and placing of the needed new tire brought back all the cheerfulness with which that Sunday morning had begun, and the beckoning grandeur of the glistening mountain peaks became even more alluring than before.

The emergency road service that made these folks happy was supplied by Peters-Tucker-Littlefield, Inc. And the car owner was so impressed by the promptness and efficiency of the service that he soon bought two more tires; and he is now counted upon as one of the firm's steady customers. This concern provides free road service anywhere within the city limits, and takes care of distant emergency calls at surprisingly moderate charges.

This service, tire prices, allowances and other features of the business form the basis of monthly circular letters to a select but extensive list of individual motorists, supplemented by occasional newspaper advertising and attractive window displays. About 3000 dealers are also circularized every month, and special letters are sent to some 1500 commercial houses.

And there is plenty of hustling all the time by the members of the firm, who bring in business by calls in person and by telephone.

One of the letters used by this dealer follows:

"Dear Sir:

"With —— Tires now as low as $16.95 and up according to size, and —— Fabric Tires as low as $10.40. With —— Cord Tires as low as $20 and up according to size, and —— as low as $9.85—tire expense is no longer a serious proposition.

"And to reduce the cost still more, we make a generous allowance for your old tires, provided they are still in condition to be renovated for used cars offered for sale by dealers, whom we supply.

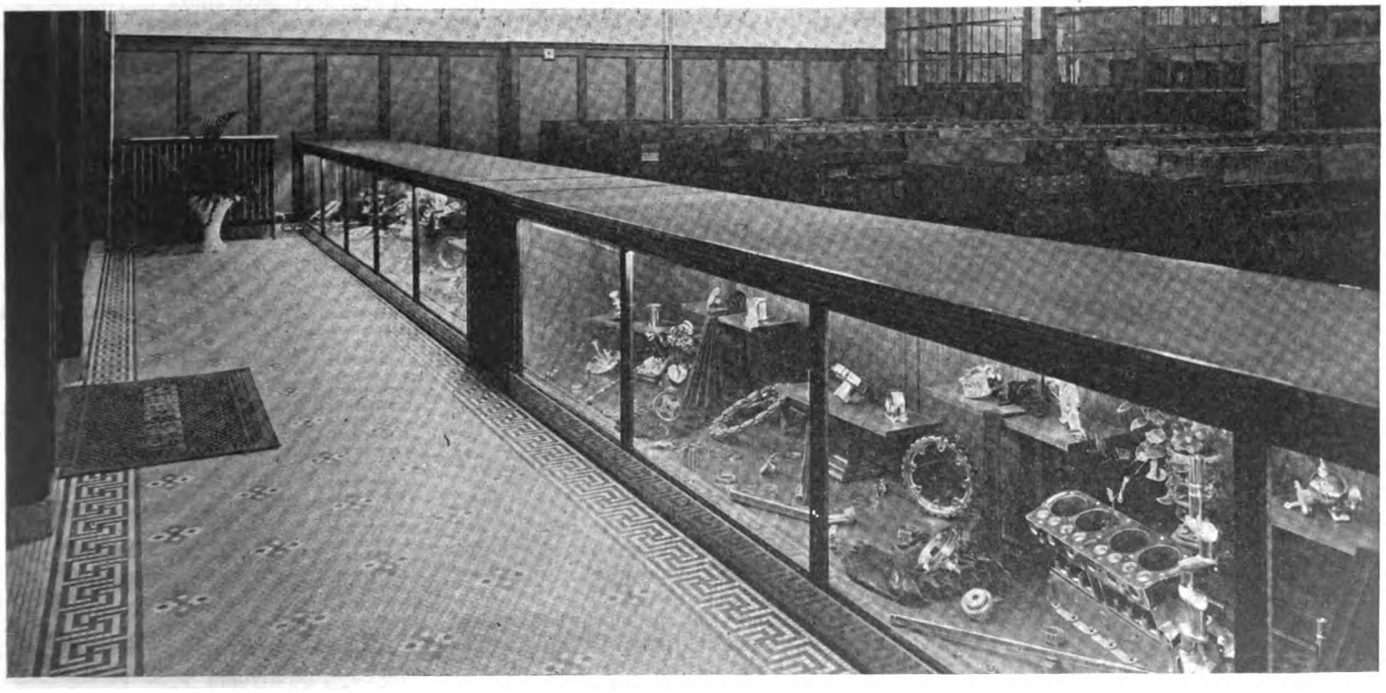
"There, it is false economy to hold on to your old tires too long. Why not hand them in as part payment and enjoy the gratification of new tires? The cost is now insignificant compared with the satisfaction, safety and service new tires provide.

"Better and more of it, OUR ROAD SERVICE FREE—that is, free, of course, excepting necessary repairs to tires and tubes, for which, however, our charges are so moderate you no longer wonder why the firm of Peters-Tucker-Littlefield is so rapidly forging to the front.

"The best tires for the money, the best service and NATURALLY the greatest following.

"If you are not already a patron, we assure you it will give us great pleasure to add your name to the growing list of those who realize that trading with us is mutually profitable."

Effective Use of Waste Space



Here is an excellent example of the effective use of space that is more or less wasted in many establishments. It is the parts salesroom of the Mendenhall Motor Co., Ford dealer in St. Louis. The counter has the usual hard finish top upon which parts are grouped for the purchaser, while the space under the counter has been turned into a beautiful display case by placing glass in the front of it and equipping it with electric lights

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Gearset Operations on the Overland Four

Removing and Replacing Countershaft, Countershaft Gear, Bushings, Idler Gear Shaft, Gear and Bushing

REMOVING and replacing any one of the six units, countershaft, countershaft gear, countershaft bushings, idler gear shaft, idler gear and idler bushing can be done separately in the following time limits:

Removing and replacing countershaft	2.5 hr.
Removing and replacing countershaft gear	2.5 hr.
Removing and replacing countershaft bushings	2.8 hr.
Removing and replacing idler gear shaft	2.8 hr.
Removing and replacing idler gear	2.8 hr.
Removing and replacing idler gear bushing	3.0 hr.

1—With chain fall take the weight of the car off the springs.

2—Remove two ⅝ in. nuts from the spring bolts.

3—Drive out the bolts.

4—Remove cotter pin from brake rod and service brake pedal clevis pin.

5—Remove clevis pin.

6—Remove wing nuts from hand brake lever rod.

7—Disconnect speedometer cable from speedometer drive shaft.

8—Block up the torsion tube and roll out the rear end.

9—Drain the oil from the gearset and engine base by removing two plugs.

10—Remove 5/16 in. cap screws and nuts from the clutch pedal pads and remove the pads.

11—Remove the two floorboards.

12—Remove the clutch and foot pedal springs.

13—Remove the clutch pedal by taking out the ⅜ in. lock bolt, washer and nut.

14—Remove key from clutch fork shaft.

15—Disconnect foot brake rod from foot brake pedal and remove pedal.

16—Remove four 5/16 in. cap screws from gear shift box and lift out gear shaft box.

17—Remove gearset cover.

18—Block up gearset case.

19—Remove cap screws holding gearset assembly to engine base.

20—Remove gearset assembly and replace one starting motor cap screw.

21—Remove wire locking four clutch shaft bearing retainer cap screws and remove cap screws.

22—Drive out clutch shaft and bearing toward front of gearset case.

23—Pull out universal joint assembly and main shaft by driving out end of main shaft.

23—Remove three nuts and one castellated nut holding universal joint assembly to gearset case.

24—Pull out universal joint assembly and main shaft by driving out end of main shaft.

25—Lift out sliding gears.

26—Remove cotter key in case holding countershaft.

27—Drive out countershaft from front to rear.

28—Lift out countershaft gears, as shown in Fig. 1. If idler gear or gear shaft is to be replaced, drive out shaft from rear. Assemble new gear on idler shaft and replace shaft in gearset case.

If countershaft bushings are to be replaced, drive bushing out of gear and replace. Fit shaft to bushings and allow 0.003 in. clearance, before replacing gears in gearset.

If idler gear shaft or gear is to be replaced, drive out idler gear shaft, driving from rear to front of gearset.

If idler gear bushing is to be replaced, drive out old bushing and replace, fitting bushing to shaft with about 0.003 in. clearance before assembling in gearset.

29—Place countershaft gears in position.

30—Drive in countershaft and replace cotter pin.

31—Replace universal joint assembly and main shaft in case at the same time placing sliding gears on main shaft. Tap universal joint lightly until the bearing and shaft are in position.

32—Put on three lock washers and nuts and one castellated nut holding universal joint to gearset housing. Cotter pin castellated nut.

33—Replace clutch shaft assembly and tap lightly until in place.

34—Replace front annular bearing retainer and fasten with four cap screws and lock washers.

35—Lock cap screw washer with wire.

The hub of the driven disk in the clutch must be centrally aligned so that the clutch shaft will enter splines of driven disk.

36—Remove starting motor cap screw and replace gearset, pushing clutch shaft through as far as possible.

37—Put brake pedal on clutch operating shaft and put key in shaft. Put on clutch pedal and depress. This will pull the gearset into place.

38—Bolt gearset securely to engine base.

39—Install starting motor and bolt securely.

40—Connect speedometer cable.

41—Roll rear end in place (two men necessary).

42—Let body down so that springs line up with shackles and put in shackle bolts.

43—Let down body and remove chain falls.

44—Replace clutch cover plate.

45—Replace gear shift box, making sure that gearset gears and shifting gears are in neutral.

46—Fasten emergency and foot brake rods and attach springs.

47—Replace pedal pads, fastening with bolts, lock washers and nuts.

48—Put in floor boards.

Better Mechanics

ARTICLE No. 247

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.

To Remove and Replace Gearset Unit

(The time for this operation is 1.8 hr.)

1—With chain fall, take weight of car off springs.

2—Remove two ⅝ in. nuts from spring bolts.

3—Drive out bolts.

4—Remove cotter pin from brake rod and service brake pedal clevis pin.

5—Remove clevis pin.

6—Remove wing nut from hand brake lever rod.

7—Disconnect speedometer cable from speedometer drive shaft.

8—Block up torsion tube; roll out rear end.

9—Drain oil from gearset and engine base by removing drain plugs.

10—Remove 5/16 in. cap screws and nuts from clutch pedal pads and remove pads.

11—Remove two floor boards.

12—Remove clutch and foot pedal springs.

13—Remove clutch pedal by taking out ⅜ in. lock bolt, washer and nut.

14—Remove key from clutch shaft fork.

15—Disconnect foot brake rod from foot brake pedal and remove pedal.

16—Remove four 5/16 in. cap screws from gear shift box and lift out box.

17—Remove gearset cover.

18—Block up gearset case.

19—Remove cap screws holding gearset case to engine.

20—Remove gearset case.

The hub of the driving disk in the clutch must be aligned so that clutch shaft will enter splines of driven disk.

21—Replace gearset, pushing clutch shaft through as far as possible.

22—Put brake pedal on clutch operating shaft and put key in shaft. Put on clutch pedal and depress. This will pull gearset in place.

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23—Bolt gearset securely to engine base.
24—Install starting motor and bolt securely.
25—Connect speedometer cable.
26—Roll rear end in place (two men).
27—Let down body so that springs line up with shackles and put in shackle bolts.
28—Put on shackle bolts nuts and cotter pins.

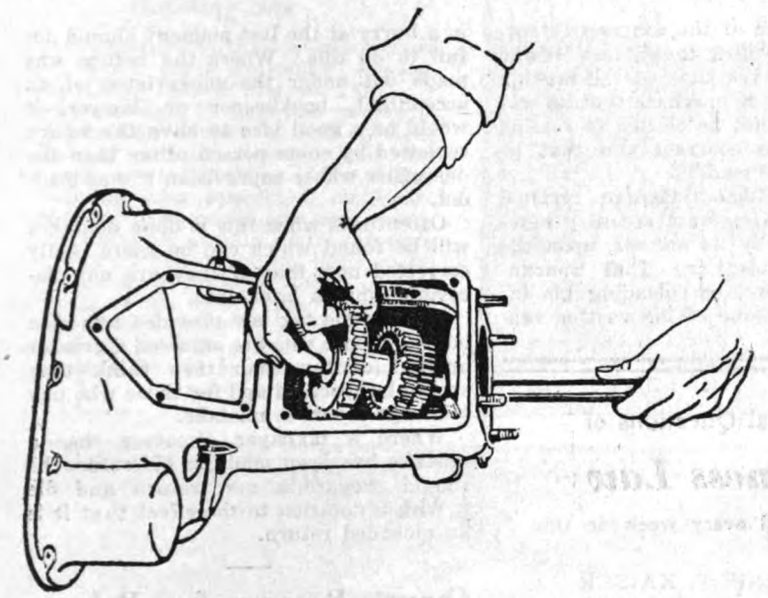


Fig. 1—Removing the Overland Four countershaft gears from the gearcase

4—Remove gear shift box.
5—Remove split pin from shifter form shaft holding shaft to housing.
6—With drift punch, drive out shifter fork shaft far enough to remove shifting fork on shaft, as in Fig. 2.
7—Assemble new shifter fork on shaft.
8—Drive shaft to position and pin.
9—Put on gear shift housing.
10—Replace four lock washers and cap screws and tighten.
11—Connect brake rod to hand brake lever with wing nut.
12—Install floor boards.

To Remove and Replace Gearshift Lever

(The time for this operation is 0.3 hr.)

1—Unscrew ball from top of gear shift lever.
2—Pull out cotter pin from gear shift lever spring retainer.
3—Remove the gear shift lever spring retainer and spring.
4—Remove gear housing cap.
5—Drive out pin with drift punch and remove gear shift lever.
6—Assemble gearshift lever in position.
7—Insert pin.
8—Put on gear shift housing cap.
9—Put on gear shift lever spring.
10—Put on gear shift lever spring retainer and cotter pin.
11—Screw the gear shift lever ball in place.

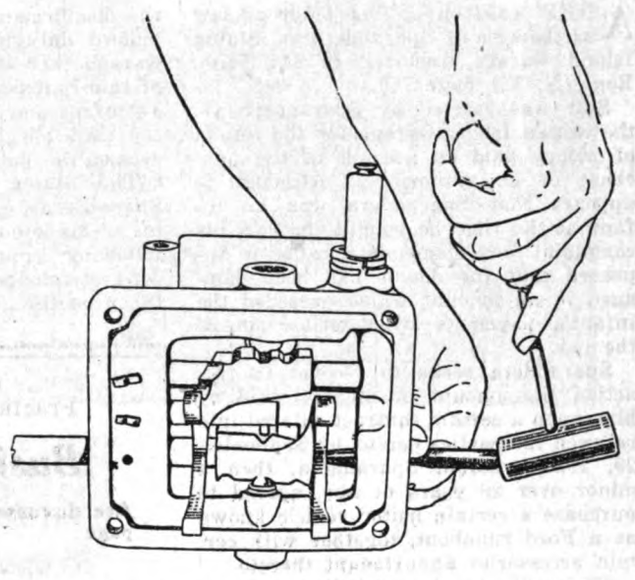


Fig. 2—Removing the shifting fork from the Overland Four gearset

29—Let down body and remove chain fall.
30—Replace clutch cover plate.
31—Replace gearshift box, making sure that the gearset gears and gear shifting forks are in neutral.
32—Fasten emergency and foot brake rods and springs.
33—Replace foot pads fastening with bolts, lock washers and nuts.
34—Put in floor boards.

To Remove and Replace Gearshift Housing

(The time for this operation is 0.3 hr.)

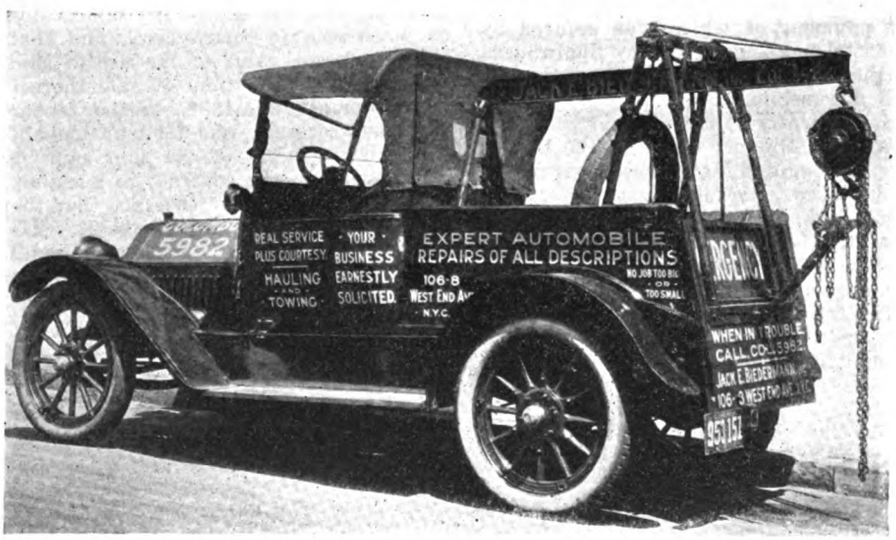
1—Remove floor boards.
2—Remove hand brake adjusting wing nut.
3—Remove brake rod from lever.
4—Remove four 5/16 in. cap screws and lock washers from gear shift housing.
5—Remove gear shift housing.
6—Place gearset sliding gears and gear shift lever in neutral.
7—Place gear shift housing in position on gearcase.
8—Tighten with four 5/16 in. lock washers and cap screws.
9—Install brake rod, adjusting with wing nut.
10—Put in floor boards.

To Remove and Replace Gearshift Lock

(The time for this operation is 0.5 hrs.)

1—Remove floor boards.
2—Remove hand brake wing nut.
3—Remove four 5/16 in. cap screws, holding gear shift box to gearset case.

This Service Car Makes 'em Look



Jack E. Biedermann, who has a repairshop in New York, has constructed this towing car, which is painted a bright green with white lettering. The hoist is so placed in the car that it can be used for lifting, towing or pulling. A complete set of service tools and equipment is carried in tool chests in the rear of the car and these are kept in the boxes at all times so that the car is ready to respond to any kind of a call at a minute's notice. The lettering forms an attractive advertisement and with the bright colors attracts attention

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Care Should Be Used in Selling Minors

Interesting Decision in New York Dismisses Minor's Complaint in Staten Island Garage Case

A NEW case on an old point of law is the case of Sparandera vs. Staten Island Garage, reported in 117 Misc. Rep. (N. Y.) page 780.

Suit was started by Sparandera vs. the Staten Island Garage for the return of money paid on account of the purchase of an automobile. Although it appears that Sparandera was an infant at the time he bought the car, his complaint was dismissed because it appeared that the dealer had been damaged in an amount which exceeded the infant's payments by deterioration of the car.

Sparandera seeks to recover in this action the amount of moneys paid by him, upon a certain contract entered into between the parties hereto, on September 29, 1920, wherein Sparandera, then a minor over 20 years of age, agreed to purchase a certain motor vehicle known as a Ford runabout, together with certain accessories appurtenant thereto.

The contract price, including war tax, freight and fuel, was $524.88, and the amount of the accessories purchased, including charges for fire and theft insurance, covering said automobile for one year was $181.34, or a total purchase price of $706.22. On this last-mentioned amount Sparandera paid to the Staten Island Garage the sum of $235.46 on September 29, 1920, the date of the delivery of automobile and accessories in question, and for the balance of said purchase price, amounting to $470.76, Sparandera executed and delivered to the garage his 12 certain promissory notes in writing, each for the sum of $39.23, the payment of which was secured by a chattel mortgage given by Sparandera to the Staten Island Garage upon the said automobile.

Subsequently at the office of the Commonwealth Finance Corp., at 100 Broadway, Borough of Manhattan, Sparandera paid three monthly installments of $39.23 each, during the latter part of the months of October, November and December, 1920, in payments of notes then due, aggregating the sum of $117.69.

The total payments made by Sparandera under his contract, including a horn, amount to $358.15. The automobile from the date of its purchase on September 29, 1920, to February 28, 1921, a period of five months, was in the possession of Sparandera. It appears that prior to the commencement of the action Sparandera rescinded the contract under consideration and demanded the return of the amount of moneys paid on account thereof, and tendered the said automobile to the garage, which demand and tender were refused by the latter, and it further appears in the complaint, undenied by answer, that at the time of the disaffirmance of the contract "Sparandera duly notified the Staten Island Garage that at the time of the making of said contract of purchase that he was an infant and that he elected to rescind the said alleged contract and that he deemed the same void."

The Staten Island Garage resisted Sparandera's claim for a recovery herein, as disclosed by its answer, upon the following grounds: (a) That Sparandera is estopped from pleading his infancy on the ground of his written representation made to the garage that he was 21 years of age; (b) that an infant cannot recover upon an executed contract; and (c) that at the time Sparandera tendered the automobile to the Staten Island Garage, it had deteriorated in value, and was not of the same value as when sold to Sparandera; and that the reasonable value of the use of said property from the time of sale thereof on September 29, 1920, to the tender made as aforesaid, was $500, an amount which is in excess of the sum paid by Sparandera on the contract in question.

The court said that the fact that the infant represented himself to be 21 years of age when he signed the contract could not be used against him, and further, as it appeared that the automobile had materially depreciated in value and the depreciation amounted to more than the infant had paid to the dealer, the infant was not entitled to the return of the money he had paid in on account of the purchase price of the car. The infant's complaint was therefore dismissed.

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

Check Up Those Tax Returns

Every business man who filed his income tax return on or before April 1 should now examine the copy which he kept to see if everything is correct. Those men who made out their returns in a hurry at the last moment should not fail to do this. Where the return was made out under the supervision of an accountant, bookkeeper or lawyer, it would be a good idea to have the return reviewed by some person other than the one under whose supervision it was made out.

Oftentimes when this is done mistakes will be found which can be more easily corrected now than if they are not discovered until a later date.

The income tax law provides remedies both for those who are assessed a greater amount of tax than they think they should be assessed and for those who pay too large a sum in mistake.

Where a taxpayer discovers that a mistake has been made in his return he should prepare a new return and file it with a notation to the effect that it is an amended return.

Cannot Recover for Balance on Running Account

If a dealer keeps an open continuous running account with a customer and recovers judgment for less than the full amount, he cannot thereafter recover judgment for the balance, according to the St. Louis Court of Appeals.

A dealer was engaged in selling automobiles and automobile parts, accessories and supplies, and conducted a repairshop.

An account was opened with a customer for various items, consisting of repairs, parts, accessories, gasoline, oil, etc. The dealer claimed that although the sum of $396.35 had been paid, this constituted only a small part of the account.

When suit was instituted for the balance, however, the court held that by accepting the smaller amount the dealer had waived its claim for the balance and could not recover any more on the bill; having recovered once on the account, it forfeited its rights to a further recovery.—Pepper vs. St. Louis, 187 S. W., page 109.

Washington Court Rules on Chattel Mortgages

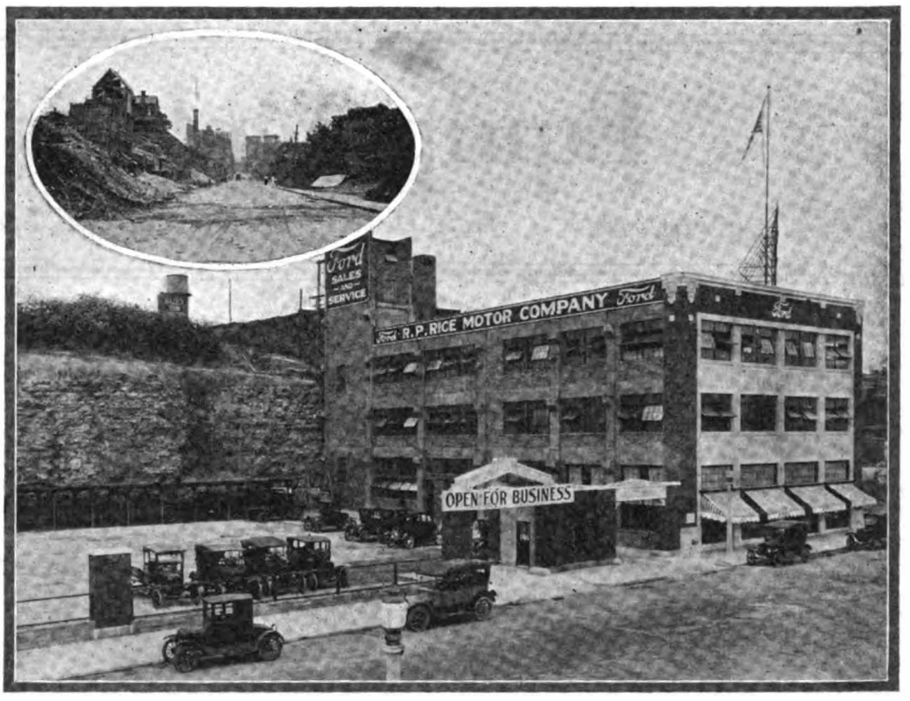
In a recent Washington case, the Supreme Court of that state decided that where there is a chattel mortgage which covers a certain specified automobile in the stock of an automobile dealer, and the mortgagee gives no permission to the dealer to sell the mortgaged automobile, the mortgage is not a mortgage on a shifting stock of goods void as to third parties but is one which allows them to procure good title.—Hardin vs. State Bank of Seattle. 205 Pac. 382.

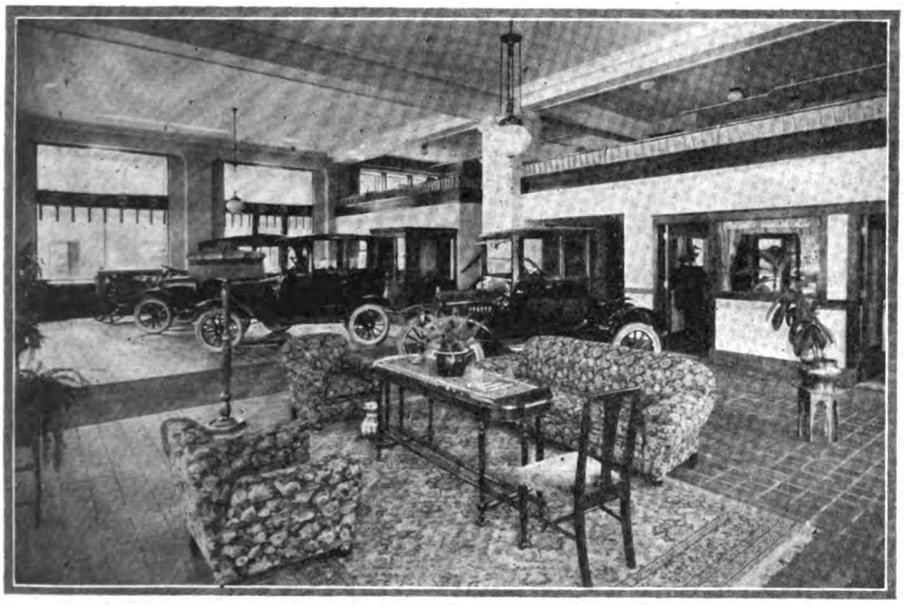
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Ideas for That New Building

Foresight Used in Selecting This Building Site

The small picture in the upper left-hand corner shows what Baltimore Avenue, Kansas City, looked like in 1916. It required courage to buy this property. The R. P. Rice Motor Co. had to move the side of a hill to erect their new sales and service building. But before the building was completed, Baltimore Avenue had been paved and was carrying considerable traffic that formerly used Main Street. Now the Rice building is on a main highway and is located close to the heart of the city. The large parking space at the side of the building is especially popular because of its convenience to the business section





Salesrooms Like This Make Selling Easier

This is the salesroom of the R. P. Rice Motor Co., Kansas City, Mo. It is divided into two sections by a strip of carpet running from the entrance down the center of the room. At the right some comfortable furniture is arranged around a table. Car and tractor displays occupy the left side of the salesroom

Novel Stockroom Location Speeds Deliveries

This view into the stockroom of the General Auto Supply Co., Harrisburg, Pa., is taken from the salesroom floor. The stock is carried on the main floor and on the mezzanine balcony. The shipping room is located at the rear of the stockroom. This arrangement simplifies delivery. Stock may be taken from the shelves and delivered over the counter or to the shipping room without lost motion



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Equipment to Sell

New Devices for the Car and Truck

Mirra Piston Pin

Burton-Rogers Co., 755 Boylston Street, Boston.



The pistons are machined from solid bar steel, S. A. E. specifications and the grinding is done on centers. The grinding is done to limits of .0002 in. They are especially hardened by a process which removes scale from the inside of the pin.

Hete-Pruf Piston Ring

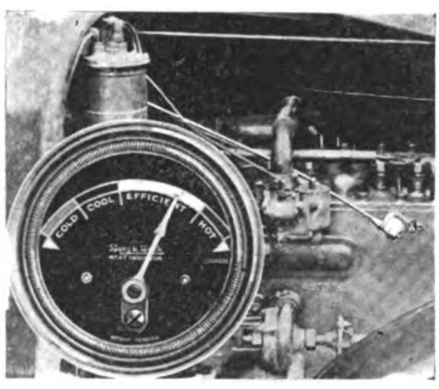
The Zinke Co.,
1315 Michigan Avenue, Chicago.



The ring is a one-piece step cut piston ring with machined or quick seating surface and ground sides. It is claimed to be proof against heat action up to 700 deg.

Borg & Beck Heat Indicator

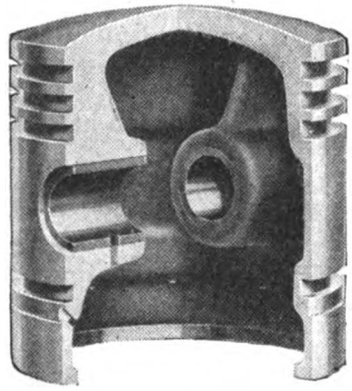
Borg & Beck Co.,
920 South Michigan Avenue, Chicago.
Price $8.50.



The heat indicator records the temperature existing in the engine on a dial gage installed on the instrument board. The actuating unit is clamped directly against the engine and contains a sensitive thermostat which is small in size but positive in action and any slight variation of the temperature of the engine causes it to expand or contract in direct proportion to the degree of heat or cold. The temperature ranges are designated on the dash indicator by contrasting colors. Indication on the dash is effected by a small gear segment and pinion which is self-connected when a turning motion is given to a flexible shaft, which connects the pinion with the pointer on the face of the dial.

Dowmetal Pistons

Dow Chemical Co., Midland, Mich.



The pistons are made from Dowmetal which is claimed to be the lightest of all commercial metals. The metal is made by electrical treatment of the natural solution called brine, which is pumped from certain wells in Michigan. The metal is approximately one quarter the weight of cast iron. Prices range from $6.75 to $11 per piston.

Klaxon Model 16 Horn for Cadillac 61

The Klaxon Co., Newark, N. J.
Price $25.



A new model electrical motor driven horn now standard equipment on the Cadillac 61. The adjustment on this model is made absolutely rigid by two adjusting lock nuts on either side of the motor. Wear is taken up by a simple kind of a lock nut. The shaft of the motor armature revolves on ball bearings at both ends. The back shell of the instrument exposes all the vital parts, so that cleaning can be accomplished. The note of the new horn is high pitched and very penetrating.

Rexoid Transmission Lining for Fords

Thermoid Rubber Co., Trenton, N. J.

The transmission lining is treated with a compound which is insoluble in oil so that the compound will remain in the fabric retaining in the lining the braking power and preventing contamination of the oil supply. Packed in cartons, each containing the lining and rivets necessary to reline the transmission of one car.

Empire Valve Cap

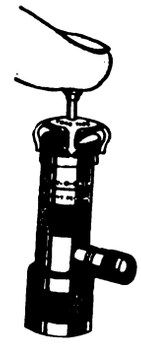
Empire Sales Co., 90 Silliman Avenue, Bridgeport, Conn.



This dust cap is made from solid brass rod, heavily knurled on the outside. The rubber cushion on the inside of the cap is made from material which will seal the air in the tube, even if the valve inside should leak. Ears will not break off when inserting or removing the valve inside.

Test-O-Cap Dust Cap and Tire Gage

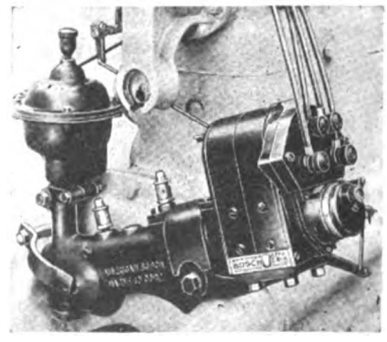
Griest Mfg. Co., New Haven, Conn.
Price $6 per set of four.



A combined dust cap and gage which is operated by pressing the button on the top. If the arrow rises the tire has sufficient air and if it does not move at all, the air supply is too low. If the arrow point on the cap rises above the bottom edge of the red band, the tire is over-flated. The tire is inflated from the side.

Bosch Magneto Attachment for Fordson Tractor

American Bosch Magneto Corp., Springfield, Mass.



A new fitting for equipping the Fordson tractor with Bosch magneto. A Bosch governor has also been brought out which can be mounted directly on the Bosch magneto fittings, being driven by the camshaft gear, which is the same gear used for driving the magneto. The magneto fitting is supplied with or without the governor, and with either ZR or DU type of magneto. It fastens on the front of the engine. Bosch impulse starter coupling, or Bosch adjustable coupling, can be made part of the equipment.

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Handy Governor for Fords and Fordsons

Handy Governor Corp., Dearborn, Mich.
Price $15



The governor is operated entirely by the speed of the inlet gases passing through the manifold to the engine. The inlet gases impinge upon the flat plate which acts on the throttle valve. This valve is offset so that the gases exert an effort tending to close it. As the pressure changes on the throttle valve, the valve moves accordingly to permit the proper quantity of gas to enter the engine to maintain the proper speed. It is made in three models—one for Ford cars, one for Ford trucks and one for Fordson tractors, all the same price.

Standley Foot Rest No. 347

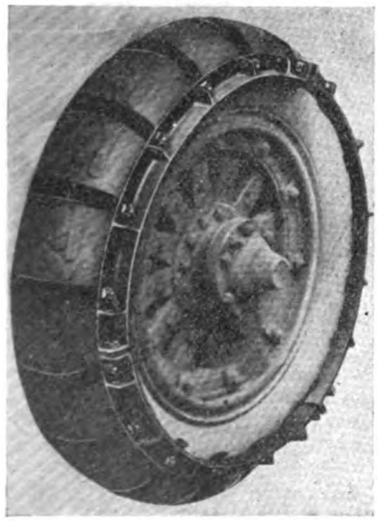
Standley Mfg. Co., Boone, Iowa.
Price 50 cents.



A foot rest to be placed in back of the accelerator pedal. It is made of pressed steel formed to fit the arch of the shoe and elevate the heel from the footboard. Finished in black baked enamel.

Foley Traction Rim for Pneumatic Tires

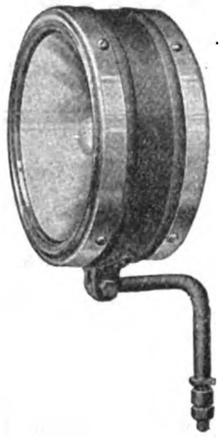
Foley Traction Rim Co., 109 Tenth Street, Minneapolis



The traction device consists of a number of bands of iron bolted to a rim on each side of the tire. The rims are in three sections and bolted to each other so that the device can be put on or taken off without unfastening the cross bands.

K-D Drum Type Headlamp for Fords

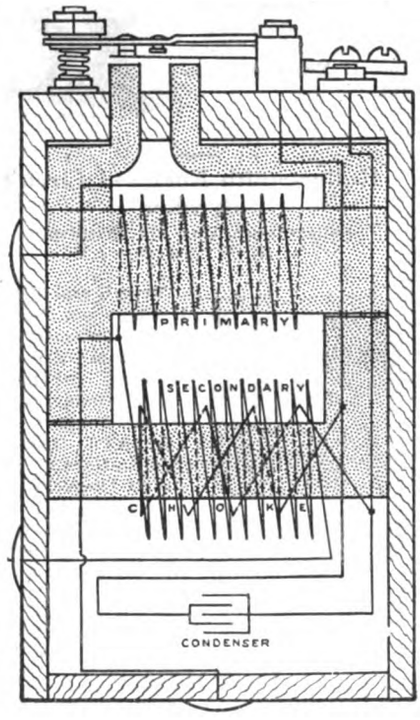
K-D Lamp Co., Cincinnati, Ohio
Price $10 per pair in black and nickel



A drum shape head lamp for Fords, the body being drawn in one piece from suitable gage metal. All plated parts are brass and the bracket is a special forging, with a single bracket support for attaching to all Fords made since 1915. Adjustments can be made up or down or sideways. For all-nickel finish the price is $15, and dimmer bulbs $2 per pair extra. The diameter of the door is 9-in.

Varley Coil Unit for Fords

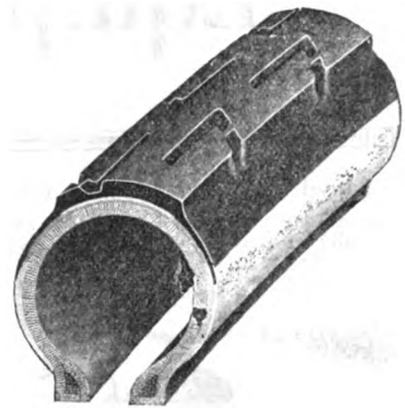
Autocoil Co., 151 Exchange Place, Jersey City, N. J.



A high tension ignition system for Fords employing four transformers utilizing current from the Ford flywheel magneto. The system is designed by Richard Varley. The flux has two paths, one through the leg containing the secondary winding and the other through the horns, air gap and armature. Under the secondary winding is another winding called the "choke" coil which, when its circuit is closed, and the primary energized, the current induced in it restrains the flow of flux under the secondary and forces some of it through the armature. At a suitable point in the current wave the magnetization of the horns overcoming the tension of the armature spring separates the contacts thus opening the choke coil circuit. It is said that the sparks obtained by the use of the new transformer have great heat value. One trouble claimed to have been overcome is the pitting of contacts and this is obviated by the fact that only induced current passes through the contacts and this is so small that pitting is inappreciable.

Amazon Cord Tire

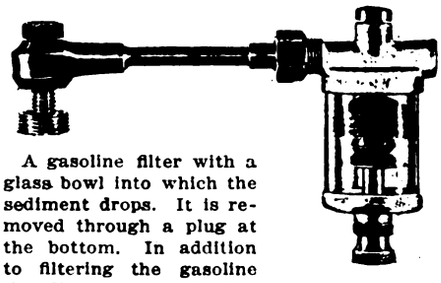
Amazon Rubber Co., Akron, Ohio
Price $14.50 for 30 x 3½



The cord tires are made in both ribbed and non-skid tread and the range of sizes includes the 30 x 3½ Clincher Ford and light car size, as well as regular straight side 3½, 4½ and 5-in. sizes.

Van Gasoline Filter

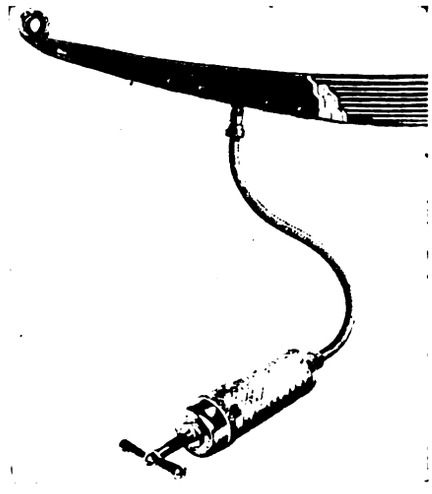
Harris Co., Inc., 89 State Street, Boston.
Price $3.



A gasoline filter with a glass bowl into which the sediment drops. It is removed through a plug at the bottom. In addition to filtering the gasoline the filter shows whether the vacuum tank is functioning properly.

Alemite Lubricating Spring Cover

Bassick Mfg. Co.,
2650 North Crawford Avenue, Chicago.



A spring cover of all metal construction being made of lead-coated, non-rusting steel. There is no fabric or leather and the covers do not need to be removed to be refilled. An Alemite connection is fitted at the bottom and grease forced in by the use of the regular Alemite gun. Made in individual sets for all makes and models of cars.

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Equipment for the Shop

New Machinery and Tools

Lloyd Portable Electric Drill

Lloyd Dynamo Works, Bremen, Germany.
Imported by G. W. McIver & Co.,
113 State Street, Boston.

Price $95 for ⅝ in. size.



The drill is of the universal motor type with aluminum casings, hemp cable, positive switch, S.K.F. bearings and Samson chuck. The motor is provided with a cooling system. It is made in ¼, ⅜, ½, ⅝ and ⅞ sizes together with drill stand. One-quarter in. price $40; ⅜ in. size price $59; ⅝ in. size $95; ½ in. size $70; ⅞ in. size $115; drill stand $35. All drills are equipped with 110 volt universal motors which will operate on either alternating or direct current.

Standard Auto-Lite Focuser

Fifield Bros. Co., 337 Water Street,
Augusta, Me.

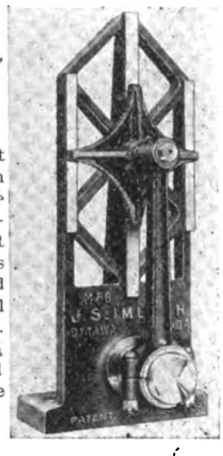


A device for testing the focus of head lamps. It consists of a cylindrical barrel one end of which is placed against the headlamp lens. The light is reflected by a mirror placed at an angle of 45 deg. onto a screen which has a hood with an aperture at the top through which the image is seen by the operator. The shape and position of the image indicate the correct or incorrect focus of the headlamp.

Twistest Connecting Rod Alignment Jig

J. S. Imlach,
324 Catherine Street,
Ottawa, Canada.

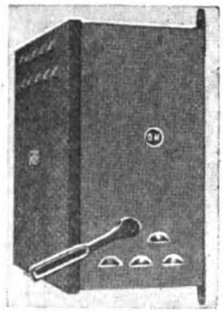
Price $24.



A tool that will test connecting rods both ways at the same time and which will magnify any errors that exist. Price includes one stock mandrel and indicator. Mandrel sizes to 2⅜ in. $5.50. Indicators, sizes to 1¼ in., $4 each. A Ford special Twistest price $12.

Roller-Smith Enclosed Circuit Breaker

Roller-Smith Co., 233 Broadway,
New York City.

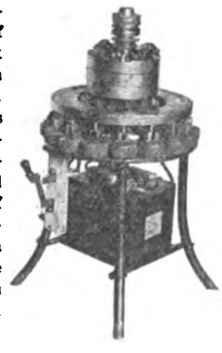


Type E and T circuit breakers are fully enclosed for safety and protection. The circuit breakers themselves are the industrial and standard type with certain necessary modifications. The circuit breakers are to be had in plain overload, under voltage, thumb grip, one and two time limit attachment.

Madison Unit Remagnetizer for Ford Magneto

Madison Battery & Service Co.,
250 State Street. Madison, Wis.

Price $75.

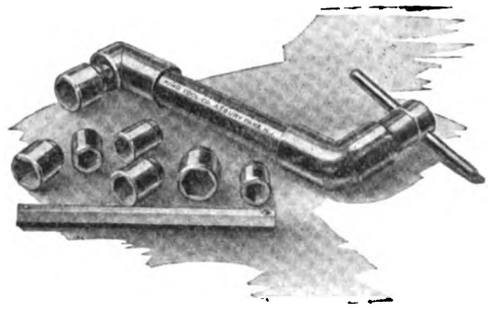


The device will remagnetize a set of Ford magnets without disassembling them from the flywheel. The current used is taken from the standard Ford storage battery and it is stated that the amount of time used is approximately the same as in starting the car. The single magnets from other magnetos can also be magnetized. The magneto support is spring mounted so that the magnets are drawn down by the pull of the coil and the springs raise the magneto clear when the current is turned off which gives the magneto a pounding action as often as the current is switched on and off.

Onli-1 Socket Wrench

King Tool Co., Asbury Park, N. J.

Price $7.50.

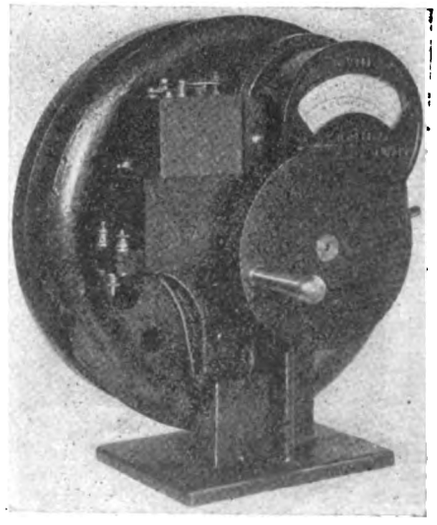


A socket wrench using two bevel gears, one on the handle shaft turning the main shaft in the tube, this in turn turning the socket shaft. If the nut is too tight to respond to the turn of the handle, the whole wrench can be made rigid from handle to socket by a simple adjustment of the socket pin. A set of six sockets fits sixteen sizes of bolts and nuts and there is an extension bar for unusually inaccessible places.

Allen Coil Tester for Fords

Allen Electric Mfg. Co., 2987 Franklin Street,
Detroit, Mich.

Price $65



The device uses genuine Ford magnetos and magnets and the coil is placed where it is easy to get at. It will test the magneto in the car and has a separate connection for horn and spark plugs. An alternating current ammeter registers the current output. The price without magnetos and magnets is $53.

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Repairshop Shortcuts

Have You Time to Think?

MAYBE it is a coincidence and maybe it is a reason, but it generally happens that the shops which are making profits are bristling with practical ideas and schemes to save time and do jobs better. The shops that are just rambling along seem barren of any such contrivances. Perhaps the shop head who takes time to think will find that the use of his brain will accomplish a good deal more than the work of his hands. Brains and hands can both make profits.

Each week Motor World publishes a page with seven practical ideas. If you really do not have time to think yourself, let these readers help you. Use some of these ideas as they are presented or with changes to meet your needs. If you have some good ideas, send them in. We pay $1 each for those accepted.

No. 3314—Keeping Mud from a Crippled Tow—To prevent mud being thrown on a towed car, light pieces of metal are riveted to the rear fenders of the tow car so that they hang down considerably lower than the regular fenders. If desirable, the lower end of these flaps can be braced to the regular fender with rods.—C. R. Stoflet, Kobe & Smith Auto Co., Scottville, Mich.

No. 3315—Removing Ford Brake Cam—A Ford brake cam is removed by sawing about one-third the way through the cam after removing the wheel. A blow with a hammer will break the cam off and the old piece can be taken out with the cam lever on it and put in a vise so that the rivets can be removed.—Fred S. Tatman, Manager, Cain's Garage, White Hall, Ill.

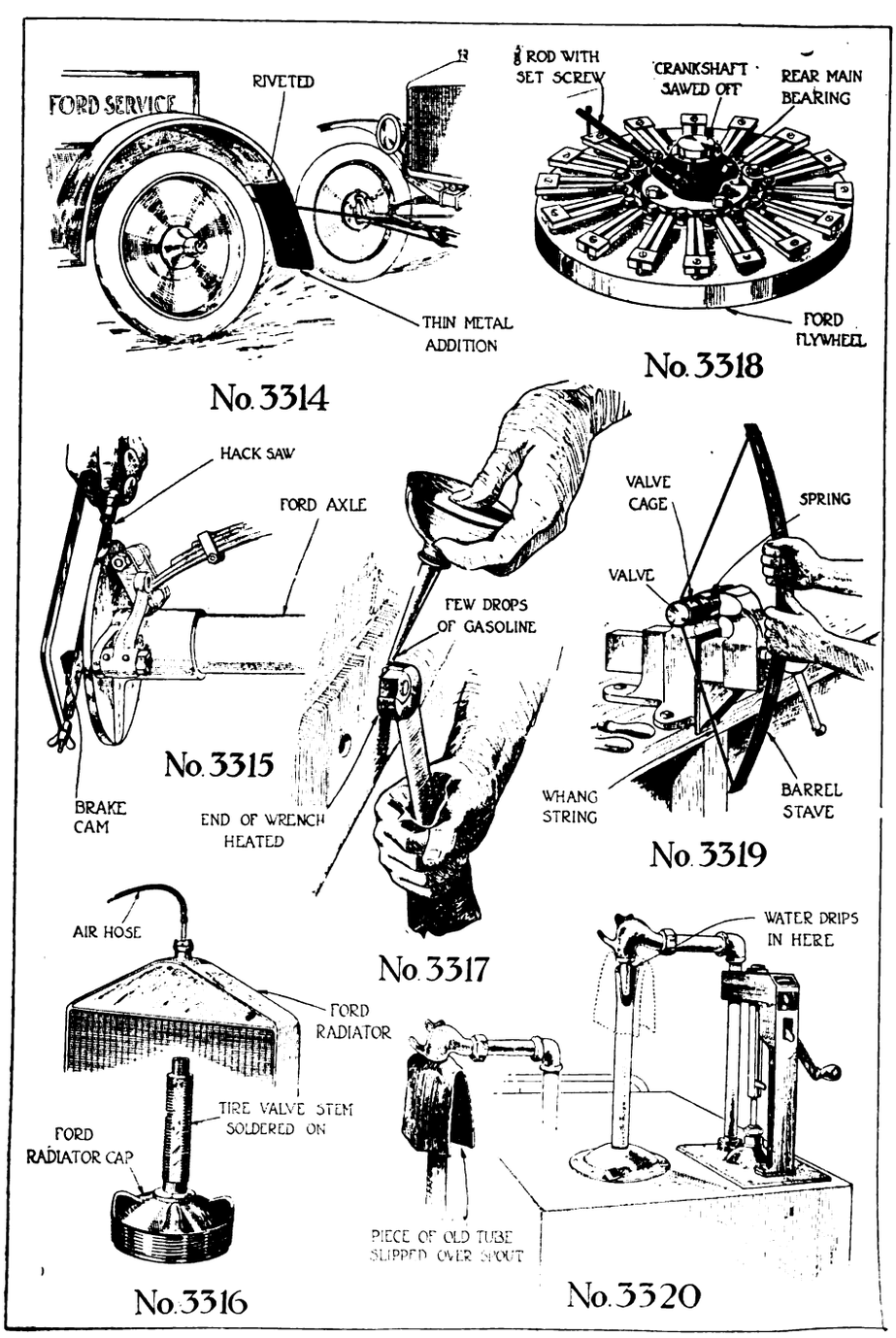
No. 3316—Testing Ford Radiators—A Ford radiator is tested by soldering a valve stem into a Ford radiator cap and plugging up the inlet and outlet and the overflow. Air pressure can then be applied through the valve.—R. M. Mallory, Mallory Motor & Auto Supply Co., Bucklin, Kan.

No. 3317—Removing a Frozen Nut—A nut which is frozen fast to a bolt is sometimes removed by heating the wrench. This heat expands the nut away from the bolt. Kerosene will assist in loosening it—Albert F. Stahle, New York City.

No. 3318—Lining Up Ford Magnets—Ford magnets are lined up on the flywheel by using an old connecting rod, sawing off the rod part and extending one of the bolts with a piece of ⅜ in. rod fitted with a set screw which is adjustable up and down to make the alignment.—Reader.

No. 3319—Grinding Buick Valve Cages—Buick valve cages are ground by holding the valve stem in a vise and turning the cage around with a bow made of a barrel stave and a whang string long enough to go around the valve barrel once.—C. J. Cross, H. H. Beltner, Overton, Neb.

No. 3320—Keeping Rain Out of a Gasoline Tank—Rain is kept out of a gasoline tank by using a piece of tube which is placed over the spout. The tube must be evenly balanced to prevent its slipping off the spout when it is hinged back.—Wm. Huppenbauer, New Brunswick, N. J.



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No Big Drop Expected This Summer

SEASONAL DECLINE PROBABLE IN JULY

June Production May Prove to Be as Large as That of Last Month

NEW YORK, July 3—There is substantial reason to believe that production of passenger cars and trucks for June exceeded a quarter million.

A preliminary survey of the shipping figures for the first three weeks of the month indicates that the total will be larger than in May, when it reached 256,000.

It is almost certain to be as large. Output for the second quarter, therefore, will approximate 725,000.

Even to those within the industry it seems almost unbelievable that so many motor vehicles could have been absorbed in three months. With the country just recovering from a long period of depression, sales have been larger than ever before for a like period.

Seasonal Decline Inevitable

In the face of the tremendous business of the quarter just closing, it seems inevitable that there will be a seasonal decline this month. Spotty retail sales conditions in certain sections indicate that it already has begun, but there are no signs that it will approach the proportions of a slump.

The falling off in sales already apparent has been largely the result of local conditions and is by no means general. It has been in certain sections of the South and in some industrial cities. On the other hand, trade still is brisk in Tennessee and North Carolina and in many of the manufacturing centers.

Buying of passenger cars in the farm districts, up to this time, has been chiefly by business and professional men. The real farm market has not opened, and when this agricultural buying gets under way, it may do much to hold up the volume of business. July is certain to be a big month, although production will be smaller because several factories will close for inventory the first half of the month and all will be down over the Fourth.

No matter what happens in the remaining months of 1922, distributors and dealers will have had one of the best years in their history, and many of them will do better than ever before.

The parts and accessory branch of the business still is running at top speed. Many manufacturers have commitments running through September and some of them into October. Vehicle manufacturers are displaying caution, however, and will govern production by demand. In the face of an unprecedented demand, there is no disposition to be reckless.

SOME CITIES REPORT

MILWAUKEE, July 1—Dealers say that the retail demand is more spotted, having skimmed the cream of prospects, but that the June volume nearly equals May which was the heaviest month. A seasonal decline is looked for in July and August, but no marked slump is expected.

DES MOINES, July 1—Any change in retail conditions noticeable is toward slackening, but it is very slight and applies only to cities and larger towns. The farmer and small town business is showing signs of improvement.

ST. LOUIS, July 1—Retail automobile sales are holding up remarkably well and June will be as big as April and May for most dealers. A decline is expected in July.

BERKELEY, CAL., July 1—Retail automobile sales are keeping up with last month. Sales of Fords and medium priced cars are best.

PHILADELPHIA, July 1—Automobile sales are holding up fairly well. No decline as yet. Used cars are selling well.

Review of Country

NEW YORK, July 3—Motor World correspondents throughout the country have secured a review of the present conditions in the automobile sales field in their respective cities. These statements bear out in a measure the reports received by the Detroit manufacturers and are given above and on the following page.

GARLAND TAKES OVER WINTON IN NEW YORK

NEW YORK, June 28—The Winton Co. has announced that the Garland Automobile Co. of New York has taken over the Winton car sales in the metropolitan district. The Winton building at Broadway and 70th Street has been sold to the Studebaker Corp. and possession will be given on July 1.

After renovations, which are expected to be completed within thirty days, the building will be used as a supplementary salesroom and new car delivery department by the New York Studebaker branch.

DURANT MAY OBTAIN LOCOMOBILE RIGHTS

Likely to Be Bidder When Plant Is Put Up at Public Sale

NEW YORK, June 29—There is substantial reason for believing that the Locomobile, or a modification of it, will be added in the near future to the line of cars controlled by Durant Motors, Inc.

Bids for the property have been asked by the receivers of the Locomobile company, and when the day of the sale arrives one of the bidders undoubtedly will be Durant Motors. The situation is similar to that which resulted in the purchase of the Elizabeth plant from the Willys Corp. when it was auctioned off by the receivers under the direction of the Federal courts.

If Durant obtains the Locomobile plant and the right to manufacture the car, drastic reductions will be made in manufacturing costs so that the price can be reduced to a figure where it can compete with Cadillac and Lincoln.

Locomobile now has a six-cylinder engine while the power plants of Cadillac and Lincoln are eight-cylinder, but it would not be difficult to change the engine.

Rest of Line Competes

The Durant four and six will compete with the Chevrolet and the Buick, the most popular of the lower priced General Motors lines. The Star will compete with Ford with the prices exactly the same.

The present price of the Locomobile open models is $7,600, and if Durant brought it into the Cadillac price class he would have to make a reduction of more than 50 per cent.

While Locomobile has had an enviable record as an automobile, the company has been in almost constant financial difficulties and it has been found impossible to reorganize on a satisfactory basis since it was thrown into a receivership several months ago.

Truck Merger Completed

NEW YORK, July 1—Completion of the merger of the Selden and Atlas truck companies under the name of the Industrial Motors Corp. has been assured by the depositing for exchange certificates of more than 80 per cent of the Atlas stock and 70 per cent of both classes of Selden stock. It is stated that negotiations are progressing for the acquisition of other truck and parts companies, and that announcement of the completion of these negotiations may be made soon.

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Sales Run Strong in Trade Centers

CHICAGO

CHICAGO, July 1—Retail sales of automobiles in Chicago continue at a high volume. Taken week by week, there has been some fluctuation through June. Sales for the week ending June 24 fell somewhat below sales for the preceding week. This week, however, shows unusual activity in virtually all lines, and it appears that the total for the week is likely to exceed any week this month. Some dealers are having a number of cancellations because of their inability to make deliveries. These sales usually are not lost to the industry, because the purchaser immediately buys some other car upon which he can get prompt delivery.

FORT WAYNE

FORT WAYNE, IND., July 1—Business has taken a spurt in this locality. Dealers in popular priced cars state that they cannot get enough cars to supply demands. Deliveries on certain models, particularly sedans, are not guaranteed under a month. Not only are the dealers experiencing greatly increased business, but all the manufacturers turning out automotive equipment are also feeling the same spurt. Part of the increase in local business is undoubtedly due to the impetus given by the beginning of actual construction work on the big truck plant of the International Harvester Co. here.

SPOKANE

SPOKANE, WASH., July 1—No material reduction in retail sales. Many firms will establish new high retail records this year, while others will be hampered because of the inability of their factories to supply the demand. Lower price cars are doing land office business. The president of the Spokane Automobile Chamber of Commerce expects the heavy retail sales to continue during July.

KANSAS CITY

KANSAS CITY, MO., July 1—Motor car dealers almost unanimously say that sales of passenger cars have been better the past week than any time this year, and that June has been a good month. This is true both of firms selling high priced cars and those selling low priced cars. Special conditions have helped some firms to build a really important volume of business in the past two or three weeks, such as announcements of new models and the entrance of new firms into the distribution, and the extraordinary efforts at publicity and selling that accompany such changes.

But both for those who have these special reasons for expecting increasing trade, and for the old established companies, the volume has been steadily growing in June. General conditions are largely responsible, with a bountiful wheat harvest in process of gathering and corn looking fine, and money already flowing more freely from the agricultural districts.

A difference of opinion is expressed, however, as to the comparison of this June's trade with last year's. Most dealers estimate it as larger, some say it is smaller. Dealers here are not expecting any retarding of trade, because they hear too much about the increases in other lines of business, especially contracting, which reflects better money conditions and readiness of business men to go ahead with expansion projects.

BUFFALO

BUFFALO, July 1—Retail automobile sales in this city have shown no sign of falling off, according to information obtained from Executive Secretary C. C. Proctor of the Buffalo Automobile Dealers Association.

"This retail business during June," he said, "was easily 100 per cent better than in the corresponding month of last year. The same thing is true with reference to the business done by Buffalo's automobile retailers during May of this year, and their business in April was at least 45 per cent better than in April, 1921.

TOLEDO

TOLEDO, July 1—Automobile sales have declined here only slightly in the last two weeks. Some dealers report that they are holding up as good as they have for the last two months. All are considerably behind in the delivery of cars. The demand for light used cars is big now. The Willys-Overland branch here reports that sales are considerably ahead of deliveries, and while declining slightly in the last 10 days, are far ahead of the same period in other years.

For the last month, sales have been going almost as good as the early spring months.

BOSTON

BOSTON, July 1—Distributors and dealers report that there seems to be no let-up in buying. April was good because it followed the show in March. May was even better, and June has been exceptionally good. From the way the sales are coming along now the dealers feel there will not be the usual summer slump in July and August, which all of them looked for, nor do they expect cancellations to any extent.

DETROIT

DETROIT, July 1—Retail buying in the Detroit district is declared by dealers to be normal for this time of the year, not as good as earlier in the spring and tapering off with the approach of summer months. Deliveries on standard lines of cars are still from two to six weeks behind, but are expected to be fully caught up on all models by Aug. 1.

Sales of used cars have slowed down considerably since June 1, and a number of dealers have declined to accept any more cars in trade. The shortage of new cars through the spring aided materially in keeping used car stocks low, but these have been slowly increasing during June. Used car prices are high. Summer months will witness a special effort to clean out used stocks in preparation for fall business.

Dealers will open the fall season with a closed car show which is expected to line up a large volume of business for the fall months.

LOUISVILLE

LOUISVILLE, KY., July 1—Automobile sales are keeping up the high mark set in April and May, according to a report issued to-day by the Louisville Automobile Dealers Association.

Sales for the first five days of last week amounted to 364 cars, of which 143 are new cars and 221 were used cars. This period is in excess of any week yet established this season, although it counts sales for only five days. With the probable sales of Saturday included, the total will no doubt exceed 400 for the week, which is 12 per cent more than any week of the season. Of the 143 new cars sold, 19 were in the high priced class, 26 in the medium priced class and 98 in the low priced class.

DENVER

DENVER, July 1—Although some dealers report that there is a beginning of a slight sales decline and expect moderate trade in July, June far surpasses May and also last June, and some say it is the best month in two years or more. New car sales are holding stronger than used cars and July is predicted to exceed last July. The general feeling is optimistic for the following months.

LOS ANGELES

LOS ANGELES, July 1—Registrations for June undoubtedly will be larger than the same month a year ago, but it may not equal May. This would not be unusual, as June customarily shows a decline.

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WOMEN'S CLUBS HEAR HIGHWAYS DISCUSSED

Pyke Johnson Speaks of Influence and John C. Long of Safety

CHAUTAUQUA, N. Y., July 1—"Highways Benefit the Home" and "Highway Accidents Are Preventable," were the themes developed by Pyke Johnson and John C. Long of the National Automobile Chamber of Commerce, speaking before the biennial convention of the General Federation of Women's Clubs in session here.

Fresh food is made available for the city children, better schools and wider social opportunities are provided for the country boys and girls, as a result of improved highways and motor transportation, Johnson pointed out,

Guarding of danger points, prosecution of the careless driver, ample playgrounds and education in the schools will eliminate accidents, Long indicated.

Long said:

If every woman in America would enroll for the degree of Doctor of Safety, the accident question would soon be solved. Twenty-eight cities reduced their motor fatalities last year. Massachusetts cut down the number of traffic injuries 50 per cent. The four main symptoms and their remedies are these:

1. Danger spots, such as curves, blind corners, busy intersections. Sufficient guarding by patrolmen or by signs is an immediate remedy, with improvement of the physical design of the danger spot as an ideal remedy. That is, a sharp curve may be protected, but it should ultimately be eliminated.

2. Prosecuting the careless driver—Citizens Complaint Bureaus, like those in Detroit and Syracuse, are needed to facilitate complaint against and prosecution of the reckless minority who are making the entire community pay the price of their heedlessness.

3. Playgrounds — The school department should be consulted as to whether there is enough play space and whether there are enough play instructors to justify telling the children not to play in the streets. Pending the building of more playgrounds, if needed, certain streets should be roped off as play areas.

4. Education in the schools—Children are naturally irresponsible, but through traffic games, playlets, and other instruction they can be trained habitually to conduct themselves properly in traffic.

FILM SHOWS HOW TO ADJUST CLUTCH

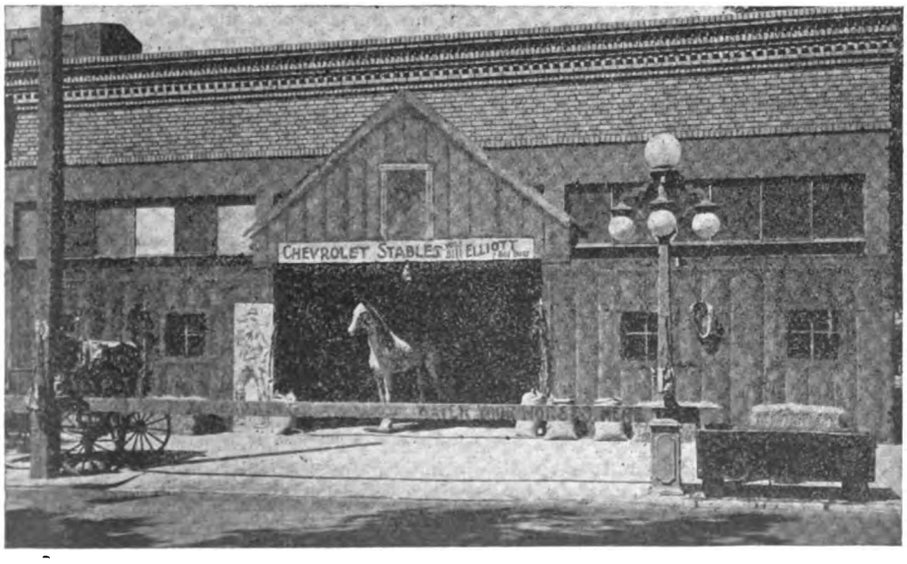
CHICAGO, June 30—A motion picture showing how a clutch adjustment should be made and detailing the operations of removing, overhauling and setting up a clutch, has been prepared by the Borg & Beck Co. of Chicago. This film is available for exhibitions at trade association meetings, dealer conventions and service conferences.

The idea was conceived by William Mack, sales manager, who believes that many owners and service station managers consider the clutch somewhat of a mystery because it is entirely hidden from view.

Lincoln Salesroom Moved

DETROIT, June 30—The Detroit city salesroom of the Lincoln Motor Co. has been removed to the Ford sales and service headquarters at Highland Park.

Celebrating "The Days of '49"



This picture shows how the salesroom of the W. I. Elliott Co., Sacramento, was decorated to represent an old-time livery stable during the "Days of '49" celebration there recently. The "property" used included some bales of hay, a few sacks of barley, stable lamps, old harness, an old dilapidated buggy, and the wooden horse shown in the picture. The old watering trough, where the riders watered their horses daily during the celebration, added a touch of realism

HUFFMAN TO PROCEED WITH MANUFACTURING

On Creditors' Petition, Bankruptcy Proceedings Are Dismissed by Court

ELKHART, IND., June 29—Bankruptcy proceedings instituted last October against the Huffman Brothers Motor Co., manufacturers of passenger cars and trucks, have been dismissed upon motion of the creditors who filed the petition for the appointment of a trustee.

L. R. Huffman, treasurer and general manager of the company, states that it has on hand approximately $500,000 worth of materials which will be turned into finished products as rapidly as possible. The organization was continued during the months of comparative inactivity, and the company is ready to proceed with manufacturing. Production will continue to be under the direction of R. E. Chiddester. W. L. Huffman, president of the company, will remain actively connected with the business.

While the plant has been in the hands of a trustee, the company has been designing new models and is now prepared to manufacture a larger truck than heretofore. It will have a capacity of 2½-3 tons. It is understood also that an original design in closed cars has been worked out.

The price lists of the company's products follow:

TRUCKS

	Old Price	New Price
Model B 1½-2 ton.....	$1,995	$1,795
Model C 1½-2 ton.....	1,795	1,695
Model D 2-3 ton.....	....	2,895

PASSENGER CARS

	Old Price	New Price
Touring	$1,795	$1,395
Sedan	....	2,295

TWO MILLER SERVICE STATIONS ARE SOLD

AKRON, July 1—The Miller Rubber Co. has sold its tire service stations in Akron and Canton, Ohio, to the Instant Tire Service Co., an Ohio corporation. The new company acquires the entire fleet of service cars in both cities and continues the tire service offered local motorists. In these stations experiments looking toward improved service were tried out and the results broadcasted to all dealers throughout the country.

Service on Miller tires is now given exclusively by dealer sales and service agencies throughout the United States. The company has completed its service work and does not intend opening service stations in other cities.

Peerless Better Than in May

CLEVELAND, July 1—The Peerless Motor Car Co. reports that its sales records for the first half of June were better than for the same period in May. Cities reporting exceptionally good June business include Chicago, Philadelphia, San Francisco, Cleveland and Boston.

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CAR THEFTS KEEPING UP WITH PRODUCTION

Of 37,554 Automobiles That Were Stolen in 1921 Only 21,273 Were Recovered

ST. LOUIS, June 30—Automobile thefts seem tc keep right along with automobile production, according to statistics of 28 "index" cities for which complete four year figures have been kept by the National Automobile Dealers Association.

Those 28 cities show that 37,554 motor vehicles were stolen in 1921 and 21,273 recovered. The number unrecovered was 40 per cent of the total, the highest noted in the four years, indicating that the thieves not only are keeping abreast of the production, but forging ahead of the police department and the legislative bodies in means devised to safeguard the owner.

New York again heads the list with total number stolen, with Chicago a close second. Chicago recoveries, however, were greatly in excess of the recoveries in New York. Twenty-one cities showed a greater number stolen in 1921 than in 1920. Cleveland, Portland, Oregon; Seattle, Salt Lake City, Columbus, Ohio; York, Pa., and Richmond, Va., showed fewer thefts in 1921 than in 1920.

Enforcement of Laws Needed

"The greatest handicap under which the police are laboring in the recovery of stolen vehicles," according to C. A. Vane, general manager of the association, "is lax enforcement of laws to punish motor vehicle thieves. Courts are unduly lenient with this class of offenders. Charges are continued against such law-breakers until the patience of the witnesses is exhausted, finally resulting in dismissals and *nolle prosequis*."

A tendency was also noted during the 1921 depression, for owners of insured vehicles to conspire for the disappearance of the vehicles in order to collect the insurance. Numerous cities over the country reported the recovery of motor cars from quarries, pits and rivers that had been reported stolen and which the police declare were clearly disposed of, with the connivance of the owner.

PERCENTAGE OF UNRECOVERED STOLEN CARS REACHED HIGH MARK IN 1921

ST. LOUIS, June 30—Statistics compiled by the National Automobile Dealers Association for four years show that in 1918 21 per cent of the automobiles stolen were not recovered; in 1919, 26 per cent; in 1920, 29 per cent, and in 1921, 40 per cent. These percentages are deduced from returns from 28 index cities, which are given in the following table:

	STOLEN				RECOVERED			
	1918	1919	1920	1921	1918	1919	1920	1921
New York	3,340	5,527	5,179	6,808	2,578	3,124	2,717	3,451
Chicago	2,611	4,447	5,974	6,799	1,954	3,447	4,340	4,438
Detroit	2,639	3,481	3,300	3,732	1,934	2,529	2,563	2,410
Cleveland	2,076	2,338	2,649	2,304	1,816	1,786	1,765	1,532
Los Angeles	1,629	1,688	1,654	2,333	1,499	1,365	1,152	1,725
Kansas City	1,144	1,661	801	1,577	606	794	341	1,153
Portland, Ore.	1,088	1,528	465	338	990	1,378	418	303
Denver	901	1,440	858	1,862	627	1,187	661	1,711
San Francisco	1,122	1,354	1,186	1,652	1,082	1,304	1,156	1,608
St. Louis	2,241	1,241	788	1,560	1,354	944	641	1,247
Seattle	1,451	1,422	1,008	861	1,376	1,398	900	710
Indianapolis	404	1,031	1,152	1,238	334	692	833	979
Boston	866	1,002	480	490	607	580	297	216
Salt Lake City	797	776	592	516	790	758	555	482
Oakland, Cal.	895	760	564	729	860	733	549	680
Omaha	1,039	734	634	927	669	567	507	855
Columbus	451	550	513	408	352	373	278	355
Cincinnati	348	520	525	741	291	293	273	445
Oklahoma City	571	149	205	493	484	70	133	396
Albany, N. Y.	41	133	87	234	29	104	70	177
Buffalo, N. Y.	1,262	986	743	1,152	914	700	507	928
Newport, R. I.	4	9	12	14	4	9	12	14
York, Pa.	6	10	8	2	6	9	8	2
Grand Rapids	152	189	262	267	149	137	250	207
Richmond, Va.	84	207	148	130	62	161	93	100
Dayton, Ohio	207	228	198	227	241	213	217	243
Lowell, Mass.	26	25	18	36	16	17	7	31
Evansville, Ind.	50	72	43	124	49	68	40	119
TOTALS	27,445	33,508	30,046	37,554	21,673	24,740	21,273	26,517

GASOLINE HEARINGS WILL BEGIN JULY 15

WASHINGTON, June 30—Hearings on the Senate gasoline investigation, being held by the Senate Manufacturing Committee, will begin on July 15. This is the last date on which refineries and gasoline manufacturing concerns can submit figures on their production, costs and profits. The Committee held its first hearing on the 23d when questionnaires were forwarded to big manufacturing oil concerns demanding full information as to profits, costs and charges.

More than 500 of these questionnaires were sent to every producer in the United States. The present plan is that any producer may supplement his report by personal representation before the Manufacturing Committee. None of the results of these preliminary investigations will be made public until the oil concerns themselves are permitted to submit their financial figures for inspection. Gilbert E. Roe, attorney, has been appointed to represent the committee and conduct the investigation for the Government.

Wills Denies Ford Rumor

DETROIT, July 2—Emphatic denial is made by C. H. Wills that Henry Ford proposed to purchase the plant of C. H. Wills & Co. at Marysville. He declared the rumor was based upon a visit made to the plant by Henry and Edsel Ford. This visit was due, Wills declared, simply to the fact that friendship formed when he was in charge of production for Ford was being continued.

Hudson-Essex Exceed 1921

DETROIT, June 29—The output of the Hudson Motor Car Co. and Essex Motors reached a new high level on June 20 when they turned out 305 cars in nine hours. The largest previous production for a single day was on April 7 when 300 cars were turned out in a little over ten hours.

On June 21, with less than six months of 1922 gone, Hudson and Essex exceeded their total 1921 production of 27,143.

MASON TIRE OBTAINS OWEN BEDFORD PLANT

Pays $275,000 For It—Output Will Be Increased Through Purchase

CLEVELAND, June 29 — Under an order approved to-day by Referee in Bankruptcy Carl D. Friebolin, the Mason Tire & Rubber Co. became the owner of the plant of the Owen Tire & Rubber Co. at Bedford. The Mason company paid $275,000 for the 14-acre Owen tract, which is located at Bedford, Ohio, a suburb of this city.

O. M. Mason, president of the Mason Tire & Rubber Co., says that the acquisition of the Owen plant will enable his corporation to increase its production 1500 tires a day. Many small sized tires will be made at the Bedford plant, but no tubes will be manufactured. The tube room will be used for the manufacture of golf balls. Production will be under way within two weeks. The number of employees will be 200 at the start and within a few weeks the number will be increased to 500.

At the Kent, Ohio, plant of the Mason company production of tires is at the rate of 3500 per diem, excluding solids, and 5000 tubes a day since March 1, and the plant has been oversold about 50 per cent.

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BUICK NOW OCCUPIES OLD SCRIPPS PLANT

All Shipments of Closed Cars Will Be Made Hereafter from Detroit

DETROIT, July 2—The taking over of the former Scripps-Booth plant by the Buick Motor Co. marks the preparation of this unit of General Motors to meet the demand for closed cars on an immediate delivery basis. Capacity for 400 closed cars a day is provided for, 10,000 monthly, or a total equal to the production of all models in the former plants of the company.

There is 350,000 sq. ft. of floor space in the former Scripps-Booth plant, including two large pent-houses now under construction, in which will be located the enameling equipment. The plant hereafter will be known as plant No. 75 of the Buick factory and will be fitted throughout with modern assembling equipment, conveyors and other aids to large production.

All closed cars will be assembled there and shipments to dealers made direct from Detroit. The chassis will be built at the Flint plants of the company and shipped to Detroit, where they will be assembled and the bodies set up. Enameling and upholstery work will be specialties of the new plant, attention having been given to place this on a highly efficient basis.

Greater Efficiency Possible

Formerly the bodies were shipped to Flint by a truck fleet from the body factories in Detroit and fitted to the bodies in connection with the regular assembly work on all models. In addition to the traffic delays and the repeated handling of the bodies, the joint assembly of closed and open models prevented highest production efficiency.

The Scripps-Booth plant was built by the Saxon Motor Car Co. It was later taken over by Scripps-Booth, but during the war was occupied by the quartermaster's department. At the close of the war it was occupied for the manufacture of Scripps-Booth cars. Scripps-Booth service is now being handled in one of the buildings of the Northway engine unit of the corporation.

DRUMPLEMAN EXPECTS TRADE TO BE STEADY

DETROIT, June 30—After a trip which included 19 cities in eastern states, William J. Drumpleman, sales manager of the Rickenbacker Motor Car Co., said he expected a steady, conservative flow of business for the remainder of the year, but without the heavy buying experienced during the spring which would have been abnormal at any other season.

Factory production in July will be absorbed by orders already on hand, Drumpleman said, but August probably will show a seasonal falling off. Baltimore was the only city he visited in which there had been a decline in sales. In Washington there has been a decided increase. Eastern demand is running steadily to closed cars, he declared, although open models are being readily absorbed.

In consideration of the increase in closed car demand, the Rickenbacker company has made arrangements to extend its factory facilities for production of cars of this class.

NEW JERSEY FORMS GOOD ROADS BODY

NEWARK, N. J., July 1—The Good Roads Association of New Jersey has been organized to stimulate interest in the $40,000,000 highway bond issue which will come up for a referendum vote at the November election.

The organization, which is incorporated, is composed of men prominently identified with other civic organizations throughout the state, including the state grange. Harry Meixell, secretary of the motor vehicle conference committee, has been made secretary. The organization is non-political in character.

"1,650 CARS IN JULY" IS COLUMBIA SLOGAN

DETROIT, June 29—Columbia Motors Co. had as dinner guests at the Columbia Club this week bankers and representatives of parts makers who will supply materials for the new Columbia light six. The purpose was to urge adequate deliveries to meet the production plans of the company. The slogan of the evening was "1650 cars in July or bust."

President J. G. Bayerline was the host of the supply men. Those who spoke were W. E. McConnell of the Detroit National Bank of Commerce; W. N. Nesbit, Peninsular State Bank; John G. Painter, Detroit Pressed Steel Co.; Norman I. Taylor, Albee Corp.; W. A. Fredericks, vice-president and chief engineer Continental Motors Corp., and E. F. Kellum, purchasing agent of Columbia.

STEARNS PRODUCING SIX-CYLINDER CAR

CLEVELAND, June 30—After having been for seven years exclusively in the four-cylinder field, the F. B. Stearns Co. is now producing a six which will be marketed along with the four. Both cars are equipped with Knight sleeve valve engines. Following are the prices of the new six:

2 passenger roadster	$2,700
5 passenger phaeton	2,700
7 passenger phaeton	2,850
Coupe	3,500
Coupe-brougham	3,500
Sedan	3,700

The prices of the four-cylinder model remain as before.

G. M. WILL ERECT NEW SERVICE HOME

Oakland and Buick Organizations in New York to Use It Jointly

NEW YORK, July 1—Alfred P. Sloan, Jr., vice-president of the General Motors Corp. in charge of operations, announces that arrangements have been completed with the Argonaut Service Corp. for the erection of a thoroughly modern and complete service building in the heart of the automobile district in New York, for the joint use of the Buick and Oakland organizations.

The building will be located on the east side of West End or 11th Avenue, occupying the block between 55th and 56th Streets, extending back 100 feet in depth. It will be of reinforced concrete, six stories high, with a total floor space of 140,000 sq. ft., and will represent an investment on land and building of almost $750,000.

To Rush Work

The work will be rushed to completion by early fall. When completed the building will house the entire service, parts and new car delivery departments of the Oakland Motor Car Co. and also the parts department and machine shops of the New York branch of the Buick Motor Co., which will move from the present quarters. This will not affect the score of sub-service stations of the Buick company which are located at convenient points over greater New York City. The building will be equally divided between these two divisions of General Motors Corp. and will be so constructed that the two organizations will be entirely separate.

Oakland owners in New York City have heretofore been compelled to take their cars to Long Island City for service and parts.

The inconvenience of the two present locations to both owners and dealers of Buick and Oakland cars has been recognized by General Motors Corp. for a long while and this new modern, up-to-date plant will be an important unit in line with the broad service policy of the corporation.

Another New Building

NEW YORK, June 28—The estate of J. Wertheim will erect a three-story building adapted to the automobile trade in the block bounded by Fifty-seventh and Fifty-eighth Streets, Broadway and Eighth Avenue. Showrooms for passenger cars will occupy the Broadway frontage and truck salesrooms will face Eighth Avenue. In the center of the building will be a large court, permitting the movement of cars into the various showrooms without disturbing the store fronts.

A building was started by Wertheim on this site two years ago, but after the foundation was built Wertheim died and the property has been idle since then.

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GEORGIA TO CONDUCT PUBLICITY CAMPAIGN

Will Use Newspapers to Educate Public on High Character of Industry

ATLANTA, July 3—In order to promote the interests of the automotive industry, and to educate the buying public to the fact that the dealers engaged in the business throughout Georgia represent the highest type of merchants, the Georgia Automotive Dealers Association will inaugurate the latter part of this month a state-wide advertising and publicity campaign, using practically all of the larger newspapers throughout the State.

The campaign will be of an educational nature entirely, and will call for an investment of several thousand dollars during the remainder of the present year.

Dealers Regarded as "Profiteers"

Discussing the advertising plans of the association, P. A. Megahee, of Atlanta, secretary, said:

The public still seems to look upon the automotive dealers as "profiteers," getting all they can for nothing and giving little in return, when as a matter of truth the majority of automobile dealers and manufacturers who remain in the business to-day are clean-cut, high class business men. We know this, but the public does not seem to, and therefore the Georgia organization will invest several thousand dollars during the coming year in newspaper advertising to educate the public to this truth.

It is the plan of the association to run paid advertising in the Sunday newspapers over the State each week in which the effort will be made to "sell" the public confidence in the industry and its stability. These ads will be supplemented by continuous publicity stories serving a similar purpose.

Members in Good Standing Eligible

Members of the association in good standing only will be allowed to participate. With each ad will be published the names of all dealers and accessory merchants contributing to the costs of the campaign, which aggregate about $100 each per half year. Already approximately half of the members have subscribed, and it is believed that about 75 per cent of them will ultimately do so.

In order to make this campaign truthful and really effective it has also been ruled by the association that hereafter no dealer will be admitted to membership whose application is not endorsed by at least two other dealers of his community and one banker in the town or city where his business is located. At the beginning of the new year the entire membership will be submitted to this same test. These facts will be brought out in the advertising that is to be published.

Another feature of the campaign is a complaint committee that will include several responsible dealers. Any complaint made by a customer about the treatment accorded him by any dealer in the association will be investigated by this committee. If the customer is in the right the dealer will be compelled to remedy the situation to the satisfaction of the customer, and failing to do so will be expelled from the association.

FORD OUTPUT 79,496 BETTER THAN IN 1921

DETROIT, June 30—Production of the Ford American and foreign plants in June, excluding the Ford Motor Co. of Canada, will carry the total production for 1922 to date over the half million mark. Excluding any of June's output, the American and foreign plants have turned out exactly 409,309 cars and trucks, while the total for the same period in 1921 was 329,813. This established a lead of 79,496.

Of the May production of 134,762, the Kearny, N. J., plant led with 14,706, about 3000 more than the April total. Detroit produced 11,524, with third place about equal for Philadelphia, Buffalo and Chicago, with 6500 each. The business of the Buffalo plant is declared to have shown considerable increase. The highest single day's assembly mark was made May 31 when 5099 cars were built. This mark was moved up on June 5 to 5,281.

Tractor production at the River Rouge in May reached 8950 and 155 were built at the Cork, Ireland, plant. The River Rouge output represents an increase from 7466 in May. Total production of Fordsons for the year to the end of May was 25,011. The total for the same period in 1921 was 20,936.

Without the receipt of any additional orders, the Lincoln Motor Co. plant will be at capacity for four months to meet the business now on hand, the company reports. Despite demand, it is declared, production will be kept down to a point where it is possible to give each car painstaking attention. The present production rate is approximating 35 daily.

Star Incorporated in Michigan

DETROIT, June 29—Articles of incorporation of the Star Corporation of Michigan were filed in Lansing this week. Capitalization is for $20,000, but this amount is to be increased, it was declared. The Michigan company will be the sales organization for the Star cars made at the Lansing plant of Durant Motors. It was announced that a distribution plan entirely new in the automobile field would be made public soon.

Penn and Belmont Merged

LEWISTOWN, PA., June 26—Hilton W. Soffield, president of the Penn Motors Corp. of Philadelphia, announces consolidation of the Penn Motors Co. and the Belmont Motor Co. The plant of the former company at Riverton, N. J., burned in June, 1921.

PARENTI PLANT SOLD TO HANOVER MOTORS

Pennsylvania Company Will Manufacture Small Car to Supplant Motorcycles

BUFFALO, June 29 — The Marine Trust Co., which has been acting as trustee for the benefit of creditors of the Parenti Motors Corp., has reported to the creditors that the committee which was appointed some time ago to raise money for the redemption of the property was unable to obtain sufficient funds for that purpose.

The Trust company, therefore, called the creditors' committee together to consider various bids which had been submitted for the property. At this meeting the trustee reported a number of bids ranging from $85,000 to $225,000. A resolution was passed, authorizing the trustee to accept an offer made by the Hanover Motor Car Co. of Hanover, Pa., manufacturer, heretofore on a royalty basis, of a small automobile, built around a two-cylinder air cooled engine, which is intended to take the place of motorcycles and motorcycle side cars, at a cost to the consumer of about $250. A number of these cars have been recently on the streets of Buffalo.

To Complete Parenti Car

It is reported that the Hanover people will move their jigs, machinery and equipment into the Parenti plant about July 1. It is also understood that an effort will be made to complete the manufacture of the materials on hand at the Parenti plant into completed cars, under an arrangement with a number of former stockholders of the Parenti company.

Von Elm Leaves A. E. Laboratories

NEW YORK, June 30—William Von Elm has retired from the A. E. Laboratories, Inc., Brooklyn. Von Elm intends to remain in the industry and continues at the head of the Universal Catalog Committee and a member of the board of directors of the Automotive Equipment Association. The recent convention gave Von Elm a striking Swiss watch in recognition of his work on the catalog committee.

Packard Increases Schedule

DETROIT, June 29—Announcement is made by Alvan Macauley that a production schedule of 2000 Packard single six cars a month has been determined upon, in addition to the twin six and truck output. This schedule would make the production exactly twice the volume decided upon when the new single six was announced in April.

Standard Parts in Black Ink

CLEVELAND, July 1—Business at the Standard Parts Co. has developed to such an extent that operations in April and May resulted in black ink returns. Profits were not large, but the company has not operated in red ink since March.

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NEW FIRM HANDLES MAXWELL-CHALMERS

Changes Made in New York—Branch Is Dropped for Distributorship

DETROIT, June 29—The Colt-Stewart Co. has been formed in New York City by William L. Colt and William D. Stewart to take over the distribution of Maxwell-Chalmers cars in the New York territory. Aside from the importance of the men composing the new company, the change is important also in that it marks the discontinuance in New York of the former Maxwell-Chalmers branch and places their business in the hands of a distributor.

William L. Colt has been identified with the automobile business since 1904 when he joined the Cleveland Motor Car Co. In an executive capacity, five years later, he organized the Colt-Stratton Co. in New York as general Eastern distributor for the Cole Motor Car Co. of Indianapolis. This concern attracted the attention of Dodge Brothers by its success and in 1914 it was named metropolitan dealer for the Dodge car.

Managed Willys Division

Dodge and Cole were handled jointly by the company until 1917 when Colt withdrew from active work in the company to accept the position of eastern division manager for the Willys-Overland Co. from which he retired to form the Colt-Stewart Co. for the purpose of taking over the Maxwell-Chalmers sales.

During Colt's association with Willys-Overland he formed the close association with Stewart, who in 1917 was made manager of the New York branch of the Willys-Overland Co. Stewart joined the Willys organization in 1916 after a varied business experience, and after fourteen months of service was appointed to the New York managership.

In announcing the change in its New York distribution, Vice-President A. E. Barker of Maxwell-Chalmers said that the new company would follow out the same general policies that were in force during the branch operation. The business will continue at the same address and the same sales organization will remain as formerly.

Harroun in Receivership

DETROIT, June 30—Harroun Motors Corp. has been placed in receivership by Judge Tuttle in Federal Court, the Guaranty Trust Co. being appointed to act pending further action on claims by creditors which may result in bankruptcy proceedings and the naming of a trustee. An immediate inventory of the plant will be taken by the receiver to determine the assets which are said to be less than half of its liabilities.

William C. Butler, vice-president and secretary of the trust company, said that inasmuch as the plant has been idle for almost four years no attempt would be made by the receiver to operate it, but merely to conserve it in the interest of creditors and stockholders. Indications were, he said, that it would be sold as soon as necessary preliminary work was concluded.

Ford May Production Aggregated 144,469

DETROIT, July 1—Total production of the Ford Motor Co. for May was 144,469 cars, trucks and tractors, divided as follows:

Cars, American, 121,073; foreign, 7170; Canadian, 6579.

Tractors, American, 8950; foreign, 155.

Lincoln cars, 602.

Grand total, 144,469.

WEBSTER TO EUROPE; DAUGHTER MARRIED

COLORADO SPRINGS, June 30—Delegates to the Automotive Equipment Association's recent convention were interested in the news that Miss Dorothy Webster, daughter of the Commissioner, was married June 28, at the Broadmoor to Henry B. Ryan of Chicago. There was interest, too, in the forthcoming two months' tour through Europe and Northern Africa of Commissioner and Mrs. Webster and Mr. and Mrs. R. R. Englehart of Davenport, Iowa. Englehart, a former president of the A. E. A., is head of the Seig Co., jobber.

There were several wedding anniversaries at the hotels, including the fourteenth of Mr. and Mrs. Nelson H. Oliver and the sixth of Mr. and Mrs. Earl V. Hennecke.

Injunction on Lug Selling

PHILADELPHIA, June 29—Upon petition of the Hudson Motor Specialties Co. the Federal court for the northern district of Ohio has granted it a perpetual injunction restraining the Simmons Manufacturing Co., The Lake Erie Accessories Co., the M & M Co. and the American Signal Co. from using or selling lugs for power plant support for motor vehicles embodying the inventions described in patent No. 1,263,899, as well as from using in conjunction with the manufacture or sale of any motor support, or lugs for power plant support, the name "Crankcase Repair Arm."

Buick Has Record Day

DETROIT, June 28—Buick Motor Car Co. shipped 822 cars on June 23, the largest single day's shipment in the company's history. The company has been operating on a part time schedule for the past month, pending changes in its manufacturing policy which include the operation of the Scripps-Booth plant.

Orders on sport models run several months ahead, dealers taking orders on a delivery basis of eight weeks. The factory is likewise far behind on closed car deliveries.

TIRE DEALERS FEEL LACK OF PROTECTION

Business Demoralized, Declares Secretary of Wisconsin Trade Associations

MILWAUKEE, July 3—A mass meeting of tire dealers of Wisconsin, called under the joint auspices of the Milwaukee and the Wisconsin Tire Dealers Association, as a preliminary to the "open forum" convention held in Cleveland, adopted vigorous resolutions seeking remedial relief from the situation in which the dealers declare themselves to be in the prosecution of their business.

The local and state associations for several months have been making investigations of the situation on their own account, and in support of similar efforts undertaken by the national association.

"Our Wisconsin mass meeting brought out that never before in the history of the tire business have such demoralized and chaotic conditions existed as now," said Samuel A. Rowe, secretary of both associations and one of the leading tire dealers of Milwaukee. "Confidence and faith in the tire manufacturers and in the industry itself are shattered. No one knows from one day to the other what will happen next, and whatever happens, using as a criterion developments in the recent past, the distributor of and dealer in tires will be the sufferer and the loser of money, prestige and general business.

No Opportunity to Recoup Losses

"Thousands of dollars have been lost through write-off in value of merchandise on dealers' shelves, and there seems to be no opportunity to recoup the losses; particularly so when the manufacturers up to the present time have refused even to confer with the associated dealers. No protection has been given dealers in the several recent declines in prices, and manufacturers have shielded themselves behind the excuse that the prices had not been changed, but they had lengthened the trade discount to dealer and manufacturer."

Biflex Increases Plant

CHICAGO, June 30—The Biflex Products Co. has increased its capacity 150 per cent by the purchase of additional buildings and land from the Chicago Hardware Foundry Co. adjoining the Biflex plant. The additional floor space obtained will be used in the production of Biflex bumpers. This is the second expansion in a year as the Biflex company did not remove its offices and foundry from Waukegan to its larger home in this city until May 1, 1921.

New Martin-Parry Plant

YORK, PA., June 30—The Martin-Parry Corp. announces that it will duplicate in Los Angeles an assembling and service plant recently opened in a new building in San Francisco.

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DURANT TO DOUBLE NUMBER OF SHARES

New Plan Will Permit Exchange for Securities in Parent Organization

NEW YORK, July 2—Stockholders of Durant Motors, Inc., decided at a special meeting here to increase the capital stock from 1,000,000 to 2,000,000 shares and thus provide for an exchange of stock of the several divisional corporations for the securities of the parent company. This exchange can be made at the option of the stockholders at any time between Aug. 1, 1924, and Aug. 1, 1926.

The plan is designed to facilitate the acquisition by the corporation of large interests in its allied companies. For this purpose approximately 500,000 shares will be required. The balance of the stock will be available for such use as the directors may determine to be for the best interest of the corporation.

The stockholders decided also to increase the directorate from five to nine members. From the standpoint of the industry the most interesting addition to the board was A. H. Sarver, who was president of the Scripps-Booth Corp., a subsidiary of the General Motors Corp. until it was liquidated recently. He is a widely known figure in the automotive field.

Sarver on Directorate

The directors in addition to Sarver and W. C. Durant are: T. W. Warner, Carroll Downes, who now is president of the Durant Motor Car Co. of Michigan; W. W. Murphy, who has been Durant's assistant since General Motors' days; C. F. Daley, H. W. Alger, who is vice-president of the Michigan company; W. R. Willett, who is at the head of the Durant Motor Car Co. of Indiana, and F. W. Hohensee, chief engineer.

After their selection the directors organized by electing the following officers: President, Durant; vice-presidents, Warner and Downes; treasurer, Murphy, and secretary, H. F. Herbermann.

The Durant Motor Car Co. of New Jersey, which will have charge of the production of the Star in the recently acquired plant of the Willys Corp. at Elizabeth, now is being incorporated with a capital of $10,000,000. The stock will have a par value of $10 with the conversion privilege. It will be headed by Hohensee as president, but the other officers have not been determined.

A large force of men now is at work in the Elizabeth factory getting it ready for production at the earliest possible moment.

Emil W. Estberg Dies

MILWAUKEE, June 28—Emil W. Estberg, one of the veterans of the automotive trade in Wisconsin, died in Columbia Hospital after a brief illness, following an operation. He was 55 years of age.

Estberg was born in Waukesha, Wis., and came to Milwaukee in 1905, engaging in business as one of the first dealers in the state, handling the old Pope-Toledo line. For several years he has been president of the Estberg-Deland Motor Co., handling the Chalmers and Maxwell. Mr. Estberg was one of the charter members of the original dealers association. now the Milwaukee Automotive Dealers Association, and held many offices.

CARS FOR RESHIPMENT INCREASED BY 30,000

WASHINGTON, July 2 — Additional figures on the number of automobiles in Europe, which it is feared will be resold in America unless prevented by the Graham "anti-dumping" bill, have been submitted by the Department of Commerce to the Senate Finance Committee.

In response to a request from the committee, Secretary Hoover secured telegraphic information that a total of 8699 automobiles were available in France, England and Italy for immediate reexport to the United States. This cable advice has been supplemented by a more complete survey made by W. C. Huntington, commercial attaché of the department in Paris, which shows that in addition to the 8699 reconditioned cars there are more than 30,000 automobiles which could be reconditioned and resold in America.

REO PLANT VISITED BY PENNSYLVANIANS

DETROIT, June 28 — Pennsylvania Day was observed at the Reo Motor Car Co. plant at Lansing this week with the appearance of a large delegation of distributors and dealers from the central part of the state who staged a drive-away from the factory of more than 100 cars, speed-wagons and the new Reo taxi.

George G. McFarland, president of the Harrisburg Automobile Co., headed the delegation. A luncheon was tendered them by the company at the Reo Club house on their arrival, and the afternoon was spent in an inspection of the plant. Dinner was served in the Kerns Hotel in the evening, following which a musical program was given by the Reo orchestra and glee club.

E. V. HARTFORD DIES; LONG IN INDUSTRY

NEW YORK, July 3—Edward Vassalo Hartford, an outstanding figure in the automotive industry whose accomplishments will be long remembered, died Friday at his city home here. He was buried from the home of his parents at Orange, N. J. He was 52 years old and is survived by a widow and two children.

As the manufacturer of the Hartford shock absorber which he put on the American market in 1904, the producer of one of the early electric starters, together with various other inventions, Hartford scored high in his efforts to better the modern motor car and the service it supplies.

PAIGE NOW PAYING COMMON DIVIDENDS

First to Be Disbursed Since Dec. 10, 1920—Company in Good Condition

DETROIT, July 1—With the payment of a cash dividend of 6 per cent on its common stock on July 10, the Paige-Detroit Motor Car Co. will resume payments on this stock which have been suspended since Dec. 10, 1920, when a 1 per cent dividend was distributed.

In connection with the resumption of payments, the company notes that since 1914 it has distributed to its holders of common stock payments of 227 per cent in cash and 263 1/3 per cent in stock. The year 1915 was the largest cash dividend period when 59 per cent was paid, and 1916 the largest stock dividend year when 130 per cent was distributed.

President H. M. Jewett said the present production of the company is at the rate of 200 cars daily, this including the two Paige models and the new Jewett. The company's bank loans have been cleared away, Jewett said.

"Our only obligations are those of a current nature," Jewett says. "Liberal allowance has been made for depreciation. Inventories have been written down to cost and we are turning over our inventories now every 30 days or at an even shorter interval. Conditions seem to justify the dividend for the common stock."

STANDARD PRODUCING NEW MODEL 75 TRUCK

DETROIT, July 3—A new model 75 light delivery speed truck is being manufactured by the Standard Motor Truck Co. to sell for $1,330. It has a capacity of 1¼ tons exclusive of the body allowance, and has 35 x 5 pneumatic cord tires.

Drive is by worm type Timken axle. Practically the same line of units is used in this truck as is used in the heavier models. These include a Continental 3¾ x 5 engine, Brown-Lipe disc clutch, Timken axle and Ross steering gear. The wheelbase is 134 in.

Dorris Prices Down

ST. LOUIS, June 29—The Dorris Motor Car Co. announces sharp price reductions effective July 1. The list follows:

	Old Price	New Price
7 passenger touring.....	$4,785	$3,950
4 passenger touring.....	4,785	3,950
4 passenger coupe.....	5,800	4,985
7 passenger sedan.....	7,190	5,750

Hudson-Essex Reduced

DETROIT, July 1—Reductions of $50 each were made to-day by the Hudson Motor Car Co. on four models of the Hudson and Essex. Hudson four-passenger phaeton was reduced to $1,645, touring to $1,695, and coach to $1,745. The Essex coach price was lowered to $1,295. The cabriolet was reduced $100, to $1,195.

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ASSOCIATION ACTIVITIES

Outing in Philadelphia

PHILADELPHIA, June 29.—Close to one hundred members of the Automobile Accessories Business Association and their guests started out in gaily decorated automobiles this morning and proceeded to the Betzwood Farms Inn at Betzwood, Pa., where the annual June outing was held amid ideal surroundings. A jazz orchestra, vaudeville numbers, community singing and outdoor sports contributed to the program.

There were baseball games organized under the old method of "choosing up" and competitive field sports as follows:

Tug of war, Manufacturers *vs.* Jobbers, two pulls out of three, won handily by the jobbers.

Pitching quoits, elimination contest, winners—Willetts, Williams, Davis and Dickel.

Sack race for married men, winner—Willetts.

Sack race for single men, winner—Boldwin.

Fat men's race, winner—John Monihan.

Hundred yards' dash, winner—Rosenfeld, paced by Irons.

Standing broad jump, winner—John Irons.

Throwing indoor baseball, winner—John Irons.

There was a buffet luncheon served at noon.

An especially good dinner was served at 6 o'clock. A feature of the outdoor exercises was a tire-changing exhibition on the lawn by Charles Payne, of the United States tire agency. He used old tires, removing a straight-side 31 x 4 in 7 seconds and putting it on again in 17 seconds, using no regular tire tool, and next astonished the gathering by using only his hands and taking off a 30 x 3½ tire in 5 seconds and replacing it in 12 seconds.

Following this feat, President W. H. Metcalf, of the association, announced that Payne will be entered in a competitive contest with Karl Mitz, a Goodyear service station dealer at Drayton, N. D., who claims that, with his bare hands he can apply a 30 x 3½ clincher tire faster than any other dealer in the world.

Caley, Executive Secretary

CHICAGO, June 30.—Following the organization of the National Motorists Association here, the board of governors elected Fred H. Caley of Cleveland, as executive secretary and F. E. Ertsman of Chicago as assistant secretary. Caley is president of the Ohio State Automobile Association and Ertsman is secretary of the Illinois State Automobile Association. Executive offices for the new organization will be opened at Washington within a week, it is announced.

The board of governors elected the following executive committee: R. H. Kennerdell, Pennsylvania; Henry Paulman, Illinois; M. E. Noblet, Indiana; Mayor McInnich, St. Joseph, Mo., and Alex Johnson of Louisville, Ky.

Entertain Camden Dealers

PHILADELPHIA, June 30.—A large gathering of members of both the Motor Truck Association of Philadelphia and their guests, the Camden Automobile Dealers Association attended the eighth annual outing of the former organization at Kugler's Mohican Club. A long procession of automobiles headed by R. Arthur Bittong, chairman of the entertainment committee, and a bus containing a fife and drum corps, filed to the ferry under the guidance of a squad of motorcycle police and was borne across the river, where the Camden contingent was picked up. Each car flew blue and yellow pennants and American flags.

There was a baseball game between the Motor Truck Association, whose battery was Barrett, c., and Koitzsch, p.; and the Camdenites, who had Adams on the mound and Hess behind the bat. The game, which was won by the Philadelphians by the score of 21 to 7, was featured by phenomenal stops of hot grounders by Bittong, shortstop for the Philadelphians, with his nose and foot. Carrigan knocked out a home run and at one time all four balls brought by the association were lost in the surrounding jungle.

New Kansas Manager

SALINA, KANS., July 1.—At a meeting of the board of directors of the Automobile Trade Association of Kansas, called by President Frank E. Siason, Phil E. Zimmerman, of Lindsborg, was selected to succeed A. L. Oliger, resigned, as secretary-manager.

Zimmerman at one time was very well known in the motor world, having been successively general salesman, advertising man, and general manager of the Hagstrom Corp., which manufactured spark plugs and other accessories. From 1913 to 1918 he was district sales director over five states for the Schwinn interests of Chicago. He has the promotion of two record tours to his credit and has annually refereed the world's championship motorcycle races at Dodge City races.

Boston Proposal Unpopular

BOSTON, July 24.—The Boston Chamber of Commerce has started a plan to organize an Automobile Trade Board in connection with its activities, and has had a representative interviewing dealers in cars and tires throughout the Boston territory. It is going to be a difficult task because many of the dealers who joined the Chamber of Commerce a couple of years ago when a big drive was on for members state that they have found the chamber was of no assistance to them.

Some of the leading dealers point out that while the automobile industry is one of the largest in the country, and that many of the dealers are members of the Chamber of Commerce, when elections were held for a place on the board of directors no representative of the motor trade was given a place on the governing body.

And when the dealers have been fighting legislation they got no assistance from the association, which has gone out and worked for other legislative programs, say some of the Boston motor leaders. Therefore instead of joining an automobile trade board some of them are going to drop their membership.

Activity Planned in Memphis

MEMPHIS, TENN.—The Automobile Dealers' Association of Memphis, headed by Owen M. Lilly, is planning much active work for the last lap of 1922. Lilly succeeded Steve Butler, who recently became president of the Memphis Chamber of Commerce. H. W. Osoinach is secretary.

Chamberlain in Salt Lake City

SALT LAKE CITY, June 22.—The Intermountain Automotive Trades Association with headquarters in this city, has made arrangements which will permit employees of automobile companies to hear the Percy E. Chamberlain lectures on service which will be given in the Barrett Hall for four evenings. It is expected that practically every automobile firm in the city will be represented Three hundred employees have already been enrolled.

CHANGES IN THE TRADE

De Graaf Motor Car Co. of Plainfield, N. J., has taken on the sale of the Peerless in that territory.

North Side Welding Works & Garage, Kalamazoo, Mich., has taken the agency for the Durant cars in Kalamazoo County.

Lasser Motor Co., Chevrolet dealer in Newark, N. J., has been appointed dealer for Elizabeth and adjacent territory. The company will operate agencies in both cities.

B. D. Jones, who was formerly with the Watson-Buick Co., has been appointed sales manager for the **Pacific Nash Motor Co.,** Ogden, Utah, succeeding **C. E. Cookerly,** resigned.

Robert L. Duffus, formerly manager of the Kalamazoo, Mich., factory branch of the Packard Motor Car Co., has become general sales manager of the **W. O. Harlow Motor Sales Co.,** that city, handling Oakland cars and Republic trucks.

Andy Lustbaum of Long Branch, N. J., Peerless and Maxwell distributor for Monmouth County, has opened a sales room in Asbury Park. **Frank S. Nea,** formerly representative for the Peerless in Passaic, N. J., has joined the staff at Asbury Park as sales manager.

Standley Manufacturing Co., Boone, Iowa, has opened a branch house in New York which carries a complete stock of the Standley line quoted f.o.b. New York City. The address of the company is Standley Manufacturing Co., Nelson Avenue and Manley Street, Long Island City, N. Y.

W. J. Keegan has gone on the road for the **Perfection Spring Co.** Keegan has spent five years in the Perfection spring factory, principally on the jobbing sales end, taking care of customers' interests, although he has also spent considerable time in the production department. He will travel principally in the southern territory.

H. H. Brenner, many years general sales manager of the **I. J. Cooper Rubber Co.,** is succeeded by **R. B. Crane,** director of sales of the Cooper Corp. Brenner retains his interest in the Cooper organization, but is giving his personal attention to his own company, the **Brenner Automobile Supply Co.,** with stores at St. Louis and Kansas City.

Kalamazoo Buick Sales Co. has been formed to succeed the **Stevens-Buick Sales Co.** and will handle the Buick cars in Kalamazoo, Mich., and vicinity. Those interested in the new company are D. B. Williams, former sales manager of the Handley-Knight Co., Kalamazoo; A. B. Connable, Sirk Wykkel, Peter Servaas and Ed. Beach.

Sidney B. Bowman, president of the **Sidney B. Bowman Automobile Co.,** New York, handling the Kissel and Gardner lines, announces the promotions of **Harry Spangler** to the new position of assistant to the president, and of **Ralph R. Schrenkeisen** to retail sales manager. Spangler was formerly retail sales manager. Both Spangler and Schrenkeisen have been with the Bowman organization for a number of years. Increased business is responsible for the expansion of the organization.

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CHANGES IN THE TRADE

H. A. White Auto Co. has been selected as distributor in the Memphis, Tenn., territory for the Durant.

Conant Automobile Co. has been organized at Houston, Tex., to handle the Durant cars in that section.

Edward J. Epsten of the Epsten Lithographing Co. has secured the distribution of the Columbia at Omaha.

Franklin Automotive Electric Co., Toledo, has been organized with F. T. Dickinson as manager for the distribution of batteries.

Gambill Motor Co., Chicago distributor of the Marmon and Hupmobile, has established a northside branch at 4017 Sheridan Road.

Lancia Motor Car Co., Boston, has been incorporated by George Piscopo, to handle the Lancia in the New England territory.

Doggett Brothers, Shelby, N. C., which has the agency for the Studebaker, has bought the garage of **Roberts-Laughridge Motor Co.**

Frank Drouillard, formerly assistant superintendent of Maxwell in Detroit, is now Maxwell dealer in the Pontiac, Mich., territory.

F. B. Smalley Co., Toledo, has taken on the agency for the Ruggles truck for fourteen counties in northwestern Ohio and southern Michigan.

Carl Swenson, of the Swenson Auto Co., Denver, has secured the franchise for the Transport truck for the Rocky Mountain territory.

Fred D. Rudisell, formerly branch manager of the Firestone Tire & Rubber Co. at Omaha, has opened up a tire service station in that city.

Wills Sainte Claire Co. of Illinois has moved into new headquarters at 2330 South Michigan Avenue. **Dayton Keith** is president of the company.

McCarty-Greene Motor Co., Chandler distributor at Birmingham, Ala., will also take on the Cleveland line. T. B. McCarthy is president of the company.

Dashiell Motor Co., Dodge Brothers distributor in Chicago, has moved from 2420 South Michigan Avenue to larger quarters at 2542 South Michigan Avenue.

August Hennebolt, for the last four years in charge of the shop department of the Motor Sales Co., Pueblo, Col., has acquired the Nash agency for that territory.

Edgewater Motor Sales Co., Chicago, has been organized to handle Earl and Liberty lines. **James Betourna** is president of the company and **J. A. Henry** is secretary.

Chambers Motor Co. has been appointed authorized Ford dealers in Memphis, Tenn. The service station is in charge of **Mike Elam** and sales department is managed by **Charles T. Everts.**

Murphy-Ijams Motor Co. has been appointed distributor for Nashville and middle Tennessee, southern Kentucky and northern Alabama for the Marmon cars. **J. W. Austin** is director of sales.

D. & W. Motor Sales Co., Chicago, Hupmobile agency, has been purchased by **Harry W. Cassleman**, president of the West Side Nash & Stearns Co. The new purchaser will continue to handle Hupmobile cars.

A. H. McIntyre, for the past year traveling representative in the East and Canada for the Haynes Motor Car Co., with headquarters at Boston, has resigned to accept a similar position for the Jordan Motor Car Co.

J. H. Ham has been made distributor for the Packard car for Charlotte, N. C., and surrounding territory. **H. L. Kurfees** is general sales manager of the Ham organization. Ham is also local distributor for the Earl car.

Geo. W. Andrews has been appointed general manager of the **W. V. Faunce Motors Co.**, Chicago distributor of the Oldsmobile. He succeeds **J. S. Feneley**, who has gone to Pittsburgh to open an Oldsmobile distributing branch.

Stevens-Duryea Co. has opened a factory branch at 2439 South Michigan Avenue, Chicago. The same company had a factory branch at that address until 1915. **Bruce E. Adams** is manager and **Webb S. Adair** is service manager.

John M. Duff, Jr., Philadelphia, has organized a company for the sale of the Nash under the name of the **Duff Nash Motor Co.** For several years Duff was associated with the retail sales department of the Philadelphia-Nash Motor Co.

Landman-Griffith Co., Toledo distributors of the Maxwell-Chalmers line, has obtained the Packard agency for northwestern Ohio. **William Love**, former Packard dealer, relinquished the agency a few weeks ago. **Warren E. Griffith** is president.

John T. Fisher Motor Co., Memphis, Tenn., has succeeded the **Reo-Memphis Co.** handling the Reo cars and trucks. Fisher was formerly president and general manager of the Union Motor Car Co. and is president and manager of the new organization.

Walter M. Bliss, former manager of the Goodyear tire branches at Boston and New York, and later with the Franklin Motor Car Co. at Boston, is now New England traveling representative for the Hudson and Essex lines, with headquarters at Boston.

Kenneth W. Gardner, who was associated with the Dunbar-Sanders Co. of Boston for a year and with the Albee Corp, for a similar time, is leaving the **Franklin-Jacobs Co.**, in Pontiac, Mich., to become assistant to the Chevrolet advertising manager in Detroit.

Frank E. Wing, Boston, New England Marmon distributor, who has carried on the business under his own name as an individual for the past 18 years, has incorporated the F. E. Wing Co., Inc., for $300,000, of which he is the principal stockholder and executive.

Walter C. Boynton, formerly service manager of the Campbell-Ewald Co., has become a member of Norval A. Hawkins' sales, service and advertising section of the General Motors advisory staff. Frank G. Eastman is now devoting his attention exclusively to the advertising features of the staff work.

Murphy Motor Car. Co., headed by Thomas W. Murphy, for the past five years one of the leading used-car dealers of Portland, Ore., has been granted the franchise for the Auburn for that territory. Murphy will have the distribution for Oregon and southwest Washington and will handle the retail sales in Portland.

Simmons Handin Motor Co. of Chicago has been appointed distributor of Gray cars for northern Illinois. Simmons is one of Chicago's oldest dealers and Handin for some time handled retail sales for Ford Motor Co. in that city. He was later made branch manager of the Salt Lake City and Cincinnati plants of that company.

A. L. McCarley, agent for the Stanley steam car for the Portland, Ore., district, has secured the Templar car as an addition and will distribute it in Oregon and southwest Washington. **W. W. Wray**, who was head of the Wray Motor Co., former Templar distributor, has been named Templar sales manager for McCarley in Portland.

Southern Motor Co., Memphis, Tenn., has been appointed distributor for eastern Arkansas, northern Mississippi and that part of Tennessee west of the Tennessee River for the products of Edward V. Hartford, Inc., of New York City. The company has been in the automobile industry for about five years and for the last three has distributed the Cadillac.

Lambeth - Armfield Distributing Agency has been formed at Rockingham, N. C., to handle Dodge Brothers cars in Richmond, Union, Anson, Scotland and Robeson counties, North Carolina, and Chesterfield and Marlborough counties, in South Carolina. **Emsley Armfield**, formerly of Monroe, N. C., will be in charge. The other member of the firm is **J. A. Lambeth** of Charlotte.

Nash-McKeough Motor Co. has been formed by J. W. McKeough of Kenosha, Wis., former manager of sales for the motor truck division of the Nash Motors Co., to handle the Nash in the Toledo district. **R. W. Kinsey**, formerly sales manager of the Nash Milwaukee branch, will be sales manager. **C. J. Flanigan**, territory manager of the Chicago district, will have charge of the wholesale business.

Standardized Parts Corp., Memphis, Tenn., is now operating a central parts deport for five specialized units, having been appointed distributor for Continental engines, Timken axles, Borg and Beck clutches, Spicer universal joints and Brown-Lipe transmission and clutches. Its territory includes Memphis, western Tennessee, Arkansas, southeastern Missouri, southwestern Kentucky and northern Mississippi.

W. P. Cronin and **J. S. Waddell** have formed the **Cooper Tire Co.** of New England to handle that line in the New England territory. Cronin formerly sold the Racine, and also carries on a large accessory business. Waddell for a number of years was connected with the Firestone Tire & Rubber Co. at its Boston branch until a year ago. **Albert Waddell**, his brother, has returned from New York to join the new firm.

J. Louis Kelley of Beloit, Wis., widely known in the tire merchandising and advertising field of the Middle West, has joined the Chicago division of the B. F. Goodrich Rubber Co. in charge of a special sales promotion campaign in the northwestern states. His first activity will be to pilot a "Goodrich Special" through the Wisconsin lake and resort territory, later traveling through neighboring states for similar promotion.

Linford Motor Co., composed of all Ford dealers in Memphis, Tenn., has been granted a charter to handle the Lincoln and Ford automobiles. The company is headed by **George Abernathy**, formerly of the Abernathy Co. Other members are **Robert T. Chambers** of the Universal Motor Car Co.; **Horace H. Hull** of the Hull-Dobbs Motor Car Co.; **J. T. Merrin** of the Merrin-Graham Co.; **B. F. McCreery** of the McCreery-Pheland; **Harry L. Price** of the Price, Barwick, and **J. M. Walker** of the Universal.

H. L. Dickey has been appointed sales manager for the automotive division of the Anderson Co., manufacturer of automotive equipment. Dickey was formerly eastern manager for the Beneke & Kropf Manufacturing Co., Chicago, then sales manager for the Moto Meter Co., Long Island City, N. Y., and later central district manager for the Splitdorf Electrical Co., Newark, N. J. Plans for concentrating the manufacture of all the company's products in one factory are at present under serious consideration.

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Calendar of Trade Events

CONVENTIONS

Olympia, Wash.....July 21-22
Midsummer Convention of the Washington Automotive Trade Association.

Chicago .....Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

RACES

Strasbourg.....July 15
French Grand Prix.

SHOWS

Watsonville, Cal.....Aug. 12-15
Automobile Show under the Auspices of the Watsonville Motor Car Dealers Association, J. S. Martin, manager.

Columbus.....Aug. 28-Sept. 2
Ohio State Fair.

Hartford, Conn.....Sept. 4-9
Connecticut Fair Grounds.

Wilmington, Del.....Sept. 4-9
Delaware State Fair.

Spokane.....Sept. 4-9
Annual Automobile Show held in connection with the Spokane Interstate Fair, B. J. Garnet, manager.

New York.....Sept. 23-30
Closed Car Show, under Auspices of Automobile Merchants Association, Grand Central Palace.

Chicago .....Nov. 13-18
Annual Show of Automotive Equipment Association.

New York.....Dec. 2-9
Eighteenth Annual Automobile Salon, National Automobile Chamber of Commerce, Commodore Hotel.

Chicago .....January
Annual Automobile Salon, National Automobile Chamber of Commerce.

HUPP DISTRIBUTOR APPOINTS DEALERS

HARTFORD, CONN., July 1—Wider distribution of Hupmobiles is planned by the L. & H. Motor Co. of this city which controls a large part of the State of Connecticut.

The company is appointing associate dealers to distribute cars. The first announcement is that of the Edward S. Clark Motor Co., this city. Several other dealers have been appointed associates and are authorized to sell wherever they can get an order, even if it is next door to the L. & H. Motor Co.

Thomas W. Campbell and Fred W. Lycett, heads of the concern, assert that within the next thirty days Hupmobile will have one of the largest, if not the largest, selling organizations in this state. Associate dealers necessarily do not have to carry a stock of cars since they can come to Hartford and get any model they desire.

Texas Co. Protects Product

DETROIT, June 29—An order restraining the sale of a type of oil refined and sold by the Texas Co. as "gun oil," as automobile motor oil, was issued by Judge Tuttle in Federal Court against David Berlin, an accessory dealer here. The order temporarily restrains the sale or the use of the Texas trade mark or name. The oil was purchased from the Government.

NEW HARTFORD PARTS HAS SPICER BACKING

HARTFORD, CONN., June 29—The Hartford Auto Parts Corp. has been organized to take over the plant of the defunct Hartford Automotive Parts Co., and is backed by the Spicer Manufacturing Co. of Plainfield, N. J.

The officer personnel is all from New Jersey and is as follows: President, Charles A. Dana, who is the directing head of the Spicer company; vice-president, John S. Berry; treasurer and secretary, Paul D. Hawkins. The directors are Charles A. Dana and Ezra P. Prentice of New York, and Leonore Carbaugh of Colonia, N. J. The reorganization assures the continuance of the works.

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¼-1	$1650a	3¼x5	34x5n	34x5n	W
Acason....RB	1½	1950	3¾x5½	36x3½	36x6	W
Acason....H	2½	2750	4⅜x5¾	36x4k	36x8k	W
Acason....L	3½	3450	4⅝x5¾	36x5k	36x10k	W
Acason....M	5	4350	5 x6½	36x6	40x12	W
Ace	1½	2295	3¾x5½	34x3½k	34x5k	W
Ace....A	2½	2795	4½x5½	36x4k	36x7	W
Acme	½	....	3¾x5	35x5n	35x5n	W
Acme....30	1½	....	3¾x5	34x3½	34x5	W
Acme....40	2	....	3¾x5	34x3½	34x5	W
Acme....60	3	....	4½x5½	36x4	36x7	W
Acme....60L	3	....	4½x5½	36x4	36x7k	W
Acme....90	4½	....	4½x5½	36x5	40x10	W
Acme....125	6½	....	4¾x6	36x6	40x12	W
American....25	2½	3350	4 x6	34x4k	36x4dk	W
American....40	4	4275	4½x6	36x5k	36x5dk	W
Armleder....20	1	2350	3¼x5½	34x3½k	34x5k	W
Armleder....21	1½	2425	3¾x5½	34x3½	34x6	W
Armleder....40	1½	2850	4½x5½	34x3½	36x6	W
Armleder....HW	2½	3200	4½x5½	36x4k	36x7k	W
Armleder....KW	3½	4150	4½x6	36x5	36x5d	W
Atlas....MD	1	1185	3½x5	32x4½n	32x4½n	W
Atterbury....20R	1½	2475	3¼x5	34x3½	34x5	W
Atterbury....7CX	2½	3175	4½x5½	36x4	36x4d	W
Atterbury....7D	3½	3975	4½x5½	36x5	40x5d	W
Atterbury....8E	5	4975	4½x6	36x5	40x6d	W
Autocar....21UF	1½-2	1950	3¼x4½t	34x4k	34x5k	D
Autocar....21UG	1½-2	2050	3¼x4½t	34x4k	34x5k	D
Autocar....27H	2	2950	4 x5½	34x5	36x7	D
Autocar....27K2	2	3075	4 x5½	34x5	36x7k	D
Autocar....26Y	5	3350	4½x5½	34x6	36x12	D
Autocar....26-B	5	4100	4½x5½	34x6	36x12	D
Available....H1½	1½	2475	4 x5	34x3½k	36x5k	W
Available....H2	2	2775	4 x5	34x3½k	6x6k	W
Available....H2½	2½	3160	4 x5	34x4k	36x8k	W
Available....H3½	3½	4175	4½x5½	34x5	40x5d	W
Available....H5	5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x1a	34x5n	34x5n	I
Beck....A Jr.	1¼	1285a	3½x3	32x4½n	32x4½n	I
Beck....B-30	1½	2060	3¾x5	34x5	36x6	
Beck....C-40	2	2150	3¾x5	36x6	36x6	
Beck....D-50	2½	2850	4½x5¼	38x7	40x8	
*Bell....(Penn.)	½	1000a	3½x5	31x4n	31x4n	B
Bell....M (Iowa)	1	1495	3½x5½	35x5	35x5n	W
Bell....E (Iowa)	1½	2100	3¾x5½	34x3½	34x5	I
Bell....O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Belmont	½	725	3¼x4	31x4	31x4	B
Belmont....D	2	2575	4¼x5½	34x3½k	34x6k	I
Belmont....F	3	3500	4 x6	36x5k	36x5dk	I
Bessemer....G	1	....	3½x5	35x5n	35x5n	I
Bessemer....H-2	1½	....	3¾x5	36x3½	36x5	I
Bessemer....J-2	2½	....	4½x5½	36x4	36x4d	I
Bessemer....K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem....KN	1	1195	3½x5	34x4½n	35x5n	B
Bethlehem....CN	2	1595	4 x6¼	34x4½k	34x6k	I
Bethlehem....HN	3	2195	4 x5¼	36x4k	36x8k	I
Brinton....C	1½	1500	3¼x5	4x4	34x5	W
Brinton....D	2½	2250	4½x5½	36x4	36x7	W
Brockway....E	1	....	3¼x5½	35x5n	35x5n	B
Brockway....S-5	1½	....	3½x5	36x3½k	36x5k	W
Brockway....SK	1½	....	4½x5½	36x4	36x6	W
Brockway....KR	2½	....	4½x5½	36x4	36x8	W
Brockway....K-5	2½	....	4½x5½	36x4	36x8	W
Brockway....RT	3½	....	4¾x6	36x5	36x10	W
Brockway....R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway....T-4	5	....	4¾x6	36x6	40x6d	W
*Buick	....	915b	3½x4¾	31x4n	31x4n	B
Capitol....G	1½	2975	3¾x5	35x5	38x7	W
Capitol....H2	2½	3700	4½x6	36x4	38x8	W
Capitol....K2	2½	4250	4½x6	36x6	42x9	W
Capitol....M3	3½	4425	4½x6	36x5	36x10	W
Case	2	....	4½x5¼	36x6	38x7	I
*Chevrolet....G	¾	745	3½x4	31x4n	34x4½n	B
*Chevrolet....T	1	1125	3½x5¼	33x4n	35x5n	W
Chicago....C1	1½	....	4 x5	36x3½k	36x5k	W
Chicago....C2	2½	....	4 x5	36x4k	36x7k	W
Chicago....C3	3½	....	4½x5½	36x5	36x10	W
Chicago....D5	5	....	4½x5½	36x6	40x12	W
Clydesdale....10	¼-1½	1485	3¾x5	34x5n	34x5n	B
Clydesdale....18	¾-1½	1890	3¾x5	34x5	34x5	W
Clydesdale....20	1-1½	2385	3¾x5	34x5	34x5k	W
Clydesdale....42	1½-2	2475	3¾x5	36x3½	36x6	W
Clydesdale....65X	2½-3	3250	4½x5½	36x4	36x8	W
Clydesdale....65EX	2½-3	3450	4½x5½	36x4	36x8	W
Clydesdale....90	3½-4½	4100	4½x5½	36x5	36x10	W
Clydesdale....120	5-6	4500	4¾x6	36x6	40x12	W
Columbia....H	1½	1895	4 x5	35x5	38x7n	I
Columbia....G	2½	2335	4 x5¼	36x4	30x7	I
Comet....T	1½	1950	3¾x5	34x4	34x4	W
Commerce....T	¾-1½	1450	3¾x5	34x4½n	34x4½n	B
Commerce....12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce....16	2	2150	3¾x5	35x5n	36x6	I
Commerce....18	2½	2495	4½x5½	36x6n	36x7n	I
Commerce....25	2½	2425	4½x5½	36x4	36x7	W
Cook....51	2½	3600	4 x5½	36x6n	40x8n	W
Corbitt....E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt....D-22	1½	2200	3¾x5	34x3½	34x4	W
Corbitt....C-22	2	2600	4½x5½	36x3½	36x6	W
Corbitt....B-22	2½	3000	4½x5½	36x4	36x7	W
Corbitt....R-22	3	$3200	4½x5½	36x4	36x8	W
Corbitt....A-22	3½-4	3800	4½x5½	36x5	36x10	W
Corbitt....AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder....AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder....B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder....D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder....C	2½	2750	4½x5½	36x4	36x7	W
Day-Elder....F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder....E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn....E	1	1600	3½x5½	35x5n	35x5n	W
Dearborn....FX	1½	2300	3¾x5½	34x4	34x5	W
Dearborn....F	1½	2180	3¾x5½	34x4	34x5	W
Dearborn....48	2	2590	3¾x5½	34x4½n	34x7	W
Defiance....G	1	1695a	3¾x5	35x5n	35x5n	B
Defiance....D	1½	2095a	3¾x5	35x5n	36x6n	I
Defiance....E	2	2275a	3¾x5	35x5n	38x7n	I
Denby....31	1¼	1485	3½x5	35x5n	35x5n	B
Denby....33	1½	2145	3¾x5	35x5n	38x7n	I
Denby....34	2	2395	3¾x5	36x3½	36x6	I
Denby....35	2½-3	2795	4½x5½	36x4	36x7	I
Denby....27	4	3895	4½x5½	36x5	36x5d	I
Denby....210	5	4295	4½x5½	36x6	40x6d	I
Dependable....A	¾-1	1650	3½x5½	34x5n	36x6n	W
Dependable....C	2	2350	3¾x5½	34x3½	34x5	W
Dependable....D	2½	2650	4 x5½	34x5	36x6	W
Dependable....E	3	2950	4½x5½	36x4	36x7	W
Diamond T....O-8	1-1½	1975	3¾x5½	36x3½n	36x4n	W
Diamond T....T	1½	2250	3¾x5½	36x3½	36x5	W
Diamond T....U	2-2½	2650	4 x5½	36x4	36x7	W
Diamond T....K	3½	3750	4½x5½	36x5	36x5d	W
Diamond T....EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T....S	5	4500	4¾x6	36x6	40x6d	W
*Diebl	A	1	....	34x4½	35x5	I
Diehl	B	1½	....	3½x5	36x6	I
Doane		2½	4100b	4½x5¾	36x5	36x7	C
Doane		3½	5100b	4½x5¾	36x5	36x5d	C
Doane		6	6000b	5 x6½	36x6	40x6d	C
*Dodge Brothers		½	730	3½x4½	32x4n	32x4n	B
Derris....K-4		2-2½	3400	4½x5½	36x4	36x7	W
Derris....K-7		3½	4400	4½x5½	36x5	36x10	W
*Dort	103	½	685a	3½x5	31x4n	31x4n	B
Double Drive....B		3	4000	4½x5½	6	6	W
Duplex	A	2	2775	4 x5½	35x5n	38x7n	W
Duplex	E	3½	3500	4½x5½	36x8	36x8	I
Duty	22	2	1500	3½x5	34x3½	34x5	I
Eagle	101	1½	1875	3½x5½	34x5	34x5	I
Eagle	100-2	2	2275	3½x5½	34x4k	34x7k	I
F. W. D.	B	3	4200	4¾x5½	36x6	36x6	B
Fageol	1½	1½	3000	3¾x5½	34x3½k	34x6k	W
Fageol	2½	2½	3900	4½x5¾	34x4	36x7	W
Fageol	3½	3½	5000	4½x6½	36x5k	40x5dk	W
Fageol	5	5	5700	4½x6½	36x6	40x6d	W
Fargo	R	2	1700	3¾x5	36x4	36x6	I
Federal	SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal	TE	1½	2175	4½x5½	36x3½	36x5	W
Federal	UE	2-2½	2425	4½x5½	36x4	36x7	W
Federal	WE	3½-4	3150	4½x5½	36x5	36x5d	W
Federal	X2	5-6	4500	4¾x6	36x6	40x6d	W
*Ford	TT	1	430	3¾x4	30x3½n	32x4½n	W
Front Drive	C	1½	2800	3¾x5½	5	4	W
G & J**	20	1	2275	3½x5½	34x5n	34x5n	W
G & J**	A	2-2½	3375	4x5¼	36x4	36x7	W
G & J**	B	3½-4	4475	4½x5½	36x5	36x10	W
G.M.C.	K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C.	K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C.	K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C.	K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C.	K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C.	K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C.	K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W.		1½	1850	3¾x5½	35x5	35x5	I
*Garford	15	¾	1800	3½x5⅛	34x5n	34x5n	W
Garford	25-B	1¼	1990	3¾x5⅛	36x6n	36x6n	W
Garford	70-H	2	2750	4½x5½	36x4	36x7	W
Garford	77-D	3½	3750	4½x6	36x5	36x6d	W
Garford	68D	5	4500	5 x6½	36x6	40x6d	W
Garford	150-A	7½	5200	5½x6	36x6	40x7d	C
Gary	F	1-1½	1675	3¾x5	36x3½	36x4	W
Gary	I	2	2250	4 x5½	36x3½	36x6	W
Gary	J	2½	2650	4½x5½	36x4	36x8	W
Gary	K	3½	3650	4½x6	36x5	40x5d	W
Gary	M	5	4100	5 x6½	36x6	40x6d	W
Geraix	M	1½	3100	4 x5½	36x3½	36x7	W
Gersix	K	2½	3500	4½x5½	36x4	36x8	W
Gersix		3½	4500	4½x6	36x5	40x12	W
Graham Bros.		1	1265	3½x4½	33x4½n	34x5n	B
Graham Bros.		1½	1325	3½x4½	33x4½n	36x6n	B
!Gramm-Pion.	10	1	1365	3½x5	33x5n	33x5n	B
!Gramm-Pion.	15	1½	1900a	3¾x5	36x3½k	30x5k	I
!Gramm-Pion.	65	1½	2500a	3¾x5	36x3½k	36x5	W
!Gramm-Pion.	20	2	2925a	4½x5½	36x4k	36x7k	W
!Gramm-Pion.	30	3	3275a	4½x5½	36x4k	36x4dk	W
!Gramm-Pion.	75P	3½	$4225a	4½x5½	36x6n	42x9n	W
!Gramm-Pion.	40	4	3995a	4½x5½	36x5	36x5dk	W
!Gramm-Pion.	50	5-6	4895a	4¾x6	36x6	40x6dk	W
Hahn....B2		1	....	3½x5	34x5k	34x5k	W
Hahn....O		1½	....	3¾x5½	36x3½k	36x6k	W
Hahn....K		2	....	4½x5½	36x7k	36x8k	W
Hahn....L		3	....	4½x5½	36x5k	36x8k	W
Hahn....M		5	....	4½x5½	36x5	36x10	W
Hahn....N		6	....	4¾x6	36x6	40x12	W
Hal-Fur....E		1½	2350	4x5½	34x5n	38x7n	W
Hal-Fur....D		2½	3000	4½x5½	36x6n	36x8	W
Hal-Fur....F		3½	4000	4½x5½	36x6n	40x10	W
Hall	1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall	2½	2½	3275	4½x5¼	36x4	36x6	W
Hall	3½	3½	4100	4½x5½	36x5	36x5d	W
Hall	5	5	5100	4½x5½	36x5	40x6d	W
Hall....7 chain		7	5100	4½x5½	36x5	40x6d	C
Harvey....WOA		2	2650	4½x5½	34x4	34x7	W
Harvey....WFA		2½	2950	4½x5½	36x4	36x7	W
Harvey....WHA		3½	3950	4½x6	36x5	36x5d	W
Hawkeye....K		1½	1850	3¾x5½	34x3½	34x5k	I
Hawkeye....M		2	2650	4½x5	36x4k	36x6k	I
Hawkeye....N		3½	3700	4½x6½	36x5k	36x10k	I
Hendrickson....O		1½	2200	3¾x5½	36x4n	36x5n	W
Hendrickson....N		2½	2690	4½x5¾	36x4k	36x7k	W
Hendrickson....M		3½	3000	4½x5	36x5k	36x5dk	W
Hendrickson....K		5	4000	5 x6½	36x6	40x6	W
Hurlburt....A		1½	2850	4 x5½	34x4	34x5	W
Hurlburt....B		2½	3750	4½x5½	36x4	36x4d	W
Hurlburt....C		3½	4590	4½x6	36x5	36x5d	W
Hurlburt....D		5	5500	4½x6	36x5	40x6d	W
Indep'd't(Iowa), B		1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa).G		1½	2040	3¾x5½	34x3½	34x5	I
Indep'd't(Ia.) .HI		2½	2040	4½x5¾	36x4	36x4	I
Indep'd't(Ohio).F		1½	2385	3¾x5	36x3½	36x5	W
Indep'd't(Ohio) H		2½	3085	4½x5½	36x4	36x4d	W
Indep'd't(Ohio) K		3½	3985	4½x5½	36x5	36x5d	W
Indiana	12	1½	....	3¾x5½	34x3½k	34x5k	W
Indiana	20	2	....	4½x5½	36x4k	36x7k	W
Indiana	25	2½	....	4½x5½	36x4k	36x8k	W
Indiana	35	3½	....	4½x5½	36x5k	36x5dk	W
Indiana	51	5	....	5 x6½	36x5k	40x6dk	W
*International	S	¾	1500	3½x5	34x5n	34x5n	I
International	21	1	1750	3½x5½	36x3½	36x3½	I
International	31	1½	1850	3½x5½	36x3½	36x4	I
International	41	2	2100	3½x5½	36x3½	36x5	I
International	61	3	2400	4½x5	36x4	36x6	I
International	101	5	3600	4½x5	36x5	40x10	I
Jackson....4WD		3½	3850	4½x5½	36x7	36x7	B
Jumbo	15	1½	2295	3¾x5½	36x3½	36x5	I
Jumbo	20	2	2520	3¾x5½	35x5n	38x7n	I
Jumbo	25	2½	2660	4½x5½	36x4	36x7	I
Jumbo	30	3	3060	4½x5½	36x6n	42x9n	I
Jumbo	35	3½	3900	4½x6	36x5	36x10n	I
Jumbo	40	4	4400	4½x6	38x7n	44x10	I
K-Z	1	1	1750	3½x5	34x3½	34x5	W
K-Z	1½	1½	2075	3¾x5	36x4	36x6	W
K-Z	2½	2½	2550	4½x5¼	36x4	36x8	W
K-Z	3½	3½	3350	4½x5½	36x5	40x10	W
K-Z	5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo....T	1	1	1295	4 x5	34x5	34x5n	B
Kalamazoo....G-1	1½	1½	2495	3¾x5	34x4	34x5	W
Kalamazoo....LG	2	2	2645	4 x5	36x4	36x7	W
Kalamazoo....NH	3	3	3145	4 x6	36x5	36x10	W
Kalamazoo....HC	3	3	3350	4½x6	36x5	36x10	W
Kalamazoo....IK	4	4	3845	4½x6	36x5	36x12	W
Kalamazoo....OK	5	5	4350	4½x6	36x6	40x6d	W
*Kelly-S....K-31	1½	1½	2700	3¾x5½	36x3½	36x6	C
*Kelly-S....K-34	1½	2	2700	3¾x5½	36x3½	36x6	W
*Kelly-S....K-38	2½	2½	2900	3¾x5½	36x4	36x4d	W
*Kelly-S....K-35	2½	2½	2900	3¾x5½	36x4	36x4d	C
*Kelly-S....K-40	3½	3½	3900	4½x6½	36x5	40x5d	C
*Kelly-S....K-41	3½	3½	3900	4½x6½	36x5	36x10	I
*Kelly-S....K-42	3½	3½	3900	4½x6½	36x5	40x5d	W
*Kelly-S....K-50	5	5	4400	4½x6½	36x6	40x6d	C
*Kelly-S....K-60	6	6	4600	4½x6½	36x6	40x7d	C
Keystone	40	2	2175	3¾x5⅛	34x5n	38x7n	I
Kimball	AB	2	3075	4 x6	36x4	36x7	W
Kimball	AC	2½	3975	4½x6	36x4	36x8	W
Kimball	AK	3	4500	4½x6	36x4	36x10	W
Kimball	AE	4	5000	4¾x6	36x5	40x12	W
Kimball	AF	5	5500	5 x6	36x6	40x7d	W
*Kissel	Express	1	1585	3½x5½	34x5n	34x5n	W
Kissel	Utility	1½	1975	3½x5½	36x3½	36x5	W
Kissel	Freighter	2½	2875	4½x5½	36x4	36x7	W
Kissel	H. D.	4	3675	4½x5½	36x5	36x5d	W
Kleiber	AA	1	2200	3¾x5½	34x3½k	34x5k	W
Kleiber	A	1½	3100	4½x5½	36x3½k	36x6k	W
Kleiber	BB	2	3600	4½x5½	36x4k	36x7k	W
Kleiber	B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber	C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber	D	5	5300	5 x6½	36x6	40x12	W
Koehler	D	1½	2150	3½x5	34x3½	34x5	W
Koehler	M	2½	3175	4 x5½	36x4	36x7	W
Koehler	MCS	2½	3275	4 x5½	36x4	36x7	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—speed truck or delivery wagon. **—Canadian Make. trac.—tractor.

1—Gramm-Pioneer. 2—Kelly-Springfield.

Passenger car specifications on page 50

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Koehler.....F	3½	$4470	4½x5½	36x5	36x10	W
Koehler,MT. Trac	5	3275	4 x5½	36x4	36x7	W
Krebs-Collier..23	¾	1260	3¾x5	34x4½	34x4½	B
Krebs-Collier..24	1	1565	3¾x5	34x5	34x5	W
Krebs-Collier..45	1½	2125	4½x5½	36x4	36x7	W
Krebs-Collier..75	2½	2375	4½x5½	36x4	36x8	W
Krebs-Collier.110	3½	2975	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1025	3¼x4½	34x5n	34x5n	B
Larrabee.....U	1½	2400	3¾x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½	3100	4¼x5½	36x4	36x7	W
Larrabee.....K-5	2½-3	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½	4000	4½x5½	36x5	36x5.1	W
Larrabee.....W	5	4800	4¼x6	36x6	40x6d	W
Maccar.....L	1½	2700	4½x5½	36x4	36x6	W
Maccar.....H-A	2	3400	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	3400	4½x5½	36x4	36x5d	W
Maccar.....H-3	4	4200	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	4950	4¼x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack...AB D.R.	1½	3150	4 x5	36x4	36x3½	D
Mack...AB Chain	1½	3000	4 x5	36x4	36x3½d	C
Mack...AB Chain	2	3300	4 x5	36x4	36x4d	C
Mack....AB D.R.	2	3750	4 x5	36x4	36x4d	D
Mack....AB D.R	2½	3850	4 x5	36x4	36x4d	D
Mack...AB Chain	2½	3400	4 x5	36x4	36x4d	C
Mack...AC Chain	3½	4950	5 x6	36x5	40x5d	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack....AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4 x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
Mapleleaf...AA**	2	3775	4 x5¼	36x4	36x7	W
Mapleleaf...BB**	3	4350	4¼x5½	36x4	36x4d	W
Mapleleaf...CC**	4	5100	4½x5½	36x5	36x5d	W
Mapleleaf..DD**	5	6200	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	4¼x5½	34x3½	34x5	W
Master.....JD	1½	2590	4¼x5½	34x3½	34x5	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2830	4¼x5½	34x4	36x7	W
Master.....DD	2½	3190	4¼x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x5d	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	5	3390	4¼x5½	34x4	36x7	D
*Maxwell.....1½	1½	912	3⅝x4½	32x3n	32x4n	W
Menominee...HT	1-1¼	2000	3¼x5	34x3½	36x5	W
Menominee.....H	1½	2475	4 x5	36x3½	36x5	W
Menominee.....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee.....G	3½	3800	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4¾x6	36x6	40x12	W
Meline.....10	1½	1985	3½x5	34x5n	36x6n	I
3Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4¼x5¼	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-5	4600	4¼x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3¾x5¼	35x5	36x6	I
Nash.....3018	2-2½	2150	3¾x5¼	36x6	40x8	I
Nash.....Quad.	2-2½	2750	4¼x5½	40x8	40x8	I
Nash..3018, LWB	2-2½	2200	3¾x5¾	36x6	40x8	I
Nash Quad. LWB	2-2½	2800	4¼x5½	40x8	40x8	I
Nash.....5018	2½	2250	3¾x5¼	34x4	34x6	I
4Nelson.....G2	1½	....	4¼x5¼	36x3½	36x6	W
4Nelson.....G3	2½	....	4¼x5¼	36x4	36x7	W
4Nelson.....G4	3½	....	4½x5½	36x5	36x5.1	W
4Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5¼	36x4k	36x7k	W
Netco .....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5¼	36x4k	36x7k	W
Noble B30	1½	....	3¾x5¼	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4¼x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4½x5½	34x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E.Spec	1½	2285	3¾x5¼	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	36x3½	36x5	W
Ogden.....E	2½	....	4¼x5½	36x4	36x8	W
Old Hickory...W	1	1775	3¾x5	36x3½k	36x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4¼x6	34x4	36x4d	W
Old Reliable....C	3½	4250	4¼x6	36x5	36x5d	W
Old Reliable....D	5	5250	4¼x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6¼	36x6	40x7d	C
*Oldsmobile Econ	1	$1095	3¼x5¼	35x5n	35x5n	I
Olympic.....A	2½	3200	4¼x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	2½	3700	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	3250	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	3400	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3850	4 x5½	38x7n	38x7n	B
Oshkosh.....BB	2½	4000	4 x5½	38x7n	38x7n	B
*Overland.....4	½	450	3⅝x4	30x3½n	30x3½n	B
Packard.....EC	1½-3	3100	4¼x5½	36x4	36x7	W
Packard.....EX	1½-3	3100	4¼x5½	36x6n	40x8n	W
Packard.....ED	2-4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	4-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige.....54-20	2½	2420	4¼x5½	34x4	34x8	W
Paige.....51-13	3½	3115	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¾	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot.....Revere	1	1380	3¼x5	35x5n	35x5n	W
Patriot.....Lincoln	2	2050	4 x5¼	34x3½	34x5	W
Patriot .Washgt'n	3	2900	4½x5½	36x4	36x7	W
Pierce-Arrow.....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow.....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow.....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3⅝x5	36x4	36x6	
Pittsburgher.....	3	3800	4½x5¼	36x5k	36x8	W
Power.....F	2	3150	3¾x5¼	36x5	36x7	W
Power.....C	3½	4250	4¼x5½	36x5	40x10	W
*Rainier.....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4¼x5¼	34x4	34x6	W
Rainier.....R-20	2½-3	....	4½x5¼	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	36x6	40x6d	W
Ranger..TK-20-2	1½	2450	3¾x5	36x6n	38x7n	W
*Reo.....F	1-1½	1245	4¼x4½	31x4½n	34x4½n	B
Reliance.....10A	1½	2400	4 x5¼	36x3½	36x5	I
Reliance.....20B	2½	3100	4¼x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3¾x5	34x3	34x4	I
Republic..10 Exp	1	1695	3¾x5	35x5n	34x5n	I
Republic.....11X	1½	1795	3¾x5	34x3½	34x6	I
Republic.....19	2½	2195	4¼x5¼	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rowe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rowe....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rowe....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rowe....G.P.W.	3	5250	3¼x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4¼x6	36x5	36x6d	W
Rowe.....F. W.	5	5500	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Sanford W-15	1½	2150b	3¾x5	36x3½k	36x5k	
Sanford.....25	2½	....	4¼x5¼	36x4	36x4d	W
Sanford.....35	3½	....	4½x5½	36x5	36x5d	W
Sanford.....50	5	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ton	3	3800	4¼x5½	36x5	36x5d	W
Schacht ...4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4100	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3400	3¾x5¼	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½-2½	3350	4¼x5¼	34x5	38x7	W
Selden.....50	2½	3250	4¼x5¼	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4¾x6	36x6	40x12	W
Seneca.....M	½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3¼x4½	32x4½n	32x4½n	B
*Service.....15	1¼	....	3⅝x5	34x4½n	35x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4¼x5½	35x5n	38x7n	W
Service.....52	3	....	4¼x5½	36x4	36x8	W
Service.....72	3½	....	4¼x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	$1950	3¾x5 1	34x5n	36x6n	W
Signal.....H	1½	2450	4¼x5¼	34x4	36x6	W
Signal.....J	2½	2875	4½x5¼	34x4	36x8	W
Signal.....M	3½	3675	4½x5½	36x5	40x5d	W
Signal.....R	5	4400	4¾x6	36x6	40x6d	W
Southern.....10	1	2090	3¾x5	34x3½	34x4	W
Southern.....15	1½	2590	3¾x5⅛	36x6n	34x4	W
Southern.....20	2	2990	4¾x5¼	36x6n	40x8k	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5¼	36x4k	36x7k	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x10	W
Standard.....5-K	5-7	4400	4¾x6	36x6	40x12	W
Sterling.....1½	1½	2885	4 x5¼	36x3½k	30x5k	W
Sterling.....2	2	3085	4 x5¾	36x4k	30x6k	W
Sterling.....2½	2½	3290	4⅜x5¼	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6¼	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6¼	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6¼	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6¼	36x6	40x7d	C
*Stewart.....14	¼-1½	1245	3⅝x5¼	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3⅝x5⅛	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3¾x5	34x3½	34x5	I
Stewart.....7	2-2½	2190	4⅛x5¼	34x4	34x7	I
Stewart.....7-X	2½-3	2390	4¼x5½	34x4	34x7	I
Stewart.....10	3½-4	3190	4½x5½	36x5	36x5d	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x5d	I
*Stoughton.....C	¾	1240	3½x5	34x4½n	34x4½n	W
Stoughton.....A	1	1790	3¾x5¼	34x5	34x5	W
Stoughton.....B	1½	2150	3¾x5¼	36x3½	30x5	W
Stoughton.....D	2	2490	4 x5⅛	36x4	36x7	W
Stoughton.....F	3	3150	4¼x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4¼x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Thomart.....	1¼	1795a	4 x5¼	34x5	34x5	C
Tiffin.....GW	1½	2100	4⅛x5¼	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5¼	36x4	36x3½d	W
Tiffin.....PW	3½	3600	4½x5½	36x5	40x5d	W
Tiffin.....F50	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....F60	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4¼x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4⅛x5¼	35x5	38x7	W
Tower.....H	2½	3200	4½x5¼	30x4	36x7	W
Tower.....G	3½	4100	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895	3¾x5	36x4	36x7	I
*Transport.....15	1	1295a	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5⅛	34x3½k	34x4k	I
Transport.....35	2	1885	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4⅛x5¼	36x5k	36x8k	I
Transport.....60	3½	2585	4¼x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Trayler.....B	1½	2390	3¾x5⅛	34x3½	34x5	W
Traylor.....C	2-2½	2850	4 x5½	36x4	36x7	W
Traylor.....D	3-3½	3300	4¼x5½	36x4	36x8k	W
Traylor.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3¾x5	34x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3¾x5¼	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5¼	36x4k	30x6k	I
Triangle.....B	2½-3	2585	4 x5¾	36x4k	36x7k	I
Twin City...B.W.	2	2750	4 x5½	36x6	40x8	I
Twin City...A.W.	3½	3950	4¼x6	36x5	40x5d	W
5Twin City.....B	3½	....	5½x6	36x6	36x6	I
5Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4¼x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4¼x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4¼x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4¼x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
Union.....FW	2½	3190	4 x6	36x5k	36x8k	D
Union.....HW	4	4650	4½x6	36x6	40x12	D
Union.....JW	6	5800	5 x6	36x6	40x14	D
United.....A	1½	2415	3¾x5¼	36x3½k	34x5k	W
United.....B	2½	3150	4¼x5½	36x4k	36x7k	W
United.....C	3½	3975	4¼x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States .U	1	1875	3⅝x5⅛	34x5n	34x5n	B
UnitedStates,NW	1½	2225	3¾x5	36x5	36x3½	W
United States...N	1½	1975	3¾x5	36x3½k	36x5k	I
United States...R	3	3075	4 x5¼	36x4	36x4d	W
United States...S	4	3875	4½x5½	36x5	36x5d	W
United States...T	6	4850	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Veteran.....M**	1½	2699	3¾x5¼	35x5n	35x5n	W
Veteran.....P**	2	3699	4¼x5½	36x4	36x7	W
Veteran.....R**	3	4200	4¼x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	½	1050	3½x4½	31x4n	31x4n	W
Vim.....30	½	1175	3¾x4½	32x4½	32x4½	W
Vim.....31	1	1975	3¾x5⅛	35x5n	35x5n	W
Vim.....22	2	3150	3¾x5⅛	36x4	36x8	W
Vim.....23	3	3950	4¼x5½	36x5	36x5 l	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.

r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. n—price includes several items of equipment. b—price includes body. *—speed truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Walker-JohnsonA	2	$2250	3½x5	34x3½	34x6	W
Walker-JohnsonB	3	2750	4½x5½	36x4	36x8	W
Walker	5	4850	4½x6½	36x6	40x6d	W
*Watson	B	1	1865a	3¾x5½	35x5n	35x5n	W
Watson	N	3½	4250	4½x5½	36x5	36x10	W
Western	W1½	1½	2550	4½x5½	36x3½k	36x5k	W
Western	L1½	1½	2550	3¾x5	36x3½k	36x5k	W
Western	W2½	2½	3250	4½x5½	36x4	36x7	W
Western	L2½	2½	3250	4½x6	36x4	36x7	W
Western	W3½	3½	4250	4½x6	36x5	40x5d	W
*White	15	¾	2400	3¾x5½	34x5n	34x5n	B
White	20	2	3250	3¾x5½	36x4k	36x7	D
White	40	3½	4200	3¾x5¾	36x5	40x5d	D
White	45	5	4500	4½x5¾	36x6	40x6d	D
White Hick	E	1	1225	3¾x5	34x5n	34x5n	W
White Hick	H	1½	1375	3¾x5	36x3½	36x5	W
White Hick	K	2½	1675	4½x5½	36x4	36x5	W
Wichita	K	1	1875	3¾x5½	36x3½	36x4k	W
Wichita	M	2	$2400	3¾x5½	36x3½k	36x6k	W
Wichita	RX	3	3200	4¾x5¾	36x4k	36x8k	W
Wichita	O	4	3500	4½x6½	36x5k	36x5k	W
Wilcox	AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox	BB	1½	2550	4½x5	36x4	36x5	W
Wilcox	D	2½	3000	4½x5	36x4k	36x3½dk	W
Wilcox	E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox	F	5	$4350	4¾x6½	36x5	40x6d	W
Wilson	F	1½	2270	3¾x5	36x3½	36x5	W
Wilson	EA	2½	2825	4½x5½	36x4	36x7	W
Wilson	G	3½	3685	4½x5½	36x5	36x5	W
Wilson	H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin	A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin	B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin	C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin	D	3½	3000	4¾x5¾	36x6n	40x8	W
Wisconsin	E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin	F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will	N	1½	2250	3¾x5	36x3½k	36x5k	W
Witt-Will	P	2½	2750	4½x5½	36x3½k	36x7k	W
Wolverine	J	1	2125	3½x5	34x3	34x4	I
Wolverine	J	1½	2375	3¾x5	34x3½	34x5	I
Wolverine	J	2	2610	3¾x5	34x4	34x7	I
Wolverine	J	2½	3425	4½x5½	36x5	36x10	I
Wolverine	L	3½	4100	4½x5½	36x5	36x10	I

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price icludes several items of equipment. b—price includes body. *—speed truck or delivery wagon. **—Canadian Make. trac—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	IeR.	4-3¼x4½	Gas.	1
Allis-Chalm..B	6-12	325	2	LeR.	4-3¼x4½	G	1
Allis-Chalm...	15-25	1185	4	Midw.	4-4½x5¼	Gas.	3
Allis-Chalm...	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
†Allis-Chalm..	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork...Z-G	14-28	1695	4	Own	4-4¾x6	GorK	3
Allwork.....C	14-28	1395	4	Own	4-5 x6	GorK	3
AndrewsKin.D	18-36	2500	4	Clim.	4-5 x6½	GorK	4
ARO..1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T....	15-30	2200	4	Clim.	4-5 x6½	G,K	4
Aultman-T....	22-45	3420	4	Own	4-5½x8	G,K	6
Aultman-T....	30-60	4500	4	Own	4-7 x9	G,K,D	8-10
Automot. B-3.	12-24	1250	4	Here.	4-4 x5½	Gas.	2-3
Avery,SR.Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery..Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4½x6	G,K,D	3-4
§Avery.....	....	....	*	Own	4-4x5½	G,K,D	3
Avery.....	12-25	....	4	Own	2-6½x7	G,K,D	3-4
Avery.....	14-28	....	4	Own	4-4½	G,K,D	3-4
Avery.....	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7½x8	G,K,D	8-10
Bates Mule .H	15-25	....	4	Mdlw	4-4½x5¼	Gas.	3
Bates Mule. F	18-25	....	*2	Midw	4-4½x5¼	Gas.	3
‡Bates MuleG	25-35	....	*2	Midw	4-4½x6	Gas.	..
Beeman.....G	2-4	240	4	Own	1-3½x4½	Gas.	..
Best.....	18-30	3100	*2	Own	4-4¾x6½	G,K,D	4
Best.....	60	5450	*2	Own	4-6½x8½	G,K,D	8-9
Bering.....	5-10	395	4	LeR.	4-3½x4½	G	..
Bering...1921	.....	1850	3	Wauk	4-4¾x5¾	GorK	2
Bern-Oil. 1922	15-30	1435	4	Own	2-6¾x7	Ker.	3-4
Capital.....	15-30	1000	2	Own	4-4¾x6	Gas.	3
Case.....	10-18	700	4	Own	4-3½x5	GorK	2
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	3
Case.....	15-27	1320	4	Own	4-4½x6	GorK	3-4
Case.....	22-40	2550	4	Own	4-5½x6¾	GorK	4-5
Case....40-72	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar .5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Caterpillar T35	15-25	....	2	Own	4-4 x5½	Gas.	3
Centaur.....	5-2½	345	2	N Way	2-4½x4½	GorK	1
Chicago....40	40	2500	4	Own	4-4½x6	Gas.	4
Cletrac.....F	9-16	595	*2	Own	4-3¼x4¼	G,K,D	2
Cletrac.....W	12-20	1345	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Depue.....A	20-30	2500	4	Buda	4-4½x6	Gas.	4
Dill.....D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dill.....R.W.	20	2980	4	Midw.	4-4½x6	Gas.	3
Do-it-All....A	3-6	495	..	Own	1-4½x5	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B.....AA	12-20	1095	4	Own	4-4½x5	G,K,D	3
Fageol.....D	9-18	1525	4	Lyc.	4-3½x5	Gas.	2
Farm Horse.B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Farquhar.....	15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar.....	18-35	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar.....	25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch..4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	$ 395	4	Own	4-4x5	G,K	2
Fox.....E	20-40	2390	4	Own	4-5½x7½	G or K	4
Franklin....G	18-30	4000	*2	Clim.	4-5 x6½	G or K	3-4
Franklin....C	18-30	3350	*2	Clim.	4-5 x6½	G or K	3 4
Franklin...G2	18-30	4350	2	Clim.	4-5 x6½	G or K	3-4
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt...A	18-30	2150	4	Wauk.	4-4¾x6¾	G or K	4
Gray.....1920	18-36	....	3	Wauk	4-4¾x6¾	Gas.	4
GL Western St	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr..20	20	765	4	Own	2-5¼x6½	K.D.	2
Hart-Parr..30	30	895	4	Own	2-6½x7	K.D.	3
‡Hart-Parr....	....	1695	4	Own	6½x7	K.D.	..
Heider.....D	9-16	870	4	Wauk	4-4½x5¾	G,K	2
Heider.....C	12-20	995	4	Wauk	4-4¼x6¾	G,K	3
Heider...Colt	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4.	12-25	1185	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4	15-30	1885	4	Midw.	4-4½x6	Gas	3
Illinois.....C	15-30	....	4	Clim.	4-5 x6½	G,K	4
Imperial....E	40-70	4500	4	Own	4-7½x9	G,K,D	10
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International .	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†790	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5¼x8	G,K,D	4
J-T.....N	20-40	....	*2	Clim.	4-5x6½	G,K,D	3-4
Lauson.....5	12-25	1495	4	Midw.	4-4½x5¼	Gas.	3
Lauson.....20	15-25	1495	4	Beav.	4-4½x6	G or K	3-4
Lauson.....21	15-30	1875	4	Beav.	4-4¾x6	G or K	3-4
†Lauson Read	15-30	2100	4	Beav.	4-4¾x6	K	..
Leader.....B	12-18	685	4	Own	2-6 x6½	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
†Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn.....H4J	40-	4500	*	Cont	4-4½x5½	Gas	4
Linn.....W	60	5000	*	Wauk	4-5 x6½	Gas	6
Little Giant, B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant, A	26-35	3300	4	Own	1-5½x6	K	6
Lombard.1922	85-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
Master Jr.....	5-10	585	..	LeR.	-2¾x4	Gas.	1
MerryGar1922	2	210	2	Evin	1-2¾x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Mod.D	22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD	35-70	3850	4	Own	4-7½x9	G or K	8-9
Mohawk .1922	8-16	650	2	Light	4-3½x4½	K or G	1-2
Moline Univ D	9-18	....	2	Own	4-3½x5	Gas.	2-3
Moline Orch..	9-18	....	2	Own	4-3½x5	Gas.	2-3
Motor Macult,	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	425	4	Own	2-3¾x4	Gas.	1
Nichols-Shep.	20-42	2650	4	Own	8 x10	G or K	3-6
Nichols Shep.	25-50	3000	4	Own	9 x12	G or K	4-7
Nilson Senior..	20-40	1975	5	Wauk	4-5 x6¼	G,K	4
Oil Pull.....K	12-20	....	4	Own	2-6 x8	K,D	3
Oil Pull.....H	16-30	....	4	Own	2-7 x8½	K,D	4
Oil Pull ....G	20-40	....	4	Own	2-8 x10	K,D	5-6
Oil Pull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
Oldsmar GarK	2½-5	225	4	Own	1-5½x5½	Gas.	1
Oshkosh....M	6-12	650	2	Own	2-4 x6	G,K	1
Oshkosh....G	12-24	985	2	Own	2-6 x7	G,K	3
Peoria.....L	12-25	$1600	4	Clim.	4-5 x6½	G,K	3
Pioneer....G	18-36	1750	4	Own	4-5½x6	G,K,D	4
Pioneer....C	40-75	3550	4	Own	4-7 x8	Gas.	10
Plowman....A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable.....	10-20	390	4	Own	2-6 x7	Ker.	2
Rex.....	12-25	1600	4	Wauk	4-4¼x5¾	G or K	3
Russell.....	12-24	1500	4	Own	4-4¼x5¾	G or K	2-3
Russell.....	15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson....M	.....	445	4	Own	4-4 x5½	G,K	2
Sandusky,...J	10-20	1250	4	Own	4-4½x5¼	G,K,D	2
Sandusky...E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
Shelby.....D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby.....C	9-18	....	4	Wauk	4-3¾x5¼	G or K	2
Steady Pull..	12-24	1485	4	Own	4-4 x5	Gas.	3
Stinson....4E	18-36	1835	4	Beav.	4-4¾x6	G,K	4
Tioga.....3	18-32	....	4	Wisc.	4-4½x6	Gas.	3-4
Topp-Stewart.	30-45	....	4	Wauk	4-4¾x6¾	Gas.	3-4
Tore Cultivater	6	750	3	LeR	4-3½x4½	Gas.	2
ToreTractor'22	6-10	495	3	LeR	4-3½x4¾	Gas.	2
Townsend....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend....	25-50	2500	2	Own	4-8½x10	Ker.	4-8
Traction Meter	40-50	....	4	..	8-3½x5	Gas.	4-5
Traylor....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar....10	25-40	3750	*2	Wauk	4-5 x6½	G or K	4
Twin City.....	12-20	1200	4	Own	4-4¼x6	G,K	3
Twin City.....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City.....	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle Sam C20	12-20	1295	4	Weid.	4-4 x5½	G	2-3
Uncle Sam B19	20-30	1985	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam D21	20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utilitor....501	2½-4	295	4	Own	1-3½x4½	G	1
Utilitor...501A	2½-4	340	4	Own	1-3½x4½	G	1
Vim.....B	15-30	1190	4	Wauk	4-4¾x5¾	G,K	3
Wallis.....K	15-25	†995	4	Own	4-4¼x5¾	G,K	3
Waterloo....N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore 21-22	12-25	1185	4	Wauk	4-4 x5¾	G,K	3
Whitney....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin...E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin...F	20-40	2050	4	Wauk	4-5 x6¼	G or K	4
Wisconsin,..H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba....12-20	12-20	2400	*2	Wisc.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4½x6	G,K,D	..
Yuba....20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba.....	25-40	4750	*2	Yuba	4-5½x7	D	..
Zelle.....	12-25	....	4	Buda	4-4½x5½	G or K	3

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. Clim.—Climax. Cont.—Continental. Dom.—Domas. Evin.—Evinrude. Here.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. T.C.—Twin City. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. ¶§Track Runner. ‡Industrial Tractor.

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Specifications of Current Passenger Car Models

NAME AND MODEL	Engine Make	Cylinders, Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Ace.....F	G-B..	4-3½x5	114	32x4	$1295	$1295	....	....	$2295
Ace.....L	H-S..	6-3½x5	117	32x4	2260	2260	....	....	3680
Ace.....C	Cont..	6-3⅝x5¼	123	33x4½	2975	2975	....	....	4500
Ambassador.....R	Cont..	6-3⅝x5¼	136	33x5	....	b1500	$4500	....	6500
American.....C	H-S..	6-3¼x5	127	33x4½	b1995	1850	1925	....	2695
Anderson.....Series 40	Cont..	6-3¼x4½	120	33x4	2195	1650	1795	$2450	2550
Apperson.....8-21-S	Own..	8-3¼x5	130	34x4½	....	2620	2645	3625	3695
Auburn.....6-51	Cont..	6-3½x4½	121	32x4	1575	1575	1615	2275	2395
Bell.....4-32	H-S..	4-3½x5	114	31x4	1095	1095	....	....	....
Bell.....6-50	H-S..	6-3¼x5	124	32x4	1545	1545	....	....	....
Biddle.....B1 & B5	Buda..	4-3¾x5⅛	121	32x4	2950	b2950	....	3950	3950
Brewster.....91	Own..	4-4 x5½	125	32x4½	5000	5000	....	....	7000
Buick..1922-34-35-36-37	Own..	4-3⅜x4¾	109	31x4	895	935	....	1295	1395
Buick.....1922-44-5-6-7	Own..	6-3⅜x4½	118	33x4t	1395	....	....	1885	2165
Buick.....1922-48-9-50	Own..	6-3⅜x4½	124	34x4½	n1785	n1785	1585	2075	2375
Cadillac.....61	Own..	8-3⅛x5⅛	132	33x5	3100	3150	3150	d3875	4100
Case.....X	Cont..	6-3¼x4½	122	32x4½	....	1890	....	....	2790
Case.....V	Cont..	6-3½x5¼	126	34x4½	....	....	1935	2585	2990
Chalmers.....1922	Own..	6-3¼x4½	117	32x4	1345	1395	1495	1995	2295
Chalmers.....1922	Own..	6-3¼x4½	122	32x4	....	....	1495	....	....
Chandler.....Six	Own..	6-3½x5	123	33x4	1595	1595	1695	2295	2395
Chevrolet.....490	Own..	4-3½x4	102	30x3½	525	525	....	{850 k720	875
Chevrolet.....FB	Own..	4-3½x5¼	110	32x4	975	975	....	1575	1575
Cleveland.....41	Own..	6-3 x4½	112	32x4	1175	1195	....	1550	1595
Cole.....890	Nort..	8-3½x4½	127¼	33x5	2485	b2485	2485	3185	3685
Columbia....Challenger	Rut..	6-3½x5	115	32x4	....	1195	....	1995	1995
Columbia.....DeLuxe	Cont..	6-3½x4½	115	32x4	1475	1475	....	2295	2350
Columbia.....Light Six	Cont..	6-3½x4¼	115	31x4	995	985	....	....	1395
Comet.....C-53	Cont..	6-3½x5¼	125	33x4½	....	1985	2085	....	2985
Crawford.....22-6-60	Cont..	6-3½x5¼	122½	32x4	3000	3000	3000	....	4500
Daniels.....D-19	Own..	8-3½x5¼	132	34x4¼	a4350	b4350	4350	5250	5950
Davis.....71	Cont..	6-3½x4¼	114	31x4	....	1195	....	....	....
Davis.....61-67	Cont..	6-3½x4½	120	32x4	1595	1595	b1695	2095	2195
Dixie Flyer.....H-S-70	H-S..	4-3½x5	112	32x4	1175	1175	b1295	1545	1595
Dodge Brothers.....Own..		4-3⅞x4½	114	32x4	850	880	....	{1280 980h	1440
Dorris.....6-80	Own..	6-4 x5	132	33x5	....	b3950	3950	4985b	5750
Dort.....19-14	D-Ly.	4-3½x5	108	31x4	885	885	....	{1315 1065k	{1445 1115k
Driggs.....Own..		4-2⅝x4½	104	30x3½	1275	1275	....	....	1975
Duesenberg...Straight 8	Own..	8-2⅞x5	134	33x5	6500	6500	6750	7800	7800
Du Pont.....A	Own..	4-3½x5½	124	32x4½	3000	3200	....	3800	4000
Durant.....A-22	Cont..	4-3⅝x4¼	109	31x4	n890	890	....	1365	1365
Durant.....B-22	Anst..	6-3½x4½	123½	32x4½	1600	1650	....	2250	2400
Earl.....40	Own..	4-3 7/16x5¼	112	32x4	1485	1095	950u	....	1795
Elcar.....K-4	Lyc..	4-3½x5	118	33x4	1095	1095	n1095	1345	....
Elcar.....7-R	Cont..	6-3¼x4½	118	33x4	1395	1395	n1395	2065	2165
Elgin.....K-1	Falls..	6-3½x4¼	118	33x4	1345	1295	b1345	2195	2195
Essex.....Own..		4-3⅝x5	108½	32x4	....	1095	....	1295	{1895 1345k
Ford.....T	Own..	4-3¼x4	100	30x3½	r319	s348	u285	580	645
Franklin.....9-B	Own	6-3¼x4	115	32x4	1900	1950	u1750	2750	2850
Gardner.....T-R & G	Lyc..	4-3½x5	112	32x4	895	895	....	....	1595
Grant.....Own..		6-3½x4½	116	32x4	1385	1385	....	1895	1945
Gray.....Own..		4-3⅝x4	100	30x3½	....	490	....	....	760
H.C.S.....Series 3	Weid..	4-3⅝x5½	120	32x4½	2400	2400	....	2850	3150
Halladay.....4	Own..	4-3½x5	115	32x4	1095	1095	....	1990	2085
Halladay.....6	Own..	6-3½x5	115	32x4	1595	1595	....	2295	2395
Handley-Knight.....Own..		4-4½x4½	125	32x4½	....	....	2650	3450	3450
Hanson.....30	Cont..	6-3½x4¼	112	31x4	....	995	....	....	....
Hanson Six.....60	Cont..	6-3¼x4½	121	32x4	1595	1595	1795	b2475	2585
Hatfield.....A-42	H-S..	4-3½x5	115	32x4	....	1345	b1315	1950	1950
Haynes.....75	Own..	6-3½x5⅞	132	34x4½	2305	b2395	2395	....	3395
Haynes.....55	Own..	6-3½x5	121	33x4	1645	1595	....	2295	2595
Haynes.....48	Own..	12-2¾x5	132	34x4½	2895	3595	2895	....	3895
Helmes.....Series 4	Own..	6-3¼x4¼	126	34x4½	....	b2500	2500	b3300	3600
Hudson.....Super 6	Own..	6-3½x5	126	34x4½	....	b1695	1745	2570	{2650 1795k
Hupmobile.....Series R	Own..	4-3¼x5½	112	32x4	1250	1250	....	1835	1935
Jackson.....638	Cont..	6-3¼x4½	121	32x4½	....	1485	b1685	2985	2985
Jewett.....Six	Own..	6-3½x5	112	31x4	1065	1065	....	....	1395
Jordan.....MX	Own..	6-3 1/16x4¾	120	32x4	1895	1795	....	2785	2785
Kenworthy.....8-90	Own..	8-3 x5¼	130	32x4½	5000	5000	5250	6000	6000
King.....K	Own..	8-3 x5	120	32x4½	1795	1795	b1795	2400	2550
Kissel.....45	Own..	6-3 1/16x5½	124	32x4½	n2385	1885	2385	b2975	3075
Kline Kar.....6-55-K	Cont..	6-3¼x4½	121	33x4	1790	1790	1790	2850	2890
LaFayette.....Own..		8-3¼x5¼	132	33x5	3985	b4090	4090	5000	5175
Leach.....999	Own..	6-3¼x5¼	134	32x4½	6500	6500	6500	6500	6500
Lexington.....22	Anst..	6-3½x4½	123	32x4½	....	1745	....	....	....
Lexington.....T-22	Anst..	6-3½x4½	128	32x4½	....	....	2285	....	3350
Lexington.....ST-22	Anst..	6-3½x4½	122	32x4	....	2100	....	....	....
Liberty.....10-D	Own..	6-3⅜x5	117	32x4	1295	1295	b1345	2085	2245
Lincoln.....Own..		8-3⅜x5	130	33x5	$3800	b3800	$3300	$3900	$4200
Locomobile.....48	Own..	6-4½x5½	142	35x5	....	b7600	7600	10500	11000
Maibohm.....B	Own..	6-3½x4½	116	32x4	1395	1395	b1495	2165	$2165
Marmon.....34	Own..	6-3⅝x5½	136	32x4½	3385	b3185	3185	3985	4235
Maxwell.....Own..		4-3⅝x4½	109	31x4	885	885	....	1385	1485
McFarlan.....1922	Own..	6-4½x6	140	33x5	6300	b6300	6300	7500	7500
Mercer.....Series 5	Own..	4-3¾x6¾	132	32x4½	3950	b3950	c3950	4850	5250
Merit.....Cont..		6-3½x4½	119	32x4	1895	1895	....	....	....
Mitchell.....F-50	Own..	6-3½x5	120	33x4	a1490	1490	b1690	2050	2275
Mitchell.....F-50	Own..	6-3½x5	127	32x4½	....	....	1690	....	....
Monroe.....1922-S-9	Own..	4-3¼x4½	115	32x3½	875	875	....	....	....
Moon.....6-40	Cont..	6-3⅛x4¾	115	31x4	....	1295	....	....	1695
Moon.....6-48	Cont..	6-3¼x4½	122	32x4	1785	1785	2285	2785	2785
Nash.....491-96-97	Own..	6-3½x5	121	33x4	1360	1390	b1540	....	....
Nash.....692-94-95	Own..	6-3¼x5	127	34x4½	....	....	1540	2090	2390
Nash Four.....41-4	Own..	4-3⅝x5	112	33x4	965	985	....	{1485 1295k	{1645 1350k
National.....BB	Own..	6-3½x5¼	130	32x4½	a2475	b2475	2375	3725	b3250
Nema.....3C	Cont..	6-3½x4½	128	32x4½	2000	b2100	c2200	....	3200
Nema.....1D	Bea..	6-3½x5½	128	32x4½	3000	b3100	c3200	....	5500
Norwalk.....430-K.S	Lyc..	4-3½x5	116	32x3½	....	1035	....	....	....
Oakland.....6-44	Own.	6-2 11/16x4¾	115	32x4	1120	1145	b1265	{1685 1285k	1785
Ogren.....6 T De Luxe	Cont..	6-3⅝x5¼	134	33x5	b3750	3750	3850	4500	4800
Oldsmobile.....43-A	Own..	4-3 11/16x5½	115	32x4	....	1145	b1145	1645	1795
Oldsmobile.....46	Own.	8-2⅞x4¾	122	33x4½	....	b1735	1735	....	2635
Oldsmobile.....47	Own.	8-2⅞x4½	115	32x4	1595	b1595	....	2145	2295
Overland.....4	Own..	4-3⅜x4	100	30x3½	550	550	....	850	895
Packard.....Single-Six	Own..	6-3⅜x5	126	33x4½	2485	2485	u2250	3175	3275
Packard.....Single-Six	Own..	6-3⅜x5	133	33x4½	....	u2350	2685	....	3525
Packard.....Twin Six	Own.	12-3 x5	136	35x5	3850	3850	3850	5240	5400
Paige.....6-44	Own..	6-3½x5	119	32x4	1465	1465	u1290	1995	2245
Paige.....6-66	Cont..	6-3⅜x5	131	33x4½	a2495	n2245	2195	3100	3155
Paterson.....22-6-52	Cont..	6-3¼x4½	120	32x4½	....	1550	1585	2595	2595
Peerless.....56-S-7	Own.	8-3¼x5	125	34x4½	....	b2790	2790	3500	3790
Pierce-Arrow.....Own..		6-4 x5½	138	33x5	7000	b6500	6500	8000	8500
Pilot.....6-50	H-S..	6-3¼x5	126	32x4½	2050	2000	2050	2950	3000
Premier.....6-D	Own.	6-3⅜x5½	126¾	33x5	3150	b3100	3250	4300	5100
Premocar.....6-40-A	Falls..	6-3⅛x4¼	117	32x4	1095	1095	...	1750	1825
R & V Knight.....R	Own.	4-3¾x5	110	32x4	....	1665	....	2385	2475
R & V Knight.....J	Own.	6-3¼x4½	127	32x4½	2475	b2475	2475	3015	3105
Roe Series...B-T6 & U6	Own..	6-3 7/16x5	120	33x4	1595	....	1595	2355	2435
ReVere.....C	Dues.	4-4¼x6	131	32x4½	3200	3200	3200	....	4000
Rickenbacker.....A	Own..	6-3½x4¾	117	32x4	....	1485	....	1885	1985
Reamer.....6-54-E	Cont.	6-3½x5½	128	32x4½	2850	b2595	2785	3850	3850
Reamer.....4-75-E	Dues.	4-4¼x6	128	32x4½	3985	b3585	b3750n	....	b4650
Rolls-Royce.....Own..		6-4½x4¾	143½	33x5	....	10,900	....	....	....
Saxon.....125	Own..	4-3½x5	112	32x4	1195	1195	....	1795	1795
Sayers Six.....DP	Cont..	6-3¼x4½	118	33x4	1695	1695	....	2795	2795
Seneca.....L-2 & O-2	Lyc..	4-3½x5	108	30x3½	875	875	....	....	....
Seneca.....50 & 51	Lyc..	4-3½x5	112	31x4	1095	1095	....	....	....
Sperling.....A	Supr..	4-3⅝x5	114	32x4	980	980	....	1685	1685
Standard.....98	Own..	8-3¼x5	127	34x4½	2150	b2500	2500	2750	3200
Stanley.....Own..		2-4 x5	130	34x4½	2800	2600	2600	3775	3850
Stanweed Six.....Cont..		6-3¼x4½	118	33x4	1765	1765	....	2750	....
Star.....Cont..		4-3½x4¼	102	30x3½	r319	s348	u285	580	645
Stearns Knight....SKL4	Own..	4-3¾x5⅝	125	34x4½	2250	2250	2450	3150	3450
Stephens.....90	Own..	6-3¼x4½	122	33x4½	1575	b1595	c1625	2450	2550
Stevens-Duryea.....E	Own..	6-4 7/16x5½	138	35x5	7250	b6900	6800	u5600	b8900
Studebaker.....Light Six	Own..	6-3½x4½	112	32x4	1045	1045	....	1375	1750
Studebaker...Special Six	Own..	6-3½x5	119	32x4	1425	1475	b1475	2150	2350
Studebaker.....Big Six	Own..	6-3⅞x5	126	33x4½	....	n1985	1785	2500	2700
Stutz.....Own..		4-4½x6	130	32x4½	2950	b2990	c2990	3990	4450
Templar.....A-445	Own..	4-3⅝x5½	118	32x4	2025	2125	b2175	2785	2785
Tulsa.....E-1-2-3	H-S..	4-3½x5	117	33x4	1175	1175	....	....	....
Velie.....48	Cont..	6-3¼x4½	115	32x4	1585	1585	b1800	2485	2485
Velie.....34	Falls..	6-3⅛x4½	112	32x3½	1235	1235	....	1750	2085
Velie.....58	Own..	6-3½x4¼	115	32x4	1395	1395	....	2085	2185
Westcott.....C-48	Cont..	6-3½x5¼	125	32x4½	....	....	1890	....	2890
Westcott.....A-44	Cont..	6-3¼x4½	120	32x4	....	1690	n1890	....	2690
Wills Sainte Claire..A-68	Own..	8-3¼x4	121	32x4½	2475	2475	....	3275	3475
Willys-Knight.....20	Own..	4-3⅝x4½	118	32x4	1350	1375	....	1875	2095
Winton.....40	Own..	6-3¾x5¼	132	35x5	3400	b3600	3400	4450	4550

a—3-passenger. b—4-passenger. c—6-passenger. n—Sport. h—All Metal Type. k—Soft Top Type. u—Chassis Price. r—Price without starter and demountable rims. Price with starter and demountable rims $414. s—Price without starter and demountable rims. Price with starter and demountable rims $443. t—Model 47—34x4½ Tires.

Engine Make: Anst—Ansted. Bea—Beaver. Cont—Continental. Curt—Curtis. D.Ly—Dort Lycoming. G-B—Grey Beal. H-S—Herschnell-Spillman. Lyc—Lycoming. Nort—Northway. Roch—Rochester Rut—Rutenberg. Supr—Supreme. Weid—Weidely. Wisc—Wisconsin.

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No. 300



PATENTED:
Feb. 17, 1914
Feb. 26, 1918
Others pending

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A time-saver, labor-saver and profit-raiser.

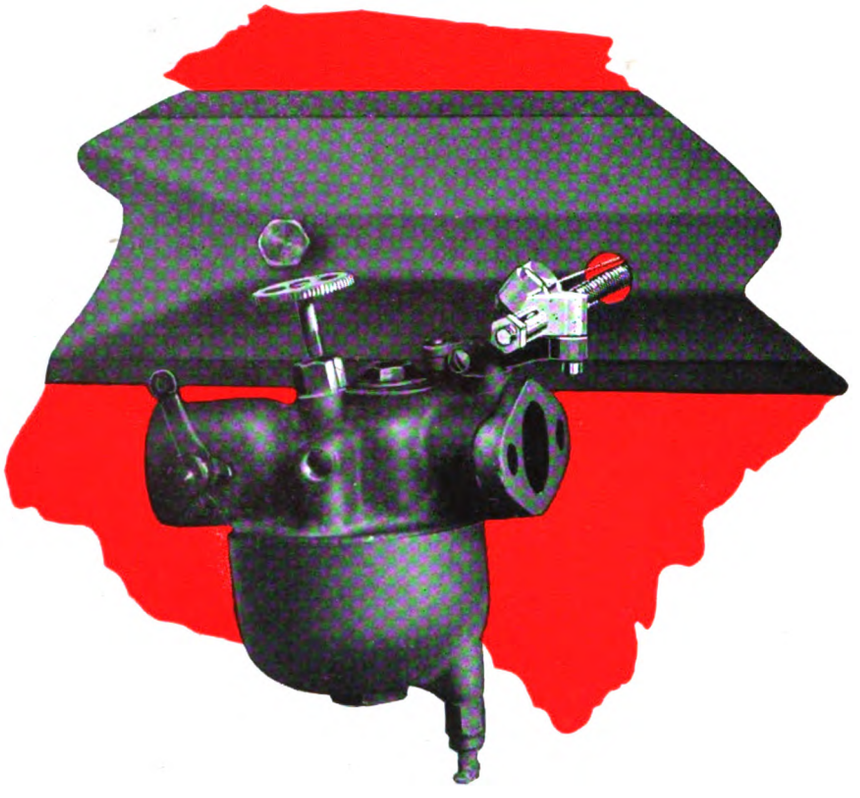
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One Carburetor Connection

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With the Williams Accelerator, one connection at the carburetor, one at the hand throttle, and one at the toeboard, complete the installation. Pressure on the pedal is transmitted direct to the carburetor without passing through a series of joints and levers. Acceleration is always smooth and certain without the use of extra attachments.

Show your customer the Williams Accelerator. You can demonstrate it over the counter and not have to explain a lot of intricate parts. The result will be quicker and easier sales. The Williams Accelerator will fit any model of Ford car.

Order through your jobber; and ask him for the new Williams Accelerator display card, or get your cards from us.

WILLIAMS BROS. AIRCRAFT CORPORATION
San Francisco

RETAIL PRICE $3.00 AND WORTH IT

WILLIAMS ACCELERATOR *for FORD CARS*

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MOTOR WORLD

for

DEALERS, JOBBERS AND GARAGEMEN

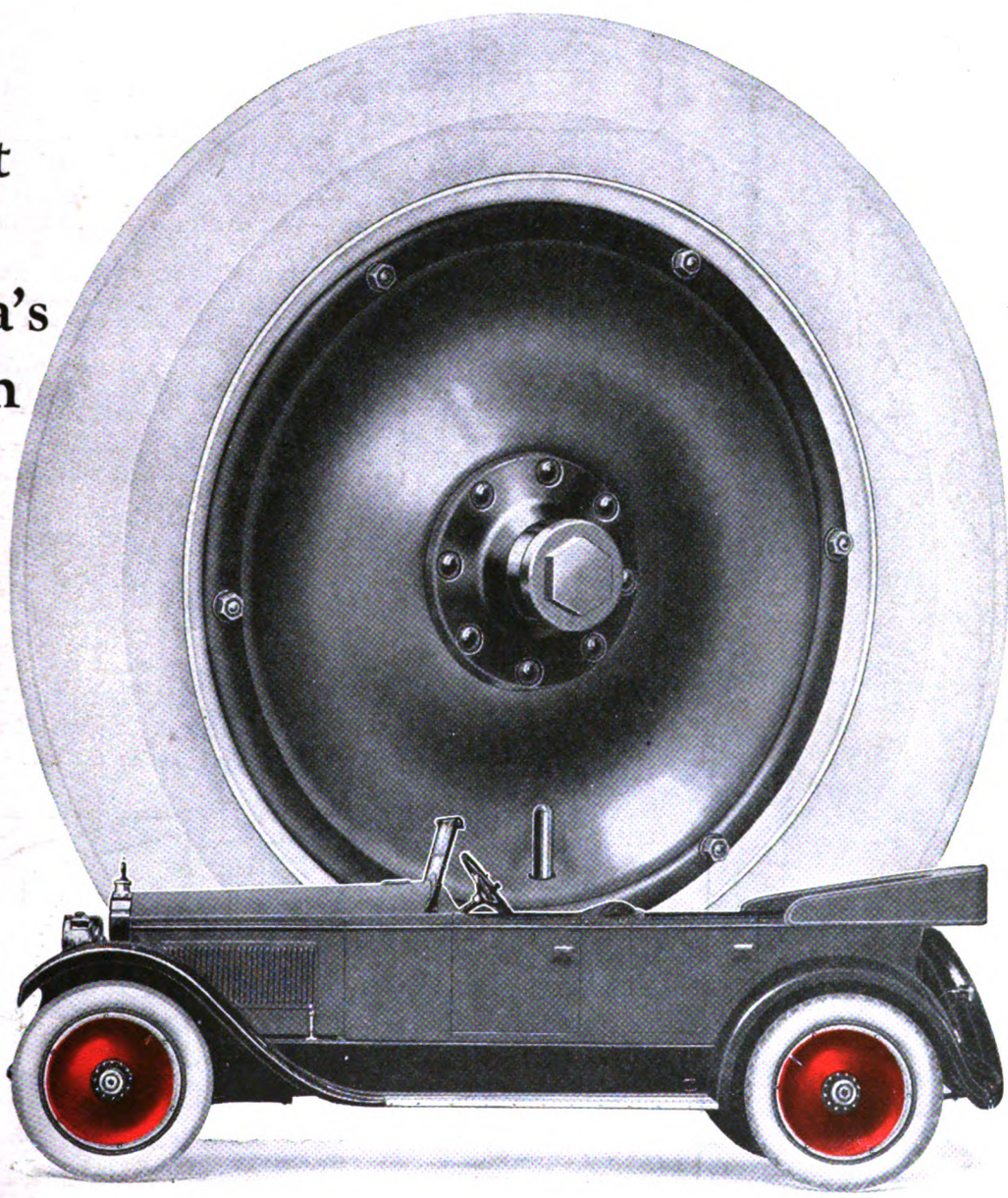
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Number 2

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Three dollars a year

Standard Equipment on twelve of America's best known motor cars

Gier Tuarc STEEL WHEELS



Gier Tuarc Steel Wheels are Standard Equipment on the Packard Sport Model

Tuarc

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THE ONLY GROOVE THAT CANNOT CLOG

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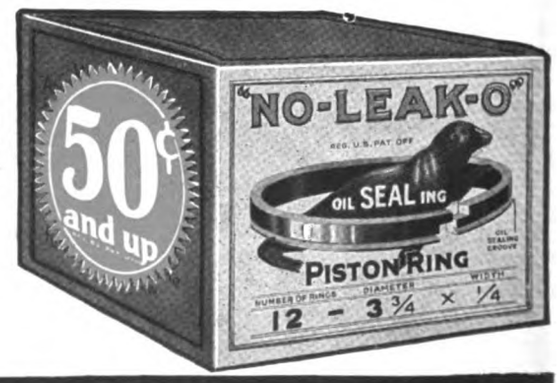
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Dept. T-40
BALTIMORE, MD.

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WON'T LEAK
because they're sealed with Oil

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MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

Reg. U. S. Pat. Off.

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Model 19

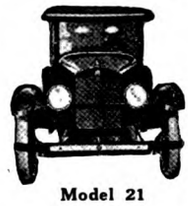
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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXII New York, U. S. A., Wednesday, July 12, 1922 No. 2

A Piece for Everybody



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Who Is Going to Profit by the Merchandising Movement?

If It Can Add a Million Dollars to the Coming Year's Equipment Business Who Will Get the Million? Some Afterthoughts on the Colorado Springs Convention

By NEAL G. ADAIR

SEVERAL million people who are listening today to concerts and speeches over the radiophone were laughing a few years ago over predictions that wireless communication would be brought within reach of the masses. They looked upon the early experiments as pastimes of scientifically inclined gentlemen with more imagination than common sense. Now you can't find a radio fan anywhere who will admit that he had the slightest doubt, from the very start of wireless investigation, of the practicality of wireless telephony.

The more or less human race always receives new things that way. It lets its pioneers live in poverty and raises monuments to them after they are dead. The characteristic responsible for this kind of conduct is skepticism.

Just about a year ago the Automotive Equipment Association decided at its convention at Mackinac Island to try an experiment in sales promotion. It voted $40,000 for a campaign intended to suggest to retailers ways and means of increasing their profits by selling more automotive equipment—accessories for the car and truck, replacement articles and materials and small merchandise in general. If retailers sold more they would buy more, of course, which meant additional business for manufacturers and jobbers, justifying the campaign by an association made up of these two classes of the equipment industry.

The movement met the expected opposition in the form of skepticism. A good many members of the association, despite the fact that they were financing a major part of the campaign cost out of their own pockets, didn't think it would work. And *they didn't work*—in the campaign. A good many retailers were skeptical, too. They didn't take much stock in the association contention that the car and truck owner will buy extra equipment if you ask him to buy. They were too busy to bother with selling small stuff.

Yet the merchandising director of the campaign, Ray W. Sherman, estimates that in the first 10 months of the movement—Aug. 1, 1921, to June 1, 1922—between eight hundred thousand and a million dollars was added to the aggregate sale of automotive equipment in the United States and Canada because retailers were asking 'em to buy. A million dollars worth of small stuff that somebody made profits on!

There is no way to establish the estimate as fact. But it is certain that application of the merchandising idea by hundreds of manufacturers, jobbers and retailers and the salesmen they employ stimulated and augmented sales. Some business and the profit that goes with it were added to the receipts of a great many corporations, firms and individuals in the various branches of the automotive equipment business—and all this because some men in the trade were not skeptical when the campaign started and others got over their skepticism as the campaign progressed and they saw what some of their non-skeptical neighbors and competitors were doing.

SO the merchandising campaign entered upon its second year at the recent convention of the Automotive Equipment Association at Colorado Springs. There were no surface indications of opposition within the membership to the appropriation by assessment of members of $60,000 to keep the campaign going another twelve months. Here and there a skeptic aired his views in private, but his audiences were small and inclined to hurry away to important engagements elsewhere. As far as the asso-

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ciation which is fathering it is concerned, the merchandising movement is a fact.

But what of the trade in general? Where does it come in on the general scheme?

It comes in, if it will, all the way along the line. The beauty of the campaign lies in the fact that a selfish movement—the A. E. A. members naturally are trying to build up their own business—becomes an unselfish movement when it gets into action.

WHEN an association of manufacturers and jobbers induces a great many retailers to put greater effort into retail selling, resulting in the sale of more goods, not all the additional goods sold are bought from these manufacturers and jobbers. Others also benefit. Thus the momentum of the campaign extends in a measure throughout the entire manufacturing and jobbing field. The additional profits that retailers earn by tying up with the campaign obviously are benefits extended outside the association, as there is no retail membership in the A. E. A.

Some members of the association, both manufacturers and jobbers, have criticized the movement because it helped competitors' business, but it is noticeable that the critics are not found in the ranks of the active campaigners, manufacturers and jobbers who have used advertising, speechmaking and motion pictures to interest the retail trade in the intensive selling idea and, in some cases, in their own products.

The help-the-other-fellow background of the campaign enfolds the consumer as well, the car and truck owner who yields to the retailer's plea to buy equipment. It is to the credit of the men controlling the movement that they have encouraged the sale only of utility merchandise, articles of equipment that will help the buyer, as one of the campaign slogans says, to get "full satisfaction from his car."

NO one pretends that there is anything new in the merchandising movement. Its two phases, to increase profits by selling more merchandise by asking people to buy it, and to increase profits by turning shop losses into profits, have been developed by leaders in the trade and promoted by the trade's business papers for years. The A. E. A. campaign, however, has the advantage of being a year 'round effort centered on a single subject with a remarkably effective means of contact with the retail trade through the army of jobber salesmen throughout the country.

The second year of the campaign will have the same tangible features—the kind that a man can get hold of—which marked the first 10 months. The "Ask 'em to Buy" film, which has been shown by A. E. A. workers and members in several hundred localities in this country and Canada, will be kept on the road, and the "Ask 'em to Buy" book, entitled, "A Greater Profit," will be available for retailers who want it. In addition, the new film, "Shop Profits," branding uncharged materials, lost tools, wasted time and uncollected bills as the shop operator's chief enemies and shop system, "Ask 'em to Buy" and "Ask 'em to Pay" as his best friends, will go the rounds, suggesting to dealers and garagemen things they can do to destroy these enemies and cultivate these friends of profits in the shop. There is another book, "Shop Profits," ready for distribution to men in the trade who ask their jobbers or the association for it. And a larger force of manufacturers, jobbers and their salesmen will be at work as volunteers helping the A. E. A. to carry the better business story around the country.

The "Shop Profits" feature will bring the garage equipment manufacturers and their jobbers more actively into the movement, as it is intended to pave the way for demonstration of the utilities of machinery in the shop, both to build profits and better to serve the car and truck owner.

AS for results, the trade itself, the men who will profit by sales promotion work if they undertake it, will have the say. If the campaign added a million dollars to equipment sales of the past year dealers and garagemen made $330,000 in gross profits on the additional business and manufacturers and jobbers had their share as well. Whatever business the campaign built last year, whatever it can build in the coming twelve months, it is something and somebody will profit by it.

Motor World is interested in the merchandising movement because it is a constructive work, intended to help men in the trade help themselves. It is not an uplift idea being tried out on the crossroads garageman, as some uninformed people have seemed to think. Some big city automobile dealers who never sold accessories before have put in departments and are carrying a large part of the overhead of their entire establishments on the profits.

There is nothing in the movement that will hurt any dealer's or garageman's standing with his customers. There is much in it that every dealer and garageman ought to know—and do.

Did the merchandising movement get to your town last year? It it didn't—or if it did—is it coming this year? Take the trouble to find out.

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Making and Managing a High Powered Selling Force

This Story Tells How the Anderson-Smith Co., in San Francisco, Selects, Educates and Directs Salesmen—It Is Full of Interesting and Helpful Ideas for Every Dealer

By H. H. DUNN

THERE is a firm on the Pacific coast selling automobiles just as the retail grocer sells sugar or flour or potatoes, or any other NECESSITY of everyday life. To do this, it has established a school for salesmen, where its staff is trained to sell automobiles as a necessity, not as a luxury; where every salesman is taught to teach the prospect that he can afford an automobile, that he must have an automobile, and that the particular automobile this salesman is selling will increase the prospect's business, add to his convenience, and even prolong his life, altogether aside from the added pleasure it will give to him and his family. Instead of allowing the prospect to ask himself, "Can I afford an automobile?" the salesman proves to him that he cannot afford to be without one.

THIS system—which has been in force eighteen months—*has increased the sales of this particular passenger car by more than* 100 *per cent;* it has necessitated the *establishment of four retail stores* for this car in as many sections of the city, and it has *forced an increase in the sales staff* from eight to more than 40 men. In other words, it is a success, and it is still growing, for the management of the firm is advertising for more men who want to learn to sell automobiles on the day that this is written. The sales manager is not advertising for automobile salesmen. In his belief, the old methods of selling automobiles have gone into the discard. "The best salesman I ever had," said this sales manager, "was a lumberjack who came to me fresh from the pine woods. The next best was a 'soda jerker' from a corner drug store; the third a grease boy from a garage near our headquarters; the fourth a bank clerk, and the fifth a furniture salesman. You'll notice that no former automobile salesman even 'got in the money' in that race."

The firm is the Anderson-Smith Motor Co., with headquarters at 1600 Van Ness Avenue, at the outer end of Automobile Row, in San Francisco. The sales manager is Ray E. Brouillet, and he came to the automobile business from the efficiency end of a correspondence school. He never sold an automobile in his life until he started to sell them, eighteen months ago, for Anderson-Smith. Here, in his own words, is the story:

"To sell automobiles, the salesman must get the right prospect, at the right time, with the right automobile for that prospect's purposes. In other words, he must get the prospect at the moment of least sales resistance, and prove to him, clearly, convincingly, and truthfully, that the automobile he is selling will fill every demand the prospect may have. To do this, the automobile salesman of to-day must be trained differently from all his predecessors, must abandon old ideas of automobile salesmanship, and must follow new lines of approach, of argument, and of contract closing. The old salesman wanted to run the automobile business in general and the branch with which he was connected, in particular; THE NEW SALESMAN MUST BE RUN BY THE AUTOMOBILE BUSINESS. He must first of all convince himself that *he is selling the right automobile,* that *the automobile he is selling is a necessity,* and then he must convince his prospect of this fact. The automobile salesman to-day must be taught the business anew, and from the ground up, along new lines, to meet greater competition and to overcome sales resistance never dreamed of in the old days in which most of the present-day automobile salesmen grew up.

Making Salesmen

"The Anderson-Smith Motor Co., which sells the Chevrolet in four retail stores and its headquarters, in San Francisco, has established a school for automobile salesmen to produce a new type of automobile salesman. It also maintains a school for Chevrolet owners, for the satisfied owner is the best prospect for another sale of the same car. We pick salesmen from all walks of life; in fact, we prefer that they never have sold automobiles before, when they enter our school. We advertise for salesmen, just as the grocer, the department store manager, or the hardware dealer advertises for clerks. When the men respond to our advertisements, or when they apply for jobs, I sit down with each one of them, look him in the eye, and watch his every reaction. If he is not two-fisted, if he is not a fighter, if he is not a worker, if he does not *believe* that whatever he says is right, he never even gets into the school. He doesn't have to be finely dressed; he need not be highly educated; he does not necessarily have to know anything about automobiles, in fact, the best salesman we ever have had, was a lumberjack out of the pine woods, who knew as much about automobiles as he did about the top of Mount Everest, but he was a fighter and he believed in himself.

"When a man passes this personal test, he is given a self-analysis chart. As you will see further on, I do not believe in elaborate bookkeeping systems, card indexes, and all that sort of thing, but this chart has proved its worth many times over. On this chart he sets down his own appraisal of himself, and I take another chart, which the applicant never sees, and set down my own appraisal of him. Every salesman in our employ, and every man in our school for salesmen, makes out one of these charts, new and fresh, at the beginning of each year, and I make out a new one on him, for my own files, at the same time. The greatest use of these charts is that when a man finds something wrong with his 'sales curve,' when he is trying but not getting results, we sit down together and go over his own chart and mine, or such parts of mine as are necessary for this particular problem. There is not one of our 40 salesmen but has been helped by this chart; not one but is glad to fill it out at the beginning of each year, and anxious to talk it over with me if he has difficulties later on. Poor salesmen are made into good salesmen; good salesmen are made better, and the best salesmen

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Where Motor Car Necessity Is Sold by Trained Salesmen

are enabled to chink up little holes of inefficiency which sometimes creep in.

"The new applicant does nothing for the first week but 'listen in' on sales arguments, approaches to prospects and closing of contracts, and read up on the Chevrolet. Then he goes around calling on prospects and closing contracts with different members of the trained sales force. Then he gets into the big lecture and study room, where he meets dummy customers to whom he sells cars. This is the toughest week of all, for there he meets men who are trained in sales resistance, who put up to him all the arguments ever thought of against buying a car. Comparisons of the Chevrolet with other cars are thrown at him, and he must meet them or drop out. When he loses an argument, he has me to back him; he can come to me at any time and get the answer to anything that puzzles him, or the reply to any argument.

"After he has completed this difficult section of the course, the new man is taught all about the mechanical angle of salesmanship. When he gets through



1—Main store of the Anderson-Smith Motor Co., San Francisco. The firm operates three other stores in the city, located so as to strategically meet the buyer. 2—Ray E. Brouillet, sales manager, who puts salesmen through a regular course of training before sending them out to meet prospects. 3—The forty salesmen at one of the twice-a-month dinners the company gives as get-together conferences for salesmen. 4—The school for Chevrolet owners, one of the methods of reducing sales resistance and making owners real boosters. The big idea behind this activity is to make every owner a prospect for another Chevrolet—and it works

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with this he knows the Chevrolet from bumper to bumper and from tire to top. Here, again, trained salesmen train him, and he gets all the help he needs from the repair and service departments. When he has completed this part of the course, which is largely a matter of memory, and not so much of personality, he goes out to sell automobiles, equipped with a thorough knowledge, not alone of selling arguments for the Chevrolet, but of buying arguments *against* it. He knows how other men who are selling our cars overcome sales resistance; he knows his own points of vantage and the weak spots in his personal armor, and he KNOWS THE CAR. He is both salesman and demonstrator. He can help a Chevrolet owner who is in trouble or who has problems in the use of his car, and, in the automobile business as in no other, it is the truth that a 'satisfied customer is the best advertisement.'

"In the eighteen months that the Anderson-Smith Motor Co. has been training its own salesmen in this manner, sales have increased more than 100 per cent, and we have found it necessary to establish four retail branches in as many sections of San Francisco, the better to overcome sales resistance. We have gone into advertising and selling cars in three languages—Italian, Chinese and Japanese—besides English, and we have salesmen who speak all these languages. We have trained our salesmen not to be experts in psychology, not to be efficiency men in keeping records, but to SELL AUTOMOBILES.

"Under this method, we have brought bookkeeping to a minimum, records to the smallest possible space, and, incidentally, have saved hundreds of dollars in space and in cash. The efficiency of the salesman is all devoted to his prospect, not to his records of why he did or did not do this or that thing. The salesman is made to know that he is in business for himself. The firm furnishes him with a desk and a telephone, and all possible sales arguments and assistance. He is made to feel that the sales manager is another salesman, right at his shoulder at all times. The salesman buys his own car, and thereby he learns not only methods of operation, but economy and carefulness, for it is his own car he is driving, and not 'the boss's car.'

Keeping Prospect Records

"Detailed reports have been eliminated, and instead each salesman keeps one sheet containing ruled lines for each prospect, and small squares for each day of the month, showing at the same time just what results were attained with each prospect and just what the salesman did on every day of the month. These sheets the salesman keeps, but at stated periods, the results are transferred to a master sheet which I keep in a small file. This obviates all the waste of time—which is large—in filling out cards, filing them in an index and then going through the index. We divide our prospects into three classes:

"1. *Active*: The man who wants an automobile, needs an automobile, is prepared to buy an automobile, and who must be convinced that the Chevrolet is the car for him.

"2. *Inactive*: The man who wants an automobile, needs an automobile, but must be shown how he can buy an automobile, on partial payments, or how he can raise the money to pay cash for one.

"3. *Future*: The man who has a car, but at some virtually fixed date in the near future, will need another. Chevrolet owners form a large part of this class, since we have taught them how to get the utmost out of their car, how it can serve them best, and when to replace it.

"Every day I take the salesman, his own sheet and my master sheet, and we have a 'boiling out' of the prospects. If this salesman is worn out on one prospect; if he is up against what he has come to believe is a 'stonewall,' the prospect is transferred to another salesman, who will make a fresh campaign for a sale. Briefly summarized, there are only three things that I particularly care about hearing a salesman say to a prospect:

"'How do you do?'

"'When will you buy a car?'

"'GIVE ME THE ORDER.'

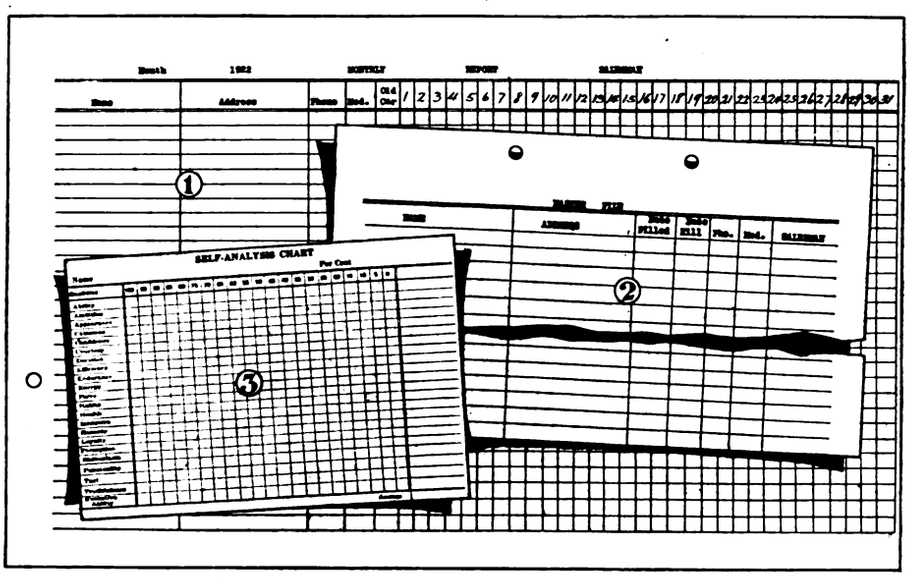
"There is too much oratory and too little work in the life of the average automobile salesman to-day. It is—as someone else has said—the 'crapshooter who rushes in where poker-players fear to bet' that sells automobiles. Sometimes I deliberately pick a fight with an applicant for a salesmanship position, if he seems to be worth it, just to prove how much initiative and pep and punch he has. I pick the fast and furious men who come to me, and when I advertise it is always a call for 'two-fisted' men who are 'not afraid of a fight!' That is the kind of men who sell automobiles, and who are selling them every day in every month.

Using Owner Influence

"When the new man is given prospects he gets, first, a list of owners of Chevrolets. Thereby, he gets a chance to make friends of present owners of the car he is selling. He becomes a sort of inspector; he advises Chevrolet owners as to the condition of their cars, their needs, and often he prolongs the life of a car by a few words of advice, because he KNOWS the car and can give the proper kind of accurate advice and information about it, all of which he has learned in our school for salesmen. When the applicant has become a salesman he gets a 'floor-day' two or three times a month, and is given a chance to show just what he can do inside. As a prospect is brought up to the time of signing his contract, the helping hand of the sales manager, or even of other and more experienced salesmen, is extended to the salesman who is closing the deal. This is one school in which the pupil always has the advantage of the help of his teachers throughout his career.

"Our salesmen, too, are trained in the purchase and 'trading in' of used cars. *The best automobile salesman in the world to-day is the motorist with a used car which he wishes to trade in.* He immediately takes the offensive, while the salesman is automatically placed on the defensive. The salesman, in every individual sales campaign, must at all times be master of the situation; he must be the 'boss' of every deal, and he is trained to so contrive and move himself about that he is in that position with the used car owner. Our method is for the salesman to keep off all arguments as to the value of the used car, but to bring every argument to bear to increase, in the mind

Forms Used in Selecting Salesmen and Directing Work



1—There are no card indexes in the sales manager's department. Instead, every salesman keeps one of these sheets and records on it every prospect, every selling attempt and every sale. At the end of the month the reports are filed. 2—From the salesmen's reports the data are taken for this master file kept by the sales manager. It shows the final disposition of every prospect. 3—Every salesman fills out a self-analysis chart at the beginning of each year. The sales manager also fills out one for each salesman and when sales lag the salesman and the sales manager go over them together—with good results

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of the car owner, the value of the new car. Then we bring the used car owner and the appraiser—our credit man who knows cars and terms—together in our office. Then we SELL HIM THE NEW CAR and buy the old car. This is the secret, from the dealer's point of view, of handling the used car."

Every once in a while, Sales Manager Brouillet puts out a written sales talk to his salesmen. He has produced twelve, so far, and here is one of them:

"Transportation is one of the five necessities of life.

"We require food, fuel, clothing, shelter and transportation. Without transportation the other necessities could not be distributed.

"Transportation moves the seed to the farms and the crops away. It moves food and clothing to merchants' stores and distributes them among the people who need them. It moves materials for building purposes.

"Without transportation there would be no progress.

"And foremost of the transportation mediums of the present and future stands the automobile.

"It stands foremost because it gives every man the advantage of directing to the best market the commodity he sells, whether it be a product of the soil or factory, or man's own labor.

"With these indisputable facts before us, it is difficult to understand how any man can see anything but great success for the automobile business.

"It stands foremost because it is closer to the needs of the individual than any other means of efficient transportation ever has been.

"Every dealer must look upon our industry as providing one of the necessities of life, and encourage others to see it in the same light.

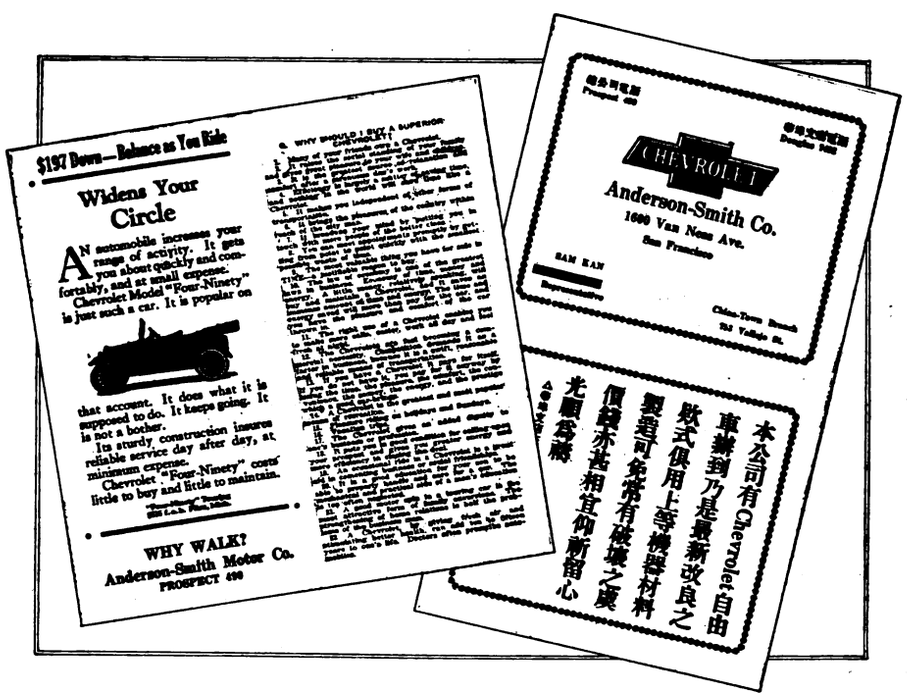
"The automobile is a necessary means of transportation and *can be sold as such* every business day of the year."

Keeping Owners Satisfied

The school for Chevrolet owners, maintained by the Anderson-Smith Motor Co. has proved more than profitable; it is considered one of the best investments they have made. The average attendance has been 175 at each meeting, and the meetings are held every Monday evening during the late fall, winter and early spring, in some one of the San Francisco salesrooms. Investigation preceding the establishment of this school showed that the average Chevrolet owner lacked knowledge regarding the care of his car, some not even knowing of the existence of instruction books. The first lecture, delivered by a representative of the Chevrolet Motor Co., from the Oakland, Cal., factory, covered construction, manufacture and classification and quality of materials used. The second dealt with the carburetor and was given by an expert in this detail. The third, by a storage battery expert, covered the function, operation and care of storage batteries in general and of the one used on the Chevrolet in particular. The fourth covered lubrication; the fifth, ignition; the sixth, a review of all previous lectures. At each lecture, a period was set apart for questions and discussions by the owners. A typewritten copy of each lecture was given each owner present.

"This school for owners," said Brouillet, "already has resulted in a number of replacements to those in attendance, and a large number of new sales to friends of those who attended the lectures. The school plan has established a closer relation between the firm and the individual customer, and has been the means of giving solutions of a number of perplexing service questions to the owner, which, otherwise, might never have been solved, or which might have grown larger and resulted in greater sales resistance on the part of the owner, when he came to get a new car, or of the friends of the owner whom he might influence in their purchase of a new car."

These results would seem to prove that the education of the automobile salesman, and of the automobile owner may be made to go hand in hand, to the great and permanent advantage of the dealer, distributor and manufacturer.



Left—Sales arguments are prepared for the salesmen by the Anderson-Smith Co. Here is one of them. Right—Reducing sales resistance among the Chinese by advertising to them in their own language is just one of a dozen odd lines of successful salesmanship.

Selling the Power Farming Idea

"WE tell our prospective farmer customer that he is just as much a manufacturer as Henry Ford, the difference being that he is manufacturing food products and Mr. Ford automotive products," says W. H. McGlamery, head of the McGlamery Auto Co., Ford dealer in Greensboro, N. C., "and, we have very little trouble in convincing him that it will be impossible for him to continue with the old primitive methods and means of high labor costs, and also the lower prices, which he must necessarily, under the present conditions, get for his products." This presentation of the power farming idea has been extremely successful in the merchandising of tractors by the McGlamery outfit and recently resulted in the sale of a complete Ford unit consisting of a car, a truck and a tractor to one farmer.

"We are completely determined to put across the idea of power farming as rapidly as it can be done," says McGlamery, "because in doing so, we are firm in our opinion that inasmuch as the tractor is a money-maker for the farmer, we believe in a short time he will have more money to spend with us in buying more Ford products, as well as the fact that he will have more money to spend with other merchants." McGlamery has three exclusive Ford salesmen and advertises extensively. A full page ad in a Greensboro paper recently told the story of McGlamery's sale of a complete Ford unit, consisting of a car, truck and tractor, to a farmer.

Sells Spark Plugs to Gasoline Customers

HERE'S the way one successful middle western accessory dealer sells more spark plugs: "I do a considerable business in gas," said this dealer, "and whenever one of my employees or myself makes a gas sale we always take a new spark plug from our pocket and suggest to the gas buyer that it would be a good plan to get an extra spark plug for use in case of emergency. In this way we make sales to fully forty per cent of our gasoline customers. And as we wouldn't get this business otherwise we feel that it is a very well worth while stunt."

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Harnessing the Selling Power of Satisfied Ownership

This Story Tells How the Herold Motor Car Co., Reo Distributor in Cincinnati, Sells the Local Performance of Its Product With Letters and Salesmen's Calls

By DONALD D. BLANCHARD

JIM JONES, plumber, buys a motor truck. He finds it economical, reliable and in every way satisfactory. The dealer who sold it to him has done his part by selling a truck of suitable capacity and equipped with the right body, and by rendering prompt and efficient service on it. Naturally Jim Jones is a satisfied owner.

Such satisfied owners are the most important factors in the unusual success that the Herold Motor Car Co., Cincinnati, Ohio, has had in distributing Reo trucks. Sales Manager Kibby uses them as his most important selling argument. He depends on their testimony so completely that he has practically discontinued demonstrations.

This is how Kibby's owners help him sell trucks.

WHEN the prospect wants evidence of the performance of the truck, Kibby suggests that he visit some owners with him or talk to them over the telephone. Usually it is possible for Kibby to provide names of owners in businesses that are the same or similar to the prospect's business. There is hardly a class of business in the territory that doesn't use one or more Reo trucks.

Kibby has so much confidence in what his owners will say that he suggests that the prospect ask these questions:

How do you like the Reo truck?

Has the service rendered by the Herold Motor Car Co. been satisfactory?

If you were buying another truck, what make of truck would you buy?

If the answers to any one of these questions were unfavorable, it would be sufficient to kill the sale. But Kibby knows that his owners are boosters. He has sold them the right size of truck with the right equipment, and his service department has kept it on the road day in and day out. He depends on his owners to furnish the big punch in his selling talk—*and they do.*

This use of satisfied owners is being developed along vocational lines. The Herold Co. has undertaken the canvass of the Cincinnati territory by classes of business. The first to be investigated is the plumbing trade. When this trade has been covered, other lines of business will be canvassed in turn.

The classified telephone directory is used as the basis of this vocational selling campaign. Here are listed all the individuals and companies engaged in the various vocations. It is probably a 100 per cent. complete vocational list, because it is difficult to conceive of a business without a telephone. If a business has a telephone, it is listed in the classified directory.

Kibby divides these lists between his salesmen. He estimates that one-half of their time can be devoted to this vocational investigation. The information to be obtained on these visits is indicated by the ten items on the "Business Report," which is shown in the illustration. These reports are turned in to the sales manager each day.

If the prospect is acquainted with any Reo owners in the same line of business, their names are put down under item 6. This indicates clearly the part that satisfied owners have in this selling effort. If item 5 indicates that the man is a prospect, the information furnished by item 6 is very useful. The owners in the same line of business with whom the man is acquainted are called on the telephone and asked to put in a good word. Furthermore, their experiences are used as sales arguments and they have added weight to their testimony because of the acquaintanceship.

As a follow up on each call, the sales department writes a letter to the man visited thanking him for his courteous treatment of the salesman. This impresses the visit on him. Furthermore, if he has been short or discourteous with the salesman, the short note of thanks may secure better treatment next time.

Finding Prospects

Prospects obtained through the canvass are listed on prospect cards and followed up at regular intervals. The sales manager goes through the prospect file every two weeks, and any prospects which should have been followed during that period but have been neglected by the salesman, are turned over to another salesman. This system forces the follow up because the salesmen know it is necessary to retain their prospects.

Prospects are also followed up with a series of three letters which are shown in the illustration. The first of these informs the prospect that another letter will follow and that this letter will contain a list of questions. These are questions that Kibby would ask a dealer if he were buying a truck. He offers to answer these questions for his own company upon the request of the prospect. The third letter carries with it a multigraphed list of all the Reo truck owners in the Cincinnati district. The first sheet of this list is reproduced in the illustration.

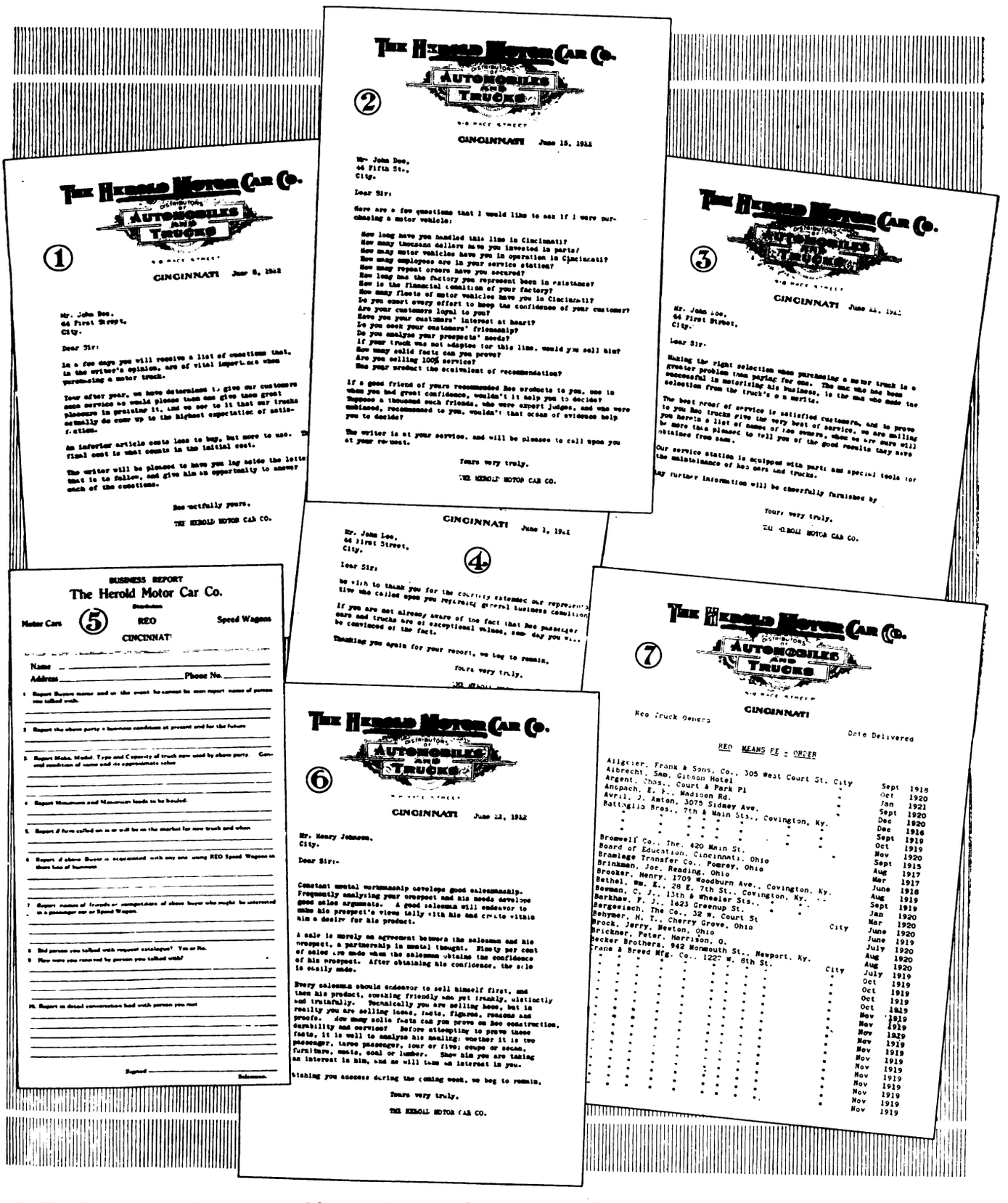
This mail advertising stresses the importance of dealing with a well established dealer and factory. It features the importance of service behind the truck. In furnishing the prospect with a list of owners, this company shows how confident it is that the testimony of any of its customers will be favorable.

Kibby is a first class salesman himself. He attributes his success to the fact that he has first sold himself and his company and, after that, the truck. He believes that sales are made when the salesman has the complete confidence of the buyer. In tackling a new prospect, his idea has been to establish this feeling of confidence and respect before proceeding to the business of selling the truck.

He is trying to inculcate this same idea into his salesmen. Frequent letters to his salesmen are part of the work he is doing to educate them. One of these letters is reproduced. This letter stresses the importance of analyzing

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Using Owner Satisfaction in Sales Letters



1—*The first letter in the series.* 2—*The second letter, which contains a list of suggested questions.* 3—*The third letter, which carries with it the list of owners.* 4—*Letter thanking business man for courtesy extended salesman making canvass call.* 5—*This is the form the salesman uses to report the results of the vocational canvass.* 6—*The sales manager frequently sends letters like these to his salesmen.* 7—*The first page of the list of owners which goes with letter No.* 3

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the prospect's hauling problem so that the salesman will be able to show most clearly how the Reo will fit these needs.

The results obtained by Kibby in a small community near Cincinnati illustrate how well this method works out in practice. It also shows that it pays to sell by the intensive cultivation of particular vocations.

There is a community of about 100 truck gardeners about eight miles from Cincinnati. The average size of their farms is in the neighborhood of five acres. These farms sell their produce on the Cincinnati market.

Some years ago Kibby started out to sell Reo trucks and cars to this community. As soon as he had made some preliminary acquaintances, he started a free truck school to which these farmers were invited. The sessions were held on the farms and the course continued for a period of eight months. The attendance averaged 25 and at times it reached 45.

Each session, Kibby would take up a different part of the truck. He would explain its function, how it operated and how it should be cared for. He was endeavoring to impress these farmers with the simplicity and durability of the truck—how easy it was to operate and maintain one. And all the time he was getting acquainted. He was getting their respect and confidence.

When a prospect was ripe for a demonstration, he would give him a real one. It meant an all night job, but he showed him the truck under actual working conditions.

Using teams, the farmer and his wife would leave for market before midnight. It would be daylight by the time the produce was sold and the farmer was back at his farm. Frequently he had to make another trip to town for a load of manure. This meant a working day of 18 to 20 hours and two teams of horses.

In making a truck demonstration, Kibby would call for the farmer at about 2 o'clock, load up the truck and drive the farmer and his wife to market. There the produce would be unloaded and the wife would remain there to sell it. Then Kibby would take the farmer and the truck, get a load of manure, drive out to the farm and then return to the market for the farmer's wife and the empty boxes and barrels. The drive back to the farm was made and everything was finished up by 6 a. m. The saving in time that the truck effected was evident.

These farmers had confidence in what Kibby said. They knew that he wouldn't sell them something that would not pay. First one bought and then another. And the truck sales brought passenger car sales. Up to the present time, this small community has purchased almost $200,000 worth of Reo trucks and cars.

The contact that Kibby established with these farmers some years ago is still maintained. Every month they receive mail advertising. Kibby maintains his personal acquaintance, too. He attends their weddings and funerals and, if he hears that any of them are sick, he makes it a point to visit them.

The reasons for the success that the Herold Co. has had in selling trucks may be summed up in a few words. It has worked to secure the confidence of its prospects. It has justified this confidence by selling a truck and equipment that would fit the prospect's business needs. It has retained this confidence by backing these trucks with efficient service. In this way they have insured satisfied customers. And these customers are showing their satisfaction by helping this dealer sell more trucks.

This Salesman Fought With Odds Against Him —and He Won

THIS is a regulation story.

It has a hero, a heroine and a villain, without which any story would be as unreal as a Georgia mountain without a moonshine still.

The hero is "Chick" C. A. Verlin, automobile salesman de luxe for the Atlanta Haynes Co.

The heroine is a woman, as a heroine should be, whom we shall call Mrs. Jones.

The villain is a lawyer whom we shall refer to as John Doe.

And so—on with the dance——

Chapter I.

"Chick" Verlin was entirely satisfied with the ways of the world. Mrs. Jones promised to buy, and at a time when sales were so few and far between that it is little wonder he should feel more or less exalted over the circumstance. This was Saturday and on Monday morning she would turn over to him Liberty Bonds to cover the initial deposit and sign her contract.

Chapter II.

Enter the villain.

It was Sunday afternoon and he had called to see the daughter of Mrs. Jones.

John Doe the villain had but recently acted as counsel for the defense in the case of a man who the Atlanta Haynes Co. had been compelled to sue. This man had bought a car and then sought to wiggle out of his contract. A jury's verdict against this party had compelled him to comply with the terms of his contract.

John Doe, upon being informed of the fact that Mrs. Jones and family intended to purchase a Haynes, proceeded to do his villain stuff. The loss of the suit had left an unpleasant taste in his mouth, and when he got through knocking that particular make of car——

Chapter III.

"I am sorry, Mr. Verlin, but I have decided not to buy that car."

Thus did Mrs. Jones upset the well-known beans when our hero called on Monday morning to close the deal in accordance with her promise of Saturday.

To say that Verlin was astonished is expressing it in the mildest of terms. He knew that she had gone so far as to visit her bank and get the $200 worth of Liberty Bonds that were to represent her deposit, and with his missionary work fully completed—or at least so he thought—he had presumed that all he would have to do would be to get her signature to the contract and take the bonds. But there's many a slip——

"Mrs. Jones, of course I am very much surprised," quoth Verlin, when he had sufficiently recovered his equilibrium to speak with coherence. "I wonder if you would mind telling me why you have decided not to buy."

At first Mrs. Jones was rather disinclined to do so, for she was quite sure that she had definitely made up her mind and that nothing would cause her to change it. Verlin, however, had a very convincing way about him and Mrs. Jones finally related the story.

Whereupon Verlin called all of his powers of salesmanship out of reserve and set forth to make this sale.

He showed Mrs. Jones where a jury, serving in a court of justice, had rendered their verdict in behalf of his company. And he showed her where that verdict was just and rightful. He showed her, too, where John Doe's condemnation of the car was entirely based upon personal prejudice. He talked, in fact, for more than an hour to surmount this wall of sales resistance he had so suddenly and unexpectedly encountered.

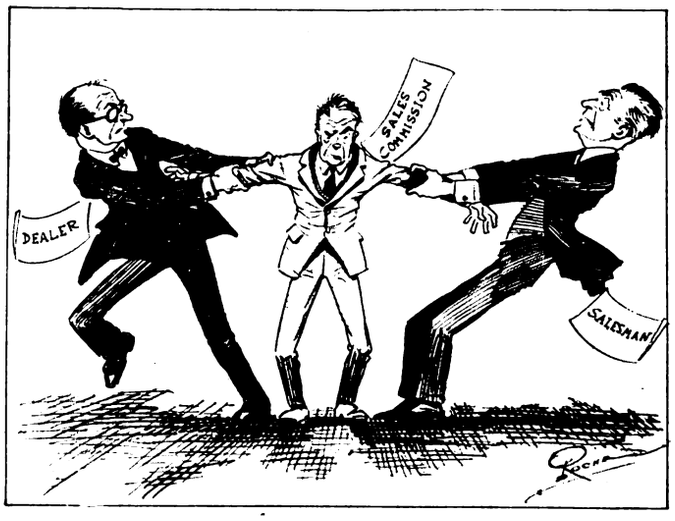
And finally, to make a long story short, as the fellow says, Mrs. Jones once again changed her mind. When Verlin left that Monday morning he had the signed contract in his pocket and the $200 worth of Liberty Bonds that represented the initial deposit.

And that's how "Chick" C. A. Verlin sold the toughest prospect he has yet encountered.

The moral of this story is—"Faint heart ne'er loosed the purse strings of a prospect."

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Exciting, Perhaps, But—



By NEAL G. ADAIR

AS Cornelius J. Reilly, distributor of the Sennett in the Callawassa territory, stepped into the salesroom of Chadwick, his Oldtown dealer, he met a young man going out. This young man was in a great hurry, and he showed signs of anger. In the office Reilly found Chadwick. The dealer was shoving books and papers about his desk and showing the same dissatisfaction with the world that had betrayed itself on the face of the departing young man.

"Hello, Chadwick," Reilly remarked casually.

"How'd do," Chadwick responded with a forced attempt at cordiality as he rose to shake hands. Then he added: "Got any salesmen down at your place that you want to farm out?"

"Need some?" Reilly inquired.

"Need some!" Chadwick retorted. "You must have bumped into the last one I had, beating it out the front door as fast as he could leg it."

"Yep, met him," said Reilly. "Seemed to be terribly sore about something."

"Kicker, just like all the rest of 'em," Chadwick went on. "Quit in a huff because I wouldn't give him the commission on a car I sold myself. Another bird did the same thing a couple of weeks ago and about a month before that Carlson—best man I ever had—picked a row over a prospect this last man sold, and jumped over to the Redman. He's been raising Ned with some of our old customers, too; took three sales away from us since the first of the month."

"Got any new men coming on?" Reilly asked.

"Two due to start to-morrow morning," Chadwick answered, "but most likely they'll blow like the others. Never saw such a business. Expect it'll drive me cuckoo some day. If you're not sweating under a load of used cars you're bound to be refereeing a fight among salesmen over commissions, or something."

"But why should they fight?" Reilly demanded.

"Why shouldn't they?" Chadwick retorted. "Wouldn't you, if you could pick up a hundred or two that way?"

"But I couldn't, and no salesman could, in any dealer organization that is run as it should be." Chadwick flushed.

"Chadwick," Reilly continued, "ever since you've had this agency I've been hammering at you to keep a prospect file, haven't I?"

"Yes, but what's that got to do with—," the Oldtown dealer began.

"And you've been promising to get one into operation," Reilly went on. "Last winter you claimed you were too busy getting your shop in good running shape, and in the spring you said you had all you could do to get two or three salesmen started right, and now—"

"And now I've got to do it all over again," Chadwick interrupted.

"Which serves you right," Reilly declared, "because if you had had a good prospect file and your girl out there at the phone had been keeping it up to date from simple reports of your salesmen there wouldn't have been any chance for quarrels about commissions and you wouldn't have lost these men."

"Oh, I don't know," Chadwick remarked.

"I know, and so will you when I get through with you," Reilly warned. "Let me ask you something. Where did you get the first tip on the man you sold the other day, the one this last salesman claimed the commission on?"

"Didn't have any tip," Chadwick replied. "He just walked in and bought. Then Johnson, this money-grabber, had the crust to say he dug the fellow up a month before and gave him a demonstration."

"Did he?" Reilly asked.

"How do I know?" Chadwick countered. "I wouldn't take Johnson's word for it and I couldn't put the customer through the third degree to find out how he happened to want a Sennett, could I?"

"But if you had been keeping up a prospect file and requiring your salesmen to report prospects, calls and demonstrations you would have known all about it, wouldn't you?" Reilly persisted.

"I suppose so," Chadwick conceded.

"And in this case, if the file had shown that Johnson had listed this prospect, given him a demonstration, and called on him regularly to keep him 'alive,' you would have admitted that he was Johnson's prospect?" Reilly continued.

"But if Johnson had discovered him, then forgotten him?" Chadwick questioned.

"Then he would have had no claim on the commission. He would have known that and known that you knew it. There would have been no argument and Johnson would still have been selling cars for you instead of going around town roasting the hide off you while he hunts another job."

"Maybe," Chadwick said.

"Better put 'maybe' in with the dead languages, where it belongs," Reilly suggested. "And better put your selling system on a basis where there won't be any 'maybes' in it, so that every time a salesman makes a sale or has a part in making one he'll get paid for it, just as much as he deserves, and so that when the house makes a sale, without any help from your men there won't be any excuse for commission claims and a lot of bickering.

"Did it ever occur to you that two leading assets of a sales organization, no matter how large or small it is, are loyalty and enthusiasm?"

"But I've been selling cars—" Chadwick broke in.

"Last week and last month and the month before—when everybody wanted them—yes," Reilly responded. "But what about next fall and winter? Can you sell them, if your salesmen suspect you of trying to make their profits as well as your own? Will they work their heads off to locate new prospects and interest them in the Sennett if they have no assurance that their work is going to pay them in dollars and cents?

"It gets right down to this, Chadwick: Are you just selling for today or planning for to-morrow? Are you just gambling on a stock of cars or building a business?"

"I suppose, I—I—don't know—," Chadwick stammered.

"But I do know," Reilly countered. "I've been selling automobiles ten years for every year you've been bluffing at it. And in my selling system the prospect list is the backbone, heart, lungs, digestive tract and a lot of other things. It keeps our sales machine alive and active and happy and—out of trouble."

"Well, I guess—where can I get a set of cards and a box to put 'em in?" Chadwick demanded.

"Send the whole system out to you—to-morrow," Reilly promised. "Been keeping an extra one on hand, waiting for some sinner to hit the trail."

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Editorial Notes

Hoover Against Dumping

ANY charge of selfishness that may have been raised against the automotive industry in connection with its opposition to the reimportation of cars and trucks sold in Europe by the American War Department will hardly stand in face of the firm support given the Graham anti-dumping bill by Secretary of Commerce Hoover. The bill would virtually prohibit the reimportations by imposing upon them an import duty so high that the transaction would not be profitable.

Information obtained by Government representatives abroad is to the effect that almost 9,000 automobiles are ready for immediate reshipment to this country, in addition to 30,000 which could be reconditioned and sent back. These vehicles would add to the used cars on the American market, aggravating a condition which is never an easy one for dealers to contend with. The reimportation would have the same unsettling effect as the sale here at reduced prices in the past year or two of many trucks brought back from the former war zone.

All these cars and trucks, together with millions of articles of equipment, were sold to Europeans, at sacrifice prices, when the War Department got out of France. It was generally expected that they would be resold abroad. It will be encouraging to leaders in the industry, who have been vigorously opposing the dumping of these goods in this country, to have Secretary Hoover agree with them that such a procedure would be unfair to the American trade.

It is to be hoped that Secretary Hoover's support of the automotive industry's attitude will overcome Congressional opposition to consideration of the Graham bill at this time and that the measure will be passed early enough to save the domestic market from this additional demoralization.

Confiscation!

AN Oklahoma dealer is the latest victim of the Federal law, literally interpreted by the courts, which imposes confiscation upon a vehicle discovered in the act of transporting intoxicating liquor. A man who had bought a car on time left it standing in the street, where an officer found a pint of whisky in it. The case against the driver, who owned the whisky, was dismissed, but the car which carried it was found "guilty" and confiscated. The dealer, who had no part in the violation of the prohibition enforcement law, thus became the principal sufferer.

Such cases are numerous. They will continue until public sentiment brings about amendment of the law. Forces within the industry, including the National and some State automobile dealers' associations, have been trying to spur such a sentiment into activity. Until this is accomplished the only recourse of dealers is to use every possible precaution in investigating the character, habits and occupations of persons to whom they sell cars on installment payments.

Correct Labels

THE automotive trade will welcome the decision of the standardization committee of the Automotive Equipment Association to attempt to bring about labelling that means something on packages of canned goods, such as body and top finishes. The committee hopes to induce members of the association making goods in this class to adopt uniform phrases describing their products, so that substitutes for certain standard compositions, such as varnish or shellac, for instance, will be plainly distinguished from the genuine merchandise.

This is a needed reform, which ought to be taken up by manufacturers regardless of association urgings. Dealers and garagemen and the general public as well are entitled to know exactly what they are buying when they purchase for resale or use finishes for such expensive property as automobile tops or bodies. And so it is with grease, oils and other merchandise that involves combinations of raw materials. They should be so marked as to be sold for just what they are.

The Outing Season

MEMBERS of many dealer associations, these days, are planning their annual outings. Committees in charge are putting in quite a bit of time making the arrangements, with no accomplishment in view except to see that everybody who attends has a good time. Trivial? Perhaps, but practical. Men, like boys, must play sometimes and there hasn't been any too much opportunity for it during the present selling season. Work is easing up a bit now and the time is ripe for the kind of relaxation that an outing offers. More than that, an occasion of this sort breeds acquaintance and friendliness. We need all of these qualities we can get in business. Where's the outing? When? Let's go!

The Freight and Traffic Department of the Automotive Equipment Association has collected $12,000 for members in freight overcharges by railroads since the department was organized a few years ago. This is an interesting example of one type of association work.

Chicago seems likely to retain its crown as an exhibition city. The latest organization to vote down a suggestion to move its show elsewhere is the Automotive Equipment Association, which unanimously favored making Chicago the permanent location of its annual business exhibit.

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The Jobber Salesman's Job

He Will Get Farther if He Tries to Help the Dealer Sell Instead of Just Trying to Sell Him

HERE are some extracts from a letter that G. Norman Baughman of the G. Norman Baughman Co., Tampa, Fla., jobber, wrote to his salesmen. There are some pungent thoughts in it for jobber salesmen—some for retailers, too:

"To our salesmen:

"If you have been a jobber salesman for two years or more you have noticed that the method of buying has changed. You can no longer step in and proceed to write down a long want list or take a haphazard order, but you have got to confront the customer with real sales argument, and if you are not a salesman you do not register. You may not know it, but most of our customers to-day read trade papers, often take courses in salesmanship and are fairly up on the art of purchasing, and many of them have adopted the same rule as the purchasing agent of many jobbing firms, viz., *'I will only buy goods from those salesmen who give me ideas.'* Therefore, if you are not giving them some ideas you can rest assured your orders, if any, are small and that the chap who follows you and tells them how to sell the goods, how to display them, how to demonstrate them, knows his line and can answer the questions asked him, shows their salesmen how to put over the line, and the hundred and one other things that go to make a successful merchant, will carry off the order *that pays his house to ship.*

Many salesmen do not realize that *when you turn in small orders the house loses money,* and the only reason the house ships those small orders is because they want to give *service* and are hoping that you will turn in a large order next time to overbalance the loss on the small ones.

"When you see a man's stock is disarranged, teach him to keep it in order and take a little time yourself and help arrange it. If you find the containers in bad shape and know that we have extra ones, or the manufacturer has, and the goods are moving slowly, order a few new cartons so the goods will present a salable condition. If the man has a show window and it is poorly dressed, take a half hour and dress it. If you do not know how to dress it, the next time you are in the store inquire of someone who does and take back the ideas. You can also get such ideas from the trade papers. You should take the best ones on salesmanship, window dressing and merchandise, study them every week and thus keep prepared to go out each week with some *new thoughts* and some *new ideas* pertaining to your line and the customer's needs.

"Always see that your customers have the advertising matter that they should have for display, both outside and inside of their buildings.

"Now, there is not a single one of our salesmen who could not increase his business, and some could easily double it, if they would take all of the above thoughts and put them into effect and watch their steps for the next 60 days.

"There is only one way to sell a customer who has not been sold on the 'Ask 'em to Buy' idea. If he has seen the picture, read the book and heard your spoken message, then if he is not sold you will have to use the 'show me' method, i.e., spend an hour or so with him and when a customer comes along sell him, and we have found out we can sell two out of every three customers if we go at it right. While you might accidentally miss the first one, you will surely get the second one. If he is getting one out of two he is getting a great deal more than he has in the past, so the idea will go over.

"There is no man to-day operating a supply store, garage or filling station selling supplies who has not sold something since your last visit, and probably his reason for not giving you anything is because he thinks he is overstocked. The chances are that he is, but I am doubtful if he is overstocked on the popular selling articles. If he is not, then he should have a few of those articles so his line will be complete because if somebody stops and asks him for something which is a good selling article and he hasn't it, and he drives to the next place, the customer is liable not to come back the next time he wants something, and if the other man has it he will stop there thereafter. Automobile owners are inclined to be clannish. If one man gets good service it is a rule that he tells his fellow motorists, and you will find friends usually going to the same place, so when you lose one customer you often lose others. When you gain a new one you may gain a dozen, so let's not try to overstock our customers, but sell them orders that will last from call to call, and see that his good selling items are always up to date, because if he hasn't the good selling items he certainly cannot expect to sell the poor ones; and if he is overstocked, give him some assistance and ideas as to how he can reduce his stock. If he has any peculiar problems and we can help him, we are here for service.

"Jobber salesmen may be divided into two classes. Those who call on the dealer *to sell him something* and those who call *to show him how he can sell something.*—G. Norman Baughman."

L'ENVOI

WHEN men have ceased to travel
And every one stays home,
Should the social skein unravel
Back beyond the days of Rome;
Should our sympathies, desires,
Be confined to what-we've-got,
And our interest merely fires
'Round a single house and lot;
Should the busy marts of trading
Never call to fields afar,
Ne'er by rail or wing be aided
O'er the geographic bar;
Should we never sigh in summer
For a cooling northern breeze,
Should we never seek to slumber
Underneath the stars and trees;
Should the travel lust that ever
From Creation's rising sun
Drove our fathers, stopping never,
Till the newest lands were won,
Should that heritage of wander
Be forgotten in a trice,
Could we sit content and ponder
With content become a vice—
When the clock no longer beckons,
When we cease to value time,
When we heed not fleeting seconds
In the universal climb;
When the road no longer calls us,
When we still the world-old-trend,
When we care not what befalls us—
Then the "Auto Boom" will end.
—Ohio Motorist.

Why "Flivverboob"?

Editor Motor World: We read with interest in Motor World of January 14 that "Flivverboob" wins the prize of what they term a road hog, or reckless and careless driver.

One would naturally think that drivers of Ford cars were the only ones of such nature, if we understand the meaning of the word "Flivver," and we for one take exception to such decisions. We know the Flivver takes up more of the road than any other car, but it is in the form of one behind the other. In our part of the country it is the larger car drivers of this reckless class that think a Ford has no place on the road, and forces them to take the ditches when necessary.

We think the judge's decision is partial to a great extent.—Coon Auto Co., Sioux Falls, S. D.

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Live Local Automobile News Helps Dealers

Can You Sell Your Newspaper This Idea of the Utica Morning Telegram?

HAS your newspaper a photographer to handle pictures for the automobile section? If it doesn't, wouldn't it be better for the paper and the dealers to have one? The Utica Morning Telegram thinks so.

Ivan Moore, who handles advertising and publicity pertaining to the automobile industry for this paper says:

"Utica, like many other cities, never had a newspaper that appreciated the popularity of automobile publicity, and now that the Morning Telegram promoted and made such a success of this necessary department, I feel proud and confident that there are greater possibilities in the automobile publicity line.

"It is quite surprising how little automobile men appreciate the value of publicity. Good, live news events break every day in some one or the other dealer's place of business, but the dealer fails to appreciate the value to be derived from the same in telling the public through the newspaper medium.

"The big factor in making the Utica Morning Telegram so popular with the automobile dealers and accessory men is having at our command a good photographer, who is ready to go at a minute's notice to take a picture of a new model of an automobile which has just arrived in town, or the taking of any picture pertaining to the automobile industry. Local pictures make a live automobile edition, just as local pictures in advertising make the advertisement more attractive.

"When the automobile edition was started by the Utica Morning Telegram there was little or no automobile advertising or publicity in the paper, but now the paper has an average of 4,985 inches of advertising, the automobile edition being published on Wednesdays only.

"The attention of the readers of the Morning Telegram is called to the special automobile edition through the insertion twice a week in the paper of special advertisements. These advertisements are large enough so that no reader can overlook the fact that he can expect something out of the ordinary in the automobile edition."

A Used Car Slogan

"EVERY used car must make a friend for us," is the slogan of the used car department of the Bornschein Motor Sales Co., Fort Wayne, and this slogan is effectively played up in all of the concern's advertising for the sale of used cars. Do all the used cars you sell make friends for YOU?

Axioms for the Truck Dealers' Letters

THE practice of typing a slogan or axiom at the bottom of business letters is becoming quite prevalent and many of those who use them are ready to testify that they are actually helpful in driving home selling truths and rendering other types of service to customers.

Some truck dealers may be able to use profitably these axioms published in the current issue of *Haul-Age*, a house organ of the Garford Motor Truck Co.:

An ounce of attention is worth a pound of overhaul.

An oiling a day keeps the repair man away.

Look before you back.

A rolling truck gathers no repair bill.

A tool in the kit is worth a thousand in the garage.

Service is as service does.

Fools rush in where experts fear to ride.

In using axioms and slogans in letters they usually are typed in red ink at the bottom of the page.

Durant Weather Vanes Carry Advertisement



In the rural sections of New Jersey and New York, motorists have been attracted recently by something novel in the way of signboards. It is a weather vane which carries the advertisement of the Poertner Motor Car Co., Durant distributor in New York, and the message "Durant — Just a Real Good Car"

Not Used Cars, But "Certified Cars"

"WE want the public to know that they can purchase 'certified cars' at our standardized prices," says E. L. Patton, president and manager of the Southern Motors Co., Jacksonville, Fla. And they carry out this idea in all advertisements in their sales.

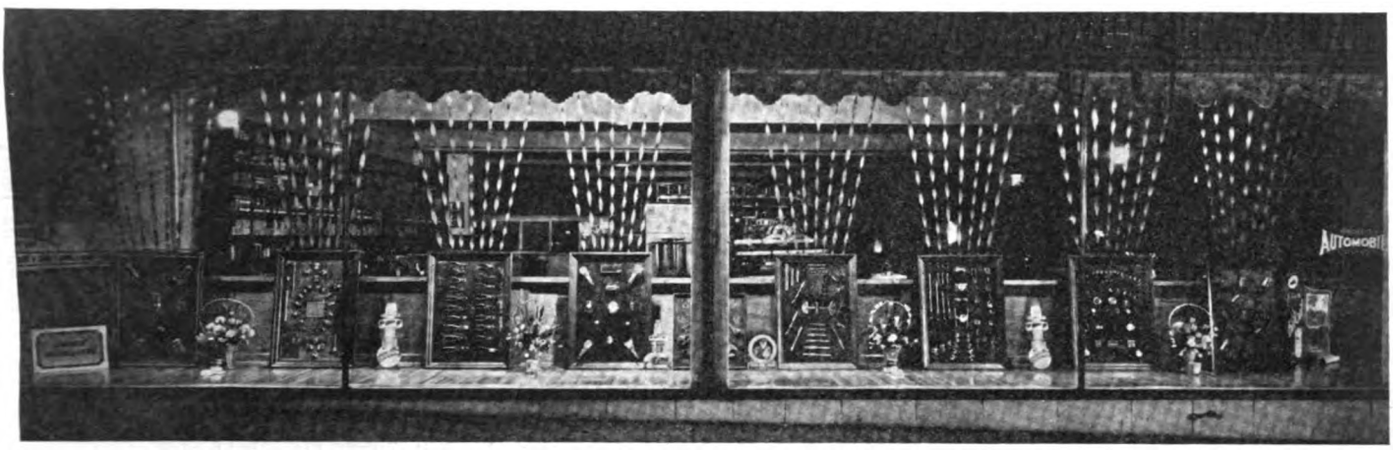
A "Certified car is a safe investment," the company's advertisements assert. To back up this assertion the company issues a certificate with each used car. This certificate carries a guarantee on mechanical condition for 30 days, and new parts installed in re-conditioning are guaranteed against flaws for 90 days. A ten-day free labor service is also a part of the certification.

Patton asserts that this policy has eliminated his "used car problem," although despite that fact he is willing to co-operate with the other Jacksonville dealers.

By advertising to the public that prospective buyers can obtain Chevrolet cars from the Southern Motors Co.—"certified cars" at standard prices, Patton believes he has made it almost impossible for his competitors to bid-up a Chevrolet car in trade.

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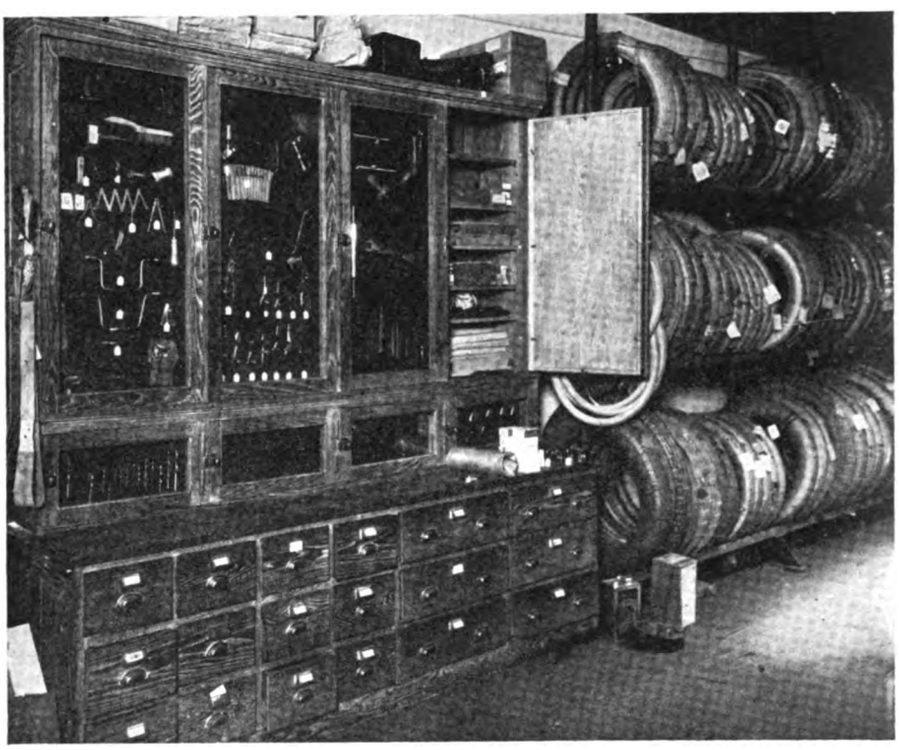
Displays That Ask 'Em to Buy Equipment



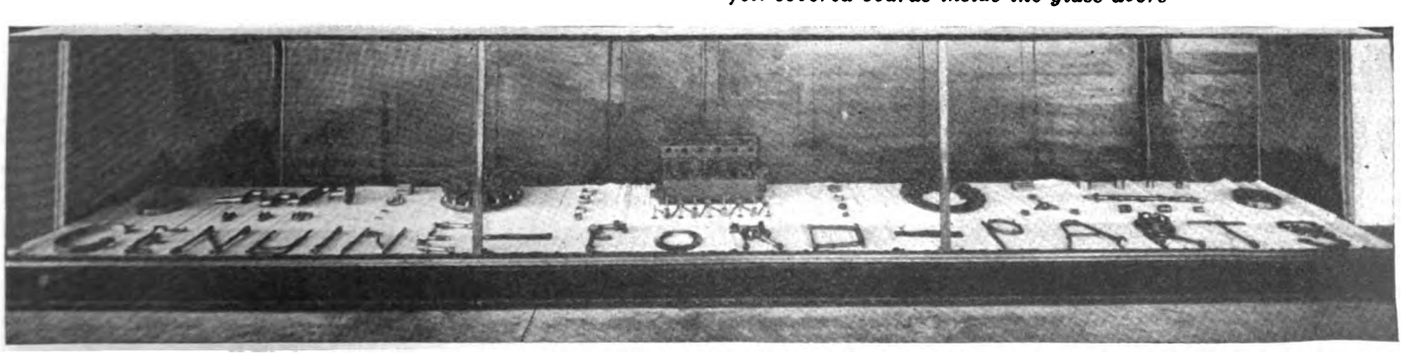
How effectively display boards may be used in window displays is shown in this effort of the Kansas City Auto Supply Co., Kansas City jobber



Here is a sign that gives tourists information and at the same time advertises Young's Garage, Amanda, Ohio, which erected it



A wall cabinet with a strong display feature is used in the Plainfield Auto Tire Co. store in Plainfield, N. J. The tools and equipment displayed are on green felt-covered boards inside the glass doors



This unique arrangement of 54 Ford parts attracted a lot of attention when shown recently in a 20-ft. display case by the Davis Motor Co., Ford dealer in Houston

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Marmon Standardized Service Costs and Flat Rates

Sixteen Service Operations Covering 85 Per Cent of Maintenance Operations Developed by Factory Service Department

THE Nordyke & Marmon Co. has prepared a list of sixteen service operations which cover 85 per cent of all maintenance operations. A flat rate covering both labor and materials has been made on these sixteen operations, these being based on time studies of thousands of operations. The minimum number of hours is entirely practical and allows a fair profit on each operation, provided the shop is equipped to do the work with Marmon special tools and methods. The prices and operations apply only to Marmon 34 cars of the B series, 1920, 1921 and 1922.

Operation	Hours	Total Price Including Parts
1—Complete inspection of car (no charge)	2.0	
2—Adjusting torque ball	2.0	$3.00
A—Loosen nuts on torque ball gland. B—Insert or remove shims as necessary. C—Tighten nuts on torque ball gland. (Several adjustments may be necessary before the correct one is obtained. This operation does not include dropping the rear end.)		
3—Grinding valves and removing carbon	8.0	18.50
A—Remove header cover. B—Remove rocker arms and push rods. C—Remove header. D—Remove valves. E—Clean carbon from pistons, cylinders and cylinder header. F—Grind valves. G—Assemble head on engine. H—Fit new gaskets. I—Refit rocker bushings. J—Clean spark plugs. K—Clean distributor points. L—Clean gasoline strainer. M—Warm up engine and adjust valves. N—Adjust carbureter.		
4—Installing and adjusting standard fan belt	0.8	2.50
A—Remove old fan belt. B—Install and adjust new standard belt.		
5—Adjusting brakes and oiling brake connections	2.5	4.00
A—Take up slack to permit both brakes to function properly. B—Free and oil all brake connections.		
6—Tuning engine	1.5	4.00
A—Adjust valves. B—Adjust carbureter. C—Clean sediment out of gas strainer. D—Clean spark plugs. E—Clean and adjust breaker points. F—Check timing. G—Test.		
7-A—Relining foot brakes	4.0	16.75
A—Remove wheels. B—Take off external bands. C—Remove facings from bands. D—Rivet on new facings. E—Round up bands. F—Replace bands. G—Replace wheels H—Set brakes to allow for take-up. I—Adjust brakes.		
7-B—Relining hand brakes	5.0	18.75
A—Remove wheels, hubs and drums, and internal bands. B—Remove old facing from bands. C—Rivet on new facings. D—Round up bands. E—Replace bands. F—Replace wheels. G—Set brakes to allow for take-up. H—Adjust brakes.		
7-C—Relining both brakes	9.0	33.00
These two operations described separately in sections 7-A and 7-B.		
8—Installing new water hose connections and flushing out radiator	2.0	2.95
A—Removing old water inlet hoses at radiator connections. B—Remove hose from split water pipe. C—Flush out radiator so it is clean. D—Install new hoses and clamps.		
9—Rebushing shock absorbers (16 bushings)	2.5	12.00
A—Remove shock absorbers. B—Press out end bushings. C—Insert new bushings. D—Examine plates. E—Replace shock absorbers. F—Adjust shock absorbers.		
10—Greasing car	3.5	8.75
Furnish the grease and grease the car completely, including the gearset, rear axle and engine.		
11—Rebushing front springs with oilless bushings	4.0	13.50
A—Remove wheels. B—Press out worn bushings from eyes of springs. C—Press in new bushings. D—Replace wheels.		
12—Aligning front wheels and adjust bearings	2.0	3.00
A—Align front wheels and adjust bearings.		

This is the ninth flat rate schedule published in Motor World. The previous schedules covered Paige, Overland Four, Studebaker, Dodge, Dort, Buick, Chandler and Hupmobile.

Operation	Hours	Total Price Including Parts
13—Rebushing steering cross rods	3.0	8.70
A—Remove bolts B—Remove bushings. C—Press in new bushings. D—Tram front wheels.		
14—Overhauling clutch	7.0	14.00
A—Take out clutch. B—Disassemble clutch. C—Clean discs. D—Replace discs. E—Clean teeth of spider. F—Replace bearings. G—Reassemble clutch. H—Replace clutch in car.		
15—General overhauling of engine	55.0	264.00
A—Disassemble engine. B—Clean carbon. C—Grind valves. D—Refit rocker arm bushings. E—Grind cylinders. F—Fit new piston skirts. G—Fit new piston rings and wrist pins. H—Repack water pump and install new impeller. I—Install new tappet rollers and pins. J—Install new guides, push rods and tappets K—Install new timing gears. L—Clean and inspect electrical equipment. M—Reassemble engine. N—Test and tune engine.		
16—Replacing standard fender	3.5	35.00
A—Remove old fender. B—Put on and bolt up new fender. The price given above applies to all fenders, front or rear; on all body styles open and closed.		

An Addition to the Hupmobile Flat Rates

Due to a regrettable error a portion of the detailed procedure of Operation No. 8, Group 24 on the Hupmobile Model R, Flat Rates published in Motor World issue of July 5 was omitted. These operations are necessary to complete the work. The details omitted were from M to V and herewith are given:

8—Take out rattle by tightening.. 7.0

A—Tighten all spring rebound clips—eight rear and six front. Shorten spacers if necessary.
B—Tighten all spring to axle clip nuts—sixteen.
C—Tighten all spring shackle bolts—four each front and rear. Spring action must be free and nuts properly locked—use new star washers if necessary.
D—Shim all four spring front bolts as required.
E—Tighten tie rod clevis bolts and clevis clamp bolts. Steering must be as free as before tightening.
F—Tighten radiator to frame.
G—Tighten hood ledges to frame.
H—Tighten head lamp bracket to fender bolts.
I—Tighten all fender bolts.
J—Tighten running board brackets to frame and running boards to brackets. Be sure spacers are tight.
K—Tighten body to frame bolts.
L—Tighten gasoline tank brackets to frame bolts.
M—Drill and tap rear cross tube near center if not already provided with set screws—use 3/16 in. drill and ¼ in x 20 U. S. S. tap.
N—Turn cross tube so hole is on bottom and install ¼ in. x 20 U. S. Std. set screw ⅞ in. long under head and check nut.
O—Tighten rear cross tube tie rod nuts.
P—Tighten spare tire rim on carrier.
Q—If car is equipped with bumpers tighten all bolts and nuts.
R—Tighten battery cage to body and battery in cage.
S—Tighten toe and floor boards.
T—Tighten windshield to body and top to windshield.
U—Shim or build up upper windshield frame to stanchion bumpers to take out side play.
V—Adjust or replace rubber door bumpers as required.

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Classifying Debtors Helps Collections

Some Helpful Hints in Collecting Accounts from the Legal Editor of Motor World

AT this time of the year most of the attention of dealers in seasonable lines like the automotive business is apt to be concentrated on the sale of goods, and only too often is the fact lost sight of that a large volume of sales is not the thing most to be desired—but a large volume of sales for cash or to people whose credit is beyond reproach.

Every dealer continually has a number of accounts on his books. A certain proportion of these are always hard to collect. This is due to various reasons. Some of the debtors are not financially responsible, some are financially responsible but neglectful, some have a real or fancied grievance in that they think they have been overcharged, and last, but fortunately smallest class, are plain "dead beats."

The most important thing for a dealer desiring to make successful collections to do is to use a little judgment when he is writing his debtors.

If, for illustration, a dealer has on his books one hundred people who owe money to him, I am convinced he will meet with much greater success in his attempt to collect the money due him, and will succeed in clearing it all but a few of the outstanding accounts, if he will take the time and trouble properly to classify them.

My suggestion as to the first class would be that it include all those people who are financially responsible, people who are quite able to pay their bills and very likely quite willing to pay them, but who have simpy neglected to do so because their entire time is taken up with things which seem more important to them.

A suggested second class will be all those people who have a grievance, whether it is real or fancied; that is, the people who the dealer thinks have neglected to pay because they believe the bill rendered is too high. These people, of course, should be addressed in a different way from those of the first class.

The third class might contain all the people on the dealer's books about whose financial responsibility he has some doubt. Even if people are perfectly willing to pay, but cannot do so because of lack of cash, they should go in this class. It will be found that the letters to people in the first and second class will not bring any results if addressed to these people; but if a special series of letters is written them, the results will be quite different.

Then there is the last class, which, unfortunately, is always found among a number of people who owe money—the "dead beats." These also will have to be dealt with differently from the others to insure results.

People properly belonging in the first class must naturally be handled tactfully. To offend them means to lose them as customers.

An itemized bill should first be sent to the party for whom the work is done. After a sufficient period of time, it should be followed by a statement simply reading "To account rendered."

It is discretionary with the dealer whether or not to send another statement, if a check is not then received. If he does not wish to send another statement, he may begin to write his letters. A form of letter which may be sent to those who fail to pay merely because of neglect is the following:

"Dear Sir:

"On going over our accounts we find an item of $75, which became due January 1.

"We appreciate the fact that in the rush of present-day business small matters like this are frequently overlooked.

"If you will send us your check, we shall be glad to forward a receipted bill and close this account.

"Thanking you, we remain,

"Yours truly."

A form of letter which may be sent with good effect to those who have a real or fancied grievance is this letter:

"On going over our books we find under your account a balance of $50, due since January 1, 1915; inasmuch as the work was done so long ago, you may not now be familiar with its details, and if you have any doubt as to the amount or accuracy of the bill, we shall be pleased to have you go over it with us.

"Our business policy is:

"First, to do our work right.

"Second, to make our prices right.

"Occasionally a customer does not understand when certain jobs require so much time or why some other item enters into the account, and we gladly go over all these things with our patrons. May we have your check, or, if the account seems like ancient history, a call in person?"

A good letter to those who are not financially responsible follows:

"My dear Mr. ——:

"I have sent you a number of bills and statements showing the state of your account with us at this time. To date we have received no response.

"We desire to co-operate with you in every way and to extend all possible credit. As this account has been running a long time, however, we will appreciate your check to close, or, if you find it inconvenient to send a check for the full amount at this time, we will be glad to receive your check for part of your indebtedness, as we find it necessary to jack up our bills receivable this month because of heavy expenses we have to meet.

"Very truly yours."

If you know a man to be a dead beat, it is not worth while wasting much time on him, so after statements have been sent, it is just as well to write letter F and if no check is received, turn the claim over to your attorney.

"Dear Sir:

"We beg to advise you that unless we receive your check in settlement of the balance of $75 still due us by Monday, the 24th inst., we shall refer the matter to our attorney for suit.

"We trust you will see your way clear to dispensing with the trouble and expense of a law suit.

"Yours truly."

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER

Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

Seeks Insurance Information

Editor Motor World:—The writer (one of your subscribers) read with considerable interest Mr. Kaiser's article on Insurance Information; and I am going to request that you send me the names of some insurance companies that are really dependable.

Have carried some "mutual" insurance (to my sorrow) and do not care for any more of this kind, and I am not well enough versed in the different plans to hazard a guess.—F. J. McMahon, Kalamazoo, Mich.

Answer:—There are so many good insurance companies—and so many bad ones—that it is impossible to give you a complete list. Any of the big companies, like the Aetna, Travelers or Hartford, will be safe for you to use. If you want information concerning any particular company, write to the Superintendent of Insurance at your state capital, and he will give you full information regarding its assets, liabilities, etc.

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Service Operations on Timken Truck Axles

Factory Recommended Practice for Adjustment, Lubrication and Maintenance on Front and Rear Types

IN ordinary truck service front wheel bearings should be removed, cleaned and readjusted at least four times a year. If the service is unusually severe it is advisable to inspect the condition of the lubricant and the adjustment of the bearings every two months.

To Remove, Clean and Readjust Front Wheel Bearings

1—Remove the hub cap, then put a jack under the front axle and raise the wheel clear of the floor.

2—Wipe the grease from the end of the spindle and with pliers remove the cotter pin from in front of the outer lock nut.

3—Take off the outer lock nut with a wrench; a thin lock washer comes off next, then take off the inner lock nut.

4—Kneel directly in front of the wheel. Grasp the rim with both hands and pull directly toward you, being careful not to let the outer bearing slip from the hub and fall to the floor, as this may bend or damage the cage so that the bearing will not render perfect service when replaced.

5—The outer bearing having been removed, lift the wheel off the spindle, exposing the inner bearing.

6—With a stiff brush and gasoline or kerosene clean all old grease from both the inner bearings and the inside of the hub. It is not necessary to remove the inner bearing from the spindle in order to do this, although it may be removed if desired. It is a good idea to occasionally remove both bearings, placing them in a pan containing a mixture of washing soda and hot water, allowing the water to come to a boil, thus cleaning off any grease from behind the rollers that the brush and gasoline may have failed to remove.

7—The bearings having been thoroughly cleaned and dried, replace the largest, or inner, bearing on the spindle, covering it thoroughly with good, clean grease, that is, free from acid, grit or any solid matter. Care should be taken to have no grit or dirt on the paddle.

8—The inside of the hub should be thoroughly cleaned and the space between the two bearing cups should be repacked with clean grease.

9—Replace the wheel, and, holding it firmly in position, slide the smaller or outer bearing on the spindle, pressing it firmly into the hub.

10—Screw on the adjusting nut, turning it up tight against the outer bearing so that the wheel binds, at the same time revolving the wheel to be sure all working surfaces come into contact. Then back off the adjusting nut enough to allow the wheel to rotate freely — but without noticeable end play.

11—Test the adjustment by taking a short bar, placing the end of it between the tire and the floor, at the same time holding one finger on the cage of the outer bearing. Work the bar up and down so that you can detect any excessive play or looseness. When you can feel a barely perceptible shake and the wheel will oscillate when given a slight spin, the adjustment is right. If there is too much looseness in the bearings, tighten up on the lock nut. If, on the other hand, the lock nut is set too tight to allow the wheel to oscillate, loosen it about one-quarter turn.

12—Replace the keyed washer which goes between the two lock nuts and which prevents the inner nut turning.

13—Replace the outer lock nut and screw it up tight.

14—Replace the cotter pin in the end of the spindle to prevent the outer nut working loose.

15—Again test the adjustment with a bar as before, because in using a heavy wrench to tighten the outer lock nut it is sometimes possible to jam this nut so tightly against the inner nut as to destroy the adjustment. By taking the extra precaution to test the adjustment before replacing the hub cap, you can always be sure that your bearings will render perfect service.

Better Mechanics

Article No. 248

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.

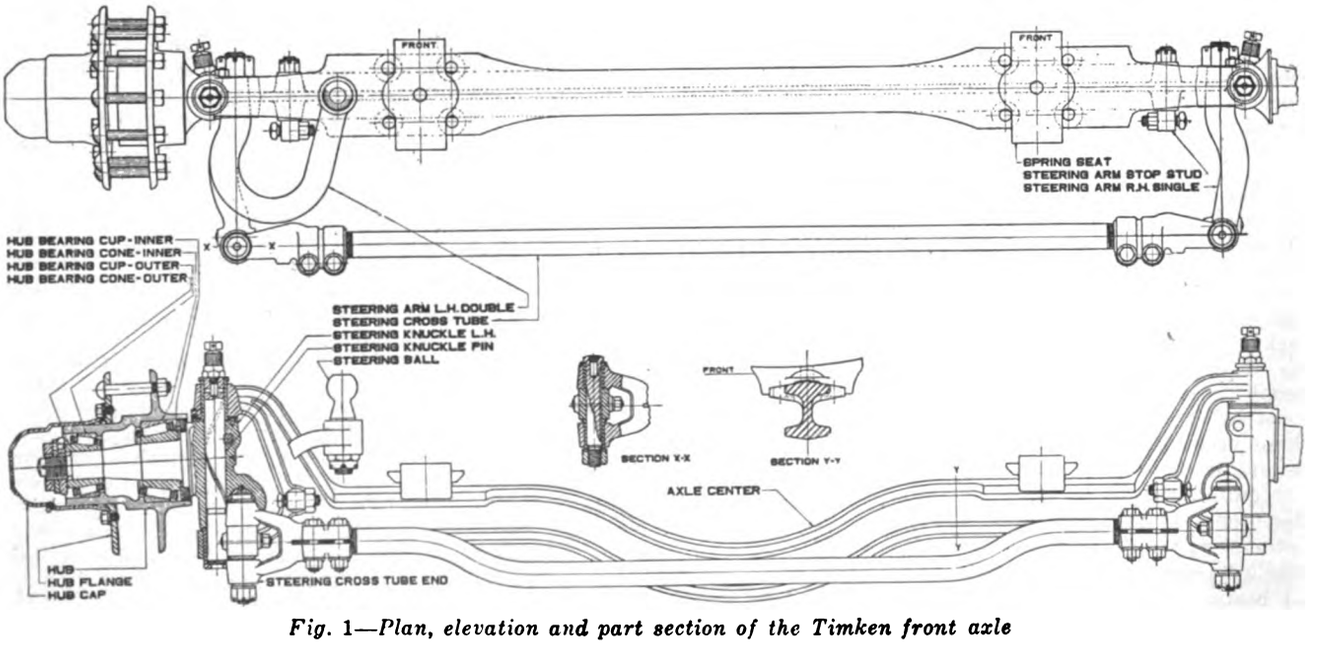


Fig. 1—Plan, elevation and part section of the Timken front axle

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16—Now cover the end of the spindle and the lock nuts with grease and put on the hub cap, tightening it securely.

To Adjust Bearings in Steering Knuckle Heads

To adjust steering knuckle bearings when a Timken roller bearing is used at the inside of the wheel hub. Occasionally both bearings should be placed in a pan of hot water and washing soda and brought to a boil. This cleans off any grease behind the rollers that may not have been removed by the brush.

6—The bearings having been thoroughly cleaned and dried, replace the inner bearing on the tube, covering it the wheel to rotate freely, but without noticeable end play. Test your adjustment by taking a bar, placing the end of it between the tire and the floor, at the same time holding one finger on the cage of the outer bearing. Work the bar up and down so that you can detect any excessive play or looseness. When you can feel a barely perceptible shake and

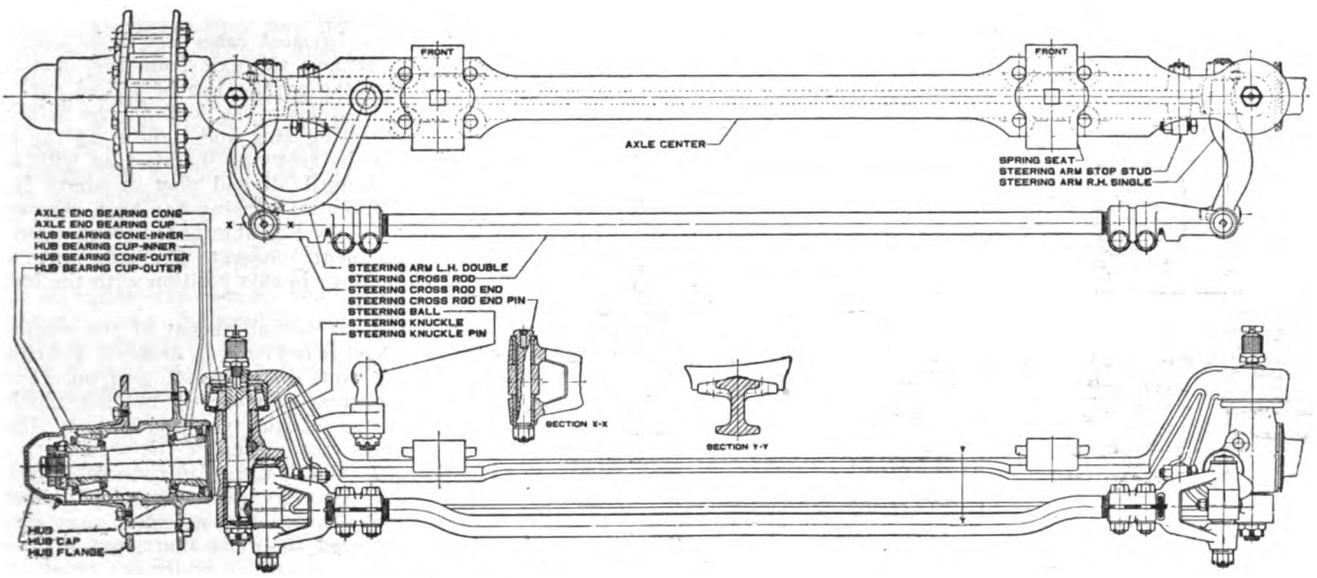


Fig. 2—Plan, elevation and part section of Timken front axle with straight beam

this point, simply tighten up on the nut on the bottom of knuckle pin after cotter pin has been removed. (See Fig. 2.) This forces the bushing in the lower yoke of the I-beam up against the steering spindle, which in turn forces the bearing up into the cup for a proper seat.

Do not fail to lubricate this bearing thoroughly with good quality cup grease through the cup provided on the top of the knuckle pin.

Rear Wheel Bearings—Full Floating Type

1—Remove the cap screws around the axle shaft drive plate (see Fig. 3) and pull out the axle shaft.

2—Put a jack under the housing, raise the wheel off the floor and wipe the grease from the end of the housing tube and the lock nuts.

3—Take off the outer lock nut, then remove the thin lock washer and the inner lock nut.

4—As the wheel is too heavy to be easily lifted off the tube, the following method can be used to remove it. Take a short piece of board and cover the upper surface with grease—slide this under the wheel and then lower the jack several notches until the wheel rests lightly on the board. Remove outer bearing, being careful not to allow it to fall on the floor, which may bend or otherwise damage the cage. The wheel can now be eased off on the greased surface of the board and rolled to one side.

5—With a stiff brush and gasoline or kerosene clean all the old grease from both outer and inner bearings and from well with good clean grease that is free from all acid, grit or solid matter. Care should be taken to see that there is no dirt on the paddle.

7—Repack the space in the hub, between the two cups which fit over the bearings, with clean grease.

8—Replace the wheel and, holding it in position, slide the other bearing on the tube end, pressing it firmly into the hub.

9—Screw up the inner lock nut, turning it up tight against the outer bearing so that the wheel binds, at the same time revolving the wheel to be sure all working surfaces on the bearing come into contact.

10—Back off the nut enough to allow the wheel will oscillate freely, the adjustment is correct.

11—Replace the lock washer and outer lock nut, screwing the nut up tight. Before replacing the drive shaft again test the adjustment with a bar as before.

12—Cover the end of the axle tube and the lock nuts with grease and replace the drive shaft, being careful to tighten up the cap screws in the plate securely.

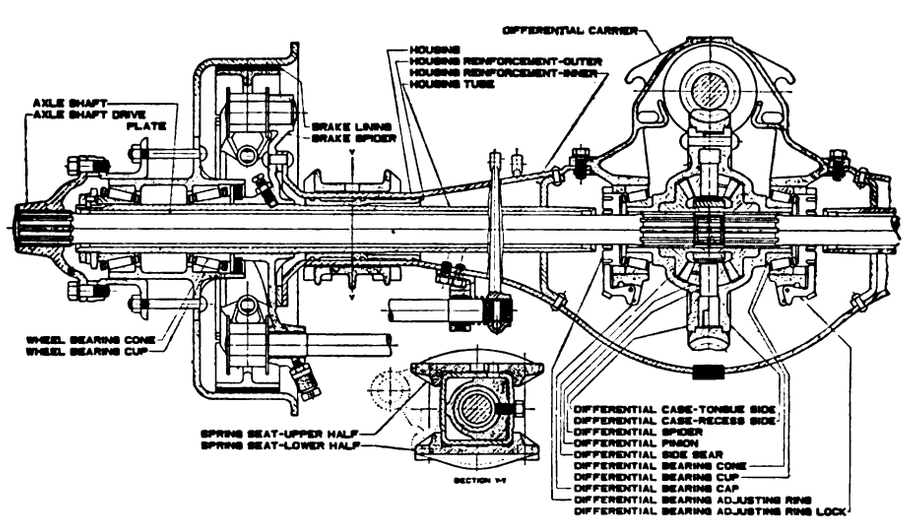


Fig. 3—Section of the Timken full floating rear axle

Rear Wheel Bearing—Fixed Hub Type

On this model axle the rear wheel is keyed to the axle shaft. The bearing cone is pressed on the shaft and the cup

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is mounted in an adjusting ring which is screwed into the axle housing. Adjustment of bearings is made by turning this ring. These bearings should be cleaned and repacked with grease once a year.

1—To clean or adjust the wheel bearing remove the wheel from the shaft using a wheel puller if necessary.

2—Release the lock (See Fig. 4) which prevents the bearing adjusting ring turning, and with a flat tool unscrew this ring from the housing. The axle shaft, carrying with it the bearing cone and rollers, can now be pulled out of the housing.

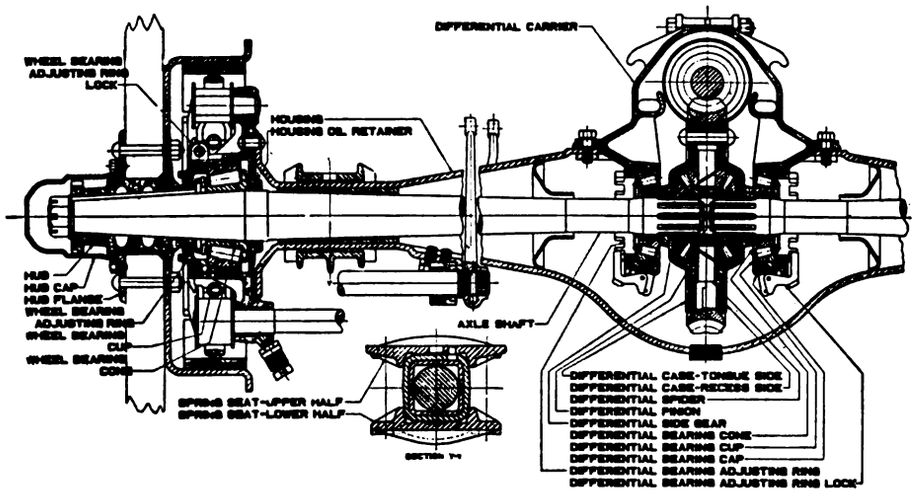


Fig. 4—Section of the fixed hub type Timken rear axle

3—With a stiff brush and gasoline or kerosene clean all old grease from the bearing shaft and end of housing. To thoroughly remove all old grease the bearings should be placed in a solution of washing soda and water and brought to a boil.

4—After carefully cleaning and drying the bearings, cover them well with good, clean grease, free from acid and dirt, grit or other solid matter.

5—Also pack the end of the housing, into which the bearing adjusting ring fits, with grease.

6—Replace the shaft with the bearing cone and rollers and screw in the ring carrying the bearing cup.

7—In adjusting the bearing remember that the two drive shafts, right and left, come in contact in the center of the differential spider. If the bearing on one side is adjusted in too far, while the bearing on the other side is too far out, the spline end of the shaft will project through into the opposite side of the differential. This will either lock the differential or cause the end of the shaft to be twisted off. Care must be exercised, therefore, to take up the same amount on both the right and left hand bearings.

8—Screw up the bearing adjusting ring on each side until all end play is taken out of the shafts and the shaft turns stiff when revolved by a wrench placed on the nut on the shaft end.

9—Back off the ring one notch and lock in this position by means of the locking finger.

10—The wheel may now be replaced, being careful to tighten up well on the nut on the end of shaft and to lock same with a cotter pin.

Differential Bearings

Differential bearings are lubricated by the oil in the axle housing. They require no attention in connection with lubrication beyond keeping the correct amount of the proper lubricant in the housing and seeing that the oil grooves are kept clean.

In adjusting the differential bearings a combination adjustment is necessary (See Fig. 4). First, all play must be taken out of the bearings by screwing up the adjusting rings on both sides of the differential, and second, the worm and worm wheel must be set in proper alignment by adjusting the differential bearing on both sides end for end, moving the differential and worm wheel to one side or the other as required for correct alignment.

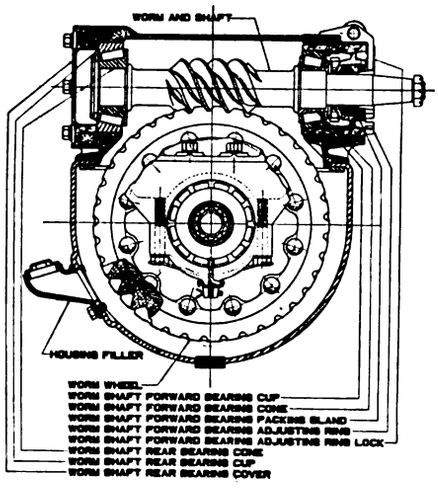


Fig. 5—How the worm shaft bearings are adjusted

All ordinary adjustment of these bearings should be made on the left hand bearing (standing at the rear and facing toward the front of the truck); never disturb the right hand bearing except when it is necessary to take down the entire differential assembly. By making the adjustments on the left bearing only the alignment of the worm and wheel will not be destroyed.

1—To adjust the bearings (See Fig. 4) the differential carrier must be removed from the housing.

2—Take out both drive shafts, remove the cap screws holding the carrier to housing, and, having disconnected the propeller shaft, lift out the entire carrier assembly.

3—In most cases it will be necessary to remove the axle from the chassis before the carrier can be pulled out.

4—Release the lock on the left hand adjusting ring and tighten up the bearings by screwing in this ring with a flat tool until all end play or shake in the differential housing has been removed.

5—Having obtained a good tight adjustment, unscrew the ring one notch and lock in this position with the locking finger.

6—If the alignment of the worm and wheel is not correct, unscrew one ring, at the same time tightening up on the other the same number of notches until the center of the worm wheel is directly under the center of the worm.

7—Check up again for end play to be sure that the adjustment is all right.

8—The carrier assembly may now be replaced, the drive shafts put in, and the axle reassembled under the truck.

9—In replacing the carrier assembly be sure that you tighten up well on the cap screws holding the carrier to the housing.

Worm Shaft Bearings

1—To adjust the worm shaft bearings (See Fig. 5) remove the packing gland from the carrier to avoid binding on the shaft and to allow free movement of the shaft.

2—Remove the lock from the slot and, with a flat tool, screw in the forward bearing adjusting ring until the shaft binds.

3—Unscrew the ring several notches to allow end play so that the shaft can expand when it becomes heated under running conditions. The exact amount the ring should be backed off is shown in the following table:

Size Axle	Play in Inches	Number of Notches
¾-1½ Ton	.011-.015	3
2-3½ Ton	.016-.020	4
5 Ton	.020	4

4—Lock the adjusting ring in this position with the locking finger and replace the packing gland on the shaft, tightening up on it sufficiently to prevent oil leaking out at this point.

On the older type axles (6456—1½ ton, 6552—2½, and the 6652—3½ ton) it is necessary, after backing off the cage, to see that the bearing cup is properly seated in the cage. This can be done by driving on the rear end of the worm shaft or by starting the truck up slowly in low gear. On the old type 5-ton axle (6752), where the worm shaft bearings are set the other way, no end play to take care of expansion is necessary. On this axle the adjustment of bearings is made at the rear of the shaft.

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Brake Adjustment

1—To tighten up the brakes, first take up on the brake rods.

2—After all the adjustment possible has been made in the brake rods take off the nut, lock washer, and clamp bolt which clamps the brake levers on the axle to the brake camshaft.

3—Lengthen out the brake rods again and move the lever back two or more serrations on the camshaft and clamp into place with the clamp bolt.

4—Make a final adjustment of the brakes by means of the adjustment on the brake rods. All possible or necessary adjustment can be made in this way up to the point where the brake shoes require relining.

Lubrication

To lubricate the worm and wheel, differential, and differential bearings, keep the housing filled to the level of the oil plug in the bowl with a good quality of light steam cylinder oil.

Cautions

1. Don't jam lock nuts so tight that the wheel binds. A wheel should oscillate when given a slight spin (in other words come to a stop and turn slowly back in the opposite direction).

2. Don't allow the lock nuts to be so loose that you can shake the wheel and feel the play in the bearings. Too loose adjustment will damage a bearing just as rapidly as too tight adjustment.

3. Don't take rollers, cone, cage or cup from one bearing and substitute these parts in another bearing even though it bears the same number. After a bearing has once been used the parts differ from an unused bearing one or two thousandths of an inch—not enough to see but enough to cause trouble and expense if parts are substituted. If a bearing must be replaced because of damage, replace the whole bearing.

4. Don't hit the cage with a hammer to drive a bearing on a spindle; you will bend the cage and damage the bearing.

5. Don't use a screw driver or other sharp tool back of the cage to pry a bearing off a spindle—you will bend the cage. If a bearing cone sticks, be sure the tool is placed behind the edges of the cone. A slight pressure is sufficient to release the cone from the spindle.

6. Don't let bearings fall on the floor; you may bend the cage which keeps the rollers in line.

7. Don't use grease or other lubricant that contains acid or has acid forming qualities. Use only a good grade of clear, medium cup grease, having no solid matter in suspension.

8. Don't drive cups in hubs or other retainers, nor cones on spindles, with a hammer where pressed fit is required.

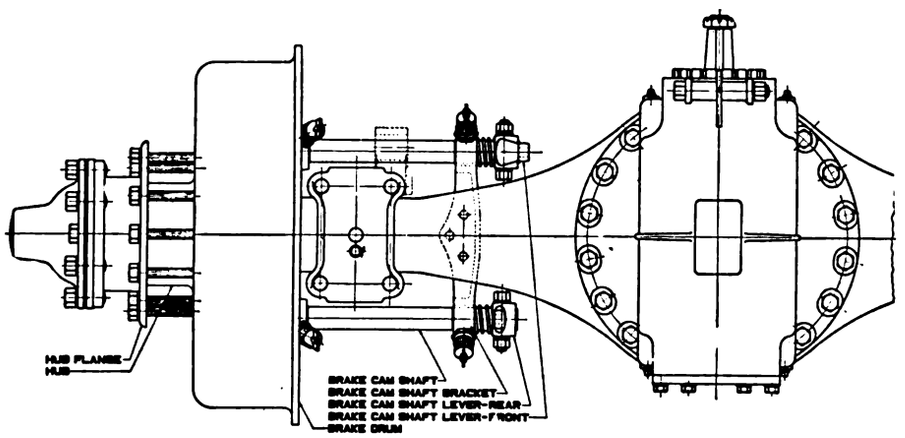


Fig. 6—Brake parts on the Timken rear axle

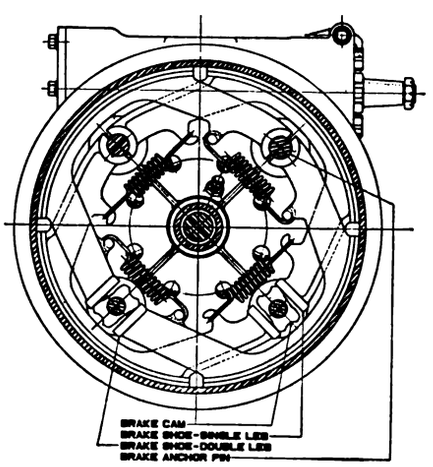


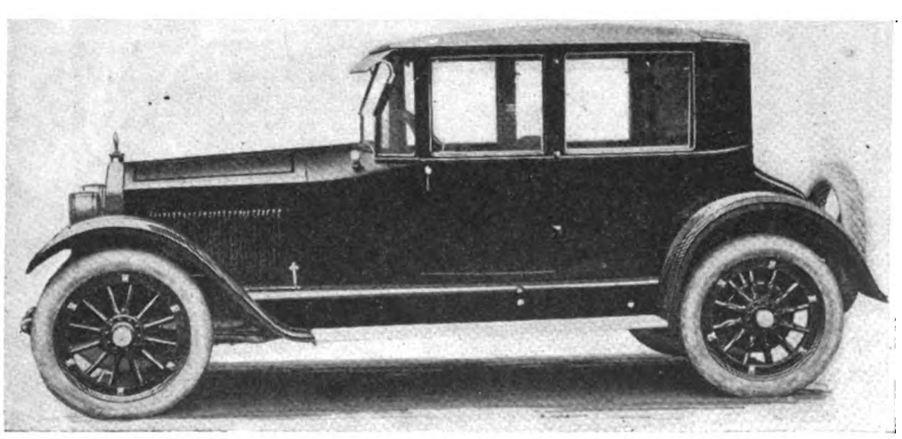
Fig. 7—Plan of the Timken brake

Stearns-Knight Six a Longer Car Than the Four

THE new Stearns-Knight Six which was announced in the July 5 issue of Motor World is to have a wheelbase of 130 in., 5 in. longer than that of the four. This change and the use of six cylinders instead of four constitute the most radical changes in the design, most of the other units and constructions following closely the practice used in the four cylinder car. The engine dimensions of the six are a little smaller than the four, being 3⅜ x 5 in. in the six as against 3¾ x 5⅝ in. in the four. It is stated that the experiments and tests of the new type engines were largely carried out by engineers and mechanics who joined the Stearns organization during the war at the time the Stearns plant was turning out Rolls Royce airplane engines. The new engine is said to operate without a period of vibration at any running speed.

Lubrication of the six is a combined force feed and splash system, the oil being driven by a gear pump. The electrical equipment is a 12-volt system, the same as in the four cylinder model. Water is circulated by a centrifugal water pump through a cellular type radiator. The clutch is a multiple disk, gearset a three speed member and gear shift and emergency brake levers are located at the center.

The wheels are of the artillery type with 34 x 4½ in. cords. The front springs are semi-eliptic and the rear cantilever. The equipment on the cars includes tire carrier, number brackets, tool equipment, pump, etc. The tops are supplied with door opening curtains and a plate glass window is placed in the rear curtain. There is a ventilator in the cowl and the windshield is a two piece plate glass, rain vision and ventilating. The coupe, brougham and sedan are equipped with sun shade and clear vision windshield.



The Stearns-Knight Six coupe brougham, $3,500. Prices of other bodies are: roadster and phaeton, $2,700; 7-pass. phaeton, $2,850; coupe, $3,350; sedan, $3,700

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Stewart Brings Out a New Utility Wagon, $1,245

Short Turning Radius a Feature—Electric Lights and Pneumatic Tires Regular Equipment

A NEW utility wagon with a capacity of 1¼ tons and a speed of 35-40 m.p.h. has been placed in production by the Stewart Motor Corp., Buffalo. Pneumatic cord tires 34 x 4½ are part of the regular equipment and the turning radius has been made very short.

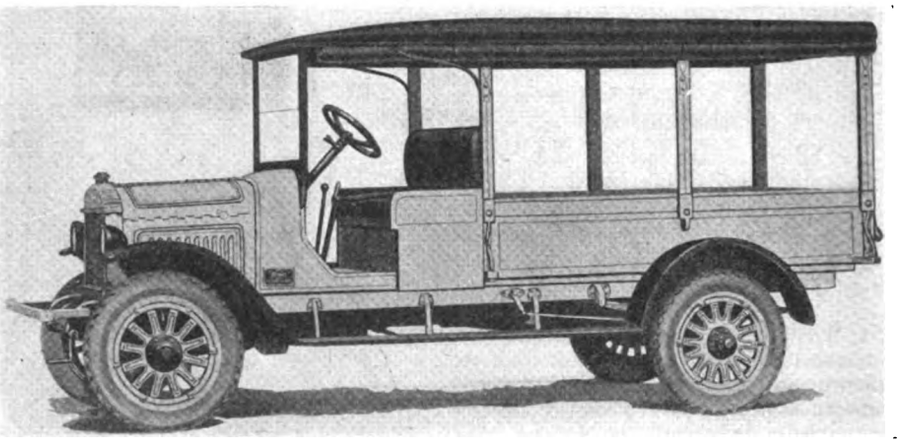
The engine is a Buda 3⅝ x 5⅛ in. with removable cylinder head and a removable cylinder block. The S. A. E. rating is 21.03 hp. Lubrication is full pressure feed with an oil gage on the instrument board. The cylinders are cast in block and are amply water jacketed and baffled to secure equal distribution of the cooling water. The cylinder head is provided with a large ledge projecting beyond the cylinder block and lugs on each end of the cylinder and head are provided for breaking the joint and for the purpose of eliminating possible injury to the gasket.

The cooling water is circulated by a centrifugal pump having a large bronze runner. Liberal sized packing glands are provided and bronze sleeves fitted over the pump shaft to prevent rusting and pitting. Made up as one assembly unit, the water pump and its drive shaft may be readily removed as a unit or separately.

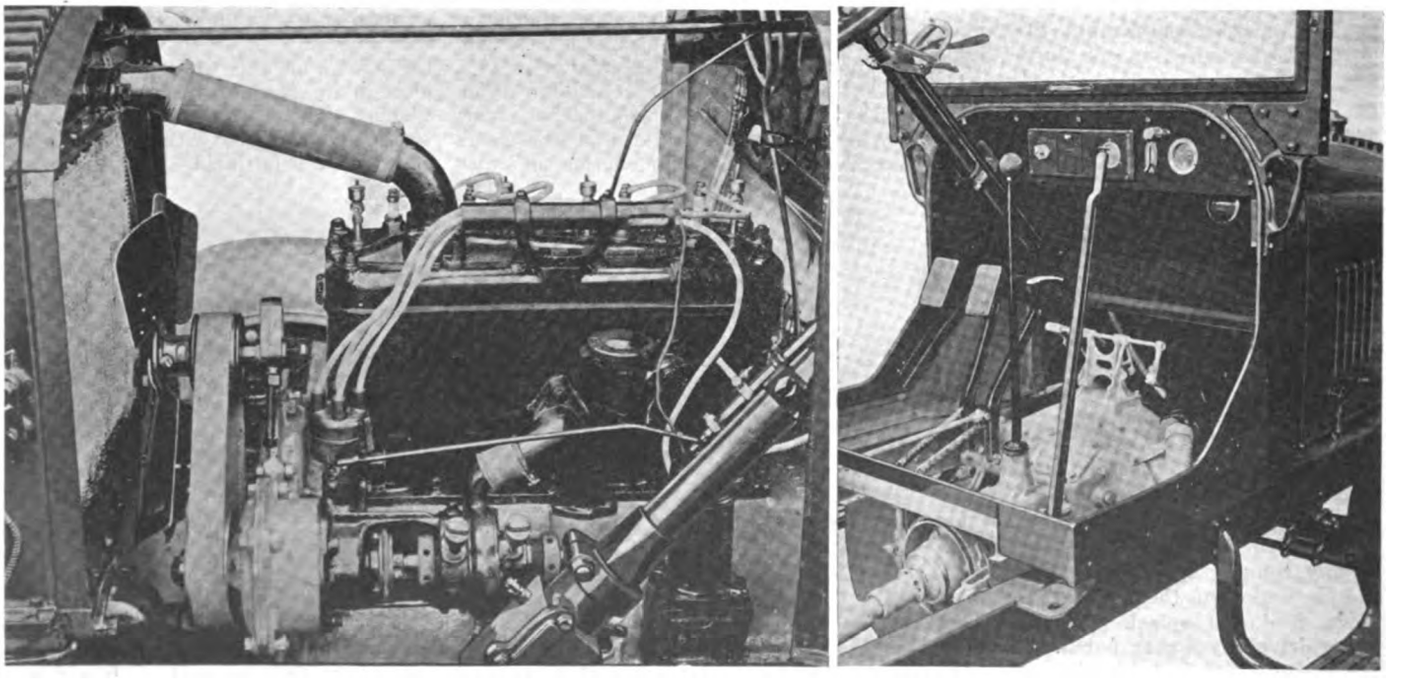
The valves and valve mechanism are operated by a single cam shaft and entirely closed. The cover over valve spring assemblies is split into two sections to facilitate removal and permit adjustment of valve tappets.

The pistons are of a gray iron and fitted with three concentric rings above the piston pin and one wiper ring in the lower part of the skirt. The wiper ring prevents the passage of excess oil into the combustion chamber. Piston heads have cooling ribs to dissipate the heat caused by the present low grade fuels.

The crankcase is divided horizontally into halves. The upper half contains the crank shaft bearings and extends over the flywheel to form the upper half of the bell housing, the lower half of the bell housing being a separate casting and not a part of the crank case or oil pan. This makes the one-piece



The new Stewart utility wagon which has a capacity of 1¼ tons and a speed of 40 m.p.h. The price is $1,245



The power plant and control units of the new Stewart utility wagon. The engine is a Buda 3⅝ x 5⅛ in. unit

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oil pan easily removable for cleaning or bearing adjustments.

The three main shaft bearings, all main and connecting rod bearings are bronze shell, babbitt lined. Camshaft bearings, which are three in number, are of babbitt, die cast. All main bearings are accurately reamed and scraped to give a maximum bearing surface. The connecting rods are drop forged I-beam construction, made of open hearth steel, and have no offset.

The crankshaft, of special design to admit of accurate running balance, is drop forged from open-hearth steel, heat treated, machined and drilled for force feed oiling system. The timing gears have wide faces and are helically cut on automatic hobbing machines.

The lubricating system is full force pressure feed to all crank shaft, cam shaft bearings, and connecting rod bearings. Oil is forced to the main bearings and cam shaft bearings through a seamless steel distributing pipe which is cast in the crank case. Oil is forced from the main bearings to the connecting rod bearings through a drilled passage in the crank shaft. This system is of the self-contained positive pressure feed, with pressure regulating valve, the oil being pumped from the oil reservoir which is located beneath the crank case, by a geared pump located in the center of the oil reservoir and attached to the upper half of the crank case to make it independent of the oil pan. Pistons and cylinders are lubricated by oil thrown from the lower ends of the connecting rods. Timing gears are also fed positively from the pressure system. The extra wiper ring on the lower end of the piston prevents an excess of oil reaching the combustion chamber, and a double throw ring back of the rear main bearing effectively prevents oil leakage into the bell housing. The oil reservoir is unusually large and is so designed that any sediment which may be present in the oil will tend to settle in bottom of reservoir below the oil pump, from whence it may be drawn off from time to time. This feature results in clean oil being circulated through the engine, which insures a long life for all bearings surfaces and a consequent long-lived engine. Chassis lubrication is by the Alemite system.

This truck has a clutch of the single disk dry-plate type, with one steel plate, and another set of disks of clutch facing material. The engine, clutch and gearset are mounted as one unit, on three-point suspension.

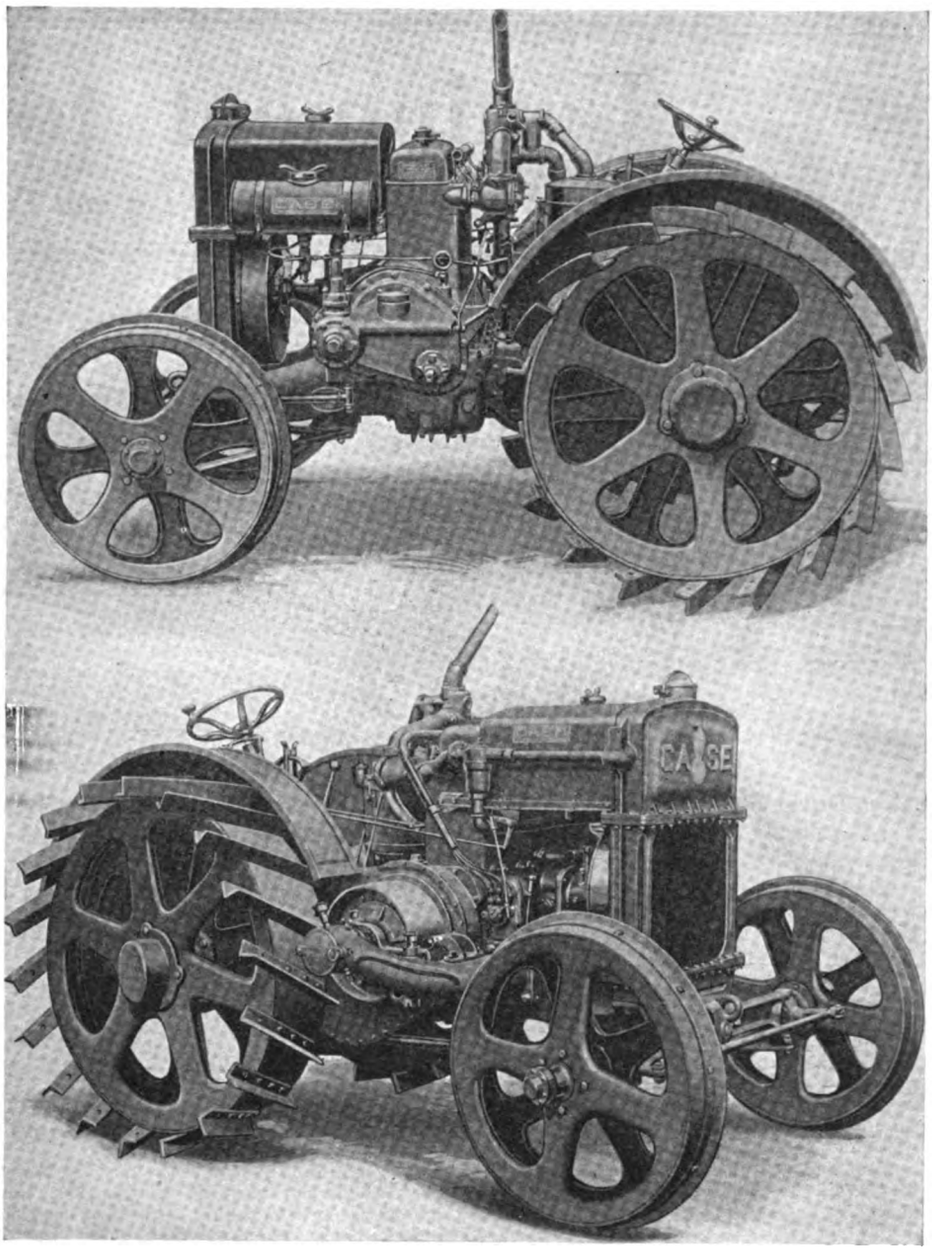
The rear axle is a Clark internal-gear drive, the same as used on other Stewart models. It is geared 5½ to 1.

The steering gear is of the screw and nut type with an adjustment on the thrust bearings for removing any end motion of the screw that may develop.

The front and rear springs are semi-elliptic in type. The rear spring has fifteen leaves and is equipped with full length rebound plate bronzed bushings, and hardened steel pins are used throughout. The wheels are the artillery type.

The regular equipment consists of electric lights with lenses equipped with focusing device, electric tail lamp, tool box, 111-hour storage battery, tools, jack, electric horn, front bumper, ammeter and dash light.

The Utility Wagon will take open and covered express body, panel, stake, special farm grain type body, and also a covered express body with closed cab.



The New Case 12-20 Tractor

While not differing radically in appearance from previous Case models, this new tractor is practically of a two-plow size for all conditions and will pull three plows under ordinary conditions. It will handle a 22 x 36 thresher with all attachments, will operate a 12 or 14 in. silo filler, will pull a 9 ft. double disk in high gear or a 12 ft. grain drill. The frame is in one piece and this holds all bearings, shafts and gears. The engine is a vertical four cylinder type, 4⅛ x 5 in. with valves in the head. The cylinder barrels are renewable. The belt pulley is mounted directly on an extension of the crankshaft. A new type of wheel construction reduces weight as well as increasing strength and rigidity

ANTI-KNOCK LIQUID PRODUCTION PLANNED

NEW YORK, July 10—Commercial production by the General Motors Research Corp. of tetra ethyl lead, the anti-knock liquid which has been developed in its laboratories, probably will not be started for several months. It first will be necessary to provide a plant which probably will be located where there is an abundance of water power. The liquid is produced by a process of distillation and it is highly explosive, which will make it necessary to locate the plant with care.

When commercial production is begun, the liquid will be supplied first to the Government for use in aircraft. The second customer to be taken care of probably will be the Fifth Avenue Coach Co. and the third, a Chicago taxicab company which operates a large fleet of cabs.

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Equipment to Sell

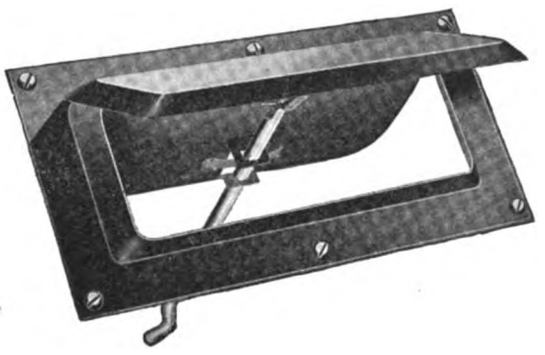
New Devices for the Car and Truck

Universal Mountable Ventilator

Higbee-Orne Co., New Britain, Conn.

Price $3.

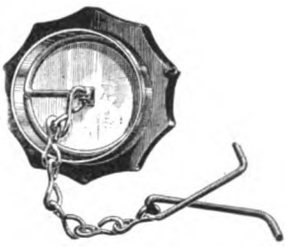
A cowl ventilator that can be attached to any car by cutting a rectangular piece in the cowl and fastening the ventilator over. The control is from the inside of the car and the construction is such that the water will not go through the ventilator when it is closed. The outfit is supplied with all necessary screws, nuts, etc., and a metal cutter for cutting the rectangular opening.



Edelmann Rubberized Radiator Cap for Fords

E. Edelmann & Co., Chicago.

A radiator cap for Fords with a brass shell and rubberized top portion with serrations around the outside to allow an easy finger grip. A chain and wire catch prevent the cap from being lost.



Dural Slip-On Dust Cap

Dural Rubber Corp., Flemington, N. J.

Price 40 cents per set of four for 30 x 3 and 30 x 3½; 50 cents per set of four for 4 in. and larger tubes.

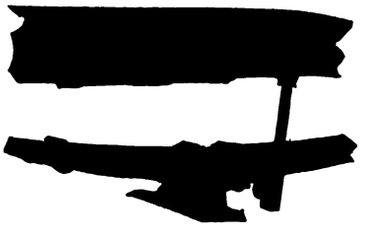
The slip-on dust caps are made of heavy rubber and slip on and off the valve stem without turning. They will not depress the valve plunger and protect the tube from chafing when it is wrapped up and carried as a spare. A tight fit is made at the bottom and at the dust cap to prevent flopping or coming loose.



Hydraulic Control Shock Absorber

Auto Spring Control Co., Inc., Jamestown, N. Y.

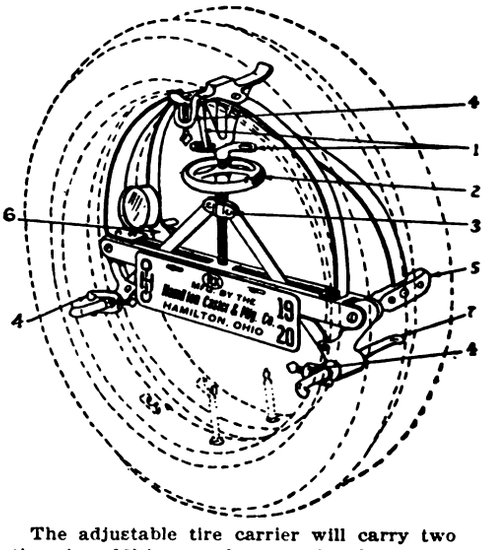
Price $135 installed.



This hydraulic control was illustrated and described in our issue of June 14, 1922, but unfortunately the illustration was inserted upside down. We are herewith showing it right side up.

Triple-Grip Adjustable Tire Carrier

Hamilton Caster & Mfg. Co., Hamilton, Ohio.

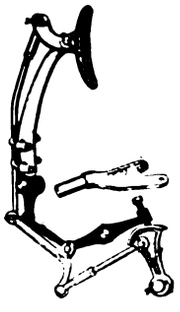


The adjustable tire carrier will carry two tires in addition to the one already on the spare carrier. The tail lamp fixture is part of the carrier. A locking device consisting of a link casting riveted on the screw allows the carrier to be locked every half turn of the hand wheel.

B & C Neutral Clutch Pedal for Fords

Burnham-Cote Co., Holyoke, Mass.

Price $7.50



The pedal provides a positive neutral position in operation and makes the emergency brake independent of the clutch operation taking away the cam which has controlled the clutch release through the emergency lever, and the lever now has only the rear end to provide for, so that it may be set up as tight as desired without affecting other adjustments. The new pedal is substituted for the stock pedal and a hinged foot plate operates the connections and the control position of the cam to maintain the clutch release in the neutral position. Operation of the car is not changed materially.

Dorrance Spark Plug Wrench

Charles J. Dorrance, 728 Monadnock Block, Chicago

Price 80 Cents



The wrench fits all makes of spark plugs and is malleable iron, nickel plated. The ends are adjustable and reversible and sufficient clearance is provided to prevent breakage of porcelains.

Du-Plex Rear Signal Lamp

Du-Plex Signal Company, Jackson, Mich.

Price $7.50.

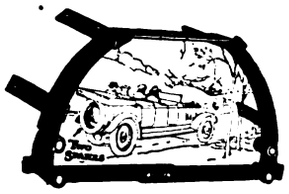


The lamp is a two color signal showing a green caution light and also a red stop light. A switch operates two different bulbs, one contact for green and the other contact for red. It is automatic in its operation and can be adjusted to any car for either a clutch or a brake driver.

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Interlock Instantaneous Tire Carrier

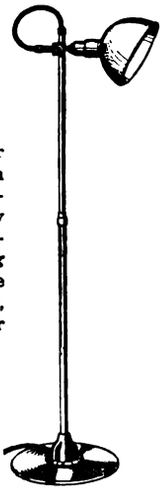
Lyons Level & Tool Co., New Haven, Conn. Price $10 with cylinder lock; $8 with padlock.



The tire carrier is for carrying an extra spare and can be put onto any car having a single ring tire carrier. It is installed by drilling four holes in the tire carrier and riveting the extra tire carrier in place. A toggle joint at the lower side of the extra tire carrier expands the rim against the tire rim and the tire is locked in place with a lock.

White Adjustable, Portable Floor Lights

O. C. White Co., 15-21 Hermon Street, Worcester, Mass. Prices $14.40 to $24.65.



Made in three styles for general shop work, bench type, flood lighting, and restricted flood lighting. Any of the three styles are obtainable with or without plug outlets. The fixtures are adopted for ceiling, wall, floor or bench attachment or for tables and desks.

Kosac Accident Preventers

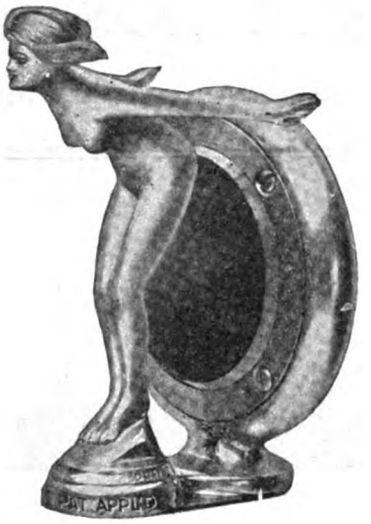
Pacific Diesel Engine Co., 57 Post Street, San Francisco.



This is an automatic brake and ignition control for the purpose of minimizing traffic accidents. It is carried in the same place as a bumper and is a mechanism consisting of flexible contact bars, fastened by goosenecks to the front and rear of the car, being equally applicable to passenger cars or trucks. The contact bars yield to a pressure of 15 lbs. that make contact with electrically wired contact points, which are in turn connected with brake and ignition control, contained in a brass cylinder which rides freely with the brake rod, so as not to interfere with the foot or hand braking of the car. A slight pressure on the contact bars makes connection, setting the brakes, cutting off the ignition and blowing the horn. The device operates only in the direction in which the car is moving.

Moto-Meter Nymph

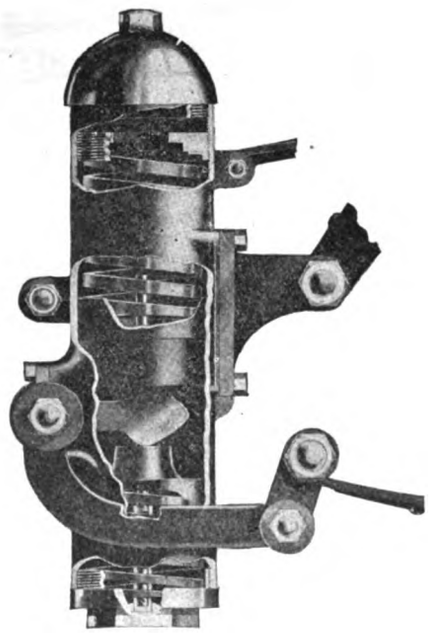
Irving Florman Co., 60 Nassau Street, New York City



The model is the same as the speed nymph which attaches to the radiator cap where a Moto-Meter is not used. The Moto-Meter model has an extension on the front of the base for the figure to stand on. It fits any Moto-Meter.

Lomar Shock Absorber

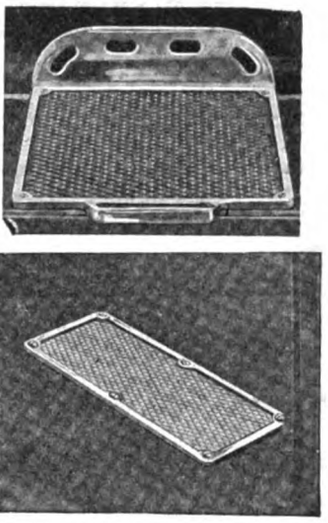
Lomar Mfg. Co., Middletown, Ohio.



The shock absorber consists of a strong cylinder entirely enclosed at either end. Two arms that terminate in a cam within the cylinder are attached to the automobile spring with the regular spring shackle bolt. The cam operates between two pistons, which are separated from the ends of the cylinder by properly adjusted special alloy springs. The upper springs absorb the shock and the lower absorbs the rebound. An adjustment nut screwed into the top of the cylinder enables one to vary the resistance of the main spring and regulate it to the exact load to be carried. Heavy oil poured into the cylinder is pumped to the top of the absorber and flows back by gravity. The cam works on a roller bearing on the upper piston which allows it to act or respond to small jars or motion.

Oberdorfer Aluminum Runningboard Plates and Heel Plates

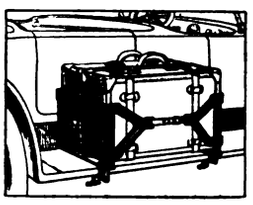
M. L. Oberdorfer Brass Co., Inc., Syracuse, N. Y.



The heel plates are 5 x 12 in. and are placed underneath the clutch and brake pedals to prevent wear on the carpet or linoleum. The runningboard plates are made in three sizes, 7½ x 9½, 8½ x 10 and 9 x 10½. A scuff plate is used on some models and a patented scraper can be had on any of the models.

Interlock Luggage Carrier

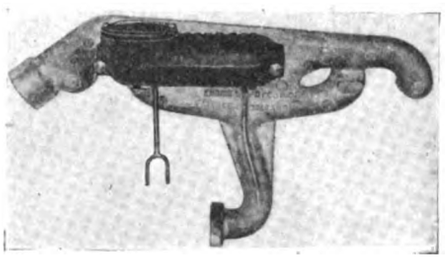
Lyons Level & Tool Co., New Haven, Conn. Price $5.



The luggage carrier has curved ends to hold luggage tightly and is attached to the runningboard with a screw clamp which requires no tools. It is made in one size adjustable from 12 in. to 4 ft. It is made of steel, finished in black enamel and is complete with straps.

Sinclair Thermostatic Carbureter Control for Ford

Sinclair Engine & Foundry Co., New Orleans, La.



A device for regulating the needle valve of the carbureter on a Ford car by a thermostatic element. Regulation is provided through the expansion and contraction of a copper section that permits a greater volume to pass when that section is cold and contracted and shuts off a part of the flow when it becomes heated and expands. The device has two vents opening into it and inside the box is a bar of copper and steel welded together. One end is stationary and the other is attached to a lever that is connected with the carbureter needle valve, thus turning the gas on or off.

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Equipment for the Shop

New Machinery and Tools

Stevens Fits-a-Ford Wrench

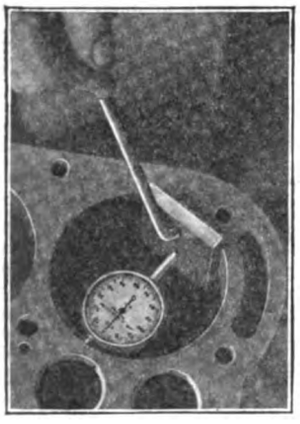
Stevens & Co., 375 Broadway, New York City
Price 60 cents



The wrench has four sockets which fit 95 per cent of all nuts and bolts on a Ford car. The sockets get a full firm grip on the nuts to prevent rounding of the edges.

Atlas Mikro-Indicator Piston Gage

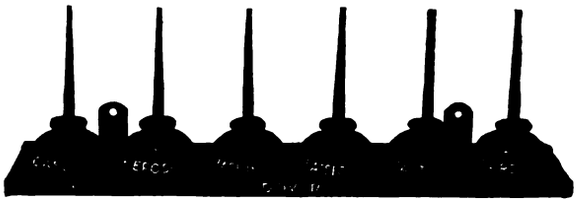
George H. Wilkins Co., 180 North Market Street, Chicago
Price $15



This gage is an adaptation of the dial indicator to a bench gage for checking the diameter of pistons, piston pins and other cylindrical articles with diameters up to and including 6 in. Pistons can be checked for diameter, roundness and uniformity. Piston pins can be rapidly sized and flat pieces gaged for thickness.

Dover Handy Oiler Set

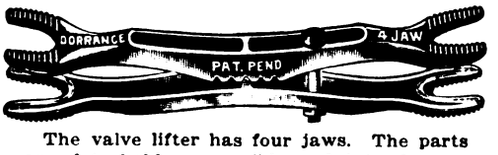
Dover Stamping & Mfg. Co., 385 Putnam Avenue, Cambridge, 39, Mass.



The handy oiler set consists of six ½ pt. copper-plated steel oilers with a heavy steel shelf which is enameled black. Each oiler has the name of its contents marked in steel raised letters.

Dorrance Valve Lifter

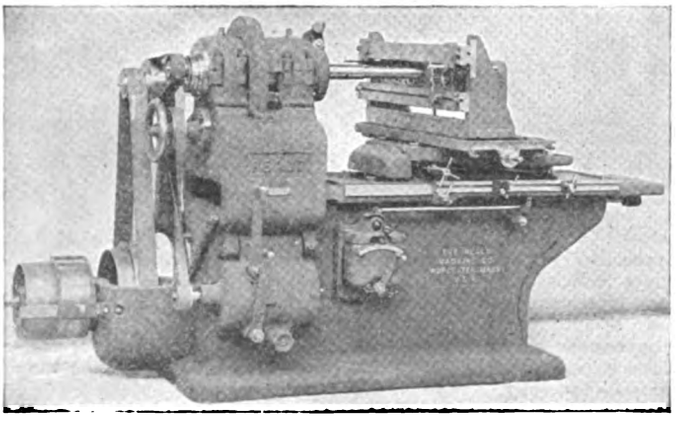
Charles J. Dorrance, 728 Monadnock Block, Chicago
Price $1



The valve lifter has four jaws. The parts are detachable, reversible and interchangeable. The reversible openings have different widths to meet the requirements of the various sized valve spring caps and pass all pin or horse-shoe keys now in use. A locking device holds the jaws firmly apart at any point of lift. Five fulcrum bearing points permit a forward or backward movement.

Heald Style No. 50 Cylinder Grinding Machine

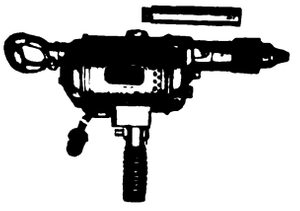
Heald Machine Co., Worcester, Mass.



The new style No. 50 cylinder grinding machine has all the features of previous machines for this class of work and has a number of improvements. It has a hydraulic drive for the table, instantly giving any speed desired. The main casting is a solid bed supporting both the eccentric grinding head and the work table. The main drive shaft on the rear of the machine is mounted on ball bearings and takes the power directly from the main line without countershaft. In addition to the vertical adjustments that it is possible to get with the universal locating jig, the cross slide table can be raised and lowered sufficiently to take care of any vertical adjustments that may be desired by the operator after the block is attached to the jig. This is obtained by two inclining slides between the main table and the cross slide.

Cincinnati Portable Electric Drill

Cincinnati Electrical Tool Co., Cincinnati, O.
Price $65



A light weight ball bearing portable electric drill with a capacity of ½ in. in steel. It weighs 14 lb. and carries a universal motor for either direct or alternating current. The drill has a Jacobs chuck, extra detachable side handle and 10 ft. of cable with Hubbell attachment plug. A mandrel with 3 x ½ in. driving wheel to insert in the chuck for light grinding is furnished as an extra. The switch is enclosed in the handle of the drill and operated by a push button through the handle.

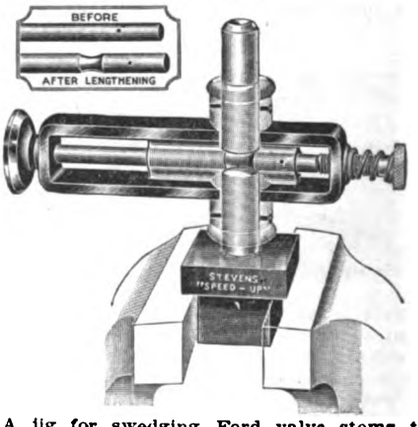
Zip Friction Paste for Fitting Bearings

Zip Mfg. Co., Denver, Col.

A friction paste that increases the normal friction of the bearing surfaces so that a shaft wears the babbitt bearing size. Furnished in 6-oz. tubes.

Stevens Valve Stem Swedge for Fords

Stevens & Co., 375 Broadway, New York City.
Price $3.



A jig for swedging Ford valve stems to make them longer. The jig is held in a vice and the valve inserted between the handle and the swedge. The swedge is tapped with a hammer and the valve turned around slowly until it is peened all the way round. The required amount of lengthening is first measured by inserting a thickness gage between the end of the valve stem and the tappet. After the valve is put in the swedge, the adjusting screw on the swedge is set according to the thickness gage. The maximum lengthening permitted is $\frac{1}{16}$ in.

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Repairshop Shortcuts

What Did You See?

A NEW YORK newspaper is running several columns every evening under the heading "What Did You See?" Readers contribute short accounts of unusual things they have seen and receive a dollar. The unusual things consist of men buying bananas, peeling them and throwing the banana away, keeping the skin; women absent-mindedly (?) carrying subway tickets through the gate, etc. People are reading these items with great interest and contributors are many.

Motor World has been for years running a page which is very much like this but the interesting or unusual things are operations or devices to save time and labor in the repairshop. These shortcuts are just as eagerly read by Motor World readers as the unusual daily happenings are read by metropolitan readers. Send a Short Cut to Motor World. One dollar will be paid for each one accepted. We will accept any which have not been used before and which are practical.

No. 3321—A Double Top Work Bench.—A work bench is made with a double top to prevent small parts and small tools being dropped into the cracks. The supports are of iron pipe stuck into the concrete floor and covered with 2 in. oak which runs lengthwise of the bench, and this is covered in turn with maple flooring which fits tight.—Owen & Graham, Detroit.

No. 3322—Drilling a Runningboard.—Holes can be drilled in a runningboard without danger of breaking the drill by blocking the runningboard from underneath.—Donald McLean, Cleveland.

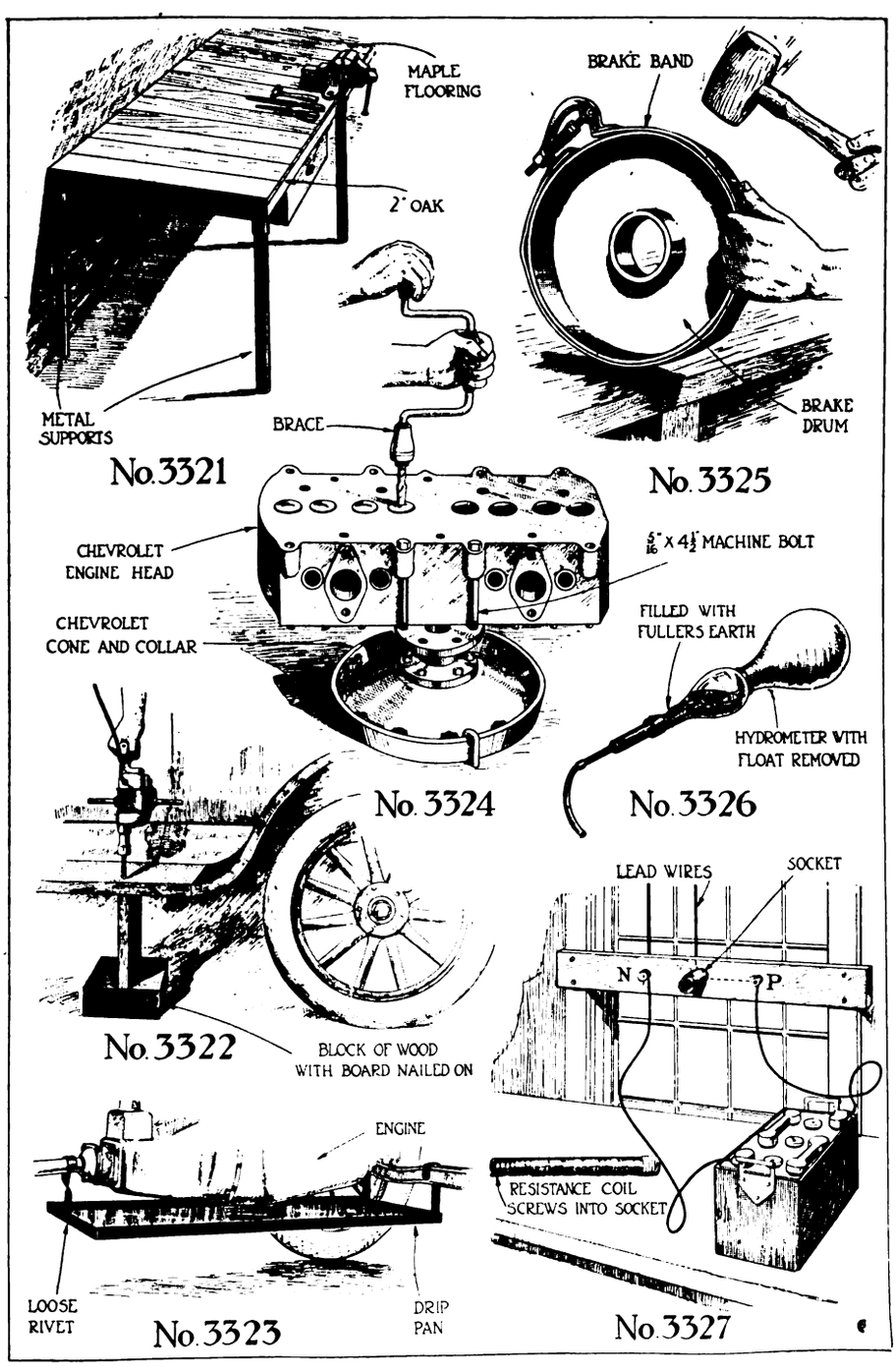
No. 3323—Concealed Drip Pan.—To prevent the unsightly appearance of a drip pan on a showroom floor, the pan is provided with three hooks, two at the forward end to hook over the front axle and one at the rear end to hook over the driveshaft. The pan is larger than ordinarily used.—Myers Motor Co., Oklahoma City, Okla.

No. 3324—Chevrolet Cylinder Head Holder.—A Chevrolet cylinder head is conveniently held on a Chevrolet cone and collar with 5/16 x 4½ in. machine bolts. The cylinder head can be moved around as desired and clearance is provided for the valve stems.—Frank S. Siebert, Oakland, Cal.

No. 3325—Straightening Brake Bands.—Brake bands that are twisted and bent are straightened by clamping around an old brake drum and pounding down the high spots with a mallet. The brake adjustment can be taken up as the band is straightened out.—Eugene Bower, Dodge Brothers Service, Scio, Ohio.

No. 3326—Applying Fullers Earth.—Fullers earth is easily applied with an old hydrometer syringe from which the float has been removed. The Fullers earth is drawn up in much the same way that electrolyte is drawn up, and the tubing can be placed between the cone and the flywheel.—H. V. D. Sweet, Canajoharie, N. Y.

No. 3327—Resistance for Battery Charging.—A resistance coil is mounted on a piece of porcelain and fitted with an electric light plug which fits in a socket. The resistance can be adjusted to suit the battery condition.—William Huppenbauer, New Brunswick, N. J.



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Conference Sought by Tire Dealers

MAKERS WILL MEET THEM, VILES SAYS

Gathering Held at Cleveland Draws Out Differences of Both Branches

CLEVELAND, July 7—The board of directors of the National Tire Dealers Association and the tire manufacturers division of the Rubber Association of America probably will meet soon to discuss certain phases of the adjustment and stabilization of the distribution of tires.

This important meeting will be the result of a series of conferences in this city which preceded and followed a meeting of the Cleveland Retail Tire Dealers Association last Friday, presided over by R. F. Valentine, president of the National Tire Dealers Association. It was the largest gathering of tire dealers and tire makers ever held in Ohio, and the plain talk indulged in by both dealers and makers sent both sides from the room with information that was most enlightening.

Many Cities Represented

The ball room of the Winton, where the meeting was held, was crowded with approximately 350 dealers, manufacturers and makers' representatives when Valentine called for order. Men were present from New York City, Philadelphia, Washington, Seattle, Minneapolis, Milwaukee, Baltimore, St. Louis, Kansas City, Indianapolis, Akron, Canton, Detroit, Chicago and Cincinnati.

A roar of approval greeted the announcement at the start of the meeting that A. L. Viles of New York City, general manager of the Rubber Association, who was in Cleveland for the meeting, stated that when the tire dealers named a committee and requested a conference the Rubber Association representatives, he was sure, would gladly meet with them and give consideration to what they had to present. Viles made it plain, however, that his association would not discuss price questions under any circumstances as that is one of the functions that trade associations must not take up.

Dealers Score Practices

Judging by the statements made by the speakers, the question of making exclusive tire dealers and automotive dealers compete with department stores, dry goods stores, barber shops and other concerns which carry tires as a side line and cut tire prices to attract trade to the other departments of their businesses, will be one of the important subjects discussed when the dealers' committee and the Rubber Association executive committee get together. That method of disposing of tires by makers was most severely criticized.

The national accounts of the tire makers, the direct accounts with fleet owners, the system of discounts, sales of tires to employees and the selling of the same tires to several dealers in the same trading radius were scored by the speakers representing dealers.

Complaints of Makers

Manufacturers came right back and charged that dealers watched their competitors and if they found one prospering in a certain neighborhood, they would open a store next door or across the street; that although the leading tire manufacturers of the country had discontinued the mileage guarantee, practically all issues of every newspaper in cities of any size contain advertisements of dealers with 6000, 8000 and 12,000 mile guarantees.

F. A. Seiberling of the Seiberling Rubber Co. was optimistic. As costs are lowered and more improved roads are built the tire industry will expand, he said.

Speaking of dealers' problems, Seiberling stated that there are far too many of them in business. He stated there are 50,000 tire dealers: 40,000 selling tires as a side line and possibly 30,000 others. With such a situation existing the dealers are bound to have trouble, he stated.

The manufacturing end is in the same boat. A few years ago there were seven tire manufacturers and now there are

(*Continued on page* 42)

BOSTON USING FILMS IN SAFETY CAMPAIGN

BOSTON, July 8—Mayor James M. Curley, in an endeavor to keep down accidents to children during the summer vacation, has ordered Superintendent James B. Shea of the park department to spend $4,000 in displaying films at all the open air playgrounds showing how accidents to children occur.

This is a continuation of the work begun before the schools closed under the direction of the Safe Roads Federation working with Mayor Curley and the school committee. In the high schools on Saturday mornings the children gathered to hear a traffic officer explain signals, and a safe roads man the need of safety. They saw a film showing how youngsters are careless.

AKRON HAS BIGGEST MONTH IN HISTORY

All Records Broken with Estimated Production of 2,500,000 Tires

AKRON, July 10—June was the greatest month from the standpoint of volume of sales in units in the entire history of the tire industry insofar as the Akron district is concerned, not even excepting the short-lived period of abnormal production during early 1920.

Estimates show over 2,500,000 tires of every size and description manufactured in the Akron district, which includes the Mason company at Kent and the Seiberling company at Barberton, during June.

The Firestone Tire & Rubber Co. reports June was the biggest month in the company's history, with sales in units larger than ever before. Firestone produced nearly 750,000 tires in June, averaging 25,000 a day and running in excess of that mark during the latter half of the month.

Large Increases Shown

The Goodyear Tire & Rubber Co. reports that its June sales of cord tires exceeded June sales of 1921 by nearly 100 per cent. Practically all other tire companies here report sales showing from 50 to 100 per cent increases over the corresponding periods of last year.

Firestone officials state:

We sold more tires in June than in any previous month in our history. The demand seems very general for our products and comes from all sections of the country, the increase being mostly from dealers who have been carrying low stocks and are now in their full selling season. Manufacturers' business and export shipments are also increasing. With tire prices on so low a basis, the consuming public is purchasing freely, knowing that tire values are in accord with the times.

No Diminishing Evident

Akron companies report July orders so far booked do not indicate that there will be any appreciable diminishing of sales, at least during the fore part of the month, although a slight tapering off of production during the latter weeks is anticipated. The usual seasonal slump in sales which comes in August, it is stated, will cause manufacturers to reduce production and to, perhaps, stabilize the industry on a basis of about 75 per cent of present aggregate production.

Jordan Has Big Earnings

CLEVELAND, July 10—The Jordan Motor Car Co. reports that June earnings will approximate twice the preferred dividend requirements for the year.

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Plants Operate on June Schedules

NO RECORD FOR JULY BECAUSE OF HOLIDAYS

Last Month's Output at Factories Shows Slight Increase Over May

DETROIT, July 11—Reports received from factories in the Detroit district indicate that a compilation of figures on June production will show a slight increase over the record output of May. In most factories the variations were very slight due to the fact that capacity was reached in May, but better deliveries of materials and other causes enabled the June production to run just a trifle higher.

Production in July, so far as the daily schedules are concerned, will be practically identical with the schedules of May and June, but holidays early in the month and close-downs for inventory and vacation periods will bring the monthly total considerably lower. The demand for cars is reported to be steady but falling off from the early spring rush. Dealers are reported to be holding orders strictly to a sales basis.

Columbia Motors, with the assurance of deliveries of materials for its light six, has set a schedule of 1650 cars for July, which will exceed its June total by 100 per cent. Two-thirds of this will be the light six and the remainder the former larger models. Gray Motors has booked a total of 500 cars for July, which will be its first full production month. First deliveries of the Gray were made late in June and consisted mainly of demonstration cars for dealers.

140,000 Ford's Output

Incomplete figures for Ford business in June show that the schedule of 130,000 cars and trucks and 10,000 tractors was approximated. The company has set a similar schedule for July production, and announces that this schedule is lower than the orders received from its dealers. There will be considerable orders carried over into August, these, for the most part, being in the closed models.

Dodge Brotbers production is continuing at the rate of 550 to 600 daily and Maxwell at the rate of 300 to 350. In the latter case the month's total will be lower owing to a week's closing for inventory in the first part of the month. Durant production is continuing at the rate of 100 daily. June being the largest month to date for the Lansing plant, and increases are set for July and August. Production of the Star car will begin at the Lansing plant in August. Dort Motor production for June was lower than in May. The July schedule is fixed at from 50 to 70 cars daily.

Hudson Motor Car Co. reports an increase over its May total of about 5 per cent in June and expects to approximate the June production in July. In both the Hudson and Essex models the daily production is continuing at 275 to 300. Hupp Motor Car Corp. is continuing its schedule of 140 daily. In the first six months the company reports business to have reached about 18,000 of its planned 30,000 output for the year.

Chevrolet Motors is continuing on its schedule of about 1000 daily, June production being about on a par with May. Buick has operated on part time in June owing to plant changes, but is prepared to resume on its regular schedule of about 350 cars daily in July. Oldsmobile is building at the rate of about 120 daily, a reduction from the May and June totals which were about alike. Oakland is running better than 100 cars daily and reports July business will be on a par with May and June.

Inventory Period Postponed

Studebaker, because of the pressure of business, has postponed its regular inventory period and will continue manufacturing throughout July at the rate of 440 cars daily in all plants. This is at the same rate as in May and June and represents the utmost that present plants are capable of producing. Paige produced about 4000 cars in June in its Paige and Jewett models, the total being about equal to the May output.

Cadillac is operating on a schedule of about 100 daily, but looks for a seasonal falling in business toward the end of the month and in August. June production was about equal with May. Wills Ste. Claire was down for inventory in the first week of the month, but will resume on its schedule of 25 to 30 daily.

Packard production in June on all models was about 1800. July schedules call for a total of 2000 cars and trucks. Lincoln is building about 35 cars daily and is four months behind on orders.

Earl Motors reports June to be the banner month of the company and is continuing on a schedule of about 65 cars daily. Chalmers production is running at the rate of 25 to 30 daily. Liberty is building 30 to 35 cars daily, plant capacity, and will continue at this rate through July and August.

Rickenbacker is continuing its schedule of 25 cars daily through July, and reports June to be about equal to May. Reo closed in the first two weeks of July for the regular vacation period.

Insures Employees

HARTFORD, CONN., July 10—The City Auto Repair Co., conducting a garage and service station and handling the Dort, has insured all its employees under a group policy.

INTENSIFY EFFORTS FOR JULY BUSINESS

Dealers in Milwaukee Working Harder Than They Did in Rush Season

MILWAUKEE, July 8—June business as analyzed by most Milwaukee dealers, equaled by the May volume, with some able to report a progressive gain. The past month started off for some dealers rather less actively than April or May, but, by the close of the period, business had the same characteristics as before, dispelling any ideas some may have entertained that the peak of demand was past and a decline had set in.

It is true that a great many dealers believe it unreasonable to expect retail demand for passenger cars to maintain the April, May and June marks during July and August. Past experience, which is still acceptable despite overturning of traditions during this reconstruction period, shows that the cream of the demand was skimmed during the second quarter of the year, while the third quarter usually required more intensive work to "sell" the more lukewarm prospects whose procrastination set them down as doubtful customers in the first instance.

Buyers Help Salesmen

No effort is being relaxed; in fact, selling work is being prosecuted with even greater intensity than in the rush season. It is recognized that resistance becomes stronger as the sales curve reaches the peak and the more willing customers have been satisfied, leaving the "hard nuts" to crack. On the other hand, the missionary work, intentionally or unconsciously being done by buyers of new cars among their friends, is helping salesmen in closing new deals.

May and June rank as the largest retail selling months in the history of the Milwaukee trade. For this reason alone, in view of seasonal conditions, it would be an extremely difficult matter to produce in July or August, the vacation period, an equal or larger amount of business.

Local dealers are not yet caught up on open car deliveries, while their closed car orders, forming a greater percentage of sales than ever before, will require from 30 to 90 days to fill at the present rate of receipts from distributors or factories.

Franklin's Biggest June

SYRACUSE, July 8—Franklin Automobile Co. reports that June surpassed all previous records for the month, and was the second biggest month in the history of the company.

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140 MORE DEALERS ADDED TO N. A. D. A.

Makes Total of 383 Elected Since New Membership Campaign Started

ST. LOUIS, July 10—One hundred and forty of the leading dealers of the country were elected to membership in the National Automobile Dealers Association during June. This makes a total elected of 383 out of the 500 applications that have been received since March 1, the date the one-of-a-thousand campaign was formally begun.

The addition of dealers in Cleveland, Jacksonville, Atlanta, Chicago, Omaha, Hutchinson, Dayton, Muskogee, Oklahoma City, Houston, San Antonio and Richmond, indicates the widely scattered nature of the work done by the national association organizers. The members are located in forty states and the District of Columbia, and July will see virtually every state represented in the membership as a result of the first campaign efforts to distribute the membership nationally.

To date, Cleveland is the most largely represented city in the association. As a result of the activities there of G. G. G. Peckham, a director of the national association, eighteen dealers have been elected to membership. Cleveland also has reorganized its local association on a basis of membership requirements virtually the same as those exacted by the national association.

Chicago Close Second

Chicago pressed Cleveland a close second as the result of the work of Henry Paulman, Pierce-Arrow distributor in that city. The Chicago representation so far is ten, but there are other applications pending that may give Chicago back the lead in national association affairs that it has always held.

Lynn M. Shaw, assistant general manager, has completed one month's work on the Pacific Coast and starts upon his second month in that region. P. F. Drury, assistant general manager, is winding up the association's first membership campaign in New England. Boston will be added to the N. A. D. A. list of cities as the result of this campaign. The membership, elected as of June 26, follows:

ALABAMA: Bissel Motor Co., Inc., of Birmingham; Standard Motor Car Co., Inc., of Mobile.

ARIZONA: M. P. Barret, Inc., McArthur Brothers Merc. Co. and Overland Arizona Co., all of Phoenix; Snow & Tufts Auto Co. of Tucson.

ARKANSAS: Bernstein Brothers of Little Rock.

CALIFORNIA: Ralph Hamlin, Inc., Howard Automobile Co. of L. A. and Albert J. Russell, all of Los Angeles; Clark Brothers, Gates & Zander and C. R. May, all of Pomona; H. O. Harrison Cox and J. W. Leavitt & Co., all of San Francisco.

CONNECTICUT: Harrington Hudson Co. of Hartford.

DISTRICT OF COLUMBIA: Stanley H. Horner, Sterrett & Fleming, Inc., and Washington-Cadillac Co.

FLORIDA: Duval Motor Co., McCants Hall Co., Mangels-Kirby Co., Claude Nolan and E. C. Williamson Motor Co., all of Jacksonville.

GEORGIA: A. L. Belle Isle, Jos. G. Blount, Franklin Motor Car Co., J. W. Goldsmith, Jr.-Grant Co., Inc., and John M. Smith Co., all of Atlanta.

ILLINOIS: Allison Rood Co., W. C. Auble Motor Co., Dashiell Motor Co., W. V. Faunce Motor Co., Louis Geyler Co., James Levy Motors Co., Marmon Chicago Co., Rowe-Young-Cooley and Smith Sauer Motor Co., all of Chicago; Morris Adler Co. of Quincy.

KANSAS: Gunsolly Motor Co. of Emporia; Clark Motor Co., Davis & Child Co., Hereford Motors and Hutchinson Motor Car Co., all of Hutchinson; Kimball & Delay and J. C. Olson, both of Parsons; Salina Automobile Co. of Salina.

LOUISIANA: Fairchild Motor Car Co. of New Orleans; Geo. T. Bishop, Inc., Dickinson Motors, Inc., and S. B. Hicks Motor Co., Inc., of Shreveport.

MARYLAND: H. S. Block of Baltimore.

MASSACHUSETTS: Weldon Garage, Inc., of Greenfield; Smith Motor Car Co. and Robinson-Toohey Co., both of Lawrence; Auto Selling & Supply Co. of New Bedford; A. V. Reopell and J. S. Harrington, Inc., both of Springfield.

MICHIGAN: Bemb-Robinson Co. of Detroit; Dort Sales Co. and Knight & Matzen, both of Flint.

MISSOURI: Central Motor Sales Co. of Springfield; Weber Motor Car Co. of St. Louis.

NEBRASKA: J. H. Markel of Lincoln; J. H. Hansen Cadillac Co., O'Brien-Davis-Coad Auto Co., Scott Motor Car Co., Guy L. Smith and Stewart Motor Co., all of Omaha.

NEW HAMPSHIRE: Manchester Auto Garage Co. of Manchester.

NEW JERSEY: Mortensen & Humphreys, Inc., of Newark.

NEW YORK: Howard B. Smith, Inc., of Buffalo; Stratton-Bliss Co., Inc., and Warren-Nash Motor Corp. of New York City; Ross Automobile Co. of Syracuse; Alling & Miles, Inc., and Chal-Max Motor Corp., both of Rochester.

(*Continued on page* 44)

DODGE PRESIDENT URGES GOOD ROADS

SYRACUSE, July 10—Frederick J. Haynes, president of Dodge Brothers, speaking here predicted that so-called speed ordinances will be obsolete in a few years and that state legislation to replace them will make the driver fully responsible for all accidents regardless of the speed at which a motor vehicle may be travelling at the time.

"In many sections of the country the towns refuse to repair highways except to make them just passable," he said in urging better roads. "Our fleets of trucks, which have become a vital necessity in the business life of America, are held up and forced to consume many extra hours of time in trips, which slows up business and increases transportation costs. We must have better highway construction, that will stand the wear and tear of truck and car alike."

JUNE MAY SET MARK FOR INDIANA JOBBERS

Accessory Unit Sales 150 Per Cent of Same Month Last Year

INDIANAPOLIS, July 10—Wholesale and jobbing accessory business for Indiana in May was far ahead of any month thus far this year. June business is reported to be as large as May and in many cases will exceed it. The general report of the leading jobbing houses in this city which sell throughout the state is that for the first three months of this year the business was on a general level that in some cases was quite low. During April the upward movement started, but it was not until May that the sales and shipment curve made a sharp upward line. In almost every case the large accessory jobbers found May far ahead of any month for this year, and in general business to exceed that of any month during 1921.

The record cannot be estimated correctly unless the fact is considered that there are considerable portions of the state where business as a rule is at a low ebb. The coal producing portions of the state are down in the consumption and sale of accessories.

The fact that present records surpass those of last year in dollar value, in spite of decreased list prices and in the face of a considerable portion of the state where business is considerably affected by idleness makes the new record highly satisfactory to the jobbing houses.

The volume of sales from the standpoint of the number of units of accessories and equipment sold is running well over 150 per cent as against the same month last year, and some of the jobbers look for a steady pull at this rate and possibly better for the next month and a half or two months.

STEPHENS PLANNING EXPANSION PROGRAM

MOLINE, ILL., July 8—The Stephens Motor Car Co. is producing at the rate of 25 cars a day, and a production of 650 for July is scheduled. Production for May and June was 430 and 425 respectively. The company has shipping specifications covering July and August which indicate no falling off in demand. Approximately 10 per cent of the present output is closed cars.

In its two factories in Freeport, Ill., where 520 men are employed and where the chassis assembly and body manufacture are carried out, there is capacity for 75 bodies daily. The engines are manufactured in Moline, where the output is 30 a day, the company having taken up the manufacture of its engines approximately two months ago. They are being manufactured in a modern brick plant, 1200 ft. by 120. A program of expansion in production of Stephens cars has been decided upon, and an aggressive selling program outlined.

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OUTPUT FOR QUARTER MAY BE NEAR 750,000

Total for First Half of Year Would Then Approximate 1,120,000

NEW YORK, July 11—While there has been an unexpected delay in compiling the totals of passenger car and truck production for June, preliminary estimates indicate strongly that it equalled the May record of 256,000 and perhaps exceeded it. This would make a total for the second quarter of close to 750,000 and for the first half year of approximately 1,120,000. The total for 1921 was 1,668,000.

While factory schedules for July have not been cut materially, there will be a considerable falling off in the month's production because of the universal July 4th holiday and inventory taking in several plants.

A seasonal falling off in sales has become apparent in some sections, notably in the larger centers of population. The farm demand has not really opened, and the extent of the decline will depend in large measure upon the volume of sales in the agricultural districts.

New Farm Truck Models

Truck makers are watching the rural districts even more closely than the passenger car makers. Most of them are bringing out new models of light trucks designed especially for farm use and will cultivate this field intensively. Unless there is a strong demand in this direction it is not expected that truck business will go much beyond the present level for the remainder of the year and it may fall off.

Passenger car manufacturers are confident that sales of closed cars after August will be unprecedentedly large, and will make the volume of business for the closing months of the year entirely satisfactory. Many of the companies are preparing to bring out new models, but there will be no revolutionary changes in design.

NEW YORK REPORTS DECLINE IN SALES

NEW YORK, July 12—Passenger car sales have started on a seasonal decline in the metropolitan area. Buying has fallen off sharply since July 1, contrary to the expectations of some distributors, who looked for a continuance of the extremely heavy business of April, May and June. More experienced merchants, however, did not anticipate that demand would be sustained after the Fourth of July holiday had started the vacation season, and they predict that July and August business will be what might be termed normal.

The record of June registration will be heavy, showing the results of sales in that month and delayed deliveries on June sales.

The used car market is accurately reflecting conditions in the new car market.

PORTLAND SCHOOLS MAY TEACH SAFETY

PORTLAND, ORE., July 10—Instruction in safety-first methods may be included in the public school curriculum of the states of Oregon, Washington and Idaho, if the unanimous recommendation of a special safety first committee composed of officials of the three states is carried out.

The committee was formed to study ways by which the number of accidents at railroad crossings and along the public highways might be reduced and to bring about uniform action in the three states.

Instruction of children in the public schools in proper safety precautions was declared to be one of the best methods for cutting down accidents, and it was proposed that instruction to the extent of one hour a week be given to all pupils.

CHAPMAN APPOINTED DORRIS SALES HEAD

ST. LOUIS, July 11—W. A. Chapman, formerly connected with the selling organization of the Skelton Motor Car Co., has been appointed director of sales of the Dorris Motor Car Co.

Chapman entered the automobile field from the farm implement business. He formerly served as manager of the Oklahoma City branch of the Rock Island Plow Co. and later acted as field supervisor for the Dort Motor Car Co.

Chapman's first connection with the Skelton organization was as general manager of distributing firms in a number of southwestern cities. When Skelton organized the Skelton Motor Car Co. to manufacture the Skelton automobile in St. Louis, Chapman became vice-president and general manager. He has been connected with Skelton sales since, continuing after Skelton's death about two years ago.

Butterfield Resigns from Apex

YPSILANTI, MICH., July 11—C. W. Butterfield, assistant general manager in charge of sales of the Apex Motor Corp., manufacturer of Ace automobiles, has resigned, effective July 10. Before joining the Apex corporation Butterfield was sales manager of the Herschell-Spillman Motor Co., North Tonawanda, N. Y.

Torbensen Gets Injunction

NEW YORK, July 10—A permanent injunction was granted the Torbensen Axle Co. by Justice Knox in the United States District Court to-day, restraining the United Gear Manufacturers Corp. from using the Torbensen name in the selling of parts for Torbensen axles, where the parts are not made by the Torbensen company.

WOULD UNIFY TRUCK HAULAGE IN SOUTH

Meeting in Birmingham Discusses Bringing Private Interests Together

BIRMINGHAM, ALA., July 10—Motor transportation, conservation of individual operation transportation in Birmingham and nearby sections, spreading out as new roads are built and old ones improved, providing a delivery system for wholesalers, jobbers, retailers and manufacturers through operation of motor trucks by a single concern, promises to be a studied business in Birmingham.

Discussion of the problems of delivery in the city and district by motor trucks at the lowest possible cost, at a luncheon attended by a score or more business men, at the instance of Henry C. Goodman, transfer and warehouse man, brought out much valuable data concerning the possibilities of the proposed plan, elimination of penalization of shipper and consumer through the operation of motor trucks and other means of delivery by individuals, and other phases of the situation.

System Now Used

Sidney J. Bowie, who acted as chairman, told of the difficulties of delivery by railroad, the several handlings necessary when shipments are made by rail, and the delays and the cost incident to rail delivery. He pictured the progress in motor transportation as good roads are being provided, and declared that the future held great things in this line. Railroads, he said, were getting most of their returns from long hauls, but had to meet the competition on short hauls. He said that Goodman had invited the assembly to the dinner for the purpose of discussing motor transportation, a system of delivery through established agencies.

Goodman went into details as to the proposed plan for operating a regular fleet of trucks, making deliveries on a small cost basis and working out the costs of operation, which, he said, were around $18 a day for a large truck. He cited some instances where the system which he proposed to Birmingham business men was being used. Merchants, manufacturers, wholesalers and jobbers were taking advantage of the system, he said, because it offered a solution of the delivery problem.

Relief from First Cost

The plan proposed by Goodman consists of private trucks being taken over by a general motor delivery concern at a fair allowance for their value to the owners in return for service to be rendered. The private concerns would thereafter be relieved of initial costs as well as the cost of upkeep. A single large concern operating a delivery service for a large number of firms would be in a position to have repairs made at a minimum cost and secure truck repair parts at minimum prices.

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UNDERWRITERS START SAFETY FIRST STUDY

Seek to Remove Growing Sales Resistance, Which Is Due to Accidents

NEW YORK, July 8—The National Bureau of Casualty and Surety Underwriters, which is the rate-making organization for automobile insurance other than fire and theft, is planning to conduct an automobile accident prevention campaign for its members.

In announcing the campaign, the bureau states clearly that the action is being taken for business reasons, aside from reasons of public welfare—that the large number of automobile accidents is creating considerable sales resistance, and that the high insurance rates, which the large number of accidents has necessitated, are unprofitable.

The preventive work of insurance companies in the field of fire and industrial accidents is well known. This is, however, the first organized effort on the part of the insurance companies to deal with the automobile accident prevention problem.

According to the present plans, which have been submitted to the directors of the bureau, the work will be fundamental in character. There will be no widespread publicity, no accident prevention weeks, or other similar popular appeals, but, instead, a close study of automobile accidents, traffic control, statistical research, etc.

The work will be carried out with the object of making the National Bureau of Casualty and Surety Underwriters a national authority on accident prevention.

The present plans provide for the progression of the work under three general heads:

1—Establishment of a department to study traffic problems and recommend systems of control and traffic legislation.

2—Widening of the present field of statistical research to include automobile accidents.

3—Establishment of an educational department which will work largely through the National Safety Council in developing safety education in the public schools, in automobile schools and through the automobile industry.

This activity on the part of the National Bureau of Casualty and Surety Underwriters is of particular importance to the automotive industry because it, too, is beginning to recognize a definite factor of sales resistance in the need for better traffic control.

Walker-LaFrance Unchanged

NEW YORK, July 10—Walker Motors, Inc., which has purchased the assets of the Ward LaFrance Truck Corp. of Elmira and will remove the plant to this city, especially for the New York market, announces that no radical changes will be made in the design or construction. The truck will be known as the Walker-LaFrance. A. Ward LaFrance, formerly president of the Ward LaFrance Truck Corp., will be in charge of production.

FARMER BEST BUYER; LABORER IS NEXT

TOLEDO, July 11—Analysis of sales by the Willys-Overland Co. for May shows that farmers bought 81 per cent more Overland cars in that month than any other vocation. Laborers came next with approximately 10 per cent of the total output. Merchants, salesmen, clerks, foremen and doctors followed in the order named. The vocational list of Willys-Knight owners shows 104 classifications for May with the farmer fifth. The farmer group was in eighth place in April.

COLE DOUBLES LAST YEAR'S PRODUCTION

INDIANAPOLIS, July 11—Production of the Cole Motor Car Co. is running 100 per cent ahead of last year and at a rate which is equal to 85 per cent of capacity. J. J. Cole, president and general manager, reports that the smaller dealers in agricultural districts are ordering cars for delivery during the summer months and that with the harvesting of crops business with them will be better than in the last two years. Foreign business also has improved materially.

A balance sheet of the Cole company as of May 1 showed current assets of $3,561,629 as compared with current liabilities of only $327,671. Cash on hand amounted to $699,089. The Cole company paid a 10 per cent dividend early in May and present indications are that there will be a similar distribution of profits in October.

Allen Plant Sold

BUCYRUS, OHIO, July 10—The Shunk Manufacturing Co., manufacturer of magnetos and various metal products, has purchased the plant of the Allen Motor Co., at auction. The sale has been confirmed by the court, and steps are being taken to occupy the plant.

All of the personal property of the company, both at Bucyrus and Columbus, was also disposed of, but the real estate in Columbus did not sell, the best bid being $150,000 while the plant is appraised at $303,830.

Bethlehem Begins Operations

PHILADELPHIA, July 6—The newly reorganized Bethlehem Motors Corp. has begun operations at Pottstown and Allentown under Howard B. Hall of New York, who is acting for the stockholders syndicate. The plant is running ten hours daily. The officials are optimistic about the motor truck business and soon will add to the working forces at the plant.

MAIBOHM TO APPEAL APPROVAL OF SALE

Because of Court Decision Arrow Motors Obtains Possession of Assets

TOLEDO, July 8—Federal Judge Killits has confirmed the sale of the property of the Maibohm Motors Co. to a creditors' committee, which has incorporated the Arrow Motors Co. as a successor. Minority creditors who did not come in under the plan for acceptance of preferred stock in the Arrow company will be given until July 20 to prove their claims. H. C. Maibohm, former head of the Maibohm company, is included in this group. The creditors' committee which took over the property is headed by E. G. Kirby, trust officer of the Commerce Guardian Trust & Savings Bank of Toledo.

After a hearing previously held, Judge Killits said he favored confirmation of the sale and the general plan adopted for organization of the new company, but that he would take the case under consideration before signing the order. H. C. Maibohm had made an offer to the court to bid $100,000 cash for the assets. Many of the creditors doubted his ability to make possible a cash distribution, however. Under the present plan creditors will be given preferred stock in the Arrow company.

Maibohm asserted that an appeal would be taken from the order by Judge Killits confirming the sale on a stock settlement basis. He declared the majority of creditors want the sale made for cash.

Arrow Motors with A. C. Burch as general manager is preparing to put the plant into operation soon.

Claims against the Maibohm company aggregate $600,000 and all but $60,000 are represented by the creditors' committee.

CRAWFORD TO EXPAND UNDER NEW CONTROL

HAGERSTOWN, MD., July 10—The stock of the Crawford Automobile Co. of this city has been purchased by M. P. Moller, a wealthy pipe organ manufacturer, and the plant has been placed under the supervision of Herbert N. Ross of New York. The factory was owned for several years by a corporation in which Moller and Henry Holzapfel, Jr., of this city were the principal stockholders. This corporation, it is said, will be dissolved.

Announcement is made by Moller and Ross that in addition to the Crawford car a sport model to be called the Dagmar will be manufactured at the local plant. One of its sport models has been built and is on exhibition in the company's salesrooms in New York.

Moller announced that all his assets will be behind the Crawford company and that it is planned to enlarge the plant and increase the output of cars as demand increases.

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EIGHTH ANNUAL PIKE TOUR NOW UNDER WAY

Association Will Hold 77 Good Roads Meetings During Two Weeks

DETROIT, July 8—The eighth annual "Pike" tour has started on a 14-day swing around Lake Michigan, with the Copper Country of Michigan as its northern terminus. The tour, as in former years, is conducted by the Michigan Pike Association. During the two weeks Captain W. S. Gilbreath, manager of the Detroit Automobile Club and president of the M. P. A., will conduct 77 good roads meetings. The object of the tour is to create interest in improved highways and to popularize through-touring routes. Out of the time spent on the road, all but two days will be in Michigan territory.

Has Staff of Speakers

Capt. Gilbreath has organized a staff of speakers for the tour and expects to have a half dozen prominent men from Michigan. The line-up includes Horatio S. Earle, "Father of good roads in Michigan," and Inspector Harry H. Jackson, head of the traffic division, Detroit police department, also Dr. P. E. Doolittle, Toronto, president of the Canadian Automobile Association and honorary vice-president of the M. P. A.

The Copper Country, which embraces all of the Keweenaw Peninsula, is making extensive arrangements through the Calumet Chamber of Commerce to surpass any entertainment ever accorded the "Pikers" on their international tours. C. T. Murphy, secretary of the Calumet C. of C., has advised Tour Manager W. D. Edenburn, of the following plans.

A large delegation from the Copper Country will meet the tour at Michigamme and passengers will be exchanged for the drive to Calumet. A monster good roads rally will be conducted at Calumet for the entire Copper Country, the Upper Peninsula highway commissioners and road engineers will be in session and join in the meeting, also the officers and directors of the Upper Peninsula Development Bureau.

DeBEAR CONTINUING FORMER ASSOCIATION

NEW YORK, July 8—Harry J. DeBear, whose term as president of the Maxwell Distributing Corp. the New York Maxwell-Chalmers branch, terminated with the purchase of the business by the Colt-Stewart Co., is retaining an executive connection with the general Maxwell-Chalmers organization.

The newly organized Colt-Stewart Co. has stepped into the Maxwell-Chalmers business in the New York territory with sales going forward at high speed. June was the largest month in the history of the territory and July has started off with a large number of orders unfilled on both Chalmers and Maxwell cars.

The organization has more than thirty dealers in the territory, including New York and several adjoining counties, but excluding all of Long Island, including Brooklyn.

It is the intention of the Colt-Stewart Co. to retain the entire personnel of the former Maxwell-Chalmers branch.

Automobile editors and advertising men on the New York newspapers gave DeBear a testimonial dinner at the Automobile Club of America, when they presented him a silver cigarette case.

GEORGE FRITZ



Former field secretary of the A. E. A who has resigned as general manager of the Research Club

GEORGE FRITZ QUITS AS MANAGER OF CLUB

CHICAGO, July 11—George Fritz, who has been general manager of the Research Club for a year and a half, has resigned, his action to take effect Aug. 1. Fritz has not announced his plans and no successor has yet been chosen by the club.

The Research Club is an organization of eighteen jobbing houses in non-competing territories, which was formed in June, 1920, the idea being adapted from the dry goods trade. Its first activities had to do with business research along efficiency lines, but later it added co-operative buying. The club maintains headquarters in the State-Lake Building. Robert Weinstock of the Weinstock-Nichols Co., San Francisco, is president.

Fritz was the first manager employed by the club. Prior to that connection he was for four years field secretary of the Automotive Equipment Association. He has been in the automotive industry eighteen years.

To Report to Ford on Mexico

DETROIT, July 10—A. J. Lankford, manager of the Ford southern branches, is on his way here after a three weeks' inspection trip into Mexico to report on the advisability of building a plant at Tampico.

MORE DISTRIBUTORS, PLAN OF MOLINE PLOW

Will Supplant Small Implement Dealers with Them—Factory Branches Reduced

MOLINE, ILL., July 10—A new plan of merchandising farm implements has been adopted by the Moline Plow Co., Inc., and George N. Peek, president and exponent of the plan, hopes to start a movement that will very largely revolutionize the merchandising of farm machinery.

The plan is to get away from the great numbers of small implement dealers, many located at crossroads, and none of whom has made money or been capable of giving the necessary service or often of making sales. In place of these dealers, Peek aims to develop distributors at centers to serve a large territory.

The Moline company, which had 24 factory branches, has already reduced this number to nine, and the appointment of distributors has been under way for some months. This change is to get away from the old method of distributing implements, which Peek describes as wasteful, and, still further to complete his plan, a basis of cash sales has been included. It is founded on the belief that the farmer should pay cash when he can.

Factory Assistance Necessary

In the past the old order of implement dealers has required too much factory sales effort. The implement manufacturer, not satisfied with putting dealers at every crossroad, had to send factory representatives to instruct these dealers, to assist them in making sales, to assist them in collecting for the machinery, and also in providing service.

The Moline plan is opposed to free service because free service means that the service is generally paid for in the original price. The new Moline distributor plan is aimed to reduce the selling cost. The distributors should buy in volume and receive volume shipments, securing the economies going with both of these.

Peek does not anticipate a very rapid return of prosperity to the farmer. The present prices for July grains are little different from those of a year ago. Wheat is 11 cents per bushel less than a year ago, and rye is 86 cents as compared with $1.20. The strong price of hogs is one of the best agricultural conditions.

The sale of agricultural machinery is from 40 to 50 per cent, and not much in excess of the same time last year.

The repair business has been considerably better.

May Best Stutz Month

INDIANAPOLIS, July 11—A complete check-up of Stutz retail sales and factory output for May shows that it was by far the best month of recent times. Complete reports of retail sales for June are not yet available.

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FEDERAL AID GIVEN FOR WESTERN ROADS

Thinly Populated States Will Receive Benefit of Latest Distribution

WASHINGTON, D. C., July 10—Additional Federal aid for construction of good roads in states thinly populated has been extended to ten states, it has been announced by the Bureau of Public Roads. Fifty per cent of the cost, not to exceed $16,500 per mile is the maximum participation in all states except those containing unappropriated public lands in excess of 5 per cent of all lands in the states.

A survey made by the bureau shows that in ten states additional Federal aid, over and above the 50 per cent, is necessary in order that construction of important trunk line highways, through thinly settled regions, may be constructed, giving a national highway transport system. The following states will receive the additional Federal highway aid:

State	Percentage Payable by United States
Arizona	61.11
California	59.21
Colorado	56.12
Idaho	58.01
Montana	53.04
Nevada	87.22
New Mexico	61.50
Oregon	61.13
Utah	74.86
Wyoming	64.65

MEETING SOUGHT BY TIRE DEALERS

(*Continued from page* 36)

300. The speakers said that many in both branches would be eliminated before the business gets down to rock bottom and then would come a healthy period for all. The legitimate tire dealer was pronounced the sound point of contact for the manufacturer, and the argument was made that no business will survive that does not protect the dealer.

Seiberling declared that the tire manufacturers have the same troubles that the dealers have, and he urged a spirit of tolerance be shown on both sides. The dealers were urged to build good will as a most valuable asset both to them and to the manufacturer.

A. E. Berger of New York City asserted that the distribution of tires in New York was in chaos; that dealers had little confidence in prices and that the situation was further harmed by the action of a big cigar store in selling tubes as a side line. He urged that before opening accounts manufacturers ask the applicants for agencies to demonstrate that they have the qualification of good business men.

Farmers Buying Trucks

ALMA, MICH., July 8—The Republic Motor Truck Co. reports that its factory is now working at about 50 per cent and that during July it will build more trucks than for any month in two years. Colonel Frank E. Smith, president of the company, declares that farmers in Kansas and Nebraska have started buying and that the farm demands promise good business through the summer. He regards the outlook for the balance of the year as very favorable.

GIRL TO OPERATE OWN CAR SERVICE STATION

ATLANTA, GA., July 11—From the gracious hostess of the Pensacola Country Club to the manager and owner of an automobile service station, Miss Marguerite Ingraham, a well known Pensacola, Fla., girl, steps into the limelight as one of the first—if not actually the first—woman in the South to take over the active management of such a business.

Miss Ingraham, who is well known in society circles of Pensacola, has purchased the station in that city operated under the name of Service, Inc., one of the finest stations in that part of Florida.

NEW YORK BRIDGES SEGREGATE TRAFFIC

NEW YORK, July 12—The Brooklyn Bridge, oldest span across the East River at New York, has been restricted to horse-drawn vehicles, and the Manhattan Bridge, a quarter of a mile upstream, is to be used exclusively for motor traffic under a city order just issued. Hitherto the bridges have carried mixed traffic, which has caused heavy congestion despite the fact that it was routed as one-way traffic at stated periods of the day.

NASH PLANS BIGGER DAILY PRODUCTION

KENOSHA, WIS., July 10—Daily production of 150 Nash sixes has been under way for some time, and Charles W. Nash, president of the Nash Motors Co., with latest factory additions, has attained a possible factory capacity of 200 a day. Contracts have recently been let for an addition to the plant at Milwaukee where the four-cylinder types are manufactured, which will give a daily capacity of 100 fours and permit the two factories a capacity of 300 daily.

Nash looks for a slight falling off in demand during July and August as compared with last year, when these two months were large production months largely due to several concerns reducing prices July 1, 1921, which created a great amount of business for July and August.

The coming harvest is certain to stimulate country buying, according to Nash, although not to the extent that has been predicted.

The Nash factory is gradually being built up into a very complete manufacturing unit. At present approximately 93 per cent of the car is produced at the factory.

ONLY THIRTY TRUCKS UNSOLD IN GERMANY

Those Disposed of by Army Commander Will Not Be Reimported to U. S.

WASHINGTON, July 8—All motor trucks used by the American Expeditionary Forces in Germany, with the exception of thirty, have been sold, the Department of State has been advised by General Henry E. Allen, commander of the Rhine forces.

The information that none of the 2000 or more trucks used by the government during the occupancy of German territory, will be returned to this country was received in response to a cable request by the department to ascertain what numbers of the trucks, if any, might be affected by the Graham anti-dumping bill.

The trucks, it is understood, were sold with the understanding that none of them were to be re-imported to the United States. If the Graham anti-dumping bill if passed, a 90 per cent re-import duty on the returned trucks would be collected.

The department was not advised what price the trucks brought but the cable advises that they were sold to all comers on open bids for whatever they would bring. The announcement of the sales has brought a protest from the Department of Agriculture which had been promised the equipment.

Department of Agriculture Aroused

Under an agreement, the War Department was to have turned the trucks over to the agricultural department to be used by the Bureau of Good Roads, which had announced previously that the trucks would be proportioned among the various 48 states by the Bureau of Good Roads for the building of highways.

A representative of the bureau arrived in Europe to inspect the trucks the day that the thirty machines were shipped on an army transport to the United States.

The Department of Agriculture has requested Secretary of War Weeks to ascertain by what authority General Allen sold the trucks after they had previously been promised to the department. As the matter now stands, however, it is believed that General Allen's sale of them will stand.

OHIO GASOLINE TAX TO FINANCE ROADS

TOLEDO, July 10—Tax on gasoline will probably be the next method of financing road construction and maintenance to be attempted in Ohio. County Commissioner John Jackman of Lucas County has already made plans to have the Toledo representatives in the state Legislature introduce such a measure at the next session.

He says his proposal will reduce high license fees and place the burden of road improvement on those who use the roads.

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Nine Companies Join in Merger

ASSOCIATED MOTORS GETS THEIR ASSETS

All Plants Will Be Continued As Will Present Line of Products

CHICAGO, July 8—Announcement has been made of the completion of the organization of the Associated Motor Industries, negotiations for which have been in progress for about ten months.

The company as now organized is an $80,000,000 corporation chartered in Delaware, and has acquired by purchase full ownership of nine companies manufacturing automobiles, trucks, parts and equipment. Following are the nine companies:

National Motor Car & Vehicle Corp., Indianapolis, Ind., manufacturer of National cars.

Covert Gear Co., Lockport, N. Y., manufacturer of transmissions, clutches and other car controls.

Recording & Computing Machines Co., Dayton, manufacturer of ignition systems, starters, magnetos and other electrical equipment.

Jackson Motors Corp., Jackson, Mich., manufacturer of Jackson automobiles and four-wheel drive trucks.

Kentucky Wagon Manufacturing Co., Louisville, Ky., manufacturer of Dixie Flyer automobiles, and of trucks, wagons, wheels and bodies.

Saginaw Sheet Metal Works, Saginaw, Mich., manufacturer of sheet metal parts for automobiles and trucks.

Traffic Motor Truck Corp., St. Louis, manufacturer of Traffic trucks.

Murray-Tregurtha Corp., Boston, Mass., manufacturer of gasoline engines.

H. F. Holbrook Co., New York City, manufacturer of automobile bodies.

Offices at Dayton

The officers of the corporation, offices of which will be at Dayton, are: Chairman of the board, Will I. Ohmer, president Recording & Computing Machines Co.; president, Louis Ruthenburg, formerly general manager of Delco Light plant of General Motors Corp.; vice-presidents, A. A. Gloetzner, president Covert Gear Co.; Robert V. Board, president Kentucky Wagon Manufacturing Co.; T. C. Brandle, vice-president in charge of merchandising of Traffic Motor Truck Corp.; George M. Dickinson, president National Motor Car & Vehicle Corp.

Ohmer, who as chairman of the board will have entire charge of the operations of the company, stated that all the plants will be operated and that for the present the products of all of them will be continued. These include the Jackson, National and Dixie Flyer automobiles and Traffic trucks. It was said also that trucks would be manufactured at the Kentucky Wagon and Jackson plants. Development of a standardized line of cars and trucks is the ultimate object of the company, Ohmer said. This line is to include a four cylinder, a light six and a de luxe six-passenger car, and trucks of various capacities.

The companies in the merger have been acquired by purchase, payment being made in stock of the new corporation on the basis of actual inventory valuation of the various companies. Ohmer said that all companies taken in had to show assets having a ratio of three to one over liabilities. Although it was not divulged just what amount of capital stock was issued in absorbing the member companies, it is understood the combined net assets of the companies were listed at about $23,000,000.

Negotiations are now in progress for the purchase of another group of companies, Ohmer said, for which additional stock will be issued. He said that in acquiring the first group no cash was spent except in taking up bonds and paying off some bank indebtedness of member companies. A $6,000,000 bond issue is being arranged to aid in paying bank loans and to give additional capital. It is also understood that some preferred stock will be offered to the public.

Working on Plans

Detailed plans for operation of the plants have not yet been worked out. Ohmer and other officials will begin a tour of inspection of the various properties next week to determine the most economical methods of operation. Present plans include automobile assembly plants at Boston, Indianapolis, Louisville, St. Louis and Oakland, Cal. The company

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"ASKS 'EM TO BUY" THROUGH STICKERS

CHICAGO, July 12—Everybody seems to be sloganing these days. The Automotive Equipment Association is the latest to come out with a sticker on its letters, a yellow, circular affair about the size of a silver dollar (they are still circulated west of Chicago) which says:

Buy
Ask 'em to Pay
Join

The first and second phrases are part of the merchandising campaign and the last is a booster for the association's ambition to enlarge its membership.

HONORS FOR HAYNES AT STATE CEREMONY

Indiana Unveils Statue on Spot from Which Car First Operated

INDIANAPOLIS, July 11—Elwood Haynes received the national salute and heard prominent men laud him yesterday when Indiana commemorated before the nation his achievement in giving to the country a mechanically successful automobile, and dedicated a monument on the spot from which the first Haynes was operated twenty-eight years ago. Hundreds of citizens of Kokomo and the state joined in the observance on Pumkinvine Pike and listened to the address of Dr. G. L. MacIntosh, president of Wabash College, and others.

As the monument of granite with an inscription in stellite, another invention of Haynes, was unveiled by Mrs. John Edward Moore, past president of the Indiana Federation of Women's Clubs, the guns of Battery A 150th Field Artillery boomed the national salute in honor of Haynes and his first little machine which the Smithsonian Institution had loaned for ceremonies.

Greetings from N. A. C. C.

On behalf of the Indiana Historical Commission, Frank B. Wynn paid tribute to Haynes' achievement, as did F. W. Fenn, representing the National Automobile Chamber of Commerce, who brought the greetings of the chamber.

Mayor B. C. Moon of Kokomo made the address of welcome. Governor McCray of Indiana was represented by C. C. Shirley who declared the celebration commemorated an epochal event in the development of the automobile and modern transportation.

Haynes responded to the tribute and stated that at the original try out there had been just four people. He narrated how the car had been hauled to the starting point, where a marker now stands, and had run a mile down the Pike, turned around and run back to the starting point. In his tribute to the citizens of Kokomo, he said, "I am surprised that they stood for the annoyance that this machine caused them."

Buick Dealers Meet

MEMPHIS, TENN., July 10—The Memphis branch of the Buick Motor Co. held a two-day "service clinic" here with approximately 75 Southern dealers and service men present. A. H. Sarvis and R. P. Keating of the factory at Flint, Mich., were in charge of the convention. George B. Gillespie is manager of the Memphis branch.

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ASSOCIATION ACTIVITIES

Houston Reorganized

HOUSTON, TEXAS, July 8—The reorganized Houston Automotive Trades Association came into being at a special and well-attended meeting of automobile and accessory dealers of this city. F. W. Mozart, the new secretary-manager, was introduced by President C. W. Manford, who announced that the new executive will maintain an office and give his full time to the work of the association.

The new body intends to establish an arbitration board with which any customer may lodge a complaint against any dealer with the assurance that a complete investigation will be made.

The new secretary-manager stressed the necessity of building up confidence between the car buyer and dealer. He has set the membership goal at 100 and more than a score of firms signed up immediately. Yearly dues were doubled to take care of the extra work assumed by the association in establishing a central office.

The association will be a strictly business body. There will be no entertainment programs, although meetings are expected to be held weekly.

New Association Promoted

ST. LOUIS, July 10—The formation of the Mississippi Valley Automobile Trade Association, composed of dealers representing the entire St. Louis district, was promoted at a meeting of the St. Louis Automobile Dealers Association last week.

Preliminary steps for the association were taken by a committee including Harry Newman of Harry Newman, Inc., Frank C. McDonald of the Southwest Nash Co. and George Schroeder of the Vesper-Buick Co. At the meeting a report was made by this committee favoring a meeting in the near future to be attended by the president and secretary of all district automobile associations and in those districts where there was no association, by leading dealers.

This committee will secure the names of the dealers whose memberships are desired and will report to the association a time and place for the organization meeting.

Toledo Elects New Trustees

TOLEDO, July 8—Members of the Toledo Automotive Trades Association at their annual meeting elected five new trustees for the ensuing two years.

They are Warren E. Griffith, for the passenger car division; A. H. Draime, tire and accessory division; C. A. Van Dusen, repair and garage division; M. R. Himes, truck division, and R. Myers, electric car and battery division.

President A. G. H. Jenssen, after expressing his appreciation for the services of Secretary T. J. Cooper in putting the organization on an efficient basis, turned the meeting over to Griffith as temporary chairman.

George B. Ricaby, Toledo realtor, and former Congressman J. Adam Bede were the speakers of the evening.

Announcement was made by Jenssen that the Ohio Automotive Trades Association would hold its annual convention in Toledo in September.

Butler on Directorate

DETROIT, July 8—Guy Butler of the Overland Sales Co., Jackson, was elected to the directorate of the Michigan Automotive Trade Association at the meeting of its officers and directors at the Hotel Addison. Butler will serve out the term of Gilbert Loomis of the Gilbert Loomis Motors Co., Jackson, for District No. 2 which expires in May, 1924. Butler is also secretary of the Jackson Automobile Dealers Association.

President M. L. Garlock reported to the executives the progress of the membership campaign for the M. A. T. A. and the results of the three weeks' campaign with the "Ask 'Em to Buy" film through the State. The membership progress was gratifying to the directors, showing a 25 per cent increase. The campaign will terminate Aug. 1. Those present at the meeting were: M. L. Garlock, Lansing, president; Charles A. Mitchell, Bay City; Frank R. Lusk, Grand Rapids; George L. Simmons, Flint; Frank E. Hathaway, Muskegon; J. J. Tompkins, Saginaw; G. O. Simons and Walter J. Bemb, Detroit, directors; H. H. Shuart, secretary, and W. D. Edenburn, manager, Detroit.

Atlanta Issues Prospectus

ATLANTA, GA., July 10—An interesting sales prospectus has just been issued by the Atlanta Automobile Association for distribution among members and non-members throughout this section, setting forth what the association is, what it does, and why membership therein is genuinely valuable to every dealer.

This organization is made up of automotive dealers and accessory dealers in Atlanta, now numbering more than 100 members, making it one of the strongest city associations of dealers, it is claimed, in the United States.

One of the principal features of the organization is the educational sales work it has carried on the past six months for the benefit of its members.

Tire Dealers Organize

DES MOINES, July 10—Retail tire dealers of Des Moines have formed the Des Moines Tire Dealers Association and affiliated with the National Tire Dealers Association of America. A. R. Corning of the Corning Rubber Co. is president; Ward Schooler of the Schooler Rubber Co., vice-president, and W. H. Bishop of the Mid-West Tire and Supply Co., secretary-treasurer.

Service Experts at Convention

SPOKANE, July 5—Service experts representing most of the varied fields in the automotive industry of the country will attend the gathering of automobile repairmen of the State in Olympia this month.

The conference will be held on the first day of the Washington Automotive Trade Association's convention, July 21. Other crafts to convene on the same day include car dealers, battery dealers, tire dealers and service stations, accessory men, body and top men, painters and grinders.

New Pittsburgh Secretary

PITTSBURGH, July 10—W. A. Richwine, formerly associated with the Pittsburgh Motor Corporation, Chandler distributor, has resigned as assistant secretary and treasurer to take up the duties as secretary of the Pittsburgh Automobile Dealers Association. The other officers of the association are F. L. Dennis, president; F. G. Affeldt, vice-president, and Roy F. Kenney, treasurer.

140 MORE DEALERS ADDED TO N. A. D. A.

Makes Total of 383 Elected Since New Membership Campaign Started

(*Continued from page* 39)

OHIO: The Cincinnati Automobile Co. of Cincinnati; The Auburn Sales Co., Barnes Motor Co., Warner M. Bateman, Cleveland Cadillac Co., Cleveland; Lafayette Co., Cleveland Motor Car Sales Co., A. L. Englander Motor Co., Jordan Ohio Co., Lake Erie Motor Co., Lucas & Christenson, Marmon Cleveland Co., Paige Ohio Co., Peerless Motor Co., Simmons Motor Car Co., Stearns Motor Sales Co., Stutz Motor Co. and Birkett L. Williams Co., all of Cleveland; F. K. Boggs, Citizens Motor Car Co., Dayton Buick Co., Jones Gist Co. and Welbon Dayton Motor Co., all of Dayton; D. D. Jones Co. of Lima; Burke Motor Co. of Springfield.

OKLAHOMA: Leachman-Johnson Motor Co. of Ardmore; Cohenour Motor Co., Fast-Buck Motor Co. and Mills Motor Co., Inc., of Muskogee; Markham Motor Co., Shelburne Motor Co. and Vesper Motors Co., of Oklahoma City; Murdock Persels Motor Co. of Okmulgee; Southwest Nash Motor Co. of Tulsa.

OREGON: C. L. Boss Automobile Co. of Portland.

PENNSYLVANIA: Smith-Foster Motor Car Co. of Newcastle; Coffman Motor Co. of New Salem; Eddie Bald Motor Car Co., Inc., Samson Motor Co. and Frank D. Saupp, Inc., all of Pittsburgh; Electric Garage of Sharon.

TEXAS: Toney Chisum of Amarillo; F. R. Wulff Motor Co. of Brady; Lone Star Motor Co., Inc., of El Paso; Percy Garett Motor Co. of Fort Worth; Jno. Christenson & Co. of Galveston; A. C. Burton & Co.; Gydeson-Manford Cadillac Co., Morehart & Keller Auto Co., Oldsmobile Sales Co., Inc., and Shelor Motor Co., all of Houston; Birdsong & Patchernick, Citizens Auto Co., Crockett Automobile Co., Guarantee Motor Car Co., Jack Neal-Nash Motors Co., San Antonio Cadillac Co., Universal Car Co. and Winerich Motor Sales Co., all of San Antonio.

VIRGINIA: William F. Lintz of Norfolk; Anderton Auto Co., Inc. and Jones Motor Car Co., both of Richmond; Virginia Motor Car Co., Inc., of Roanoke.

WASHINGTON: Washington Auto Co., Inc., of Yakima.

NINE COMPANIES JOIN IN MERGER

(*Continued from page* 43)

has no plant at Oakland, but is understood to be negotiating for one.

Plans include a subsidiary dealers' financing organization capitalized at $35,000,000. This plan will permit the dealer to sell cars and trucks on a small cash payment from which he will take his discount or commission and to accept for the balance notes which he will turn over to the finance corporation. Between 600 and 700 banks have agreed to buy these notes from the finance company, Ohmer said.

Ohmer stated that immediate steps would be taken to enlarge the dealer organizations handling the various products and that as quickly as possibly the financing plan would be made available to them all.

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CHANGES IN THE TRADE

L. J. Davey, Des Moines, has taken on the Marmon.

Union Motor Co., Waterloo, Iowa, will distribute the Packard.

Frank K. Taylor has taken the Columbia agency at Des Moines.

Fowler Motor Car Co., Milwaukee, has been appointed retail Jordan dealer.

Mason Tire Co. has named **W. B. Connolly** of Cleveland branch manager at Des Moines.

F. H. Fernald of Newport, R. I., has been appointed Nash dealer in Newport and vicinity.

Carl B. Seaman, Columbus, has been appointed representative for the Rolls-Royce in central Ohio.

F. B. Smalley Co., Toledo, has been made distributor of the Ruggles truck for Northwestern Ohio.

George W. Canterbury, Inc., Boston, has taken over the sale of the Winton car in the Boston territory.

East Side Paige Co., Milwaukee, has been formed to serve as a retail dealer in the Paige and Jewett.

Snow Auto Co., Ottumwa, Iowa, will handle Overland and Willys-Knight in addition to the Maxwell-Chalmers line.

Lawwell-McLeish Co., Columbus, has taken over the agency for the Lincoln in central Ohio from the Ellis Motor Car Co.

William S. Black, formerly with Nash and Chevrolet, has become service manager for the **Clemens Auto Co.**, Overland dealer at Des Moines.

Bachman Motor Co., Milwaukee, for many years Dort distributor, has been appointed distributor of the Stephens in Milwaukee and adjacent territory.

The Supreme Motor Co., distributor of the Stutz car for many years, has been appointed distributor for the Rickenbacker line for St. Louis and territory.

Monarch Motor Car Co., St. Louis, has been appointed distributor for the Davis for that territory. The company also is distributor of the Stanwood.

C. P. Brewer, who has been handling used cars at Spokane, has become an associate of James L. Elam of the James L. Elam Auto Co. in handling Paige and Jewett automobiles.

Old Hickory Tire & Tube Co., Nashville, will distribute Old Hickory cord and fabric tires and tubes in middle Tennessee and central Kentucky. **Rottero Bros.** are the proprietors.

Bar Harbor Motor Co. of Bar Harbor, Me., has secured the agency for Mount Desert Island, including the summer resorts of Bar Harbor, Northeast Harbor and Seal Harbor, for the Nash.

Drexel Motor Co. has taken over the Jordan lines in the Houston territory. The company has been handling the Ranger cars. Agencies have already been established in many towns of the Houston territory.

B. F. Goodrich Rubber Co. has opened a factory branch office in Cedar Rapids, Iowa, to serve seventeen counties. **P. H. Broadies**, Goodrich representative in the Mason City territory, has been made manager of the branch.

John F. Evans has been installed as Minneapolis district manager for the Miller Rubber Co. He has been manager in Indianapolis since January, 1921, and also had been Cincinnati manager for the Firestone Tire & Rubber Co.

I. J. Cooper Rubber Co., Birmingham, Ala., has retired from the general accessory business and in the future will handle its own manufactured products exclusively, which consist of tires, tubes, storage batteries and battery parts.

M. S. Mentzer, formerly in the automobile business in Atlanta and recently branch manager for the Studebaker company at Buffalo, N. Y., has returned to Atlanta as manager of the Studebaker branch, succeeding **S. M. Piper**, who died during June.

George Means, one of the oldest dealers in Des Moines, has bought the interest of his partner in the **Means-Kucker Auto Co.** and the business will now be conducted as the **Means-Chevrolet Sales Co.** Until a few months ago it was a direct factory branch of the Chevrolet.

William S. Black has been appointed service manager for the **Clemens Automobile Co.**, Des Moines, distributor of the Overland and Willys-Knight. For a number of years Black was traveling representative on the Pacific coast for the Nash Motors Co. Previously he was connected with the Chevrolet organization.

Conrad Welling, for the past six years president and general manager of the Welling Motor Co., which formerly distributed the Olympian, Friend and Crow-Elkhart cars and All-American truck, has been appointed special supervisor of service for the **St. Louis Motor Car Co.**, Jordan and Cleveland distributor.

Norman E. Stoneburg, Toledo, has been appointed the new distributor for Stutz cars in 18 counties of northwestern Ohio. He was formerly manager of the used car department of the Sturdevant-Jones Co. **Ralph Benton**, Stutz service manager, and **Charles Beckerman**, used car man, will be associated with Stoneburg.

New York Auto Supply Co., organized by Minneapolis men to take over the stock and lease of the Times Square Auto Supply Co. in that city, is headed by **Bernard Schwartz**, who has conducted the Minneapolis branch of the company since it was started. **Morris F. Levitt** is treasurer and **C. L. Levitt** is secretary.

Scott-Bury Motor Car Co., Packard distributor in Omaha, has changed its name to the **Scott Motor Car Co.**, following the resignation of F. J. Bury. A. C. Scott is the president. Ralph Hitchcock, secretary, and Clarke W. Thornton, treasurer, represent the active management. John Wale continues as head of the service department. Hitchcock is sales manager.

Kokomo Rubber Co. of Kokomo, Ind., has opened a St. Louis branch. The Kokomo tire formerly was sold and serviced by the **Zerweck-Grayson Tire Co.** as distributor. **Walter W. Napier**, formerly Kansas City representative of the Kokomo Rubber Co., has been appointed manager of the St. Louis branch and **Wallace E. Acton**, who has been in the tire sales field in St. Louis, has been appointed office manager.

H. F. Williams and **H. C. Futch** have purchased the plant of the **Webber-Doe Co.** in Cloverdale, a suburb of Montgomery, Ala., and have bought and reopened the Cloverdale Ford and Fordson agency. Williams, formerly of Athens, Ga., was commercial agent of the Southern Railway for many years. Futch was formerly vice-president of the Old Hickory Wagon Co. of Atlanta.

E. O. Wattis, president of the **Winford-Kimball Motor Co.**, Ogden, Utah, has acquired the Binford interests in that company, the name of which has been changed to **Wattis-Kimball Motor Co.** Wattis is vice-president and general manager of the Utah Construction Co. of Ogden, builder of railroad extensions and at the present time has under his supervision one of the largest dams in the world in the Hetch-Hetchy San Francisco water supply project.

Calhoun Motor Co. has been formed at Minneapolis to handle the Chevrolet following the closing of the retail office at the branch there. Martin Swanson is president; Ray W. Close, sales manager, and F. W. Palmer, secretary and service manager. The **Pomeroy-Kennedy Co.** has also been organized in that city to deal in the Chevrolet by H. F. Kennedy and E. F. Pomeroy. Charles M. Stroud is the service manager. Other Chevrolet companies in the city are the **F. B. Wilcox Motor Co.** and the **Grossman-Kimball Co.**

Southwest Motor Co., distributor in North Texas for the Wills-Sainte Claire cars, has been purchased by John P. Neece, formerly of Mexia. It is announced that a reorganization of the company is now in progress and that the name probably will be changed. **G. C. Tippins** remains with the new firm. Other members of the company are **J. R. Neece, J. R. Neece, Jr., John P. Neece** and **R. D. Neece.** The company will retain headquarters at Dallas. Agencies have been established at Fort Worth, Wichita Falls and Mexia.

The Automotive Sales & Service Co. of Atlanta, after operating for five years as a factory branch for Splitdorf products, has been organized as a separate company and has taken over the distribution of the Splitdorf line in the entire Southeast. **S. D. Katz**, who opened a Splitdorf factory branch in Atlanta nine years ago and has been district sales manager, heads the new company, which covers eight States. Products of the Wire Wheel Corporation and Benzer lenses are also distributed by it in the southeastern territory.

A. E. Maltby has resigned as vice-president and general manager of the **Guy A. Willey Motor Co.**, Philadelphia, distributor of Paige and Jewett cars. He has made no announcement of his plans other than to take a vacation at his summer cottage on Island Heights, N. J. Maltby has been associated with the trade in Philadelphia for twenty years, starting as branch manager for the Winton Co. Three years ago he became identified with the Bigelow-Willey Motor Co., as it was then known. He has been president several times of the Philadelphia Automobile Trade Association and a director of that organization for a number of years. During that time he was a leading spirit on the show committee. He was also a member of the board of directors of the National Automobile Dealers Association and is widely known throughout the country for his activities in the organization. He is succeeded in the Willey company by **L. F. Carter**, who has spent most of his life in the advertising and automobile business. For the last four years Carter has been conducting used car sales.

New Eagle Sales Manager

ST. LOUIS, July 10—C. A. Wetherbee, for many years connected with the truck business in St. Louis, has been appointed general sales manager of the Eagle Motor Truck Corp., manufacturer of the Eagle truck.

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Calendar of Trade Events

CONVENTIONS

Olympia, Wash......July 21-22
Midsummer Convention of the Washington Automotive Trade Association.

Toledo .....September
Annual Convention of the Ohio Automotive Trades Association.

Chicago .....Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

RACES

Strasbourg.....July 15
French Grand Prix.

SHOWS

Watsonville, Cal......Aug. 12-15
Automobile Show under the Auspices of the Watsonville Motor Car Dealers Association, J. S. Martin, manager.

Columbus.....Aug. 28-Sept. 2
Ohio State Fair.

Hartford, Conn......Sept. 4-9
Connecticut Fair Grounds.

Wilmington, Del.....Sept. 4-9
Delaware State Fair.

Spokane.....Sept. 4-9
Annual Automobile Show held in connection with the Spokane Interstate Fair, B. J. Garnet, manager.

Indianapolis.....Sept. 4-9
Automobile and Accessory Show in conjunction with the Indiana State Fair, Automobile Show Building under the auspices of the Indianapolis Automobile Trade Association, J. B. Orman, manager.

Syracuse, N. Y.....Sept. 11-16
New York State Fair.

New York.....Sept. 23-30
Closed Car Show, under Auspices of Automobile Merchants Association, Grand Central Palace.

Chicago .....Nov. 13-18
Annual Show of Automotive Equipment Association.

New York.....Dec. 3-9
Eighteenth Annual Automobile Salon, National Automobile Chamber of Commerce, Commodore Hotel.

Chicago .....January
Annual Automobile Salon, National Automobile Chamber of Commerce.

SARVER WOULD HEAD LOCOMOBILE PLANT

NEW YORK, July 11—If the offer of Durant Motors, Inc., for the plant and assets of the Locomobile Co. is accepted when they are offered at receiver's sale, it is probable that the subsidiary corporation which will be organized to operate the property will be headed by A. H. Sarver, who headed the Scripps-Booth Corp. until it was dissolved by General Motors. It is not likely that Sarver will be actually in charge of production, but this work will be entrusted to some man already in the Durant organization.

Durant is understood to be willing to pay about $2,000,000 for the plant, which includes four large buildings and eight or ten smaller ones. It is his purpose to effect manufacturing economies which will permit the sale of the Locomobile for less than half the present price and put it in the class with Cadillac and Lincoln. He proposes to use part of the factory space for the manufacture of the new Mason truck to supply the Eastern territory.

Frank L. Mitchell Dies

NEW YORK, July 12—The death is announced at Monticello, Cal., of Frank L. Mitchell, founder and first president of the Mitchell Motor Car Co. He was 70 years old.

"COPPER COOLED" CAR OF G. M. C. DELAYED

NEW YORK, July 10—Quantity production of the line of "copper cooled" cars which General Motors Corp. proposes to put on the market probably will not be started for several months. It had been expected that they would be turned out in limited quantities by September, but C. F. Kettering, who has charge of their development, insists upon considerably more experimental work. He wants the new line tested under all kinds of weather conditions and on all kinds of roads, which necessarily will mean a delay in production.

The New Car and Truck Description Index

Giving the date and page number on which they appeared

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Oakland (Two-passenger Coupe)....June 28, 1922-28
Oakland 6-44.....Jan. 11, 1922-14
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Mack .....June 21, 1922-42
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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾-1	$1650a	3½x5	34x5n	34x5n	W
Acason....RB	1½	1950	3¾x5¼	36x3½	36x6	W
Acason....H	2½	2750	4⅜x5¾	36x4k	36x8k	W
Acason....L	3½	3450	4⅜x5¾	36x5k	36x10k	W
Acason....M	5	4350	5 x6¼	36x6	40x12	W
Ace....C	1½	2295	3¾x5⅛	34x3½k	34x5k	W
Ace....A	2½	2795	4¼x5½	36x4k	36x7	W
Acme	20	1	....	3¾x5	35x5n	35x5n	W
Acme	30	1½	....	3¾x5	34x3½	34x5	W
Acme	40	2	....	3¾x5	34x3½	34x5	W
Acme	60	3	....	4¼x5½	36x4	36x7	W
Acme	60L	3	....	4¼x5½	36x4	36x7k	W
Acme	90	4½	....	4¼x5½	36x5	40x10	W
Acme	125	6¼	....	4¾x6	36x6	40x12	W
American	25	2½	3350	4 x6	36x4k	36x4dk	W
American	40	4	4275	4½x6	36x5k	36x5dk	W
Armleder	20	1	2350	3½x5¼	34x3½k	34x5k	W
Armleder	21	1½	2425	3¾x5½	34x3½	34x6	W
Armleder	40	1½	2850	4¼x5¼	34x3½	36x6	W
Armleder	HW	2½	3200	4¼x5½	36x4k	36x7k	W
Armleder	KW	3½	4150	4½x6	36x5	36x5d	W
Atlas	MD	1	1135	3½x5	32x4½n	32x4½n	W
Atterbury	20R	1½	2475	3½x5	34x5	34x5	W
Atterbury	7CX	2½	3175	4½x5¼	36x4	36x4d	W
Atterbury	7D	3½	3975	4½x5½	36x5	40x5d	W
Atterbury	8E	5	4975	4½x6	36x5	40x6d	W
Autocar	21UF	1½-2	1950	4¼x4½	34x4k	34x5k	D
Autocar	21UG	1½-2	2050	4¼x4½	34x4k	34x5k	D
Autocar	27H	2	2950	4 x5½	34x5	36x7	D
Autocar	27K2	2	3075	4 x5½	34x5	36x7k	D
Autocar	26Y	5	3950	4½x5½	34x6	36x12	D
Autocar	26-B	5	4100	4½x5½	34x6	36x12	D
Available	H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available	H2	2	2775	4 x5	36x3½k	36x6k	W
Available	H2½	2½	3160	4 x5	36x4k	36x8k	W
Available	H3½	3½	4175	4½x5½	36x5	40x5d	W
Available	H5	5	5375	5 x6	36x6	40x12	W
*Avery		1	....	3 x1s	34x5n	34x5n	1
Beck....A Jr.		1¼	1283a	3½x5	32x4½n	32x4½n	1
Beck....B-30		1½	2050	3¾x5	34x5	36x6	
Beck....C-40		2	2150	3¾x5	36x6	36x6	
Beck....D-50		2½	2850	4¼x5¼	38x7	40x8	
*Bell....(Penn.)		½	1 100a	3½x5	31x4n	31x4n	B
Bell....M (Iowa)		1	1495	4½x5⅛	35x5	35x5n	W
Bell....E (Iowa)		1½	2100	3¼x5¼	34x3½	34x5	1
Bell....O (Iowa)		2½	2550	4½x5½	34x4	34x6	1
Belmont....A		½	725	3¼x4¼	31x4	31x4	B
Belmont....D		2	2575	4¼x5½	34x3½k	34x6k	1
Belmont....F		3	3500	4 x6	36x5k	36x5dk	1
Bessemer....G		1	....	3½x5	35x5n	35x5n	1
Bessemer....H-2		1½	....	3¾x5	36x3½	36x5	1
Bessemer....J-2		2½	....	4½x5¼	36x4	36x4d	1
Bessemer....K-2		4	....	4½x5½	36x5	36x10	1
Bethlehem....KN		1	1195	3½x5	34x4½n	35x5n	B
Bethlehem....CN		2	1595	4 x6¼	34x4½k	34x6k	1
Bethlehem....HN		3	2195	4 x5¼	36x4k	36x8k	1
Brinton....C		1½	1503	3¼x5	34x4	34x5	W
Brinton....D		2½	2250	4½x5¼	36x4	36x7	W
Brockway....E		1	....	3½x5⅛	35x5n	35x5n	B
Brockway....S-5		1½	....	3¼x5	36x3½k	36x5k	W
Brockway....SK		1½	....	4½x5¼	36x4	36x6	W
Brockway....KR		2½	....	4½x5½	36x4	36x8	W
Brockway....K-5		2½	....	4½x5¼	36x4	36x8	W
Brockway....RT		3½	....	4¾x6	36x5	36x10	W
Brockway....R-4		3½	....	4½x5½	36x5	36x5d	W
Brockway....T-4		5	....	4¾x6	36x6	40x6d	W
*Buick		...	915b	3¾x4¾	31x4n	31x4n	B
Capitol....G	1½	1½	2975	3¾x5	35x5	38x7	W
Capitol....H	2½	2½	3700	4½x6	36x4	36x8	W
Capitol....K	2½	2½	4250	4½x6	36x6	42x9	W
Capitol....M	3½	3½	4125	4½x6	36x5	36x10	W
Case		2	....	4½x5¾	36x6	38x7	1
*Chevrolet....G		¾	745	3½x4	31x4n	34x4½n	B
*Chevrolet....T		1	1125	3½x5	33x4n	35x5n	W
Chicago....C1	1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago....C2	2½	2½	....	4 x5	36x4k	36x7k	W
Chicago....C3	3½	3½	....	4½x5½	36x5	36x10	W
Chicago....D5		5	....	4½x5½	36x6	40x12	W
Clydesdale....10	¾-1½	1485	3¾x5	34x5n	34x5n	B
Clydesdale....18	¾-1½	1890	3¾x5	34x5	34x5	W
Clydesdale....20	1-1½	2385	3¾x5	34x5	34x5k	W
Clydesdale....42	1½-2	2175	3¾x5	36x3½	36x6	W
Clydesdale....6SX	2½-3	3250	4½x5¼	36x4	36x8	W
Clydesdale....6SEX	2½-3	3150	4½x5½	36x4	36x8	W
Clydesdale....90	3½-4½	4100	4½x5½	36x5	36x10	W
Clydesdale....120	5-6	4500	4¾x6	36x6	40x12	W
Columbia....H	1½	1895	4 x5	35x5	38x7n	1
Columbia....G	2½	2335	4 x5¼	36x4	36x7	1
Comet....T	1½	1950	3¾x5	34x4	34x4	W
Commerce....T	¾-1½	1450	3¾x5	34x4½n	34x4½n	B
Commerce....12	1½	1800	3¾x5	35x5n	35x5n	1
Commerce....16	2	2150	3¾x5	35x5n	36x6	1
Commerce....18	2½	2495	4½x5¼	36x6n	36x7n	1
Commerce....25	2½	2125	4½x5¾	36x4	36x7	W
Cook....51	2½	3600	4 x5⅛	36x6n	40x8n	W
Corbitt....E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt....D-22	1½	2200	3¾x5	34x3½	34x4	W
Corbitt....C-22	2	2600	4½x5¼	36x3½	36x6	W
Corbitt....B-22	2½	3000	4½x5¼	36x4	36x7	W
Corbitt....R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt....A-22	3½-4	3800	4½x5½	36x5	36x10	W
Corbitt....AA-22	5	$4500	4¾x6	36x6	40x6d	W
Day-Elder....AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder....B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder....D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder....C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder....F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder....E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn....E	1	1600	3½x5½	35x5n	35x5n	W
Dearborn....FX	1½	2300	3¾x5½	34x4	34x5	W
Dearborn....F	1½	2180	3¾x5⅛	34x4	34x5	W
Dearborn....48	2	2590	3¾x5⅛	34x4½n	34x7	W
Defiance....G	1	1695a	3¾x5	35x5n	35x5n	B
Defiance....D	1½	2095a	3¾x5	35x5n	36x6n	1
Defiance....E	2	2275a	3¾x5	35x5n	38x7n	1
Denby....31	1¼	1485	3½x5	35x6n	35x5n	B
Denby....33	1½	2145	3¾x5	35x5n	38x7n	1
Denby....34	2	2395	3¾x5	36x3½	36x6	1
Denby....35	2½-3	2795	4½x5¼	36x4	36x7	1
Denby....27	4	3895	4½x5½	36x5	36x5d	1
Denby....210	5	4295	4½x5½	36x6	40x6d	1
Dependable....A	¾-1	1650	3½x5½	34x5n	36x6n	W
Dependable....C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable....D	2½	2650	4 x5½	34x5	36x6	W
Dependable....E	3	2950	4¼x5½	36x4	36x7	W
Diamond T....O-8	1-1½	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T....T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T....U	2-2½	2650	4 x5¼	36x4	36x7	W
Diamond T....K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T....EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T....S	5	4500	4¾x6	36x6	40x6d	W
*Diehl		1	....	3½x5	34x4½	35x5	1
Diehl....B		1½	....	3½x5	36x6	36x6	1
Deane		2½	4100b	4¼x5¾	36x5	36x7	C
Deane		3½	5100b	4¾x5¾	36x5	36x5d	C
Deane		6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers		½	730	3⅞x4½	32x4n	32x4n	B
Dorris	K-4	2-2½	3400	4¼x5½	36x4	36x7	W
Dorris	K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort	103	½	685a	3½x5	31x4n	31x4n	B
Double Drive	B	3	4000	4¼x5½	6	6	W
Duplex	A	2	2775	4 x5½	35x5n	38x7n	W
Duplex	E	3½	3500	4¼x5½	36x8	36x8	1
Duty	22	2	1590	3½x5	34x3½	34x5	1
Eagle	101	1½	1875	3⅝x5½	34x5	34x5	1
Eagle	100-2	2	2275	4¼x5¼	34x4k	34x7k	1
F. W. D.	B	3	4200	4¼x5½	36x6	36x6	B
Fageol	1½	1½	3000	4¼x5¼	34x3½k	34x6k	W
Fageol	2½	2½	3900	4¼x5¾	34x4	36x7	W
Fageol	3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol	5	5	5700	4½x6¼	36x6	40x6d	W
Fargo	R	2	1700	4¼x5	36x4	36x6	1
Federal	SD	1½	1800	4¼x5	35x5n	36x6n	W
Federal	TE	1½	2175	4½x5¼	36x3½	36x5	W
Federal	UE	2-2½	2425	4½x5¼	36x4	36x7	W
Federal	WE	3½-4	3150	4½x5½	36x5	36x5d	W
Federal	X2	5-6	4500	4¾x6	36x6	40x6d	W
*Ford	TT	1	430	3¾x4	30x3½n	32x4½n	W
Front Drive	C	1½	2800	3¾x5½	5	4	W
G & J**	20	1	2275	3⅝x5½	34x5n	34x5n	W
G & J**	A	2-2½	3375	4x5¼	36x4	36x7	W
G & J**	B	3½-4	4475	4½x5½	36x5	36x10	W
G.M.C.	K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C.	K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C.	K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C.	K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C.	K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C.	K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C.	K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W.		1½	1850	3¾x5½	35x5	35x5	1
*Garford	15	3¼	1590	3⅝x5⅛	34x5n	34x5n	W
Garford	25-B	1¼	1990	3¾x5½	36x6n	36x6n	W
Garford	70-H	2	2750	4½x5½	36x4	36x7	W
Garford	77-D	3½	3750	4½x6	36x5	36x6d	W
Garford	68D	5	4500	5 x6½	36x6	40x6d	W
Garford	150-A	7½	5200	5½x6	36x6	40x7d	C
Gary	F	1-1½	1675	3¾x5	36x3½	36x4	W
Gary	I	2	2250	4 x5½	36x3½	36x6	W
Gary	J	2½	2650	4½x5½	36x4	36x8	W
Gary	K	3½	3650	4½x6	36x5	40x5d	W
Gary	M	5	4100	5 x6½	36x6	40x6d	W
Gersix	M	1½	3100	4 x5½	36x3½	36x7	W
Gersix	K	2½	3500	4½x5½	36x4	36x8	W
Gersix		3½	4500	4½x6	36x5	40x12	W
Graham Bros.		1	1265	3⅞x4½	33x4½n	34x5n	B
Graham Bros.		1½	1325	3⅞x4½	33x4½n	36x6n	B
1Gramm-Pion.	10	1	1365	3½x5	33x5n	33x5n	B
1Gramm-Pion.	15	1½	1900a	3¾x5	36x3½k	36x5k	1
1Gramm-Pion.	65	1½	2500a	3¾x5	36x3½k	36x5	W
1Gramm-Pion.	20	2	$2925a	4½x5¼	36x4k	36x7k	W
1Gramm-Pion.	30	3	3275a	4½x5½	36x4k	36x4dk	W
1Gramm-Pion.	75P	3½	4225a	4½x5½	36x6n	42x9n	W
1Gramm-Pion.	40	4	3995a	4½x5½	36x5	36x5dk	W
1Gramm-Pion.	50	5-6	4895a	4¾x6	36x6	40x6dk	W
Hahn....B2		1	....	3½x5	34x5k	34x5k	W
Hahn....O		1½	....	3¾x5¼	36x3½k	36x6k	W
Hahn....K		2	....	4¼x5½	36x7k	36x8k	W
Hahn....L		3	....	4½x5½	36x5k	36x8k	W
Hahn....M		5	....	4½x5½	36x5	36x10	W
Hahn....N		6	....	4¾x6	36x6	40x12	W
Hal-Far....E		1½	2350	4x5½	34x5n	38x7n	W
Hal-Far....B		2½	3000	4¼x5½	36x6n	36x8	W
Hal-Far....F		3½	4000	4½x5½	36x6n	40x10	W
Hall....1½		1½	3100	3¾x5	34x5n	38x7n	W
Hall....2½		2½	3275	4½x5¼	36x4	36x6	W
Hall....3½		3½	4100	4½x5½	36x5	36x5d	W
Hall....5		5	5100	4½x5½	36x5	40x6d	W
Hall....7 chain		7	5100	4½x5½	36x5	40x6d	C
Harvey....WOA		2	2650	4½x5½	34x4	34x7	W
Harvey....WFA		2½	2950	4¼x5½	36x4	36x7	W
Harvey....WHA		3½	3950	4½x6	36x5	36x5d	W
Hawkeye....K		1½	1850	3¾x5½	34x3½k	34x5k	I
Hawkeye....M		2	2050	4¼x5	36x4k	36x6k	I
Hawkeye....N		3½	3700	4½x6⅜	36x5k	36x10k	I
Hendrickson....O		1½	2200	3¾x5½	36x4n	36x5n	W
Hendrickson....N		2½	2690	4¼x5¼	36x4k	36x7k	W
Hendrickson....M		3½	3000	4¼x5	36x5k	36x5dk	W
Hendrickson....K		5	4000	5 x6¼	36x6	40x6	W
Huffman		1½-2	1795	3¾x5	34x3½	34x6	W
Huffman....C		1½-2	1635	3¾x5½	36x3½	36x6	I
Huffman....D		2-3	1855	4¼x5½	36x4	36x7	
Hurlburt....A		1½	2850	4 x6½	34x4	34x5	W
Hurlburt....B		2½	3750	4¼x5½	36x4	36x4d	W
Hurlburt....C		3½	4500	4½x6	36x5	36x5d	W
Hurlburt....D		5	5500	4½x6	36x5	40x6d	W
Indep'd't(Iowa)	B	1	1665	3¼x5	34x3½	34x4	I
Indep'd't(Iowa)	G	1½	2040	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.)	HI	2½	2940	4¼x5¼	36x4	36x4	I
Indep'd't(Ohio)	F	1½	2395	3¾x5	36x3½	36x5	W
Indep'd't(Ohio)	H	2½	3085	4¼x5¼	36x4	36x4d	W
Indep'd't(Ohio)	K	3½	3985	4½x5½	36x5	36x5d	W
Indiana	12	1½	....	3¾x5¼	34x3½k	34x5k	W
Indiana	20	2	....	4¼x5½	36x4k	36x7k	W
Indiana	25	2½	....	4¼x5½	36x4k	36x8k	W
Indiana	35	3½	....	4¾x5½	36x5k	36x5dk	W
Indiana	51	5	....	5 x6¼	36x5k	40x6dk	W
*International	S	¾	1500	3½x5	34x5n	34x5n	I
International	21	1	1750	3½x5¼	36x3½	36x3½	I
International	31	1½	1850	3½x5¼	36x3½	36x4	I
International	41	2	2100	3½x5¼	36x3½	36x5	I
International	61	3	2400	4¼x5	36x4	36x6	I
International	101	5	3600	4¼x5	36x5	40x10	I
Jackson....4WD		3½	3850	4½x5½	36x7	36x7	B
Jumbo	15	1½	2295	3¾x5¼	36x3½	36x5	I
Jumbo	20	2	2520	3¾x5¼	36x4	38x7n	I
Jumbo	25	2½	2660	4½x5½	36x4	36x7	I
Jumbo	30	3	3060	4½x5½	36x6n	42x9n	I
Jumbo	35	3½	3900	4½x6	36x5	36x10n	I
Jumbo	40	4	4400	4½x6	38x7n	44x10	I
K-Z	1	1	1750	3½x5	34x3½	34x5	W
K-Z	1½	1½	2075	3¾x5	36x4	36x6	W
K-Z	2½	2½	2550	4½x5¼	36x4	36x8	W
K-Z	3½	3½	3350	4½x5½	36x5	40x10	W
K-Z	5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo	T	1	1295	4 x5	34x4	34x5n	B
Kalamazoo	G-1	1½	2495	3¾x5	34x4	34x5	W
Kalamazoo	LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo	NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo	HD	3	3350	4½x6	36x5	36x10	W
Kalamazoo	LK	4	3845	4½x6	36x5	36x12	W
Kalamazoo	OK	5	4350	4½x6	36x6	40x6d	W
2Kelly-S	K-31	1½	2700	3¾x5¼	36x3½	36x6	C
2Kelly-S	K-34	1½	2700	3¾x5¼	36x3½	36x6	W
2Kelly-S	K-38	2½	2900	3¾x5¼	36x4	36x4d	W
2Kelly-S	K-35	2½	2900	3¾x5¼	36x4	36x4d	C
2Kelly-S	K-40	3½	3000	4½x6½	36x5	40x5d	C
2Kelly-S	K-41	3½	3900	4½x6½	36x5	36x10	I
2Kelly-S	K-42	3½	3900	4½x6½	36x5	40x5d	W
2Kelly-S	K-50	5	4400	4½x6½	36x6	40x6d	C
2Kelly-S	K-60	6	4600	4½x6½	36x6	40x7d	C
Keystone	40	2	2175	3¾x5½	34x5n	38x7n	1
Kimball	AB	2	3075	4 x6	36x4	36x7	W
Kimball	AC	2½	3075	4½x6	36x4	36x8	W
Kimball	AK	3	4500	4½x6	36x4	36x10	W
Kimball	AE	4	5000	4¾x6	36x5	40x12	W
Kimball	AF	5	5500	5 x6	36x6	40x7d	W
*Kissel	Express	1	1585	3⅞x5½	34x5n	34x5n	W
Kissel	Utility	1½	1975	3⅞x5½	36x3½	36x5	W
Kissel	Freighter	2½	2875	4¼x5½	36x4	36x7	W
Kissel	H. D.	4	3675	4¼x5½	36x5	36x5d	W
Kleiber	AA	1	2200	4¼x5¼	34x3½k	34x5k	W
Kleiber	A	1½	3100	4¼x5¼	36x3½k	36x6k	W
Kleiber	BB	2	3600	4¼x5¼	36x4k	36x7k	W
Kleiber	B	2½	3050	4½x5½	36x5k	36x8	W
Kleiber	C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber	D	5	5300	5 x6½	36x6	40x12	W
Koehler	D	1½	2150	3½x5	34x3½	34x5	W
Koehler	M	2½	3175	4 x5¼	36x4	36x7	W
Koehler	MCS	2½	3275	4 x5⅛	36x4	36x7	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—speed truck or delivery wagon. **—Canadian Make. trac.—tractor.

1—Gramm-Pioneer. 2—Kelly-Springfield.

Passenger car specifications on page 50

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Koehler.....F	3½	$4470	4½x5½	36x5	30x10	W
Koehler,MT. Trac	5	3275	4 x5½	36x4	36x7	W
Krebs-Collier..23	¾	1260	3¾x5	34x4½	34x4½	B
Krebs-Collier..24	1	1535	3¾x5	34x5	34x5	W
Krebs-Collier..45	1½	2125	4½x5½	36x4	36x7	W
Krebs-Collier..75	2½	2375	4½x5½	36x4	36x8	W
Krebs-Collier.110	3½	2975	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1925	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2100	3¾x5	34x3½	31x5	W
Larrabee.....J	1½-2	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½-3	3150	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½	4000	4½x5½	36x5	36x5-1	W
Larrabee.....W	5	4800	4½x6	36x6	40x6d	W
Maccar.....L	1½	2700	4½x5½	36x4	36x6	W
Maccar.....H-A	2	3400	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	3100	4½x5½	36x4	36x5d	W
Maccar.....H-3	4	4200	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	4950	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack...AB D.R.	1½	3150	4 x5	36x4	36x3½d	D
Mack...AB Chain	1½	3000	4 x5	36x4	36x3½d	C
Mack...AB Chain	2	3300	4 x5	36x4	36x4d	C
Mack....AB D.R.	2	3750	4 x5	36x4	36x4d	D
Mack....AB D.R.	2½	3850	4 x5	36x4	36x4d	D
Mack...AB Chain	2½	3400	4 x5	36x4	36x4d	C
Mack...AC Chain	3½	4950	5 x6	36x5	40x5d	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4 x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
Mapleleaf...AA**	2	3775	4 x5½	36x4	36x7	W
Mapleleaf...BB**	3	4350	4½x5½	36x4	36x4d	W
Mapleleaf...CC**	4	5100	4½x5½	36x5	36x5d	W
Mapleleaf...DD**	5	6200	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	3½x5½	31x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x5	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4¼x5½	34x4	36x7	W
Master.....DD	2½	3190	4¼x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x5d	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4¼x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3½x4½	32x3n	32x4n	W
Menominee...HT	1-1¼	2000	3¼x5	34x3½	36x5	W
Menominee....H	1½	2175	4 x5	36x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4½x6	36x6	40x12	W
Moline.....10	1½	1985	3½x5	34x5n	36x6n	I
*Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-5	4600	4¼x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3¾x5½	35x5	36x6	I
Nash.....3018	2-2½	2150	3¾x5½	36x6	40x8	I
Nash.....Quad.	2-2½	2750	4½x5½	40x8	40x8	I
Nash..3018, LWB	2-2½	2200	3¾x5¾	36x6	40x8	I
Nash Quad. LWB	2-2½	2800	4½x5½	40x8	40x8	I
Nash.....5018	2½	2250	3¾x5½	34x4	34x6	I
4Nelson.....G2	1½	....	4½x5½	36x3½	36x6	W
4Nelson.....G3	2½	....	4½x5½	36x4	36x7	W
4Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
4Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5½	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5½	36x4k	36x7k	W
Noble.....B30	1½	....	3¾x5½	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4½x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4½x5½	34x4	36x6	W
Northwestern.WS	2½	3590	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	31x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E-Spec	1½	2285	3¾x5½	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¼x5	36x3½	36x5	W
Ogden.....E	2½	....	4½x5½	36x4	36x8	W
Old Hickory...W	1	1775	3¼x5	36x3½k	36x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4¼x6	34x4	36x4d	W
Old Reliable....C	3½	4250	4¼x6	36x5	36x5d	W
Old Reliable....D	5	5250	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6¼	36x6	40x7d	C
*Oldsmobile Econ	1	$1095	3½x5¼	35x5n	35x5n	I
Olympic.....A	2½	3200	4½x5½	30x4	30x8	W
Oneida.....B9	1½	2825	4 x5½	36x3½	36x7	
Oneida.....C9	2½	3700	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	3250	3½x5	36x6n	30x6n	B
Oshkosh.....AA	2	3400	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3850	4 x5½	38x7n	38x7n	B
Oshkosh.....BB	2½	4000	4 x5½	38x7n	38x7n	B
*Overland.....4	½	450	3½x4	30x3½n	30x3½n	B
Packard.....EC	1½-3	3100	4½x5½	36x4	36x7	W
Packard.....EX	1½-3	3100	4½x5½	36x6n	40x8n	W
Packard.....ED	2-4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	4-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige.....54-20	2½	2420	4¼x5½	34x4	34x8	W
Paige.....51-13	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot... Reverse	1	1380	3¾x5	35x5n	35x5n	W
Patriot... Lincoln	2	2050	4 x5¼	34x3½	34x5	W
Patriot .Washgt'n	3	2930	4½x5½	36x4	36x7	W
Pierce-Arrow....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow....	3½	4350	4½x6¼	36x5	36x5d	W
Pierce-Arrow....	5	4850	4½x6¼	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3½x5	36x4	36x6	..
Pittsburgher.....	3	3800	4½x5½	36x5k	36x8	W
Power.....F	2	3150	3¾x5¼	36x5	36x7	W
Power.....C	3½	4250	4½x5½	36x5	40x10	W
*Rainier.....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4½x5¼	34x4	34x6	W
Rainier.....R-20	2½-3	....	4½x5¼	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	36x6	40x6d	W
Ranger...TK-20-2	1½	2450	3¾x5	36x6n	38x7n	W
*Reo.....F	¾-1	1245	4½x4½	31x4½n	34x4½n	B
Reliance.....10A	1½	2400	4 x5¼	36x3½	36x5	I
Reliance.....20B	2½	3100	4½x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3¾x5	34x3	34x4	I
Republic..10 Exp	1	1695	3¾x5	35x5n	34x5n	I
Republic.....11X	1½	1795	3¾x5	31x3½	34x6	I
Republic.....19	2½	2195	4½x5¼	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rowe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rowe....C.D.W.	2	3300	4 x5	34x4	36x3½l	W
Rowe....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rowe....G.P.W.	3	5250	3½x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4¼x6	36x5	36x6d	W
Rowe.....F. W.	5	5500	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Sanford W-15	1½	2150b	3¾x5	36x3½k	36x5k	..
Sanford.....25	2½	....	4½x5¼	36x4	30x4d	W
Sanford.....35	3½	....	4½x5½	36x5	36x5d	W
Sanford.....50	5	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4½x5½	36x4	36x7	W
Schacht....3-Ton	3	3800	4½x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5¼	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½-2½	3350	4½x5½	34x5	38x7	W
Selden.....50	2½	3250	4½x5½	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4¾x6	36x6	40x12	W
Seneca.....M	½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3½x4½	32x4½n	32x4½n	B
*Service.....15	1¼	....	3½x5	31x4½n	35x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	30x7	W
Service.....37	2	....	4¼x5½	35x5n	38x7n	W
Service.....52	3	....	4¼x5½	36x4	36x8	W
Service.....72	3½	....	4¼x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	$1950	3¾x5	34x5n	36x6n	W
Signal.....H	1½	2450	4½x5¼	34x4	36x6	W
Signal.....J	2½	2875	4½x5½	34x4	36x8	W
Signal.....M	3½	3675	4½x5½	36x5	40x5d	W
Signal.....R	5	4400	4¾x6	36x6	40x6d	W
Southern.....10	1	2090	3¾x5	34x3½	34x4	W
Southern.....15	1½	2590	3¾x5½	36x6n	34x4	W
Southern.....20	2	2990	4¾x5¼	36x6n	40x8k	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5¼	36x4k	36x7k	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x10	W
Standard.....S-K	5-7	4400	4¾x6	36x6	40x12	W
Sterling.....1½	1½	2885	4 x5¼	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5¼	36x4k	36x6k	W
Sterling.....2½	2½	3290	4¼x5¾	36x4k	30x4dk	W
Sterling.....3½	3½	4325	4½x6¼	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6¼	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6¼	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6¼	36x6	40x7d	C
*Stewart.....14	1¼-1½	1245	3½x5¼	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3½x5½	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3¾x5	34x3½	34x5	I
Stewart.....7	2-2½	2190	4½x5¼	34x4	34x7	I
Stewart.....7-X	2½-3	2380	4¼x5½	34x4	34x7	I
Stewart.....10	3½-4	3190	4½x5½	36x5	36x5d	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x5d	I
*Stoughton.....C	¾	1240	3½x5	34x4½n	34x4½n	W
Stoughton.....A	1	1790	3¾x5¼	34x5	34x5	w
Stoughton.....B	1½	2150	3¾x5¼	36x3½	36x5	w
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stewart.....F	3	3150	4¼x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4½x5½	36x4k	30x7k	W
Sullivan.....H	3½	3450	4½x6	36x5	36x5d	W
*Themart.....	1¼	1795a	4 x5¼	34x5	34x5	C
Tiffin.....GW	1½	2100	4½x5¼	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5¼	36x4	36x3½d	W
Tiffin.....PW	3½	3600	4½x5½	36x5	40x5d	W
Tiffin.....F50	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....F60	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4¼x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2900	4½x5¼	35x5	38x7	W
Tower.....H	2½	3200	4½x5¼	36x4	36x7	W
Tower.....G	3½	4100	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895n	3¾x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5½	34x3½k	34x4k	I
Transport.....35	2	1885	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4¼x5½	36x4k	30x8k	I
Transport.....60	3½	2585	4¼x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Trayler.....B	1½	2390	3¾x5½	34x3½	34x5	W
Trayler.....C	2-2½	2850	4 x5½	36x4	36x7	W
Trayler.....D	3-3½	3300	4¼x5½	36x4	36x8k	W
Trayler.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1295	3½x5	34x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3¾x5½	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5½	36x4k	36x6k	I
Triangle.....B	2½-3	2585	4 x5¾	36x4k	36x7k	I
Twin City...B.W.	2	2750	4 x5½	36x6	40x8	I
Twin City...A.W.	3½	3950	4¼x6	36x5	40x5d	W
5Twin City.....B	3½	....	5½x6	36x6	36x6	I
5Twin City.....A	5	....	5½x6	30x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4¼x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4¼x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4¼x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4¼x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
Union.....FW	2½	3190	4 x6	36x5k	36x8k	D
Union.....HW	4	4650	4½x6	36x6	40x12	D
Union.....JW	6	5800	5 x6	36x6	40x14	D
United.....A	1½	2115	3¾x5¼	36x3½k	34x5k	W
United.....B	2½	3150	4¼x5½	36x4k	36x7k	W
United.....C	3½	3975	4¼x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States .U	1	1875	3½x5½	34x5n	34x5n	B
UnitedStates,NW	1½	2225	3¾x5	36x5	36x3½	W
United States..N	1½	1975	3¾x5	36x3½k	36x5k	I
United States..R	3	3075	4 x5¼	36x4	36x4d	W
United States...S	4	3875	4½x5½	36x5	36x5d	W
United States...T	6	4850	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Veteran.....M**	1½	2690	3¾x5¼	35x5n	35x5n	W
Veteran.....P**	2	3690	4¼x5½	36x4	30x7	W
Veteran.....R**	3	4200	4¼x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	½	1050	3½x4½	31x4n	31x4n	W
Vim.....30	½	1175	3½x4½	32x4½	32x4½	W
Vim.....31	1	1075	3½x5⅛	35x5n	35x5n	W
Vim.....22	2	3150	3¾x5⅛	36x4	36x6	W
Vim.....23	3	3950	4¼x5½	36x5	36x5d	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. •—speed truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Walker-JohnsonA	2	$2250	3½x5	34x3½	34x6	W
Walker-JohnsonB	3	2750	4½x5½	36x4	36x8	W
Walker	5	4850	4½x6½	36x6	40x6d	W
*Watson	B	1	1965a	3¾x5½	35x5n	35x5n	W
Watson	N	3½	4250	4½x5½	36x5	36x10	W
Western	W1½	1½	2550	4½x5½	36x3½k	36x5k	W
Western	L1½	1½	2550	3¾x5	36x3½k	36x5k	W
Western	W2½	2½	3250	4½x5¼	36x4	36x7	W
Western	L2½	2½	3250	4¼x6	36x4	36x7	W
Western	W3½	3½	4250	4½x6	36x5	40x5d	W
*White	15	¾	2400	3¾x5½	34x5n	34x5n	B
White	20	2	3250	3¾x5½	36x4k	36x7	D
White	40	3½	4200	3¾x5¾	36x5	40x5d	D
White	45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick	E	1	1225	3¾x5	34x5n	34x5n	W
White Hick	H	1½	1375	3¾x5	36x3½	36x5	W
White Hick	K	2½	1675	4½x5¼	36x4	36x5	W
Wichita	K	1	1875	3¾x5¼	36x3½	36x4k	W
Wichita	M	2	$2400	3¾x5¼	36x3½k	36x6k	W
Wichita	RX	3	3200	4¾x5¾	36x4k	36x8k	W
Wichita	O	4	3500	4½x6½	36x5k	36x5k	W
Wilcox	AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox	BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox	D	2½	3000	4¼x5	36x4k	36x3½dk	W
Wilcox	E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox	F	5	$4350	4¾x6½	36x5	40x6d	W
Wilson	F	1½	2270	3¾x5	36x3½	36x5	W
Wilson	EA	2½	2825	4½x5¼	36x4	36x7	W
Wilson	G	3½	3685	4½x5½	36x5	36x5	W
Wilson	H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin	A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin	B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin	C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin	D	3½	3000	4¾x5¾	36x6n	40x8	W
Wisconsin	E	5	3500	4½x6½	36x6	36x10	W
Wisconsin	F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will	N	1½	2250	3¾x5	36x3½k	36x5k	W
Witt-Will	P	2½	2750	4½x5½	36x3½k	36x7k	W
Wolverine	J	1	2125	3½x5	34x8	34x4	I
Wolverine	J	1½	2375	3¾x5	34x3½	34x5	I
Wolverine	J	2	2640	3¾x5	34x4	34x7	I
Wolverine	J	2½	3425	4½x5½	36x5	36x10	I
Wolverine	L	3½	4100	4½x5½	36x5	36x10	I

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price icludes several items of equipment. b—price includes body. *—speed truck or delivery wagon. **—Canadian Make. trac—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm.	15-25	1185	4	Midw.	4-4½x5½	Gas.	3
Allis-Chalm.	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm.	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork	2-G	14-28	1695	4	Own	4-4¾x6	GorK	3
Allwork	C	14-28	1395	4	Own	4-5 x6	GorK	3
AndrewsKin.D	18-36	2599	4	Clim.	4-5 x6½	GorK	4
ARO	1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T.	15-30	2200	4	Clim.	4-5 x6½	G,K	4
Aultman-T.	22-45	3420	4	Own	4-5½x8	G,K	6
Aultman-T.	30-60	4500	4	Own	4-7 x9	G,K,D	8-10
Autocar. B-3	12-21	1250	4	Herc.	4-4 x5½	Gas.	2-3
Avery,SR.Cal	5-10	....	4	Own	4-3 x4	G,K	..
Avery Cult-C		....	3	Own	6-3 x4	G,K	..
Avery B	5-10	....	4	Own	4-3 x4	G,K	2
Avery C		....	4	Own	6-3 x4	G,K	..
Avery	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery	12-20	....	4	Own	4-4½x6	G,K,D	3-4
§Avery		....	*	Own	4-4x5½	G,K,D	3
Avery	12-25	....	4	Own	2-6½x7	G,K,D	3-4
Avery	14-28	....	4	Own	4-4½	G,K,D	3-4
Avery	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery	45-65	....	4	Own	4-7½x8	G,K,D	9-10
Bates Mule.H	15-25	....	4	Midw	4-4½x5¼	Gas.	3
Bates Mule. F	18-25	....	*2	Midw	4-4½x5¼	Gas.	3
‡Bates MuleG	25-35	....	*2	Midw	4-4½x6	Gas.	..
Beeman G		2-4	240	4	Own	1-3½x4½	Gas.	..
Best		18-30	3100	*2	Own	4-4¾x6¾	G,K,D	4
Best		60	5450	*2	Own	4-6½x8½	G,K,D	8-9
Bering		5-10	395	4	LeR.	4-3½x4½	G	..
Bering	1921	....	1850	3	Wauk	4-4¾x5¾	GorK	2
Burn-Oil, 1922		15-30	1425	4	Own	2-6¾x7	Ker.	3-4
Capital		15-30	1000	2	Own	4-4½x6	Gas.	3
Case		12-20	1050	4	Own	4-4½x5	G,K,D	3
Case		15-27	1320	4	Own	4-4½x6	GorK	3-4
Case		22-40	2550	4	Own	4-5½x6¾	GorK	4-5
Case	40-72	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar .5T		25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T		40	....	*2	Own	4-6½x7	Gas.	6
Caterpillar T3S		15-25	....	2	Own	4-4 x5½	Gas.	3
Centaur		5-2½	345	2	N Way	2-4½x4½	GorK	1
Chicago	40	40	2500	4	Own	4-4½x6	Gas.	4
Cletrac	F	9-16	595	*2	Own	4-3¼x4½	G,K,D	2
Cletrac	W	12-20	1345	*2	Own	4-4 x5½	G,K,D	2-3
Dakota	4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Depue	A	20-30	2500	4	Buda	4-4½x6	Gas.	4
Dil	D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dil	R.W.	20	2980	4	Midw.	4-4½x6	Gas.	3
Do-It-All	A	3-6	495	..	Own	1-4½x5	Gas.	1
Eagle	F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle	H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B	AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol	D	9-18	1525	4	Lyc.	4-3½x5	Gas.	2
Farm Horse.B		18-30	1885	4	Clim.	4-5 x6½	G,K	4
Farquhar		15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar		18-35	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar		25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch	4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson		-18	$ 395	4	Own	4-4x5	G,K	2
Fox	E	20-40	2390	4	Own	4-5½x7½	G or K	4
Franklin	G	18-30	4000	*2	Clim.	4-5 x6½	G or K	3-4
Franklin	C	18-30	3350	*3	Clim.	4-5 x6½	G or K	3 4
Franklin	G2	18-30	4350	2	Clim.	4-5 x6½	G or K	3-4
Frick	A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick	C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt	A	18-36	2150	4	Wauk.	4-4¾x6¾	G or K	4
Gray	1920	18-36	....	3	Wauk	4-4¾x6¾	Gas.	4
Gt. Western St		20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr	20	20	765	4	Own	2-5¼x6½	K,D.	2
Hart-Parr	30	30	895	4	Own	2-6½x7	K,D.	3
‡Hart-Parr		....	1695	4	Own	6½x7	K.D.	..
Heider	D	9-16	870	4	Wauk	4-4¼x5¾	G,K	2
Heider	C	12-20	995	4	Wauk	4-4½x6¾	G,K	3
Heider	Calt	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4		12-25	1185	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4		15-30	1885	4	Midw.	4-4½x6	Gas	3
Illinois	C	15-30	....	4	Clim.	4-5 x6½	G,K	4
Imperial	E	40-70	4500	4	Own	4-7½x9	G,K,D	10
Indiana	F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International	B-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International	15-30	1750	4	Own	4-5¼x8	G,K,D	4
J-T	N	20-40	....	*2	Clim.	4-5x6½	G,K,D	3-4
Lauson	5	12-25	1295	4	Midw	4-4½x5¼	Gas.	3
Lauson	21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lauson Road		15-30	2000	4	Beav.	4-4¾x6	K	....
Leader	B	12-18	685	4	Own	2-6 x6½	G,K,D	2-3
Leader	N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader	GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn	H4J	40-	4500	*	Cont.	4-4½x5½	Gas	4
Linn	W	60	5000	*	Wauk	4-5 x6¼	Gas	6
Little Giant,	B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant,	A	26-35	3300	4	Own	1-5½x6	K	6
Lombard	1922	85-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard	1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
Master Jr.		5-10	585	..	LeR.	-2¾x4	Gas.	1
MerryGar1922		2	210	2	Evin	1-2¾x2½	Gas.	..
Minne. All-P		12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P		17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Med.D		22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD		35-70	3850	4	Own	4-7½x9	G or K	8-9
Mohawk 1922		8-16	650	2	Light	4-3¼x4½	K or G	1-2
Moline Univ D		9-18	....	2	Own	4-3½x5	Gas.	2-3
Moline Orch.		9-18	....	2	Own	4-3½x5	Gas.	2-3
Moter Macult,		1½	195	2	Own	1-2¾x3½	Gas.	..
NB	1	3-6	425	4	Own	2-3¼x4	Gas.	1
Nichols-Shep.		20-42	2650	4	Own	8 x10	G or K	3-6
Nichols Shep.		25-50	3000	4	Own	9 x12	G or K	4-7
Nilsen Senior		20-40	1975	5	Wauk	4-5 x6¼	G,K	4
Oil Pull	K	12-20	....	4	Own	2-6 x8	K,D	3
Oil Pull	H	16-30	....	4	Own	2-7 x8½	K,D	4
Oil Pull	G	20-40	....	4	Own	2-8 x10	K,D	5-6
Oil Pull	E	30-60	....	4	Own	2-10x12	K,D	8-10
Oldsmar GarK		2½-5	225	4	Own	1-5½x5½	Gas.	1
Peoria	L	12-25	$1600	4	Clim.	4-5 x6½	G,K	3
Pioneer	G	18-36	1750	4	Own	4-5½x6	G,K,D	4
Pioneer	C	40-75	3550	4	Own	4-7 x8	Gas.	10
Plowman	A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable		10-20	390	4	Own	2-6 x7	Ker.	2
Rex		12-25	1600	4	Wauk	4-4¼x5¾	G or K	3
Russell		12-24	1500	4	Own	4-4½x5¾	G or K	2-3
Russell		15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell		20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell		30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson	M	....	445	4	Own	4-4 x5½	G,K	2
Sandusky	J	10-20	1250	4	Own	4-4¼x5¼	G,K,D	2
Sandusky	E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
Shelby	D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby	C	9-18	....	4	Wauk	4-3¾x5¼	G or K	2
Steady Pull		12-24	1485	4	Own	4-4 x5	Gas.	3
Stinson	4E	18-30	1835	4	Beav.	4-4¾x6	G,K	4
Tioga	3	18-32	....	4	Wisc.	4-4½x6	Gas.	3-4
Topp-Stewart.		30-45	....	4	Wauk	4-4¾x6¾	Gas.	3-4
Toro Cultivator		6	750	3	LeR	4-3½x4½	Gas.	2
Toro Tractor'22		6-10	495	3	LeR	4-3½x4½	Gas.	2
Townsend		10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend		15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend		25-50	2500	2	Own	4-8½x10	Ker.	4-8
Traction Meter		40-50	....	4	....	8-3½x5	Gas.	4-5
Traylor	TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar	10	25-40	3750	*2	Wauk	4-5 x6¼	G or K	4
Twin City		12-20	1200	4	Own	4-4½x6	G,K	3
Twin City		20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City		40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle Sam C20		12-20	1295	4	Weid.	4-4 x5½	G	2-3
Uncle Sam B19		20-30	1985	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam D21		20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utiliter	501	2¼-4	295	4	Own	1-3½x4½	G	1
Utiliter	501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis	K	15-25	†995	4	Own	4-4¼x5¾	G,K	3
Waterloo	N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore 21-22		12-25	1185	4	Wauk	4-4 x5¾	G,K	3
Whitney	D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita	T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin	E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin	F	20-40	2050	4	Wauk	4-5 x6¼	G or K	4
Wisconsin,	H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba	12-20	12-20	2400	*2	Wisc.	4-4½x6¾	G,K,D	3
Yuba	15-25	15-25	2750	*2	Wisc.	4-4¼x6	G,K,D	..
Yuba	20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba	25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba		25-40	4750	*2	Yuba	4-5½x7	D	..
Zelle		12-25	....	4	Buda	4-4¼x5½	G or K	3

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. Clim.—Climax. Cont.—Continental. Dom.—Domas. Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. T.C.—Twin City. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor.

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Specifications of Current Passenger Car Models

NAME AND MODEL	Engine Make	Cylinders, Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Ace.....F	G-B	4-3½x5	114	32x4	$1295	$1295	....	....	$2295
Ace.....L	H-S	6-3¼x5	117	32x4	2260	2260	....	....	3680
Ace.....C	Cont.	6-3⅝x5¼	123	33x4½	2975	2975	....	....	4500
Ambassador.....R	Cont.	6-3⅝x5¼	136	33x5	....	b4500	$4500	....	6500
American.....C	H-S	6-3¼x5	127	33x4½	b1995	1850	1925	....	2695
Anderson.....Series 40	Cont.	6-3¼x4½	120	33x4	2195	1650	1795	$2450	2550
Apperson.....8-21-S	Own.	8-3¼x5	130	34x4½	....	2620	2645	3625	3695
Auburn.....6-51	Cont.	6-3¼x4½	121	32x4	1575	1575	1615	2275	2395
Bell.....4-32	H-S	4-3⅛x5	114	31x4	1095	1095	....	....	....
Bell.....6-50	H-S	6-3¼x5	124	32x4	1545	1545	....	....	....
Biddle.....B1 & B5	Buda	4-3¾x5½	121	32x4	2950	b2950	....	3950	3950
Brewster.....91	Own.	4-4 x5½	125	32x4½	5000	5000	....	....	7000
Buick..1922-34-35-36-37	Own.	4-3⅜x4¾	109	31x4	895	935	....	1295	1395
Buick.....1922-44-5-6-7	Own.	6-3⅜x4½	118	33x4t	1365	1395	....	1885	2165
Buick.....1922-48-9-50	Own.	6-3⅜x4½	124	34x4½	n1785	n1785	1585	2075	2375
Cadillac.....61	Own.	8-3½x5⅛	132	33x5	3100	3150	3150	d3875	4100
Case.....X	Cont.	6-3¼x4½	122	32x4½	....	1890	....	....	2790
Case.....V	Cont.	6-3¾x5¼	126	34x4½	....	....	1935	2585	2990
Chalmers.....1922	Own.	6-3¼x4½	117	32x4	1345	1395	1495	1995	2295
Chalmers.....1922	Own.	6-3¼x4½	122	32x4	....	....	1495	....	....
Chandler.....Six	Own.	6-3½x5	123	33x4	1595	1595	1695	2295	2395
Chevrolet.....490	Own.	4-3¼x4	102	30x3½	525	525	....	850 k720	875
Chevrolet.....FB	Own.	4-3⅛x5¼	110	32x4	975	975	....	1575	1575
Cleveland.....41	Own.	6-3 x4½	112	32x4	1175	1195	....	1550	1595
Cole.....890	Nort.	8-3½x4½	127¼	33x5	2485	b2485	2485	3185	3685
Columbia....Challenger	Rut.	6-3⅛x5	115	32x4	....	1195	....	1995	1995
Columbia.....DeLuxe	Cont.	6-3¼x4½	115	32x4	1475	1475	....	2295	2350
Columbia.....Light Six	Cont.	6-3¼x4¼	115	31x4	995	985	....	....	1395
Comet.....C-53	Cont.	6-3½x5¼	125	33x4½	....	1985	2085	....	2985
Crawford.....22-6-60	Cont.	6-3½x5¼	122½	32x4	3000	3000	3000	....	4500
Daniels.....D-19	Own.	8-3½x5¼	132	34x4¼	a4350	b4350	4350	5250	5950
Davis.....71	Cont.	6-3⅛x4¼	114	31x4	....	1195	....	....	....
Davis.....61-67	Cont.	6-3¼x4½	120	32x4	1595	1595	b1695	2095	2195
Dixie Flyer.....H-S-70	H-S.	4-3½x5	112	32x4	1175	1175	b1295	1545	1595
Dodge Brothers.....	Own.	4-3⅞x4½	114	32x4	850	880	....	1280 980h	1440
Dorris.....6-80	Own.	6-4 x5	132	33x5	....	b3950	3950	4985b	5750
Dort.....19-14	D-Ly.	4-3½x5	108	31x4	885	885	....	1315 1065k	1445 1115k
Driggs.....	Own.	4-2⅝x4½	104	30x3½	1275	1275	....	....	1975
Duesenberg...Straight 8	Own.	8-2⅞x5	134	33x5	6500	6500	6750	7800	7800
Du Pont.....A	Own.	4-3⅛x5⅛	124	32x4½	3000	3200	....	3800	4000
Durant.....A-22	Cont.	4-3⅞x4¼	109	31x4	n890	890	....	1365	1365
Durant.....B-22	Anst.	6-3¼x4½	123½	32x4½	1600	1650	....	2250	2400
Earl.....40	Own.	4-3⅞x5¼	112	32x4	1485	1095	950u	....	1795
Elcar.....K-4	Lyc.	4-3½x5	118	33x4	1095	1095	u1095	1345	....
Elcar.....7-R	Cont.	6-3¼x4½	118	33x4	1395	1395	n1395	2065	2165
Elgin.....K-1	Falls.	6-3⅛x4¼	118	33x4	1345	1295	b1345	2195	2195
Essex.....	Own.	4-3⅝x5	108½	32x4	....	1095	....	1195k	1895 1295k
Ford.....T	Own.	4-3¾x4	100	30x3½	r319	s348	u285	580	645
Franklin.....9-B	Own	6-3¼x4	115	32x4	1900	1950	u1750	2750	2850
Gardner.....T-R & G	Lyc.	4-3½x5	112	32x4	895	895	....	....	1595
Grant.....	Own.	6-3⅛x4½	116	32x4	1385	1385	....	1895	1945
Gray.....	Own.	4-3⅝x4	100	30x3½	....	490	....	....	760
H.C.S.....Series 3	Weid.	4-3⅝x5½	120	32x4½	2400	2400	....	2850	3150
Halladay.....4	Own.	4-3½x5	115	32x4	1095	1095	....	1990	2085
Halladay.....6	Own.	6-3⅛x5	115	32x4	1595	1595	....	2295	2395
Handley-Knight.....	Own	4-4⅛x4½	125	32x4½	....	....	2650	3450	3450
Hanson.....30	Cont.	6-3⅛x4¼	112	31x4	....	995	....	....	....
Hanson Six.....60	Cont.	6-3¼x4½	121	32x4	1595	1595	1795	b2475	2585
Hatfield.....A-42	H-S.	4-3½x5	115	32x4	....	1345	b1315	1950	1950
Haynes.....75	Own.	6-3½x5 1/16	132	34x4½	2395	b2395	2395	....	3395
Haynes.....55	Own.	6-3½x5	121	33x4	1645	1595	....	2295	2595
Haynes.....48	Own.	12-2¾x5	132	34x4½	2895	3595	2895	....	3895
Holmes.....Series 4	Own.	6-3½x4¼	126	34x4½	....	b2500	2500	b3300	3600
Hudson.....Super 6	Own.	6-3½x5	126	34x4½	....	b1645	1695	2570	2650 1745k
Huffman.....	Cont.	6-3⅜x4½	120	32x4	1395	1395	....	....	2295
Hupmobile.....Series R	Own.	4-3¼x5½	112	32x4	1250	1250	....	1835	1935
Jackson.....638	Cont.	6-3¼x4½	121	32x4½	....	1485	b1685	2985	2985
Jewett.....Six	Own.	6-3¼x5	112	31x4	1065	1065	....	....	1395
Jordan.....MX	Own.	6-3 1/16x4¾	120	32x4	1895	1795	....	2785	2785
Kenworthy.....8-90	Own.	8-3 x5¼	130	32x4½	5000	5000	5250	6000	6000
King.....K	Own.	8-3 x5	120	32x4½	1795	1795	b1795	2400	2550
Kissel.....45	Own.	6-3 1/16x5½	124	32x4½	n2385	1885	2385	b2975	3075
Kline Kar.....6-55-K	Cont.	6-3¼x4½	121	33x4	1790	1790	1790	2850	2890
LaFayette.....	Own.	8-3¼x5¼	132	33x5	3985	b4090	4090	5000	5175
Leach.....999	Own.	6-3¼x5¼	134	32x4½	6500	6500	6500	6500	6500
Lexington.....22	Anst.	6-3¼x4½	123	32x4½	....	1745	....	....	....
Lexington.....T-22	Anst.	6-3¼x4½	128	32x4½	....	....	2285	....	3350
Lexington.....ST-22	Anst.	6-3¼x4½	122	32x4	....	2100	....	....	....
Liberty.....10-D	Own.	6-3½x5	117	32x4	1295	1295	b1345	2085	2245
Lincoln.....	Own.	8-3⅜x5	130	33x5	$3800	b3800	$3300	$3900	$4200
Locomobile.....48	Own.	6-4½x5½	142	35x5	....	b7600	7600	10500	11000
Maibohm.....B	Own.	6-3⅛x4½	116	32x4	1395	1395	b1495	2165	2165
Marmon..... 34	Own.	6-3¾x5⅛	136	32x4½	3385	b3185	3185	3985	4385
Maxwell.....	Own.	4-3⅝x4½	109	31x4	885	885	....	1385	1485
McFarlan.....1922	Own.	6-4½x6	140	33x5	6300	b6300	6300	7500	7500
Mercer.....Series 5	Own.	4-3¾x6¾	132	32x4½	3950	b3950	c3950	4850	5250
Merit.....	Cont.	6-3¼x4½	119	32x4	1895	1895	....	....	....
Mitchell.....F-50	Own.	6-3½x5	120	33x4	a1490	1490	b1690	2050	2275
Mitchell.....F-50	Own.	6-3½x5	127	32x4½	....	....	1690	....	....
Monroe.....1922-S-9	Own.	4-3¼x4½	115	32x3½	875	875	....	....	....
Moon.....6-40	Cont.	6-3⅛x4¼	115	31x4	....	1295	....	....	1695
Moon.....6-48	Cont.	6-3¼x4½	122	32x4	1785	1785	2285	2785	2785
Nash.....691-96-97	Own.	6-3¼x5	121	33x4	1360	1390	b1540	....	....
Nash.....692-94-95	Own.	6-3½x5	127	34x4½	....	....	1540	2090	2390
Nash Four.....41-4	Own.	4-3⅝x5	112	33x4	965	985	....	1485 1295k	1645 1350k
National.....BB	Own.	6-3½x5¼	130	32x4½	a2475	b2475	2375	3725	b3250
Noma.....3C	Cont.	6-3¼x4½	128	32x4½	2000	b2100	c2200	....	3200
Noma.....1D	Bea.	6-3½x5¼	128	32x4½	3000	b3100	c3200	....	5500
Norwalk.....430-KS	Lyc.	4-3½x5	116	32x3½	....	1035	....	....	....
Oakland.....6-44	Own.	6-2¾x4¾	115	32x4	1120	1145	b1265	1685 1285k	1785
Ogren.....6 T De Luxe	Cont.	6-3⅝x5¼	134	33x5	b3750	3750	3850	4500	4800
Oldsmobile.....43-A	Own.	4-3¼x5¼	115	32x4	....	1145	b1145	1645	1795
Oldsmobile.....46	Own.	8-2⅞x4¾	122	33x4½	....	b1735	1735	....	2635
Oldsmobile.....47	Own.	8-2⅞x4½	115	32x4	1595	b1595	....	2145	2295
Overland.....4	Own.	4-3⅜x4	100	30x3½	550	550	...	850	895
Packard.....Single-Six	Own.	6-3⅜x5	126	33x4½	2485	2485	u2250	3175	3275
Packard.....Single-Six	Own.	6-3⅜x5	133	33x4½	....	u2350	2685	....	3525
Packard.....Twin Six	Own.	12-3 x5	136	35x5	3850	3850	3850	5240	5400
Paige.....6-44	Own.	6-3¼x5	119	32x4	1465	1465	u1290	1995	2245
Paige.....6-66	Cont.	6-3⅜x5	131	33x4½	a2495	n2245	2195	3100	3155
Paterson.....22-6-52	Cont.	6-3¼x4½	120	32x4½	....	1550	1585	2595	2595
Peerless.....56-S-7	Own.	8-3¼x5	125	34x4½	....	b2790	2790	3500	3790
Pierce-Arrow.....	Own.	6-4 x5½	138	33x5	7000	b6500	6500	8000	8500
Pilot.....6-50	H-S.	6-3¼x5	126	32x4½	2050	2000	2050	2950	3000
Premier.....6-D	Own	6-3⅜x5½	126¾	33x5	3150	b3100	3250	4300	5100
Premocar.....6-40-A	Falls.	6-3½x4¾	117	32x4	1095	1095	...	1750	1825
R & V Knight.....R	Own	4-3⅛x5	116	32x4	....	1665	....	2385	2475
R & V Knight.....J	Own.	6-3⅝x4½	127	32x4½	2475	b2475	2475	3015	3105
Reo Series ..B-T6 & U6	Own.	6-3⅛x5	120	33x4	1595	....	1595	2355	2435
ReVere.....C	Dues.	4-4¼x6	131	32x4½	3200	3200	3200	....	4000
Rickenbacker.....A	Own.	6-3½x4¾	117	32x4	....	1485	....	1885	1985
Roamer.....6-54-E	Cont.	6-3½x5¼	128	32x4½	2850	b2585	2785	3850	3850
Roamer.....4-75-E	Dues.	4-4¼x6	128	32x4½	3985	b3585	b3750n	....	b4650
Rolls-Royce.....	Own.	6-4½x4¾	143½	33x5	....	10,900	....	....	....
Saxon.....125	Own.	4-3½x5	112	32x4	1195	1195	....	1795	1795
Sayers Six.....DP	Cont.	6-3¼x4½	118	33x4	1695	1695	....	2795	2795
Seneca.....L-2 & O-2	Lyc.	4-3½x5	108	30x3½	875	875	....	....	....
Seneca.....50 & 51	Lyc.	4-3½x5	112	31x4	1095	1095	....	....	....
Sperling.....A	Supr.	4-3⅜x5	114	32x4	980	980	....	1685	1685
Standard ..98	Own.	8-3¼x5	127	34x4½	2150	b2500	2500	2750	3200
Stanley.....	Own.	2-4 x5	130	34x4½	2800	2600	2600	3775	3850
Stanwood Six.....	Cont.	6-3¼x4½	118	33x4	1765	1765	....	2750	....
Star.....	Cont.	4-3⅛x4¼	102	30x3½	r319	s348	u285	580	645
Stearns-Knight....SKL4	Own.	4-3¾x5⅝	125	34x4½	2250	2250	2450	3150	3450
Stearns-Knight.....6	Own.	6	...	.....	2700	2700	2850	3500	3700
Stephens.....90	Own.	6-3¼x4½	122	33x4½	1575	b1595	c1625	2450	2550
Stevens-Duryea.....E	Own.	6-4⅞x5½	138	35x5	7250	b6900	6800	u5600	b8900
Studebaker....Light Six	Own.	6-3⅛x4½	112	32x4	1045	1045	....	1375	1750
Studebaker...Special Six	Own.	6-3½x5	119	32x4	1425	1475	b1475	2150	2350
Studebaker.....Big Six	Own.	6-3⅞x5	126	33x4½	....	n1985	1785	2500	2700
Stutz.....	Own.	4-4⅝x6	130	32x4½	2950	b2990	c2990	3990	4450
Templar.....A-445	Own.	4-3⅜x5½	118	32x4	2025	2125	b2175	2785	2785
Tulsa.....E-1-2-3	H-S.	4-3½x5	117	33x4	1175	1175	....	....	....
Velie.....48	Cont.	6-3¼x4½	115	32x4	1585	1585	b1800	2485	2485
Velie.....34	Falls.	6-3⅛x4½	112	32x3½	1235	1235	....	1750	2085
Velie.....58	Own.	6-3⅛x4¼	115	32x4	1395	1395	....	2085	2185
Westcott.....C-48	Cont.	6-3½x5¼	125	32x4½	....	....	1890	....	2890
Westcott.....A-44	Cont.	6-3¼x4½	120	32x4	....	1690	n1890	....	2690
Wills Sainte Claire..A-68	Own.	8-3¼x4	121	32x4½	2475	2475	....	3275	3475
Willys-Knight.....20	Own.	4-3⅝x4½	118	32x4	1350	1375	....	1875	2095
Winton.....40	Own.	6-3¾x5¼	132	35x5	3400	b3600	3400	4450	4550

a—3-passenger. b—4-passenger. c—6-passenger. n—Sport. h—All Metal Type. k—Soft Top Type. u—Chassis Price. r—Price without starter and demountable rims. Price with starter and demountable rims $414, s—Price without starter and demountable rims. Price with starter and demountable rims $443. t—Model 47—34x4½ Tires.

Engine Make: Anst—Ansted. Bea—Beaver. Cont—Continental. Curt—Curtis. D.Ly—Dort Lycoming. G-B—Grey Beal. H-S—Herscoell-Spillman. Lyc—Lycoming. Nort—Northway. Roch—Rochester. Rut—Rutenberg. Supr—Supreme. Weid—Weidely. Wisc—Wisconsin.

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MINUTE MAN SIX

(Series 22)

$1745

The Series 22 Lexington *dominates!*

Experienced motorists realize that here is extraordinary *value*.

Lexington possesses certain features that can not be obtained on any other car regardless of price—features that mean more power, greater economy, longer life, increased safety, added convenience:

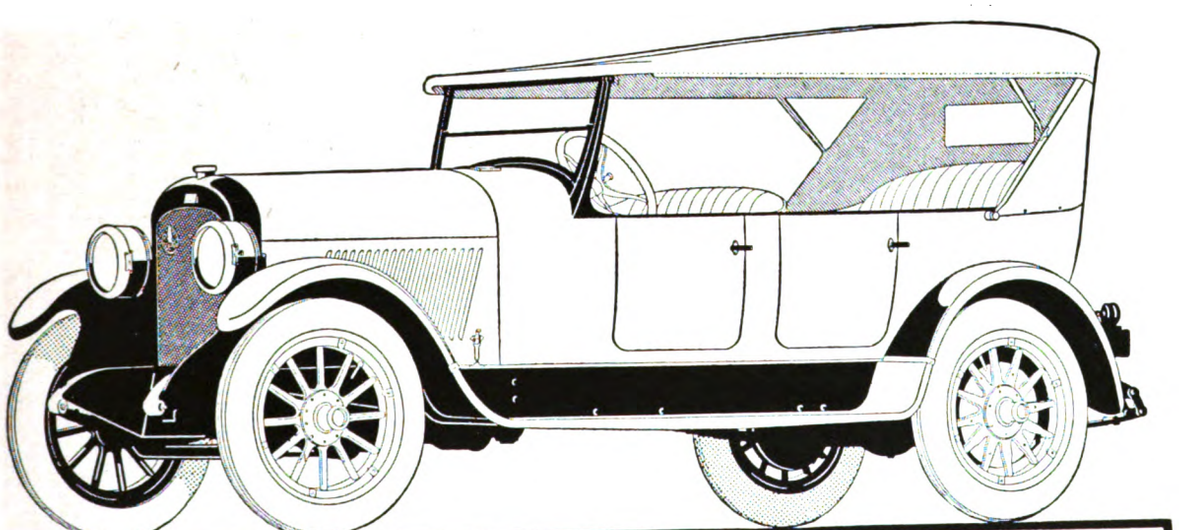
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Double-triangular Center Cross-member—a new frame principle;

Cable Foot Brake System—positive, quiet, perfectly equalized;

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Let us tell *you* about them *today!*



Here They Are! Series 22 Line Now Complete!

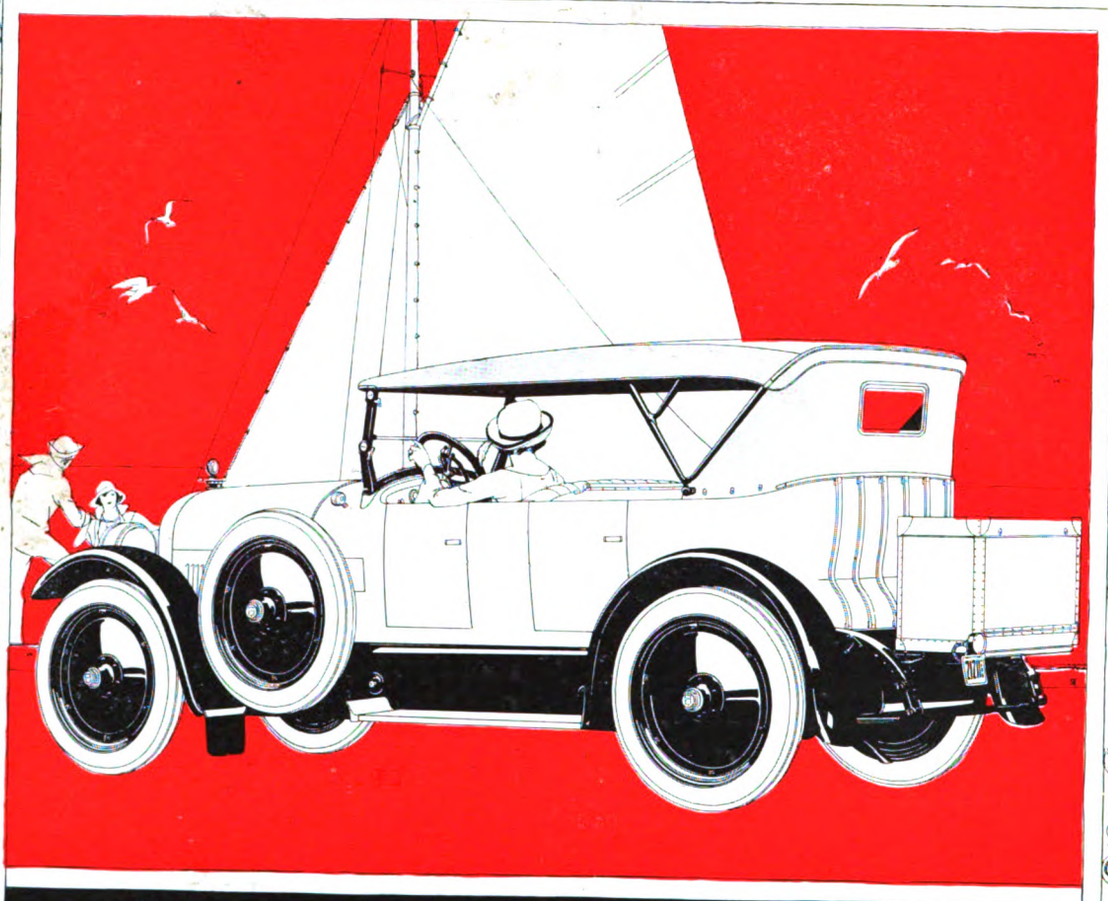
Five-passenger Touring, $1745; Six-passenger Touring, $1845; Five-passenger California Top, $2045; Six-passenger California Top, $2145; Five-passenger Sport, $2145; Four-passenger Coupe, $2345; Five-passenger Sedan (with two taxi seats), $2545.

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THE NEW IMPROVED FOUR PASSENGER HAYNES 75 TOURISTER

For those who desire a car for touring which is dependable in power and impressively proportioned, and yet wish the seating to be conversationally convenient, Haynes engineers and designers have evolved the new, improved, four-door, four-passenger Haynes 75 Tourister.

The whole car is correctly eloquent of smartness, from its new design, searchlight type head lamps to the serviceable trunk carried at the rear. The slope of the windshield, the three-quarter length running boards, the spare tires riding beside the commanding hood, the trim, ebonized handles of the four convenient doors, the stylishly French-plaited leather upholstery over deep, resilient cushions, every detail appeals to those who appreciate discriminative completeness.

Like all Haynes 75 models, the Tourister has the pick-up, the get-away, the steady, trustworthy, quiet power, which is the gift of Haynes manufacturing experience, in the famous, Haynes-built six cylinder 75 motor.

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$2395
F. O. B. FACTORY

Cord tires and wooden wheels are standard equipment on all six cylinder Haynes 75 models. The Haynes 75 Blue Ribbon Speedster has cord tires and six wire wheels as standard equipment. ***Disc wheels are optional at no extra charge.*** *All models except the Speedster, equipped with six wire wheels, prices on application*

THE HAYNES AUTOMOBILE COMPANY, *Kokomo, Ind.* Export Office, 1715 Broadway, New York City, U. S. A.

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1893 · THE HAYNES IS AMERICA'S FIRST CAR · 1922

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Volume LXXII
Number 3

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NEW YORK, JULY 19, 1922

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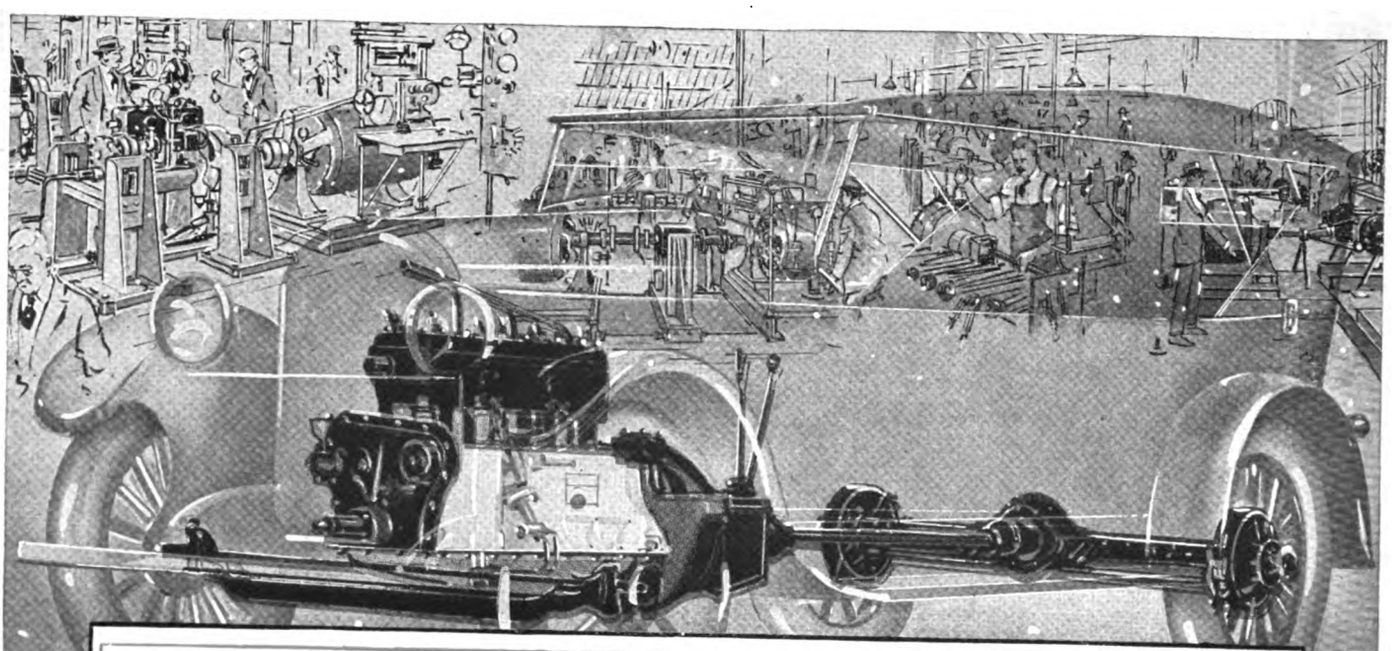
A Correction

Contrary to popular impression the price of the Jordan is not $3,000 — It's the record with owners that makes people talk that way —

Edward S. Jordan

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Back of the SPECIALIZED car

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Today the car buyer looks not only at the car but, with keen understanding, at the production methods and standards back of it.

The SPECIALIZED car holds his interest because in each of its major units it represents concentration of skill, specialized training and specialized equipment. No lost motion, no dissipated energies—but the undivided and untiring attention of SPECIALISTS to each unit until, in material, in mechanical principle and in operation, perfection is achieved.

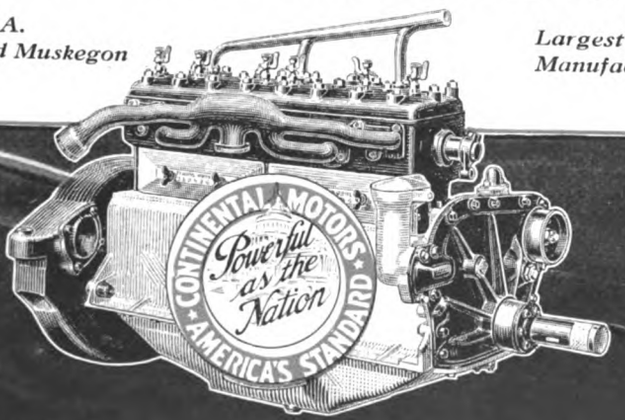
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MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

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239 West 39th St., New York City Phone Bryant 8760
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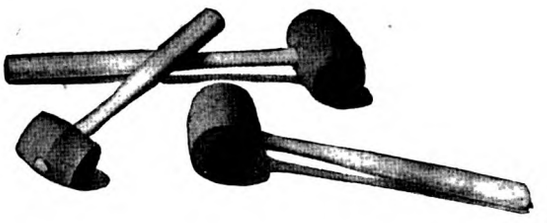
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Many a tire has had its bead pinched and many a rim has been damaged by a careless blow of a metal hammer.

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Just explain to any motorist the danger of a miss-hit with a metal mallet — an injured rim or felloe—damaged tire bead—

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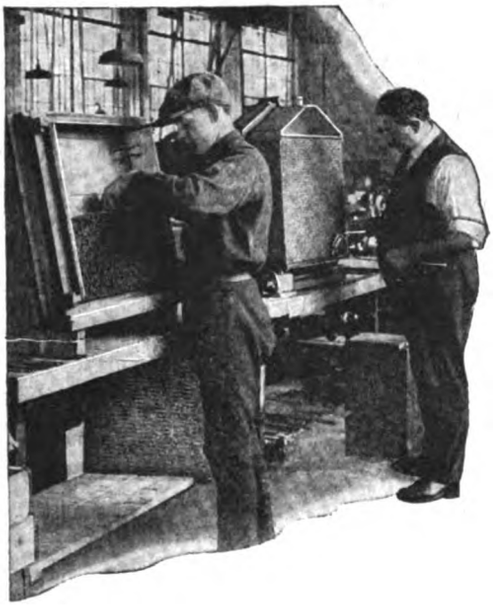
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It is of the honey-comb, tubular type, built up from separate, seamless, solid drawn tubes—the strongest and lightest construction. It is guaranteed against everything except only damage by accident.

ROLLS-ROYCE

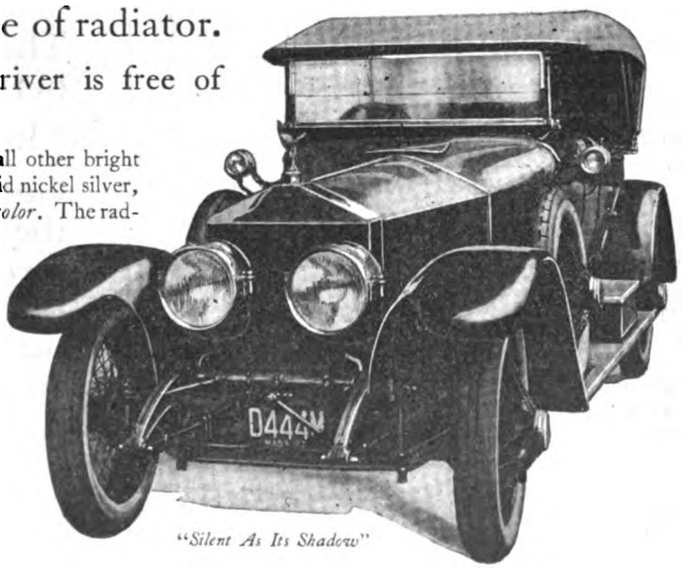
Radiators have superior cooling advantages. They cannot rust or clog—freezing does not injure them—they withstand road-shock, strain and rapid changes of temperature—they may be more easily and economically repaired, in case of accident, than any other type of radiator.

The Rolls-Royce driver is free of radiator troubles.

The top-tank, side plates and all other bright parts of the radiator are made of solid nickel silver, so that *they will always keep their color*. The radiator is supported on ball joints so that it is not stressed by the inevitable small deflections of the frame. All radiators are tested, under pressure, before being put on the car.

Write for "The Story of Rolls-Royce—Its Design, Workmanship and Materials"

ROLLS-ROYCE
of America, Inc.
SPRINGFIELD, MASS.



"Silent As Its Shadow"

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXII New York, U. S. A., Wednesday, July 19, 1922 No. 3

No Wonder They Come Back for More



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WHAT makes people "come back for more"?
That's one way of asking what builds business.
The answer ALWAYS is SERVICE.
The well built car, well maintained—the car that gives satisfactory service—sells another. So it is with a truck or tractor.
The well done repair job sells another.
Well handled treatment of the customer for gas, oil or automotive equipment brings him back for more.
EVERY DEALER AND GARAGEMAN CAN BUILD BUSINESS ON SERVICE—IF HE WILL.

Putting Service in Sales Brings Customers Back

A Small City Dealer Asks 'em to Buy with Well Displayed Stock, Good Advertising and Serious Attention to Patrons' Wants—AND THEY BUY

SELTZER is a dealer in Norristown, Pa., 35,000 population. And Seltzer says:

"Get 'em coming to your gasoline pump and your free air line, but for goodness sake have a hose that will work and a pump that is efficient. Failure to have these necessities makes grouches out of most motorists and infuriates some.

"Tie up your windows with your advertising and call attention to them. Have a 'tourist window,' a 'gift window,' or the like.

"We use a 'street scout' armed with a pencil and notebook, in getting equipment prospects.

"We use postcards in series and personal letters as a means of follow-up."

EVER since he attended an A. E. A. movie and lecture meeting last March, M. Eugene Seltzer, proprietor of the Colonial Auto Supply Co., Norristown, Pa., has been a fervid supporter of the policy of "Ask 'em to Buy," which, he says, at a conservative estimate has increased his business 20 per cent.

"We have a system that works well," says Seltzer. "When a customer stops at our curb for gasoline or air we first supply his needs in that direction. We then find out if he has come to buy some particular article. When this is supplied, or at about the same time, we make a practical suggestion relative to something which we have, in the meantime, noticed his car lacks; we call attention to articles displayed in our window, close to the curb and we go inside and bring out something he needs, which we ask him to buy. If a customer buys anything, we never fail to ask 'Is there anything else?' And whether there is, or isn't, we offer him something for sale.

"This plan, since its inception, has been most satisfactory. Our window displays supplement our sales talks. We dress our windows frequently, changing them at least once a week, and we usually tie up our window displays with our advertisements in the Norristown newspapers. This week we have a 'tourist' window, displaying such articles as folding seats, travelers' cases, picnic kits and even a Blue Book in the foreground.

"Do our windows pay? Well, I notice that whenever we display any particular article in the window, sales in that line for the week are considerably larger."

Seltzer stresses the importance of having a first-class air hose that is always in good condition.

"I know of more motorists than you can count who have been annoyed at and complained of poor or useless air hose and pumps at different places, including service stations," said Seltzer. "It is my belief that having an air hose that won't work when needed is the cause of many motorists becoming so disgusted that they stop patronizing the



$15,000 STOCK HERE

Gas, free air and an accessory store—not much of a place, you'd say offhand, but the dealer this story tells about does a big, aggressive, prosperous business there

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place where it is, no matter how loong they have been trading with the concern owning it. Either give real service, or don't pretend to, or you will anger your customer. We see to it that our air hose is never out of commission." The air hose Seltzer uses is a pliable metal one, of the "indestructible" type. The air is served by means of an automatic compressor of 150 lb. pressure. Both pump and hose are closely inspected daily, to see if they are in first rate operating condition. Air service, of course, is free.

Believing in giving customers a chance to make purchases on the day they do the most touring, Seltzer keeps open on Sunday till 5 p. m. Week days he closes at 9 p. m.

He carries a complete stock as to width of range, rather than as to the number of items of the same kind, and keeps his retail stock up to about $15,000, cost price value.

"I found I had to keep a complete stock," says Seltzer, "because people here never ask, 'Have you got such and-such an article?' They always say, right off the bat, 'Give me such-and-such a thing.' They expect you to have it and feel disappointed if you don't, so in stock it has to go in case I don't have it. I have two men inside, besides myself and the bookkeeper, and we all carry a little pad on which to enter calls for stock that we are not keeping, so we will be sure to order it.

"I turn my stock over, on an average, six times a year, so you can see that we keep the goods moving right along."

Anything wanted in the way of accommodation for a patron Seltzer makes a point of getting, even if there is no profit on it. He does not grudge the time and effort, as he is confident that this policy helps to weld his customers to the store.

"If I am not sure that I can get a certain article," says Seltzer, "I am careful not to promise it, for it's not good policy to promise and then disappoint. Some customers are apt to take an incident of this kind very much to heart."

Seltzer has learned that it not only pays to accommodate his customers, but that it also pays sometimes to accommodate car dealers. For instance, he has a reciprocal working agreement with automobile dealers in Norristown, whereby when they are closed, or out of some article, he takes care of their patrons in the accessory department. This plan works out advantageously for all concerned.

Seltzer carries a minimum stock of $5,000 worth of tires, being a dealer in two brands and distributor of a third. He vulcanizes tubes, distributes a lubricating oil locally and is agent for a well-known battery. In his tire stock he has not forgotten the larger pneumatics for trucks.

"We pride ourselves on selling more battery water than any three other concerns in Montgomery County," says Seltzer, "not because of what there is in it for us, but because we have cultivated this as an advertisement. People talk about it and it helps our business. Little things like this count for more than one would be apt to believe."

The store is also a service station for attaching bumpers and replacing fenders. It sells and attaches a large number of automatic windshield cleaners."

In fact, it is largely because Seltzer doesn't hesitate about going after prospects through the mails, on foot and by deputy that he has succeeded in piling up an enviable business. He has several ways of doing this. Seltzer, like most small town dealers, makes good use of the State automobile registration records, issued from the capital. From these he obtains names and addresses and follows up letters with advertising matter.

He always makes his letters personal, although he uses a mimeograph machine of his own, and sends them under a two-cent stamp, so they will be opened as first class mail. One week he may send a fuel oil letter, the next a tire letter, and the next a stoplight letter, and at times he will combine several articles in a sales letter.

He had considerable success with a series of specially printed pictorial postcards, of which he mailed to each prospect and listed customer twelve cards in succession, one for every month in the year. Each card bore a catchy line at the top, and, on the address side, in simulated handwriting, were announcements like the following:

"Isn't this just the opportunity you have been wanting? It looks very good," and

"Have you been here? It's the most satisfactory place."

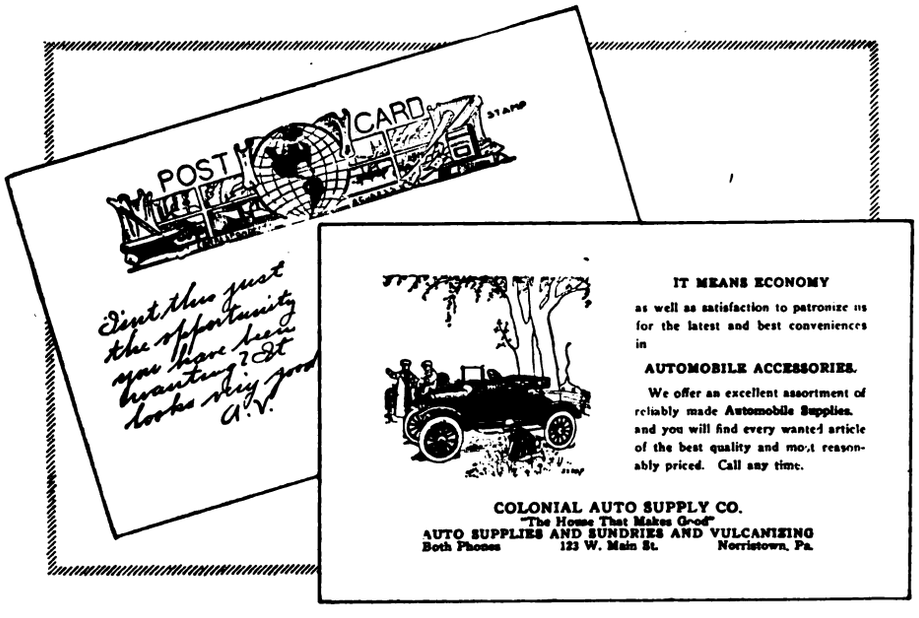
The concern's name, address, telephone number, line of business, the phrase, "Automobile Accessories," and a picture of a car with people in or near it, always figured in the cards' general scheme.

Whenever he starts anything new for the store, like the "New Local Service for Motorists," a special bearings service, he announces this in a printed folder.

Another of Seltzer's practical ways of going after customers is to detail a man who sometimes acts also as an inside salesman, to street duty.

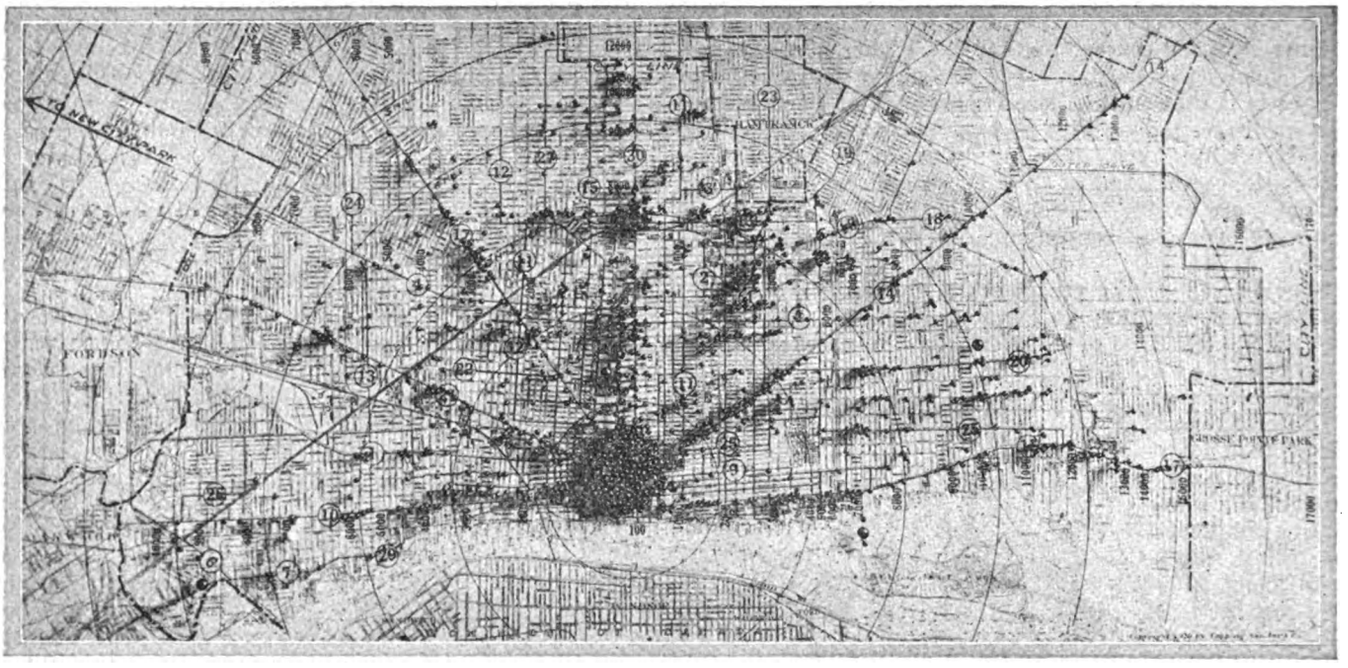
This man's job at such times is to patrol the town on the lookout for cars that need new and spare tires, better fenders, springs or any parts or accessories; to jot down the needs and the car's license number in a little book he carries; to look up the name and to report on it.

Advertising That Builds Equipment Business



The Pennsylvania dealer whose merchandising methods are described here got good results from a series of twelve postcards like the above. One card was sent each month to prospects and customers

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DETROIT ACCIDENT BAROMETER THAT AIDS POLICE IN SENSIBLE TRAFFIC CONTROL

The picture shows part of the map, maintained at police headquarters, on which are "spotted" each month accidents of different kinds. Study of the map enables the authorities to detect danger points and, in case of street accidents, to make necessary provisions for proper traffic control. Different sizes of pins show whether the accidents were fatal or resulted in the injury of persons and different colors show whether automobiles, street cars or other vehicles were concerned. Detroit led the country in 1921 in cutting down fatal street accidents.

Education Helping Regulation to Improve Street Traffic

Detroit's Traffic Control System Moves Motor Vehicles More Promptly and Safely Through Busy Sections and Safety Campaign Cuts Down Accidents

By J. EDWARD SCHIPPER

DURING the first four months of 1922, there were 7000 less traffic ordinance complaints than for a corresponding period in 1921 in the city of Detroit. Along with this, there has been a very material decrease in accidents when compared to the number of vehicles registered in the city. This has been the result of an intensive Safety First campaign, which has been persistently followed in well defined form since 1918.

This campaign has spread to every angle of the question of public safety and its relation to the traffic in the city. It has reached into the public schools, where lectures designed to awaken the interest and hold the attention of children have been given. It has spread to the courts, where efficient co-operation has been given to the police department in the conviction and punishment of those arrested for traffic violations. It has spread in a most interesting way to the method of handling traffic in the city streets and in various devices and plans for so regulating the traffic as to have it move at a sufficient pace to free the business districts of congestion and, at the same time, to keep the number of accidents down to a reasonable and steadily decreasing figure based on a percentage of accidents compared with the number of vehicles registered.

Every Friday there is a meeting and luncheon at the Detroit Athletic Club of the Public Safety and Traffic Committee. This committee has 28

Are You Working for Street Safety in Your Town?

IN Detroit the aim of the traffic authorities is not to restrict but to expedite the movement of vehicles in the greatest degree possible with due regard to the safety of the public.

Could you cut down sales resistance on automobiles in your town if traffic conditions were improved? Would the Detroit plan help you make suggestions to your public officials? This story gives the general details and additional information can be obtained from the Detroit Public Safety Committee.

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members representative of practically every branch of business and public affairs that would be interested in the question of traffic and public safety. Prominent automobile dealers, the city engineer, the county road commissioner, the fire commissioner, the park commissioner, the police inspector in charge of traffic and several of the city's representative merchandising and manufacturing executives are members of this committee. The meetings are well attended and a complete record of the minutes is kept and forms the basis of recommendations which are back of much of the traffic system which has been adopted in Detroit.

Inspector Harry H. Jackson, who is head of the traffic division of the police department, has under his command a picked body of men who are doing effective work in the reduction of street accidents. The law making it compulsory to report every accident to the police department has put into his hands statistics which enable him to post his men to the best advantage. In addition to this, the automobilist is guided by well defined markings on the curbs and streets, so that at no time should he be in doubt as to how fast he can go or what path he should take.

The Tower System

On the main thoroughfare, Woodward Avenue, traffic is controlled by the tower system, which is similar to that adopted in New York and other large cities. There are, however, some improvements which are unique and original with Detroit. One of these is the use at crossings of a bell which rings when the signal lights are about to change, informing vehicles lined up ready to make the crossing that the signal is changing. This makes it unnecessary to place officers at intermediate points between the towers save on exceptionally busy corners. The tower signals are the three-light system, green, meaning go, yellow, meaning that the signal is about to change, and red, indicating stop. When the yellow signal flashes, all traffic is supposed to stop, and this is followed immediately by the green or red signal, meaning go or stop. The tower system controls the traffic for several blocks each way, so that it is possible to keep traffic moving along a long line and thus promptly empty the business sections of the city during the evening rush hour, or to fill them during the morning rush period.

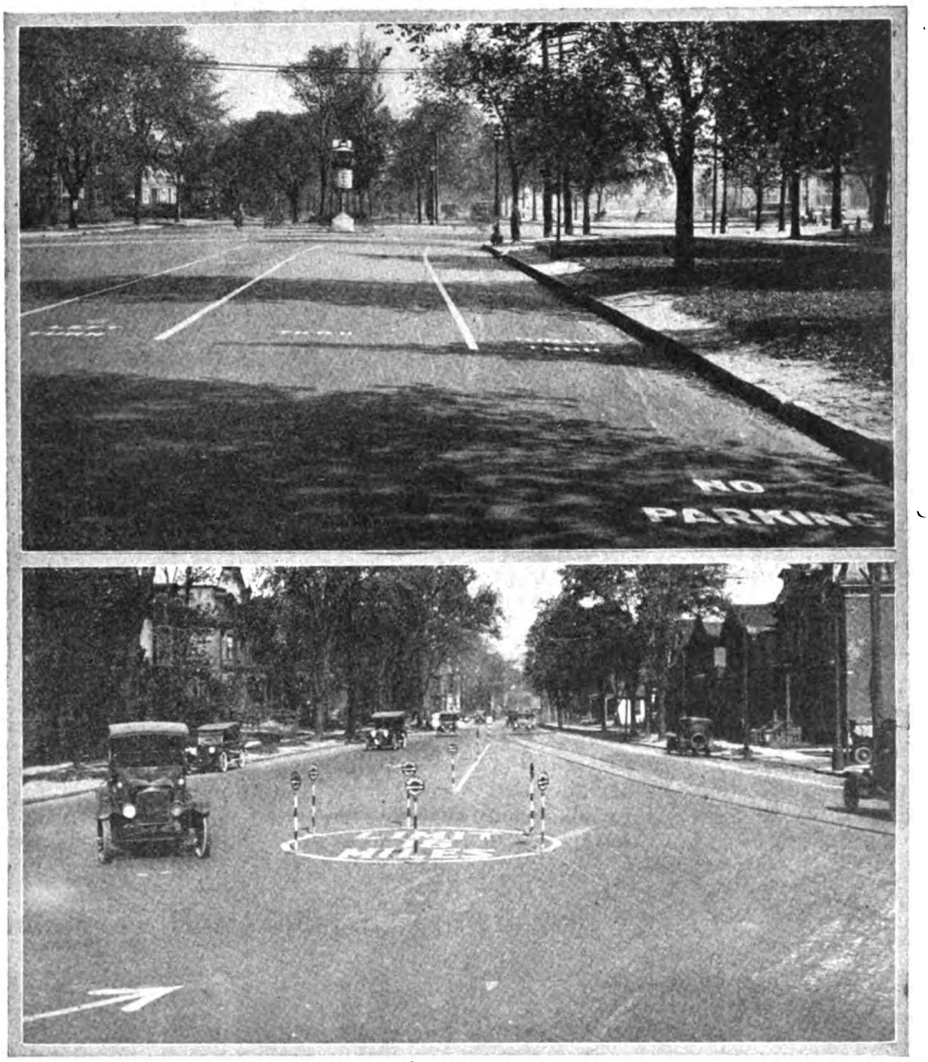
The use of white markings on the streets for guiding the motorist both in regard to speed and direction has worked wonders. It is surprising to see how even drivers who are inclined to be careless keep inside of the bounding white marks and they have proven to be as efficient as a raised curbing, without the possibility of causing accidents such as would be likely to happen with a raised guide.

As the stranger enters the city, he is greeted by a sign post at the city limits which reads, "Detroit—speed limit 15 miles per hour." The traffic officers allow a leeway of five miles per hour, but rigidly hold the traffic to a speed of 20 miles per hour. Formerly, 25 miles per hour was permitted in certain districts of the city, but recently a limit of 20 miles has been strictly enforced, with a resulting noticeable drop in accidents.

As in all large cities, there are a number of confusing corners where traffic could readily be jammed or accidents occur, due to vehicles going in opposite directions attempting to take the same path. Practically all trouble throughout the entire city has been eliminated at these points by the use of the white line system. A broad white line is painted in such a way as to give a well defined path for every vehicle and even though the driver be a stranger in the city and unfamiliar with the particular corner, he is virtually certain to take the right way.

Along the main boulevard and other through streets, drivers encounter lettered warning signals painted directly on the road paving. These are large enough to attract attention and to continually impress themselves on the mind. On the main boulevard which completely surrounds the city and

Features of Detroit Traffic Control Workable in Large or Small Cities



Upper—Congestion at prominent intersections has been relieved by plainly marking the path for vehicles going straight through or making a right or left turn. Note the "No parking" sign along curb so that the approach to the corner will be clear. Lower—The establishment of rotary traffic at this intersection has practically done away with accidents, whereas there was formerly some sort of minor collision here almost every day and not a few serious ones

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which is much used for a motor thoroughfare, the driver encounters these painted warnings which admonish him to "Drive safely"; "Don't speed"; "Drive with care"; "Limit 15 miles." Or, he will go along a little farther and come to a large sign which will say, "School—Limit 10 miles."

As in all large cities, many of the traffic problems are concerned with parking in the city streets. Instead of leaving the parking regulations for any particular block to the imagination of the motorist, he is duly informed by the curb stone signs which advise him what the regulations are for that street. A typical sign reads, "Parking limit 7 to 10 a. m. 5 min., 10 a. m. to 4 p. m. 20 min., 4 to 7 p. m. 5 min. At the bottom is printed "City Ordinance."

At each car stop there is a safety zone denoted by a white mark and a raised mushroom plate, providing sufficient room for intending passengers to stand in a position where they can mount the car platform. No parking is permitted at the curb adjacent to these safety zones, and at the curb opposite each safety zone there is a target mounted on a pole which reads, "No parking, safety zone." Other signs read, "No parking day or night" or "No parking—Fire engine house," "No parking—Fire engine route." On some streets angle parking only is permitted and such streets are denoted by signs which state, "Angle parking only."

In order to expedite traffic at corners, white lines are painted guiding those intending to make a right turn close to the curb and within this space is painted the words, "Right curve." Those going straight through have a space in the center which is indicated by the word, "Through," and those turning to the left are guided into a



DETROIT TRAFFIC CONTROLLER

Type of signal tower used by Detroit Traffic Department for controlling traffic for several blocks in either direction from the point of intersection. Flashing of a yellow light indicates that the signal is about to change, green means go and red, stop

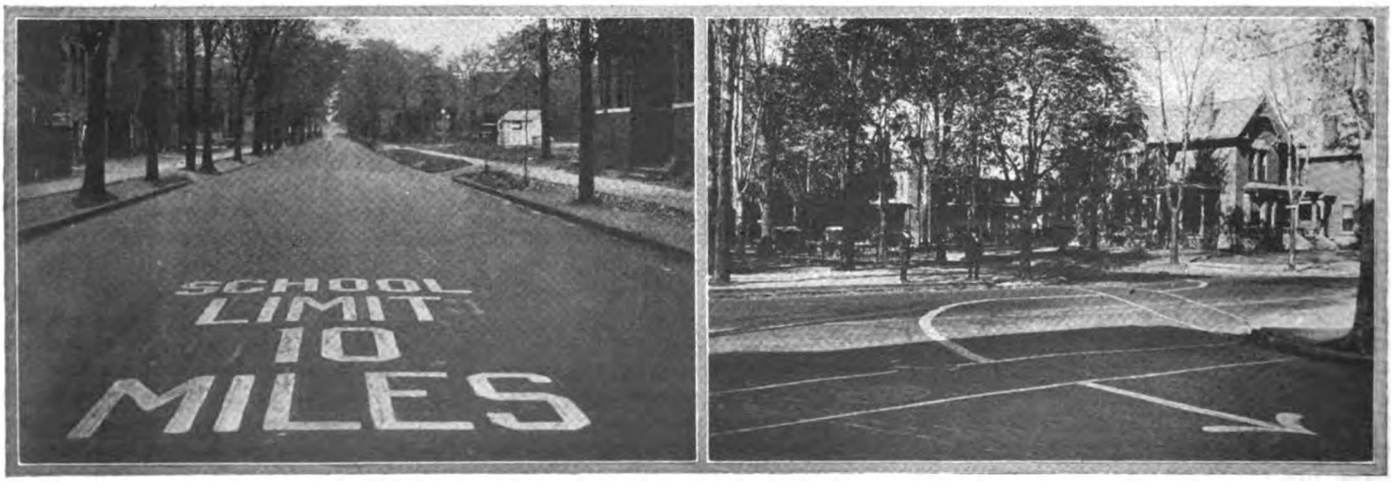
left-hand space or pathway which is indicated by "Left turn." Detroit permits a right turn being made when the traffic is moving at right angles to the vehicles intending to make the right turn. In other words, a right turn can be made at any time, which has been found to help in relieving congestion at the corners.

A point which Inspector Jackson has insisted upon is that at no time is a traffic officer allowed to violently upbraid a man who makes a mistake in traffic. He is simply sent around in the direction that traffic is moving. He is never forced to back up if he goes across a curb line against a stop signal, but is simply made to make a right turn and go on with the cross traffic. Inspector Jackson states that a man rarely or never wilfully violates a stop signal on traffic. He has completely eliminated the customary harangue given the offending driver by the policeman and this has resulted in a more friendly spirit of co-operation among Detroit motorists.

All of these devices and arrangements are but the surface indications of the careful work and thought given to safety matters by the police department itself, as well as the Public Safety and Traffic Committee. When the members of the committee make a suggestion that seems feasible, Inspector Jackson passes it along to his department for trial and what has been accomplished in cutting down traffic accidents is very largely due to these suggestions. Every effort is being made to get the average citizen to co-operate with the police department. For instance, post cards are supplied on which a citizen may report to the police regarding traffic law violations. Other cards encourage citizens, including motorists, to report places where children are playing in the street in a dangerous manner. The informant's name is held in strict confidence.

Every police officer also carries with him accident report blanks which make it certain that reports on acci-

Typical Detroit Street Markings to Direct Motor Vehicle Drivers



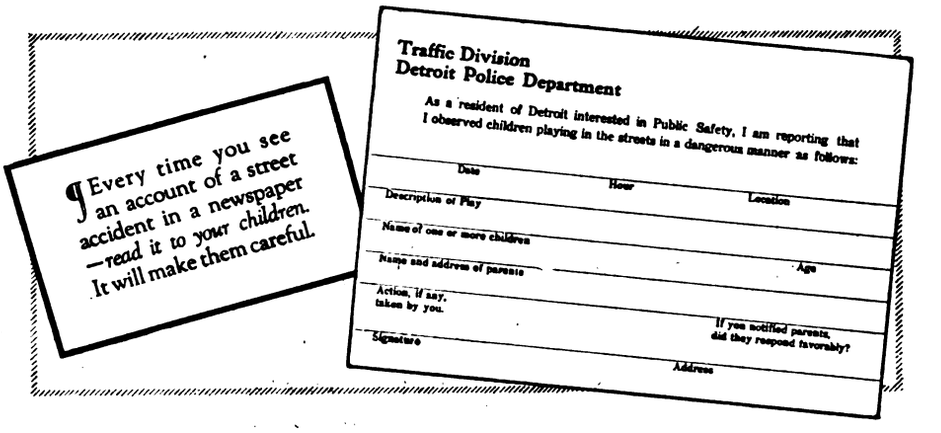
Left—Only a heedless driver would speed past a school with a sign like this painted on the pavement. Right—The white lines which guide traffic on this puzzling street intersection have proved to be effective in preventing accidents at this kind of corner. Note the pedestrian crossings ruled off. There are a number of such corners in Detroit where a street intersecting an avenue comes in at a point which is not opposite that at which it leaves, thus giving an irregular four corners as shown. In order to prevent vehicles going in opposite directions from taking the same path, the white line has been employed with success, giving two well defined traffic lanes

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dents will be uniform and of such a nature as to enable the department to derive its statistical information from this report. The result is that some interesting and important statistics on accidents have been secured. For instance, in 1921 there were 134 fatal accidents in the city. The diagram with this story shows the kinds of vehicles responsible. Passenger automobiles led with 76; street cars were second with 22; heavy trucks had 16; light trucks 7, railroads 5, motorcycles 4, taxicabs 2 and jitneys 2. The time of day at which most accidents occur is stated and every time an accident is reported a pin is placed in a big city map in Inspector Jackson's office. At the end of the month, these pins form a very good indication of the parts in the city which require maximum attention.

A complete system of records and cross card index files is kept, giving the date of the accident, the name of the driver, the kind of car, etc., so that every type of record desired on accidents can be secured from the files of the department. Every driver whose name comes to the attention of the police in any way, either for a traffic violation, for an accident, or for any other reason, has a card in this index file with his complete record so that a close check is kept for reference when cases come to court. Reckless driving and driving while intoxicated impose revocation of license. The police department recommends the revocation to the Secretary of State. Before the police department makes the recommendation the driver is given a hearing. Before the revocation is made by the Secretary of State, the driver has another opportunity for a hearing at his office. In practically all cases, however, the recommendations of the police department have been followed.

One of the effective methods of public education has been in the use of moving pictures showing typical street accidents which have been carefully and accurately posed for the police department. These films are shown at public schools, at lodge meetings, at churches and wherever the police department finds it possible to place them.



Two Glimpses of Detroit's Safety Campaign Propaganda

Left—This advice to parents, widely circulated in various forms, helped to make children more careful in street play. Right—Thousands of people who enrolled in an auxiliary of the Public Safety Committee and other interested people who could be reached were furnished these cards on which to report cases of children courting accidents by carelessness in street play



DIRECTS DETROIT TRAFFIC

Inspector Harry H. Jackson of the Police Department

Organizations co-operating in an auxiliary Public Safety Committee include schools, churches, the Board of Commerce, the Detroit Automobile Club, various business clubs, the street railways, truck and taxicab drivers, owners and fraternal organizations, theaters, city departments, labor unions and the like.

The campaign of public safety education is going on continuously. Booklets, cards and posters keep hammering this message home.

Motor World's next article on traffic control, to appear soon, will consider the highways out in the country, with traffic problems that affect the rural and small town highway rather than the big city street. Traffic control systems of Massachusetts, Connecticut and other States are being studied and interesting, practical information will be presented to assist readers who may want to induce action along better traffic lines by public officials in the sections where they live and do business.

Patience Wins with This Type of Prospect

SELL a hard-boiled buyer?

The greatest asset a salesman can have in a case like this is patience, for without it you only waste your time. Besides patience, I found in my own case that some excuse to make another call is very necessary. My hardest sale was made to a man who had an old car to trade in; in fact, he had already gotten trade-in appraisals from the other dealers. Of course, in selling quality and not price it was necessary for me to sell him thoroughly on the advantages my car offered to offset the price attraction made by my competitors, who cut the price of their cars indirectly, by allowing more on my prospect's car than it was actually worth. Another feature that made this sale very hard was having to spend so much time waiting for an interview, as almost every time I called on this man I would have to wait from one to three hours before he would see me. He would then take up a lot of time explaining how much better trade he could get on some other car, and would then tell me of the wonderful things other salesmen claimed for their cars.

During our interview I found it very necessary to always have a ready answer for every objection.

I am convinced that my greatest help in making the sale was the fact that I called regularly at least once a week until I succeeded in securing my prospect's order.

I was told that several other salesmen made but two or three calls and then apparently got "cold feet."

By going to my prospect's office at just about the time he was leaving for home I would let him drive the new car, thus giving him the chance to get that new car fever and at the same time to see the advantages of the car I was trying to sell him.

When I finally got his order I put him down as about the hardest prospect I ever had to sell.—JOHN B. KENNEDY, Triangle Motors Co., Louisville, Ky.

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Closer Canvass of Territory Needed in Farm Sections

Dealers Are Selling Tractors in Volume, and Some Trucks, But Some Sales Opportunities Are Overlooked—A Close-up Study of a Territory

By DONALD D. BLANCHARD

A MOTOR WORLD editor has been gumshoeing around a typical farm territory, looking into tractor and truck sales and prospects for more sales. The territory was central—southern Ohio. Conditions there may be different from those prevailing in some sections but they are identical with those in others.

The Motor World editor discovered—but his story tells that. He discovered some things about farmers' attitude toward tractors and trucks, about farmers' credit and how dealers can profit by it, about things done and things that might be done in selling to farmers that tractor and truck dealers and other dealers considering these products will find readable and, we believe, useful. The story is about the Ohio field, but it is largely applicable anywhere. The scenery is sectional but the narrative is a faithfully reproduced cross-section of farm territory selling conditions.

TRACTOR dealers in Ohio have enjoyed a fair measure of prosperity during the past spring. Sales made this year are many times those made in the same period of last year. Price, terms and weather conditions have been important factors in the making of these sales.

The heavy price cuts made last winter evidently have brought the tractor down to a figure that is satisfactory to the farmer. At present prices the farmer seems to be convinced that the tractor is a profitable investment. The price cuts accomplished what elaborate comparisons showing that implement and tractor prices had not increased as much during the war period as the prices of other commodities, could not accomplish.

HE bottom had fallen out of the farmers' market. Until tractor and implement prices had taken a similar drop, the farmer would not exchange any of the few dollars that his products brought for machinery that was priced on the basis of the war dollar.

The pockets of Ohio farmers are not well lined with cash. There is likely to be a decided improvement in this respect this fall if crops come up to present expectations, and if the market for these crops maintains a reasonably high level. Still, the average Ohio farmer is in pretty fair shape despite the shortness of his cash assets. There are some who may not survive financially, but these are the exceptions.

As a result of this shortness of cash, practically all of this spring's buying has been on a credit basis. This is a decided change from last year. It indicates that the farmer's view of the future is much improved. He sees better times ahead, and he is willing to use his credit to buy equipment that will hasten their arrival.

Very few tractors have been sold for cash this spring. In some cases the farmer has given notes for the entire purchase price. In others he has paid a quarter or a third down. The notes mature in 6 to 18 months.

Some of the factories assist their dealers in handling the farmers' paper. These factories offer an additional discount for cash, and dealers who are financially able to do so are availing themselves of this additional profit. Of course, before a note is accepted a very careful investigation of the reputation among tradesmen of the maker is made.

The local banks are also assisting in financing farm machinery sales. They are not favorable to the 18-month notes, but in a majority of cases will buy six-month paper made by responsible farmers and endorsed by the dealer. In a few cases dealers are using farmers' notes as collateral security for loans from the banks on their own notes. If a note is to be sold to a bank, the dealer invariably determines whether the bank will buy it before accepting the note.



The branch salesman is an important factor in closing truck sales. Here he is shown helping the dealer get the order from a farmer with a big berry crop

Dealers handling lines that are not factory-financed naturally are at a disadvantage, unless they can finance themselves. Dealers in this class must have capital of their own to carry their sales, or they must have the assistance of a bank. The ability to accommodate the farmer with credit is essential to farm machinery sales in this territory at this time.

Weather conditions favored tractor sales during the past spring. The season was late and unusually wet. Farmers found it difficult to get their crops in with horses. Many

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of them met these weather conditions by purchasing tractors. The tractors worked so much faster that the farmers were able to get their crops planted in the short dry spells between rains.

In this connection, it is interesting to note a change in viewpoint. At one time the tractor was regarded as a strictly fair weather performer. It was supposed to be a disadvantage as compared with horses when the going was heavy. But the experiences of the past spring indicate the contrary is true. The tractor has proved itself a reliable machine in all sorts of weather.

Practically all the dealers in this territory depend entirely on tips and other chance information for the location of prospects. Very few are making any systematic investigations that produce all the sales possibilities of their territories. Most of them keep some sort of a prospect record, but it is the exceptional dealer that is making any special effort to get names to put on this prospect record.

The average dealer considers himself well acquainted with his territory. He feels that he knows about everybody worth knowing and that he is a pretty good judge of their credit. And he uses this knowledge as the basis of his sales work. There is some reason to question the accuracy of this knowledge. It hardly seems likely that a dealer with a territory embracing an entire county with approximately 5000 farms in it can know his territory so well that he can realize on all of its sales possibilities without resorting to intensive selling methods.

Under present conditions, when tractors and machinery must be sold on credit, the obvious method of territorial sales analysis would seem to be the determination of what farmers in the territory have good credit. The next step would be to determine the needs of this class and to focus all selling effort on the job of filling these needs.

A few dealers have made farm-to-farm canvasses, and a profitable percentage of the prospects turned up in this way have been sold. One dealer in Southwestern Ohio has two salesmen on the road. They work on a commission basis and are independent of any direction from the home office. This dealer does not think that the commissions they earn during the year will be large enough to balance their drawing accounts. The failure of these salesmen can very likely be traced to the fact that their efforts are of a hit-or-miss variety. They are going where the grass looks greenest, and in so doing are very likely passing over many prospects that could be sold. It is quite probable that, if their efforts were directed and supervised by the home office, they would be more successful.

Now that the farmer is satisfied with tractor prices and is willing to use his credit to buy them, the two principal points of sales resistance have been eliminated. Most of the farmers hereabouts seem to be convinced of the tractor's utility and economy. Despite this condition, demonstrations are still helpful in securing orders. These demonstrations are in the nature of exhibitions for individual farmers rather than public affairs.

The importance of service seems to be pretty generally realized, but not many dealers are equipped to handle it. One dealer interviewed has an inspector whose duty it is to report on the condition of tractors. If repairs are needed, this dealer sends a mechanic from his service station to handle them. The farmer is charged so much for each mile this mechanic has to travel, in addition to the charge for the time spent in making the repair. Another dealer has a handy man who helps the farmer with difficult repair jobs on both tractors and implements. The dealer does not make any charge for his services.

Parts stocks carried by dealers are on the whole rather limited. Dealers depend on the complete stocks maintained by branches and distributors for their needs.

It is difficult to say just how far the dealer can afford to go in the matter of service. The average farmer is inclined to do his own tinkering and to call on outside assistance only when the job is too much for him. For this reason the dealer service station is likely to get only the hard jobs. Furthermore, unless the dealer has a large number of tractors in the field, he cannot hope for a profitable volume of service work. These conditions probably account for the fact that so few dealers have made any provision for tractor service. The dealer knows that service is essential to sales, but he can't afford to provide as good service as he should. Of course, if he operates a garage, or a service station for cars and trucks, tractor service can be handled very nicely. But the dealer who handles nothing automotive but the tractor is in a difficult situation from the service standpoint.

Much that has been said about tractors might also be said about the methods employed in selling trucks to farmers. Farmers raising corn and grain do not seem to be particularly good truck prospects. They prefer to hire a truck when they need it. They can hire truck haulage for from 16 to 20 cents a ton-mile, so it is not hard to see why they prefer this method to owning a truck. Farmers with vegetables or fruit to haul to market are more likely prospects in this territory.

It might be possible to bring more farmers into the truck owning class if the field were worked more intensively. At the present time, little effort is being made to sell the farmer. Dealers and distributors are directing their sales efforts at the industrial and commercial user.

Selling methods are not all that they should be. Salesmen are inclined to feature the construction of the truck rather than the work it is capable of doing and the economies it can effect. Springs, axles, engines, bodies, etc., are likely to form the high spots of the sales talk rather than the time and money-saving features.

Local dealers lean quite heavily on the assistance of salesmen from the branch or distributor. The branch salesman works out in the field with the dealer and helps him close the order. Where there is a trade-in involved, the branch frequently handles that part of the deal.

Everybody Knows the Tractor Will Plow, But—



The farmer likes to see the tractor at work in his own fields. Individual demonstrations of this character are of material assistance in getting the farmer's name on the dotted line.

Garage Issues Passes to the Trade

HART'S GARAGE at Chattanooga finds it profitable advertising to distribute passes each year to a number of garagemen, motor car dealers and proprietors of car and battery service stations in the surrounding states. Where the name of the owner is known, it is placed upon the pass and accompanies a letter asking the garageman or dealer to accept it with the compliments of Hart's Garage. Where names of proprietors are not known, they are asked to furnish the names of one or two parties actively engaged in their particular business. The garage stores an average of two or three cars a night gratis as a result of this advertising, but there are many more storage customers each night who have been recommended to Hart's Garage by the garagemen and dealers who have received passes from this Chattanooga garageman.

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If Some Businesses Would Get Acquainted with Themselves

What a Fine Family They Would Discover They Had and What Splendid Co-operation Among Departments Would Result

By B. C. HAMILTON
Chandler Motors of New England

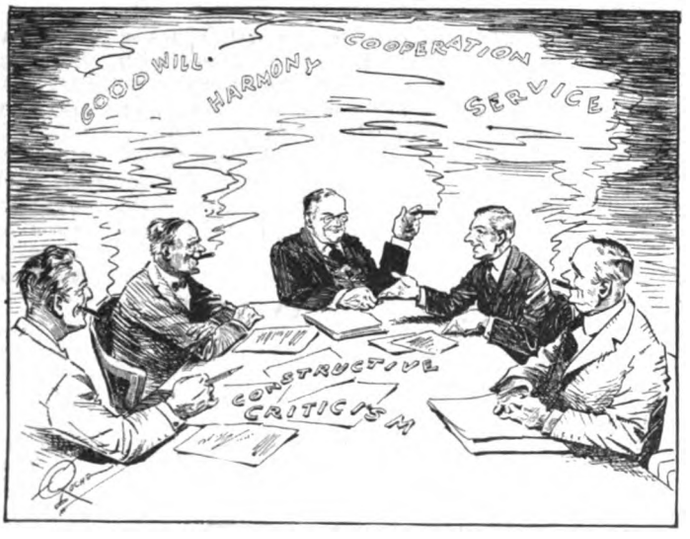
IF the *Service Department* feels that the sales department is reckless with its promises of free work; that the parts department is always out of standard stock; that the delivery department seldom delivers new cars in proper condition—what would you do?

If the *Sales Department* feels that the service department turns out work which makes the customer sore and creates sales resistance; that the parts department is not courteous and painstaking in its attention to customers' needs; that the delivery department is careless instead of careful in preparing cars for delivery to customers; that the service department—oh, well, there's only one place worse and that's where free heat is furnished all the year round—WHAT would you do?

If the *Parts Department* feels that the service department expects too much and too often; that the sales department is made up of a lot of fresh guys who get more fun out of blaming them for anything and everything than they do in making sales; that the delivery department is always out of this or that for some unaccountable reason; that the service department is wasteful and unreasonable in wanting parts to-day instead of two weeks—what WOULD you do?

If the *Delivery Department* feels that the service department should do uncomplainingly the things left undone by the D. D.; that the sales department crowds them on delivery dates so that the work has to be hastily instead of thoroughly done; that the parts department doesn't give a rip whether they have equipment or not—it's always to-morrow—or too late—WHAT WOULD YOU DO?

Now if this condition or feeling exists throughout the main departments it is bound to spread to the bookkeepers, stenographers, and general office force, but it can't do a great deal of damage there, because the office force does not come in very intimate contact with the customers. The amount of friction they create is only a little added irritation to the "internal workings" of the organization, BUT if the switchboard girl is considered on the office force just remember that *she does come in contact with the customers*—good and plenty—when she is not knitting or talking to some other girl about the length of her skirt or the shortness of her hair and so forgetting all about what she is paid for. Some go so far as to say that a switchboard operator is just as important as the best salesman. She certainly can be a great help or do a lot of damage.



If these criticisms were only an indoor pastime it could be considered as a source of possible mental relaxation for brains that imagine they are overtaxed, but this attitude of "passing the buck" and shirking of responsibility finds its way into the consciousness of our Big Boss—the customer. Of course, this internal hemorrhage must be stopped, and stopped effectually. Courteous and efficient service cannot be given if we are not right among ourselves.

This is not an overdrawn or exaggerated picture of an unusual condition. Not at all. Praise be it can be cured, and quickly, as soon as the heads of departments realize that the development of their department depends in some way on all the other departments. One reason for this isolated feeling is that the department managers do not get together in conference, do not know each other outside of business—do not have periodical *round table gatherings* where they can exchange stories, smoke, josh, settle the affairs of the nation, discuss prohibition, and get acquainted; find out what good fellows the others are when one really knows them.

It takes only a few of these meetings to get into the frame of mind where you would give your shirt, if necessary, to help the other fellow. You just bet you would, and all the others soon feel the same way toward all the rest. Then what? Co-operation during business hours. Then what? Why, the application (perhaps not admitted) of the rule which irons out all petty misunderstandings, removes all the obstacles in the way to perfect harmony. You are doing as you would be done by.

This is not preaching. It is common sense. It is efficiency.

So, if you are looking for some way to reduce, to the lowest possible point, the friction mentioned in the beginning of this article, organize, a *round table council*, if you want a name for these meetings of department managers, for the open and free discussion of any problems that confront you, the company as a whole, or some particular department. Of course the real purpose of these meetings is to *discuss constructive criticism*. There should be no knocking or controversial argument. The chief executives may or may not sit in.

Honest expression is a great relief. It may clear out a channel that has been clogged with misunderstandings and apprehension so that definite ideas can come to light. You never can tell—*a round table council is worth a trial.*

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You and Your Job

By NEAL G. ADAIR



IT occurred to Georgie Roper, as he glanced at a newspaper headline chronicling the day's heat record as the highest in ten years, that his spirits were just about as far below zero as the temperature was above. When anything occurred to Georgie he usually did something about it. On this occasion he walked into the office of his boss, Tommy Trumbull, general manager of sales and numerous other things around the establishment of C. J. Reilly, Inc., and announced that he was going to quit trying to sell automobiles.

"Going to?" Trumbull commented. "Thought you did—about three weeks ago."

Roper flushed at the reference to his successful competition, since July first, for the cellar championship in the Reilly sales organization.

"But this is official," he persisted.

"Sounds serious," Trumbull conceded. "Let's talk it over—over here in the breeze," motioning the salesman to a chair that, like his own, was in the range of a busy electric fan.

"What seems to be the matter this time?" Trumbull asked, recalling several other occasions when Roper had declared his intention of withdrawing his talents from the job of retailing Sennett cars in Callawassa.

"Oh, everything," Roper answered vaguely.

"Not so serious, then," said the general manager. "I had begun to think perhaps you had a real reason for getting out, but—"

"But I have," Roper replied. "I've only sold one car in three weeks and I haven't a live prospect to work on and—and—and I'm getting sick of it, sick of the whole blamed thing."

"Like to sell, don't you, Georgie?" Trumbull suggested.

"I do, you know."

"Sold a lot of 'em last year, didn't you?" Trumbull went on.

"Last year, sure, but this month—"

"Sold quite some the first half of this year, quite some last month, didn't you?" Trumbull persisted.

"Sure, but—"

"Then, why not now?" the general manager finished.

"Now you're shootin'," Roper flashed back. "That's what I want to know—why not now? And, as I can't answer the question, and you don't seem to be able to, I'm for trying a crack at something else."

"Suit yourself, Georgie," Trumbull said, "but — well, let's enjoy the zephyrs here a few minutes longer and maybe we'll think of something important."

Tommy lighted a cigarette to encourage the thinking process, and Roper gave himself over to the pleasant occupation of soaking up the artificial breeze.

"Georgie," said Trumbull after a few puffs, "you're trying to drive spikes with a tackhammer."

"Seems just about as hard as that," Roper conceded. "But what's the idea?"

"Nobody can get across with a job that requires headwork unless he has faith in his job and in himself as the best man on earth to do the job," said Trumbull.

"Some order," Roper observed.

"And you can fill it—because you've been filling it, until you hit into this slump," Trumbull answered.

"But this slump—" Roper began.

"—is like a lot of others you've had and every salesman has," Trumbull finished for him. "Reminds me of climbing a mountain. You strike a lot of little downhill grades, but take it all in all, and you're going up all the time—climbing.

"That's the word you want to put in the back of your head and keep there—climbing. There are no level roads to successful selling or anything else successful. You must keep climbing or slide back.

"And as long as you have faith you will keep climbing."

"But it's pretty hard to have faith when—when—" Roper hesitated.

"When you haven't faith, sure it is," said Tommy. "And the way to work up faith and the enthusiasm that goes with it is to sit down and see what there is to have faith in.

"First, there's the thing you're trying to sell—the Sennett car. Is there a better one anywhere for the money? Do you ever need to feel that you are misleading a prospect when you tell him that it will give him satisfactory service?

"Then there's the house—and can you go anywhere and find a man who's squarer than C. J. Reilly, or a policy that's fairer, for customers or employees?

"Next, there are the folks you work with, salesmen, men in the shop and girls in the office, all doing their best, all ready to give you a square deal and a helping hand and expecting the same from you. Anything wrong there?

"Then there's your job. For quite a few years it has kept you and your family comfortably happy. You are buying a home out of its earnings. And it keeps you busy doing something useful in the world, selling a useful commodity. Worth while job, isn't it?

"And, finally, there's yourself. I've never heard anyone around the place roasting you or doubting you, and I'm putting in half the afternoon talking to you because—well, it sounds foolish to talk this highbrow stuff, but I have faith in you, Georgie.

"So there you are. Believe in your product, believe in the house, believe in the folks you are working with, believe in your job and yourself and put your faith into selling conversation."

"And then what?" said Roper.

"Roll your own conclusions," Tommy suggested. "I'm beating it down to the Board of Trade to sell the secretary a sedan."

And Tommy went.

And Georgie thought.

And if you were finishing the story wouldn't you add that Georgie *stayed?*

Questions

IF your salesman fails to close a prospect, do you count the sale lost or try your own ability as a "closer"?

Do your road signs tell motorists how to get to your garage or just mention the fact that you operate one—somewhere?

Do you treat the man who stops for gas and oil as a nuisance or a customer?

Do you listen to your prospect when he's saying something important—or thinks he is—or do you make him devote the whole period of the interview to listening to you?

Do you know the condition of the roads leading out of your town, or do you tell the tourist to stop and ask somebody at the postoffice?

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Editorial Notes

Don't Get Caught

IT is significant that two of the largest automobile dealers' associations in the country, those in Chicago and Detroit, have issued statements to their memberships warning dealers not to get caught with excessive stocks of used cars in a market with a declining demand.

The officers of both associations cite the experiences of dealers in the summer of 1920, when the great bulk of the trade, which had been selling actively throughout 1919 and the spring of 1920, traded actively and found itself when the readjustment period set in with used car accumulations on which many heavy losses were taken.

There is no justification for comparing the big selling season which has been in progress since early spring with the final months of the boom period following the armistice, but it will not be amiss to call the trade's attention to the fact that the tremendous demand of recent months for new and, in a degree, for used cars cannot be expected to continue. A decline in sales already is under way in many of the larger cities and some smaller communities. A probable rise in farm territory buying will offset this to some extent. However, even with good business, which is likely to prevail for the rest of the year, the selling records of the first six months can hardly be maintained and dealers should apply this fact directly to their consideration of the used car situation.

The situation is one which will bear conservative watching. Dealers should see to it that trades are made on a basis which will permit profitable handling of the used car. They should also see to it that used car stocks are kept down to a minimum so that they will not be forced into expensive warehousing of used merchandising during the fall and winter or into the equally disastrous alternative of getting rid of such stocks at a sacrifice.

Tractors on Small Farms

BETTER selling by dealers and wider appreciation by farmers of the varied utilities of tractors are putting these agencies of power farming more and more on the smaller size farms. Month by month the fact is being impressed upon more farmers that the tractor is not merely a power unit built to pull a low or cultivating implement, but that it can be turned to many jobs by using its belt-driving ability. A manufacturer recently sent a questionnaire broadcast to about a thousand farmers who owned his make of tractor, asking among other things the size of their farms. Almost half of them were found to be of less than 100 acres. It was not so long ago that many men in the trade were conducting their tractor businesses on the assumption that the farm of 100 acres or less seldom would be a tractor prospect. As education regarding tractor uses is extended and equipment to go with the tractor is developed not only more small farms but many additional classes of business will be added to the lists of tractor owners.

A Motorless Highway

DO you know of a highway where no motor vehicles travel? Offhand we can think of a few—in the Lake Mohonk, N. Y., restricted property and on the roads of Mackinac Island, Mich., for instance. Motor vehicles are not allowed there; that's the only reason, of course. Recently in a most unexpected place, in the heart of New York City, a highway has been restricted to animal-drawn vehicles. This is the highway across Brooklyn Bridge, oldest and most famous of the East River spans connecting Manhattan Island and Long Island. Traffic necessities, not someone's desire for what they term exclusiveness, dictated the Brooklyn Bridge restriction and at the same time all but motor vehicles were ruled off the Manhattan Bridge, a quarter of a mile upstream. The two bridges have carried the great flow of traffic, passenger and freight, between downtown New York and Brooklyn. Now the Brooklyn Bridge highway will see nothing but freight—slow-moving freight. And on the other bridge faster moving freight will go its way unhindered and unhampered.

The two bridges will offer an interesting study of yesterday and to-day in highway transportation. One will show the haulage methods that had to fill the bill until automotive transportation was developed. It will present in continuous drama the passing of the horse except for short haul work. The other will typify the transport of to-day—and to-morrow—motor cars and trucks swiftly, unhaltingly, surely taking persons and commodities to their destinations.

We can imagine that metropolitan motor truck dealers who may have scant prospect lists will send men to Brooklyn Bridge to scan the procession of vans, trucks and delivery wagons. Why not? Among names of firms that could be jotted down from the lettering on these vehicles would be found many that might be sold motor trucks. The suggestion prompts another. In any city or town where highway freight traffic is heavy—at market centers, bridge approaches and in warehouse and industrial districts—there will be found a proportion of horse-drawn vehicles. The owners of some of them may be on motor truck dealers' prospect lists, but hardly all of them. An occasional observation trip to a busy trucking section looks like a good bet for any motor truck dealer. Not only horse-drawn trucks but some of the motor-driven variety that are nearing the final stages of their usefulness are likely to suggest where motor truck salesmen can find interested listeners.

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How New Zealander Handled a "Tough Prospect"

Courtesy and Service Were the Things That Won a Sale When Other Dealers in the Territory Failed

Editor Motor World: I have only just received my issue of the Motor World dated March 8. I look forward to each mail from America to get my journal, as I read and digest every bit of news it contains, and as a help in running a garage it is invaluable to me. Although I am manager of the firm, I also act as salesman and there is no other job I would prefer to that of an outside salesman. I am enclosing a 500-word copy of my toughest car deal.

On the occasion of this particular deal, I was salesman for Messrs. J. Pomeroy & Co., at Hamilton, Waikate, and had occasion to take a trip through to Auckland on business. I called on a salesman friend of mine in the motor business in Auckland. During our conversation a gentleman called in to have a look at the car my friend was representing. I noticed he soon got rid of the prospect and came back to finish the talk we were having. He casually mentioned to me, "See that old gent, all the agents in town are trying to separate him from his wad for a car, but he's too hard, and although he's a buyer, I am not wasting any more of my time making a sale with him."

I thought no more about it until that night when on my way back to Waikate by train, I was surprised to find myself sitting right opposite to the same old gentleman and his wife. From their conversation I gathered they were on a visit to my own home town. Before being on the train very long we got acquainted and I gradually introduced the question of motor cars without letting him know I was interested in any particular car. He told me quite a lot about himself and his business, and I gathered he had a very successful business and that he had worked hard to make his money.

We arrived in Hamilton about midnight, and I had by that time got his confidence, and after wishing him a pleasant time, and directing him to a suitable place to stop, we parted as he believed, for good. Next morning I had the demonstrator just O. K. and was waiting for him to walk down the only street in Hamilton, which I figured he would do immediately after breakfast. At 9.30, he, with his wife, came along, and as they were passing the shop I walked right out and met them on the pavement with a good hand shake; told him I would like to run him around our town and show him a bit of the country. He never suspected that I was out to sell a car, and he walked right into the trap with eyes wide open. Out in the country I let him have a drive just to see how easy it was. It was his first try at the wheel. At the end of the drive his wife complimented him on the performance and when we arrived back at the garage I told him the price and asked him to buy. He ended up with buying and we drove back some days later to Auckland with his car. He paid all my expenses and also made me a present for the kindness shown him. We stopped at my friend's garage for some gas, and imagine his surprise when he saw what I had done. After I had explained, all he said was, "The mean old skinflint." —George L. Campbell, Motor Garage, Auckland, New Zealand.

Write to Motor World About It

This page every week is devoted to discussions of topics of the trade by Motor World readers. Have you a suggestion to overcome a difficulty or improve some condition within the industry? Write to Motor World about it.

Sees Importance of Traffic Control Study

Editor Motor World: That is a splendid work you have started, to discuss traffic problems, as indicated in "The Editor Says—" in your issue of June 28. We have had a traffic problem here in Newark, and two years ago this association was instrumental in forming an organization that adopted the title of the Traffic Regulations Advisory Committee of the City of Newark, in which we enrolled every user of the city streets. The associations represented, in addition to the Automobile Trade Association, were the Motor Truck Club, Automobile Club, Chamber of Commerce, Merchants' Association, Jitney Bus Owners' Association, Marketmen's Association, Furniture Warehousemen's Association, Expressmen's Association, the Public Service Corp., which operates the electric street cars, and others. All told there were some twenty-five organizations, in addition to which there were representatives of the city and county engineers' departments.

Every phase of the traffic congestion problem was taken up; sub-committees were appointed, to whom were assigned various angles of the problem, such as main-line routing, one-way streets, direction of traffic, parking, etc. After a careful survey of their respective tasks these sub-committees reported back to the main committee, and their recommendations then were forwarded to the city officials, in whose department the regulation of traffic, parking, etc., was centered.

Traffic regulation is a very vital part of the motor industry. The saturation point is not going to come from an overproduction so much as it is from overcrowding of the highways, which will make it inconvenient, or perhaps dangerous, to operate motor vehicles. It certainly is an important part of our business.

Broad and Market Streets, Newark, is the second busiest corner in the State of New Jersey.—Claude E. Holgate, Manager, Newark Automobile Trade Association.

Persistency

SIX times a spider has spun its web outside my study window and six times I have destroyed it. Tomorrow morning I'm sure it will be there again.

To prevent a spider from spinning its web time after time in the same place one has to kill the spider.

If we, who are interested in selling goods, had the persistency of spiders we'd amount to something, wouldn't we? — Thomas Dreier Service.

Drip Pans Under Cars May Prevent Sales

"THERE'S one thing I always see to about the cars I have on display in my salesroom," said a successful middle western car dealer, "and that is that no drip pan is necessary under the cars. I formerly used to put cars on exhibition in my salesroom which dripped oil, and I'd catch this oil in a pan, as so many other dealers do. But I found that this pan always attracted the attention of prospects and made many of them ask whether or not the cars I was selling leaked oil. So now I either take the oil out of the cars I put into my salesroom or make sure that they don't leak. And, believe me, this helps in making sales."

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Slogan Contest Is Good Summer Publicity

Dealer Finds It a Valuable Means of Preparing Public for Big Fall Selling Drive

A SLOGAN contest may be just what your business needs this summer to attract and hold popular attention and prepare the public for your big fall selling drive. Several dealers have gotten fine results from such a contest. Here is how one was handled recently. In an advertisement in the Sunday papers, the dealer asked the local owners of the car he sold to submit a slogan or phrase describing the car, of ten words or less. A cash prize and several valuable items of equipment were offered for the best phrases submitted. The following Sunday the dealer's advertisement contained all the phrases submitted with the names of the persons submitting slogans, and it also announced the winners. One of the valuable things accomplished by the contest was that it enabled the dealer to get the names of a lot of his owners into his advertisement with their own snappy phrases endorsing the car.

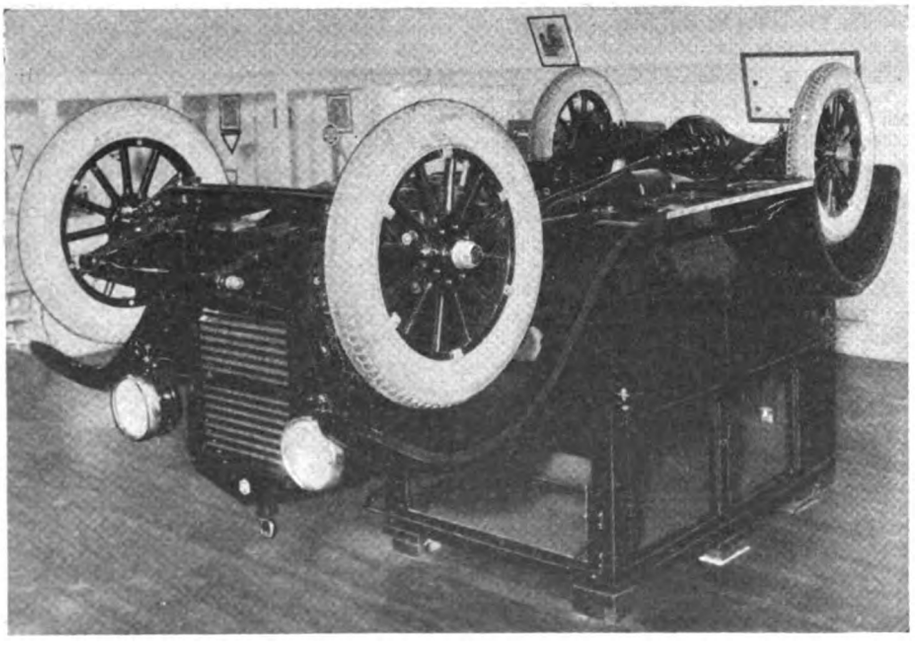
Ideas On Selling and Management

You will find them every week on this and the opposite page—ideas that will make dollars or save dollars for the

Car Dealer
Truck Dealer
Equipment and Tire Dealer
Tractor Dealer
Repairman

Some of our readers are contributors to this section of Motor World. Have you developed a plan that might help some other man? If you have, will you write it out and send it in?

A Novel Car Display



In making this startling, and at the same time educational, display of an Essex coach, no special equipment was needed. Before beginning the actual work of turning, the oil was removed from the distributor housing, crankcase, transmission and rear axle. The rear seat cushions and battery were removed. A set of four right angle blocks, upholstered, so that the weight of the car could rest on them without marring the body, was made. Four straight blocks, also upholstered, were placed under the pillar posts, after the coach was overturned. Then some old padding material, front seat cushions in this instance, were secured to place under the wheels as the coach was turned on its side, and hub caps used to relieve strain on the fenders and running board at the same time. Ten or twelve men then turned the coach on its side, after which the blocks were placed so that the weight would rest evenly on them when the car was overturned. Following this the car was tilted up and slowly turned over

This Bulletin Board Gives Good Impression

THE Crawford Auto Co., Birmingham, Ala., Ford dealer, maintains a large bulletin board in its main salesroom on which the names of purchasers of cars are placed each day. The bulletin board asks all employees of the Crawford organization to patronize Crawford patrons. The bulletin, which is in plain view, naturally has a fine effect on prospective buyers of automobiles, especially if they are business men. The wording on the board is as follows:

"We sold cars to the following concerns and individuals yesterday: (Here is given a list of purchasers.) We will appreciate it if our employees will trade with our friends named above."

Rents Emergency Trucks on Mileage Basis

TRUCK maintenance has been a problem, more or less, with various Chicago dealers. The systematic care of turning a job out on schedule time is perhaps the biggest part of this problem. One dealer, however, has installed what he believes will be a profitable thing, both for himself and the owner.

When a truck is brought into his maintenance department, the owner is advised of the length of time required for the repairs necessary. Very often the holding of a truck means serious losses to the owner and so he is told that there are at his service, a number of trucks, one of which he can put into operation while his is being worked on.

Gas and oil are, of course, supplied by the user and a hubodometer registers the number of miles covered. The charge on the mileage is determined by the class of goods carried.

Introducing a New Employee

ADVERTISEMENTS like this are inserted by some dealers in local newspapers when a man joins the company in an executive capacity or as a salesman:

> MR. JOSEPH SPILLANE
> Takes pleasure in announcing his appointment as service manager of the
> Goodwin Motor Car Company
> 916 Main Street
> Sennett Cars Redman Trucks

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Women's Interest Helps Sales Contest

Illinois Jobber Finds It Pays, Once in a While, to Put Up Prizes for Salesmen's Wives

IF you want to make a sales contest go strong, get the women interested in it. This is the advice of George Rinkenberger of the Washington Auto Supply Co., Washington, Ill., jobber, who recently conducted a successful contest among his travelers by offering a washing machine as a prize. Rinkenberger wanted to promote sales of a particular line of items through his jobbing territory. He offered a washing machine to the salesman who first reached a certain quota. The result was that wives and families of all the salesmen became interested in the contest and urged the salesmen on to vigorous efforts. After the contest was completed, Rinkenberger decided to continue it in a different way, offering to each salesman who should reach the quota, in a given period, one of the machines. Every man in the organization won a machine.

Rinkenberger says the contest paid in dollars and cents. The sales stimulation was so great, not only on the lines which were being pushed, but on other items which the salesmen sold at the same time.

Counter at Curb Sells Accessories to "Gas" Customers

THE Scholder Tire and Accessory Co. of Birmingham, Ala., has a long counter along the edge of the sidewalk in front of its store on which accessories and supplies are attractively displayed to the passing motorist. The advantage of the counter is that it is much nearer the street than the show windows, and autoists cannot pass without seeing the articles on display.

An Accessory Show Window Card

HERE'S a good stunt for an accessory show window card. Print the word "Accessories" in a perpendicular line at the left of a card—the "A" at the top, the first "c" right under, the second "c" under the first "c" and so on. Then opposite each letter paint the names of some of the accessories you carry in stock beginning with that letter. For instance, opposite one of the letters "s" found in the word you could paint, "Spot-lights." Opposite another "s" you could use "Spark plugs" and so on. This sort of a card always interests folks.

Milk Bottles Help Station Give Quick Service

QUART and pint milk bottles may be used in the filling station to expedite service and gain the good-will that is the motorist's reward for quick administration to his needs. Some filling station operators fill a number of these bottles with oils of common grades and have them arranged on shelves where they are easily accessible.

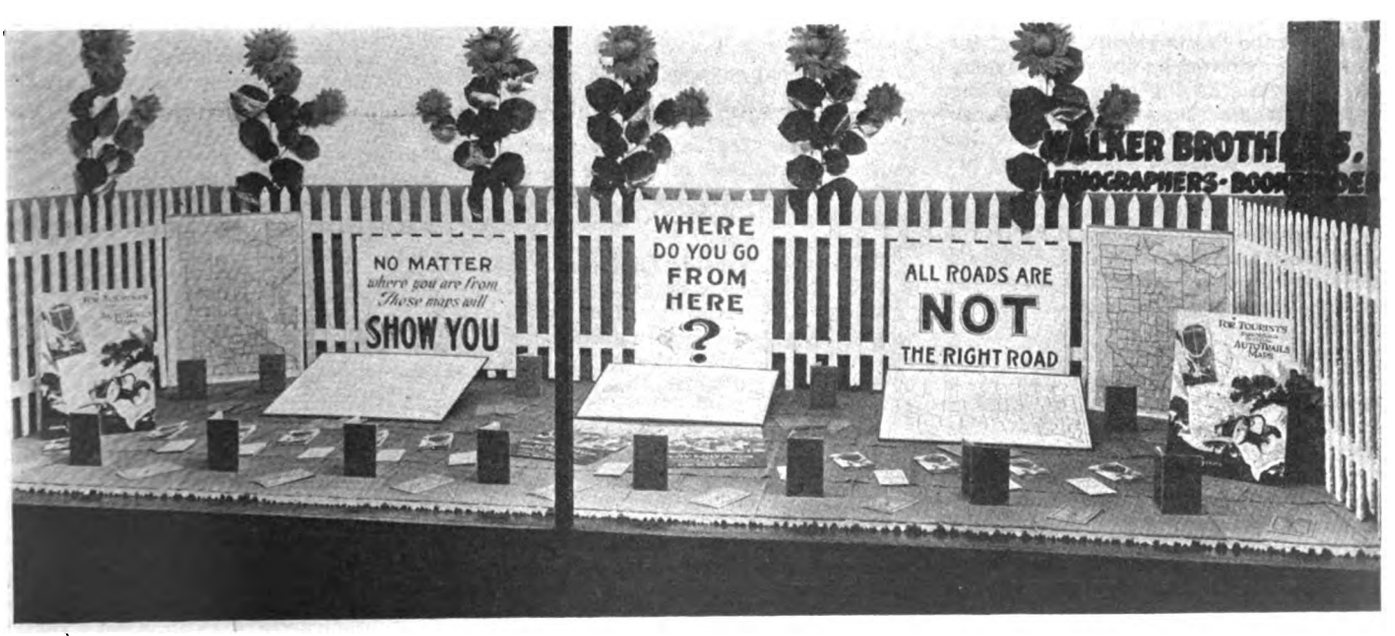
When the motorists ask for oil, some of these are placed in one of those wire baskets used to carry half a dozen or more milk bottles and taken to the car. Bringing along an extra supply often enables the service man to sell an extra pint or quart of oil when it is seen that one quart does not fill the reservoir.

Jobber Salesmen Have Weekly "Leader"

AN enterprising jobber in Central Illinois finds it worth while to give his salesmen, traveling in a jobbing territory, a particular item each week as a leader. One week it will be a spotlight, another week a bumper, another week a windshield cleaner, and so on, but always there is some top-liner item in which the men are particularly interested and with which they open their conversations with dealers and garagemen.

The jobber says this gives the men a subject to break the ice with customers and proves good business, not only for the item being pushed, but for others as well.

A "Where Do We Go from Here" Window



Walker Bros., at Fargo, N. D., recently made a very effective display of road maps. The lower half of the background of the window was covered with grass green crêpe paper with white crêpe paper on the top half extending across the background and the side. In front of this background was a picket fence painted white, behind which lines of sunflowers were planted. The floor of the window was covered with green paper also, and upon it was shown several road maps as illustrated in the accompanying picture. Signs on the fence in the background carried the merchandising message

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Dealer Responsible When Renting Cars

A Good Thing to Remember When the Summer Guest Hires a Car and Driver for a Trip

AT this time of the year a great many dealers in the country do an extensive automobile livery business with summer guests. The question of a dealers' liability when he acts as a livery man therefore becomes important.

If a garage keeper rents cars, he must take care that they are in proper condition and in charge of a competent person, for in a case where the owner of a garage lets a car for hire and furnishes a driver and the hirer exercises no control, except to direct him where to go, the garageman is responsible for any negligence of the driver.

Meyers vs. Tri-State Auto Co., 140 B. W. 184.

He is not only liable for injuries caused to third persons that the driver may run down, but he is also liable to the one hiring the car for injuries caused by the chauffeur's negligence or unskillful driving.

Neumiller vs. Acme Motor Car Co., 49 Pa. Sup. Court, 183.

In fact, in a recent case a company which rented cars was held liable for injuries to a guest of the one who hired the car. It seems the chauffeur tried to crowd between a standing truck and the curb, which brought about a collision in which the guest was more or less severely injured.

The court said: "A corporation engaged in the business of renting out automobiles driven by its regularly-employed drivers, having an understanding with the regular customer to carry also such persons as he invites to ride with him, is liable to the one so riding by his invitation for damages sustained through the negligence of the driver in operating the automobile, unless it appears that the customer has exercised such control over the operation of the car as to make a negligent act of the driver his own act."

Clinton vs. Company, 87 Atl. 71.

In another case, the foreman of a garage took a car out at night, inviting several friends to go with him. After imbibing considerably, he wrecked the car. The owner sued and the court held that, as the garage keeper knew that his foreman was in the habit of taking out cars which were left at his shop for repairs, at improper times and making unauthorized use of them, he was liable for the damage done.

Travellers' Indemnity Co. vs. Fawkes, 139 N. W. 703.

The garage keeper is not always liable, however, when he rents a car. In one recent case, a man hired a car without a chauffeur and procured a man to operate the same from another rival garage. An accident resulted, and it was held that the owner of the car was not liable for the injuries, as the chauffeur was not his employee but was the employee of the man who hired the car for the occasion.

The general rule as to when a garage owner is liable for his chauffeur's negligence is the same as in the case of any other motor car owner. The question is, as the courts have put it. Was the person operating the automobile at the time of the accident engaged in the service of or acting as the agent of the car owner? Did the car owner exercise any control over the operator? When he exercises control—when the automobile is being operated in his service, or on his business, then he is liable. Otherwise, he is not liable.

Power vs. Arnold Engineering Co., 126 N. Y. S. 839.

Among the many peculiar decisions which have been handed down involving the rights and liabilities of motor car owners, is one in which a man rented an automobile for a Sunday pleasure ride. The garage keeper rendered his bill, but payment of the same was refused. He thereupon sued, but the court refused to allow him to recover because there was a provision in the State Penal Code that a person should not pursue one's ordinary calling on Sunday, as the regular business of the man who rented the car was renting cars for hire. The court said that renting a car for a pleasure ride was neither a work of charity nor necessity, and for that reason the garage keeper could not recover.

Jones vs. Belle Isle, 79 S. E. 357.

To date, this decision stands alone and has not been followed by the courts of any other State. Many of the States, however, have statutes quite similar to the Georgia statute under which this case was decided, and sooner or later this question is bound to come up in some of those States. When it does, it will be interesting to note what method the courts will adopt to get around this law. If they do not find some way, the result will surely be to put taxicabs out of business as far as Sunday is concerned and to drive people to using surface cars and the subway.

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

Custom a Factor in Determining This Case

Editor Motor World: I bought a harness, auto accessories, tire and vulcanizing shop, and there was a contract drawn up and signed that the man I bought out was not to re-engage in the harness, garage and vulcanizing business in the same town. He went away and learned the battery business, and in about five months he put up a building and started a battery station, in connection with this he handles tires, auto accessories, gas, oil and vulcanizes tubes. Now if it comes down to law, would tires, auto accessories, gas and oil be considered as garage business, or would he have to be selling some make of car; this is what I would like to find out. Now would vulcanizing tubes be violating the contract or would he have to be vulcanizing tires? He also has an air compressor and has the back part of his building rented out to another man for repairing cars.

Now you may have had a case of this kind before and would know more about it than a home lawyer, that's why I am writing you. Please answer my letter at once.—George Stoker, Victor, Iowa.

Answer:—The custom of garages in your part of the country should be controlling in determining the effect of the limitation clause in the contract. Thus, if it is the custom for garages to sell tires, auto accessories, gas, oil, etc., I think the person who sold you the garage should be enjoined under his agreement. The best thing for you to do is to take your problem to a local lawyer and let him decide whether he thinks it advisable to ask for an injunction. There is nothing very difficult about a case of this kind and there are lots of authorities on it.

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A Method for Speeding Up the Flat Rate System

Handling Estimates When the Volume of Repair Orders Finds the Neck of the Bottle at the Estimator's Desk

FLAT rate schedules are being handled in a great variety of ways throughout the country. Some of the smaller shops have them in sheet form, but most organizations use either a card system or a visible system. Where the schedule is confined to one make of car and the repairshop handles a large volume of business, it is found that all the other departments of the organization are "hanging" on the estimator. Purely manual labor and dexterity of the fingers have to be relied on to hasten the estimates so that the repair orders can be signed and the work routed through the shop.

The Willys-Overland branch in New York was for some time face to face with this problem, and there seemed no way out of it without adding another estimator. This would have meant the duplicating of a great deal of records, forms and estimating machinery and was not considered advisable.

Making practically a time study of the system, the Service Manager, Henry M. Holt, finally came to the conclusion that the time spent thumbing cards was the fly in the ointment. He accordingly devised a simple device that would cut down time in locating the specific operations wanted and provide a working estimate file that would be at once heavy enough to be serviceable and simple enough to cut out lost motion.

This device consists of a brass frame or cradle made out of 1 in. angle brass with thirty 3 ply boards. These are reinforced with 1¼ in. brass channel on each side to prevent warping.

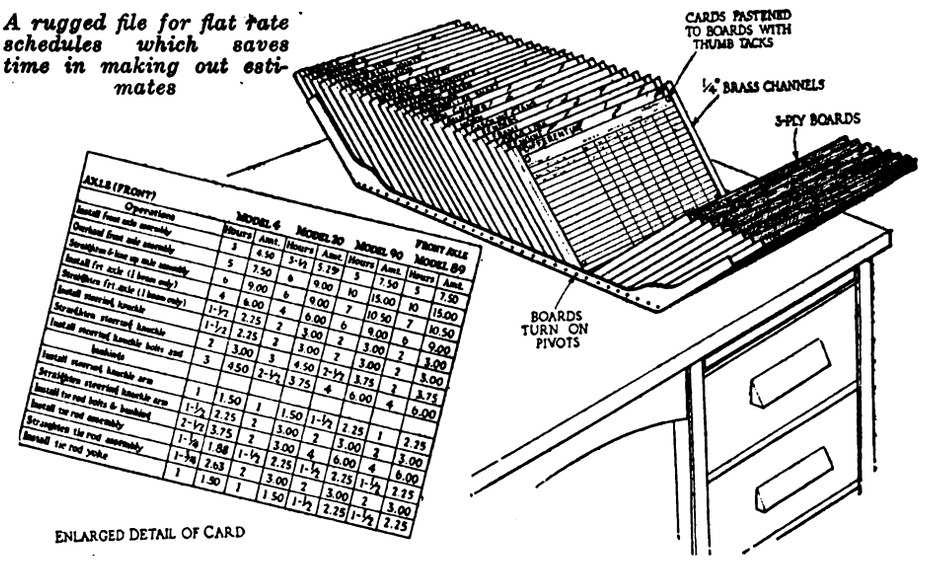
These boards are set in the frame by having two pivots which are part of the boards, fit into corresponding holes of the brass cradle. The boards are leaning backwards at an angle of 45 deg. This position of the boards leaves a margin on top of ½ in. for each board. On ½ in. is pasted in alphabetical order and covered with celluloid the names of units upon which repair operations are made.

The standard repair operations for each of these units are printed on sheets which are fastened on the corresponding board with thumb tacks. As the name of the units are printed in large letters, it makes it very easy for the estimator to instantly find the flat-rate charges for each unit. He then separates the boards at that point and the forward boards fall backward also at an angle of 45 deg., making a total of 90 deg., which is quite sufficient to disclose the information desired. The first five boards are used for everyday service station information, such as car specifications, license information, etc.

Besides being simple in construction it is also strongly made and will give years of service. It also has another advantage over the loose-leaf binder, as there are no sheets to be worn or torn. It also works better than a card system, as it takes less time to find the information by just separating the boards, and when taking into consideration that some service stations estimate over 10,000 jobs a year it can be readily seen how much time is saved.

The cradle is screwed to the desk and cannot be moved away. If it is found necessary to change any information the thumb tacks are removed and the sheet changed. The front board is covered by celluloid so as to give complete protection. Besides all this, it has one big advantage in giving the customer the impression that the flat-rate or estimate system has been put on a business basis and that the flat rates given are standard to all who come to the service stations.

A rugged file for flat rate schedules which saves time in making out estimates

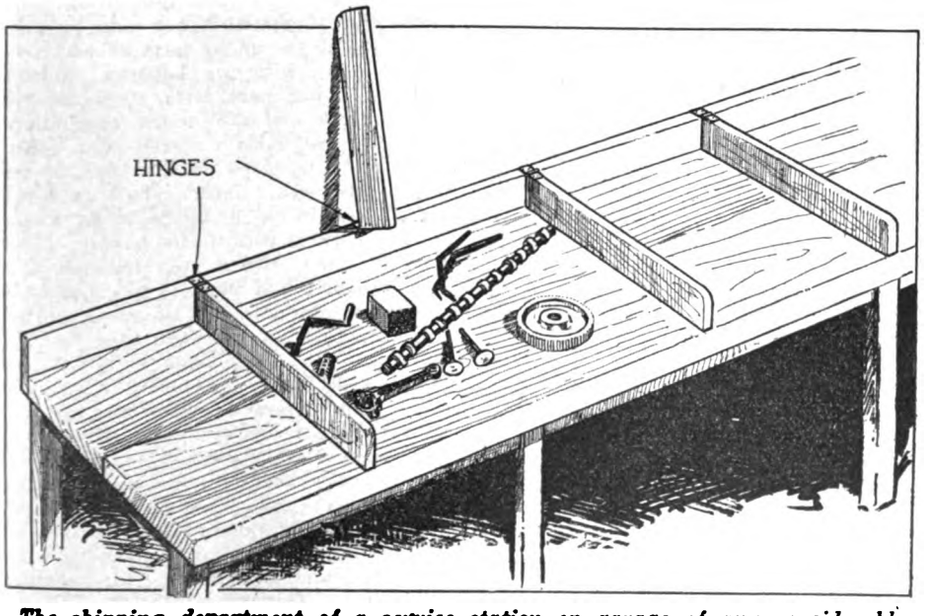


ENLARGED DETAIL OF CARD

AXLES (FRONT)

Operations	MODEL 6		MODEL 20		MODEL 90		FRONT AXLE MODEL 89	
	Hours	Amt.	Hours	Amt.	Hours	Amt.	Hours	Amt.
Install front axle assembly	3	4.50	3-½	5.19	5	7.50	5	7.50
Straighten & line up axle assembly	5	7.50	6	9.00	10	15.00	10	15.00
Install fit axle (1 beam only)	6	9.00	6	9.00	7	10 50	7	10.50
Straighten fit axle (1 beam only)	4	6.00	4	6.00	6	9.00	6	9.00
Install steering knuckle	1-½	2.25	2	3.00	2	3.00	2	3.00
Straighten steering knuckle	1-½	2.25	2	3.00	2	3.00	2	3.00
Install steering knuckle bolts and bushings	3	4.50	3	4.50	2-½	3.75	2	3.00
Install steering knuckle arm	1	1.50	1	1.50	1-½	2.25	1	2.25
Straighten steering knuckle arm	1-½	2.25	2	3.00	2	3.00	2	3.00
Install tie rod bolts & bushings	2-½	3.75	2	3.00	4	6.00	4	6.00
Straighten tie rod assembly	1-½	1.88	1-½	2.25	1-½	2.25	1-½	2.25
Install tie rod yoke	1-½	2.63	2	3.00	2	3.00	2	3.00
	1	1.50	1	1.50	1-½	2.25	1-½	2.25

A Shipping Room Convenience



The shipping department of a service station or garage of any considerable size is often up against the problem of sorting shipments for packing. An interesting feature of the shipping and receiving room of the Paige-Detroit Service, Inc., New York, is the design of the tables. These tables, one receiving and one shipping, have a number of light pieces of wood hinged at the back end to the table so that by bringing any number of them down on the table, the table is divided up in a number of spaces on which can be piled the parts orders as they are made up or received

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Federal Develops Fast Express Chassis

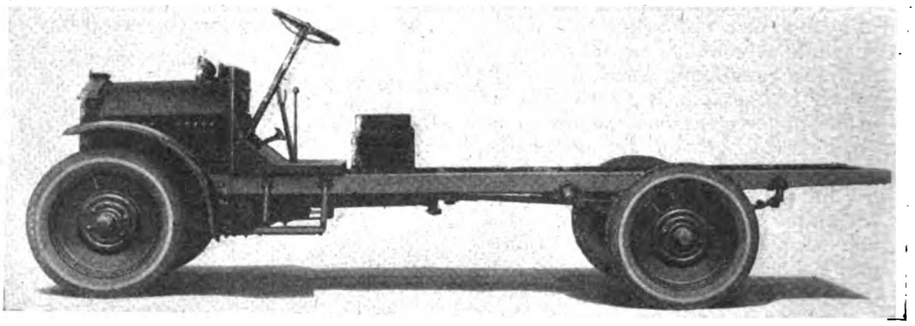
Thirty-two Body Combinations Available—Chassis Price to Be $1375

A NEW model, known as the Federal Fast Express, with a nominal capacity of one ton, has been brought out by the Federal Motor Truck Co. This new delivery type truck has a chassis weight of 2950 lb., with a body allowance of 900 lb. It is mounted on a 132-in. wheelbase chassis with 56-in. tread, and has a loading space back of the seat of 110 in.

The powerplant is the Continental J-4 engine, which is the same unit as has been used for the past two years in the Federal Model S-D. This engine has a bore of 3¾ in. with a 5-in stroke. It has a three-bearing crankshaft with 2½-in. diameter shaft. It also has a heavy camshaft, 1¾ in. in diameter, mounted on three bearings.

The truck is distinctive in that although of small capacity it is worm drive employing the Timken axle. The worm drive type of rear axle is used in all Federal models. In addition to the Continental and Timken units, the Federal Fast Express employs the Eisemann magneto, Zenith carbureter, Oakes fan, Long radiator with the core in a heavy pressed steel shell, Borg & Beck clutch, Detroit Gear & Machine transmission, Peters universal joints, Gemmer steering gear, Stewart-Warner vacuum tank, Disteel wheels, U. S. Royal cord tires, Alemite chassis lubrication, Remy starter and generator, and Exide heavy truck service type of battery.

The clutch is a 10 in. type. The gearset is selective sliding and in conjunction with the 5.6 to 1 reduction in the rear axle, gives a final reduction of respectively 5.6 to 1 on high, 9.4 to 1 on second, 17.4 to 1 on low and 21 to 1 on reverse.

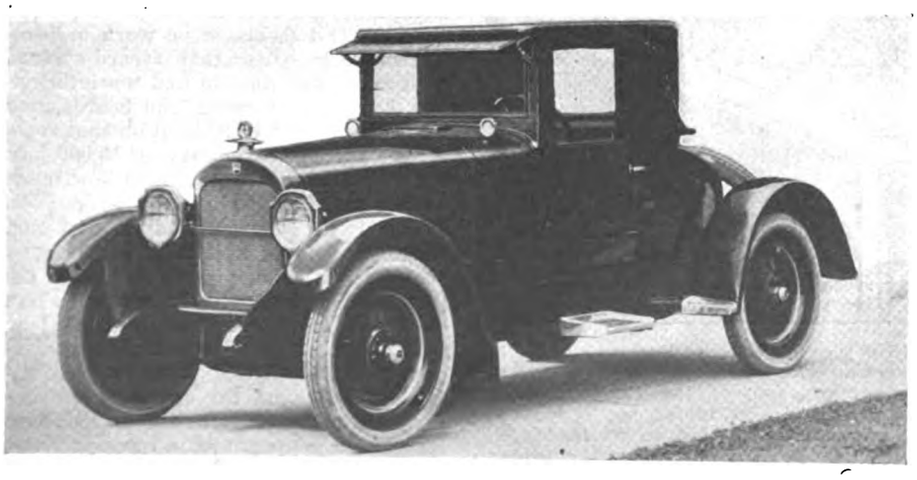


The Federal Fast Express

Chrome vanadium steel springs have been adopted in place of carbon steel, as experience has shown that due to the continuous use of trucks and the great number of miles traveled, the ordinary carbon steel type of spring is subject to considerable fatigue. The tire size is also designed to withstand considerable usage, the car using the 5 in. tire, Royal Cord make, both front and rear.

Thirty-two Combinations

The Federal company has made arrangements to furnish any style body mounted and painted, ready for work. There are in all thirty-two different combinations of seats, bodies, windshields and cabs which have been worked out to fill practically every need of express or delivery work for which this chassis would be called upon. Many of the combinations are interchangeable on the same body and with the same top. Production on these models started July 5, and it is expected that by Aug. 1 demonstrators will be in the hands of all Federal distributors. Owing to the magneto ignition equipment and the adaptability of the truck for various road conditions, it is expected that considerable export business may be secured with it. The price of the chassis is $1,375, f.o.b. Detroit.



The new Liberty coupe

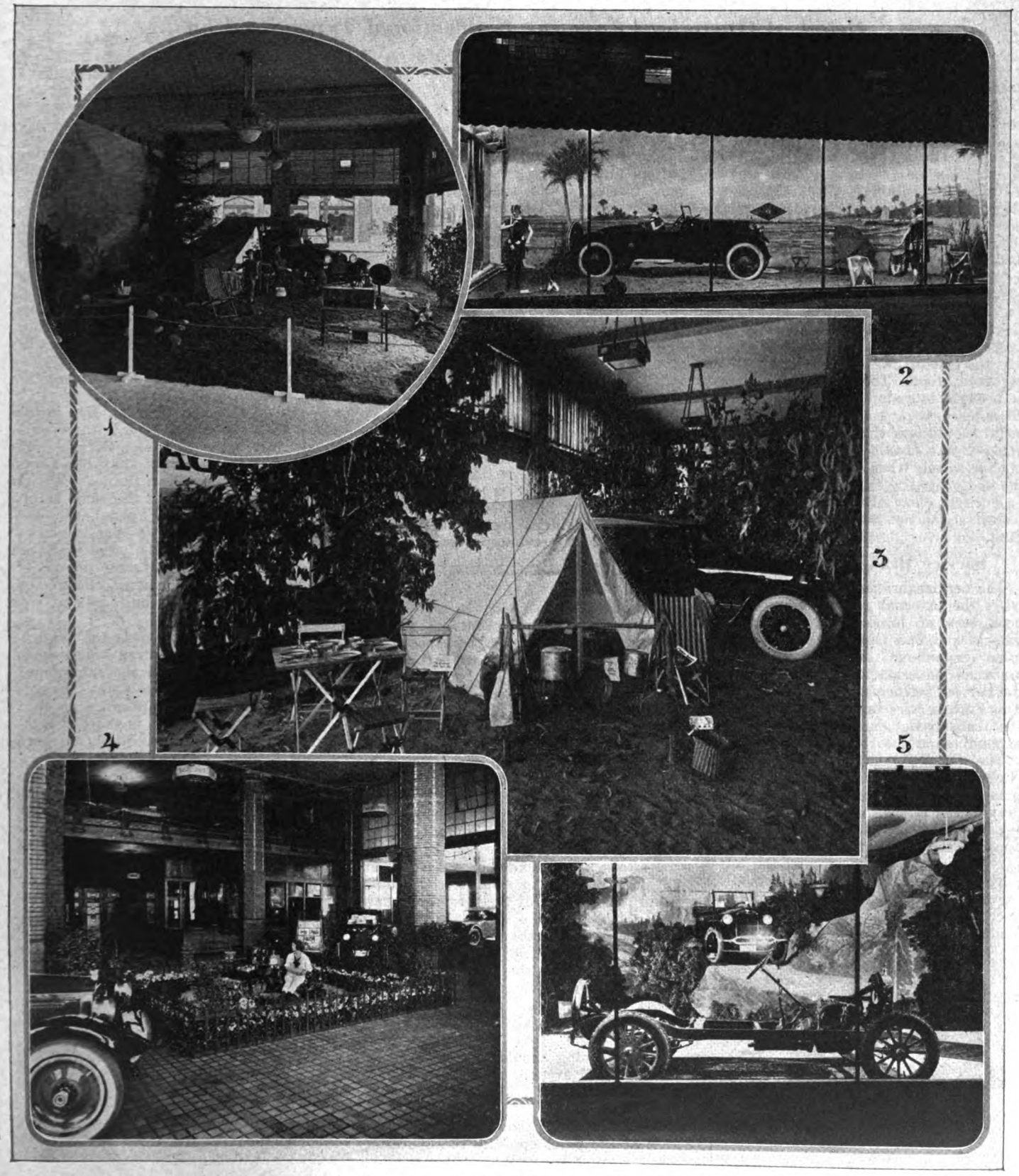
Liberty Brings Out New Coupe for Business and Professional Men

A NEW coupe of the roadster type, designed particularly for business and professional men, is being manufactured by the Liberty Motor Car Co. The body is a distinctly two-passenger design, the seating arrangement being side by side. The lines of the under part of the body are identical with the Liberty roadster and the upper part is a steel covered unit. There are two doors, the pillars of which are wood covered with steel. One of the features of the body is the large glass rear light. This is bevel glass 13 in. in height by 26 in. in width, and is provided with a silk curtain. The body is fitted with a step instead of a runningboard, and there is an aluminum casting at the base of the rear fender which carries out the step idea and, at the same time, provides a rigid support for the rear fender. The soft top is over wood framing and the construction has been worked out to eliminate drumming. The windshield is a one-piece type and the car is provided with a cowl ventilator. Tuarc wheels are standard equipment with nickel trimmed head lights and parking lights. The car is equipped with a water indicator and special radiator filling cap. The windshield is equipped with a visor.

The doors are provided with Eagle locks, with an inside door lock on the left door and an outside door lock on the right. In addition to the usual dash equipment there is also a clock and a cigar lighter.

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Some Summer Salesroom Display Ideas



THE salesroom that is bright, cheerful and particularly attractive is the one that helps best to sell in the Summer. Here are some fine examples of salesroom displays that make a particularly strong summer appeal. 1—Camping scene with radio amplifier that announced baseball scores, Albertson Motor Co., Dodge, Los Angeles; 2—Beach scene, Bird-Sykes, Bunker Co., Paige, Kansas City; 3—Call-of-the-Open-Road display, Chase-Morrill Co., Velie and Jordan, San Francisco; 4—Summer garden scene, with radio, Carl C. Anthony, Packard and Durant, Los Angeles; 5—Mountain touring scene, Gardner salesroom, Los Angeles

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How to Adjust and Reline Car and Truck Brakes

Detail of Operations Covering Conventional Types Used on Nearly All Motor Vehicles—When to Adjust and When to Reline

IT is quite a simple matter to determine when the brakes need adjustment or relining. When the brakes are properly adjusted, a sudden application of either service or emergency should bring the car to a stop in a short distance, this distance depending largely on the speed of the car when the brakes are applied and the weight of the car. As a rule a light car will be brought to a stop more quickly than a heavier car, and, of course, the faster the car is going, the greater the distance it will cover before it stops. The average car should be brought to a stop in 20 ft. when going 20 m.p.h. A pressure of 30 lb. on the pedal should lock the wheels. The emergency brake should be capable of locking the wheels when several notches from the end of its travel. Both brakes should be entirely clear of the drums when released so as not to cause brake dragging.

Service Brake Adjustment

The service brakes are practically always the external contracting set when both sets of brakes are on the rear wheels and one is contracting and the other expanding. When one set is a transmission brake, it is the emergency, the service set being on the rear wheels. The Ford service brake is on a drum in the transmission, and the emergency is expanding on the rear wheel drum.

The external contracting brakes vary slightly in construction, but the general principles are about the same. The brake band is positioned at three points, the brake anchor pin which is directly opposite the contracting linkage, the upper part of the equalizer and the lower part of the equalizer. The equalizer serves to allow the same amount of clearance on the top and bottom of the drum when the brake is released. The release spring acts between the support at the bottom and the lug on the brake band, thus forcing it all the way out. On the bottom the distance that the band can clear the drum is regulated by two nuts on the opposite side of the support from the spring. One of the nuts is the adjusting nut and the other is the lock nut to keep it from turning after the adjustment has been made. In some cases one or two additional points of adjustment are provided, as in the case of the Dodge, which has a top support and a rear support. A typical brake construction is shown in Fig. 1.

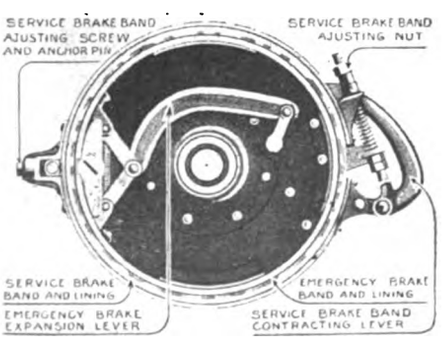


Fig. 1—A typical brake set with toggle operated internal brake and equalized external brake

Better Mechanics

ARTICLE No. 249

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.

The first thing to be done in making any brake adjustments is to jack the rear wheels clear of the floor, release all brakes and see that the gear shift is in neutral. If the brake pedal can be pushed all the way to the floor or to the end of the slot without locking the wheels, the service brakes need taking up. Proceed as follows:

1—Loosen the locknut on the equalizer on either brake and slack off both nuts toward the bottom of the threaded equalizer until there is a clearance of about 1/32 in. between the brake lining and the drum at the end of the band.

2—Set down on the upper adjustment which is either a winged nut or an elongated nut, until the top of the brake band is approximately the same distance from the drum.

3—The lining should now be clear of the drum all around, and this clearance should be not over 1/32 in. nor less than 1/64 in.

4—If the lining has too much clearance at the point opposite the operating mechanism, it is usually possible to make an adjustment by removing a cotter pin in the brake anchor pin and setting the screw in until the clearance is correct. This may necessitate making the other adjustments over again. See Fig. 2.

5—Where there are more adjustments, each screw should be turned the proper amount so that the clearance is uniform.

6—When the clearance has been adjusted, proceed in the same manner to adjust the clearance on the other service brake on the other wheel. Theoretically both brakes should now be equally adjusted and should take hold at the same time and should lock at the same time. Practically, however, this seldom happens, and further slight adjustments will have to be made on account of varying amounts of lost motion, slight misalignment, etc.

7—Have someone depress the brake pedal about 2 or 2½ in. Both wheels should just begin to brake slightly. If they do not both catch at the same time, set up the adjustment on the loose wheel till they both do brake at the same point.

8—Depress the brake pedal till one of the wheels is locked so that it cannot be turned with the hands. See that the other wheel locks at the same point. If it locks either before or after, change the adjustment slightly till both lock at the same point.

9—It occasionally happens that an adjustment cannot be secured where both wheels start to brake at the same point and both lock at the same point. In this case it is better to compromise so that a medium pressure which is short of locking the wheels operates equally on both wheels.

10—There may be some misunderstanding as to the term equalization. Some brakes are said to be equalized, and this means that there is a mechanical contrivance arranged so that any pull from the pedal is distributed equally to each brake. In addition to this, each individual brake band is equalized so that the pressure is equally distributed around the band when the adjustments are correct. In spite of equalizers between the

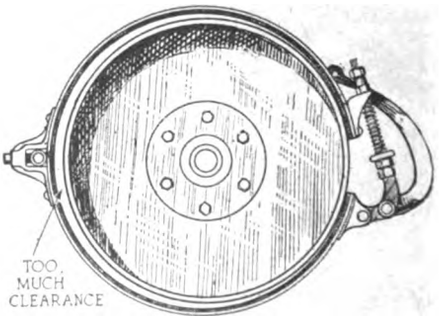


Fig. 2—There is too much clearance at the anchor pin. This is remedied by adjusting the screw

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two brakes, adjustments must be made so that the brakes take hold at the same time. Failure to make the adjustments this way will result in skidding in slippery weather and in slewing of the car when the brakes are suddenly applied.

11—The adjustments on the service brakes are all made on the equalizer, not on the pull rods. On practically all cars the rod adjustments are made at the factory and are correct for all time. Changing the adjustment on the pull rod will not effect a correct adjustment and will throw the whole mechanism out of order. There are a few exceptions to this rule, but not very many. Any special adjustments involving the length of the rod would be covered by individual manufacturers' instructions.

12—Occasional trouble will be experienced with bands that are bent. The lining in such a case will have more clearance at some places than others. This can generally be remedied by inserting the blade of a screwdriver at the point where the clearance is smallest and then depress the brake pedal. This has a tendency to bend the band out at that place. More serious bending, which cannot be remedied by the screwdriver, can be taken care of by removing the brake band and hammering it to a true circle with a wooden mallet over an old brake drum. To do this it is necessary to remove the wheel, brake rod connections and the anchor pin.

13—Where the brake chatters, grabs or refuses to take hold till considerable pressure is applied, then takes hold all at once, the reason can be ascribed to glazing of the brake lining. Relief can sometimes be obtained by squirting generous quantities of gasoline or kerosene between the lining and the drum, followed by an application of neatsfoot or castor oil. If the glazing resists this treatment, the band is removed and the lining soaked in gasoline for an hour, followed by a good scrubbing with a stiff brush and an application of neatsfoot or castor oil. Any lining which resists this treatment is probably too burned or charred to be of further service and should be replaced. While such a treatment is necessary to get rid of the glazing, it is probably not the best thing in the world for the lining. Linings are impregnated with various compounds to give them longer life, better holding power, etc. These compounds are supposed to be oil, water and gasoline proof, but after having undergone great heating and soaking in oil, it is a question whether some of the compound is not dissolved out. At any rate, they will be better than a glazed lining, and the soaking can result only in the slightest harm. Opinions on this may differ.

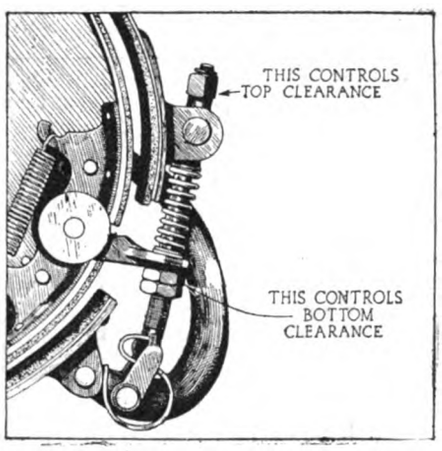


Fig. 3—Adjustments to get correct top and bottom clearance

Emergency Brake Adjustment

The emergency brakes are either of the internal expanding type, where both brakes are on the rear wheel drums, or are of the contracting type when placed in back of the transmission. There are some cars with service and emergency brakes external contracting side by side on a single wide drum, and there are some other constructions using two drums, one inside the other on the rear wheels, both sets being either internal or external. The large majority of cars, however, have the emergency or hand brake internal expanding on rear wheels.

The operating part of the brake consists of two shoes, which are hinged at the anchor pin and expanded at the opposite side, either by a toggle joint or a cam. Either of the two methods forces the shoes away from each other at the operating end and into contact with the inside of the drum. The shoes are faced with brake lining. A new type that is used to a limited extent on trucks and will shortly be used on passenger cars has four shoes instead of two.

The emergency brake in the hands of the average owner is not subject to a great amount of wear, as it is supposed to be used only to hold the car stationary or on long hills or in case the service brake fails to hold. When the emergency is of the internal expanding type in the rear wheels, the only possible adjustment is by shortening up the brake rod from the pedal. Usually this adjustment is made at the clevis joint to the pedal. The clevis pin is slipped out after removing the cotter pin, the clevis turned down on the brake rod the desired number of turns and the pin and cotter pin put in place again. Another favorite construction is a wing nut on the end of the brake rod which in this case goes through the pedal. In making a wing nut adjustment either on the service or emergency brakes, care must be taken to get the knife edge of the nut in the slot so that it will lock.

When the emergency brake is at the rear of the transmission, the operations of adjusting are exactly the same as in the case of the contracting service brake. The contracting mechanism is usually at the top and the anchor pin at the bottom. It is usual to allow slightly more clearance at the anchor pin side than elsewhere, and the brake should start to take hold at the top first. A clearance of 3/32 in. at the bottom and 1/32 in. at the top is about right.

There are several cars that have constructions a little aside from the conventional. On the Reo the service brake and clutch are both operated by the left or clutch pedal. Depressing the pedal slightly releases the clutch and depress-



Fig. 4—Using a screwdriver to bend the band

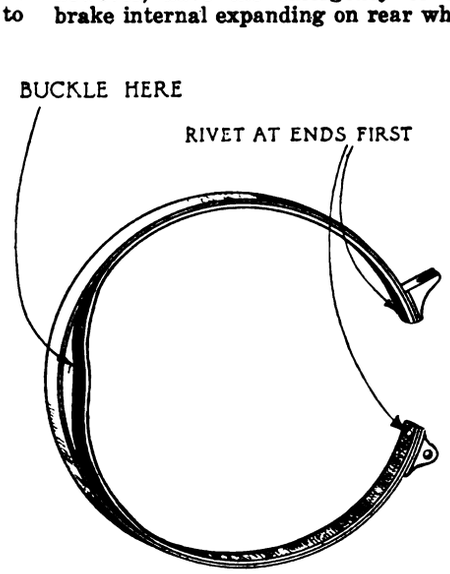


Fig. 5—Method of buckling the external lining

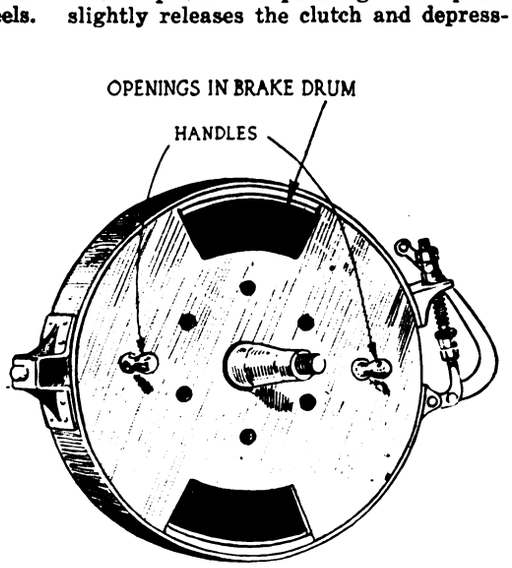


Fig. 6—A dummy drum for adjusting the brakes

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ing it further applies the service brake. It is necessary to see that the brake does not take hold till the clutch is disengaged. The Reo emergency brake is operated by the right pedal which has a ratchet lock so that it will stay down at any point until released by the latch. There is no hand lever. The actual braking mechanism is conventional. By depressing both pedals at once both sets of brakes are applied. On the Reo the emergency would tend to receive more wear than on a car where the emergency is operated by a hand lever because it is used not only for holding the car, but for stopping it as well.

The Ford service brake operates on a drum in the transmission. There are three drums in the transmission and the brake is the rear one. Adjustment is made by tightening up the adjusting nut on the right side. The recoil spring is between the band lugs. The nut engages a slot every half turn to lock it in place. It is usual while the transmission door is off to also adjust the reverse band. The slow speed band is adjusted from the outside. The Ford emergency brake is of the internal expanding type in the rear wheels and is not lined. There are two hub brake shoes expanded against the drum by a cam. The emergency brake is not intended for stopping the car, merely for holding it.

Relining Brakes

When brake linings have worn down to a point where it is impossible to get an adjustment, it is necessary to reline them. While some constructions will necessitate special methods, the following series of operations will be found approximately correct for most cars having external service brakes and internal service brakes:

1—Jack up the rear axle at both ends so the wheels are clear of the floor. Block the front wheels securely.

2—Remove the wheels. The various types of axles will require slightly different operations for this. Semi-floating axles are removed by taking off the hub cap, removing cotter pin, removing axle nut and removing wheel, using a puller if necessary. Floating axles are removed by taking off the hub cap, removing the bearing adjusting nut and cone and slipping off the wheel.

3—Disconnect the brake bands, breaking the joints to the rods and the brake anchor pins. Also loosen additional adjustment points if they are used.

4—Disconnect the internal shoes in the same way and lift them out. Even if the emergency brakes are not worn enough to warrant relining, it is customary to reline both brakes at once on account of the economy of time in taking the other parts off.

5—Wash the bands and all other parts around the brake operating mechanism with gasoline or kerosene.

6—Remove the old brake lining, using a cold chisel ground on one side only like a carpenter's chisel. Another method is to drive them through from the lining side with a punch, as the heads will be worn off.

7—Rivet the new lining on, being careful that the lining is the correct length, width and thickness, as called for in the manufacturer's specifications. Hollow brass or copper rivets are used with the heads on the lining side. Thin linings can be worked from the band side, driving the rivets through the lining through the holes in the band and clinching them over some rounded piece of iron. Heavier lining should be drilled and countersunk. Lining that is so heavy that it cannot be worked readily can be softened by soaking in hot water for a half hour.

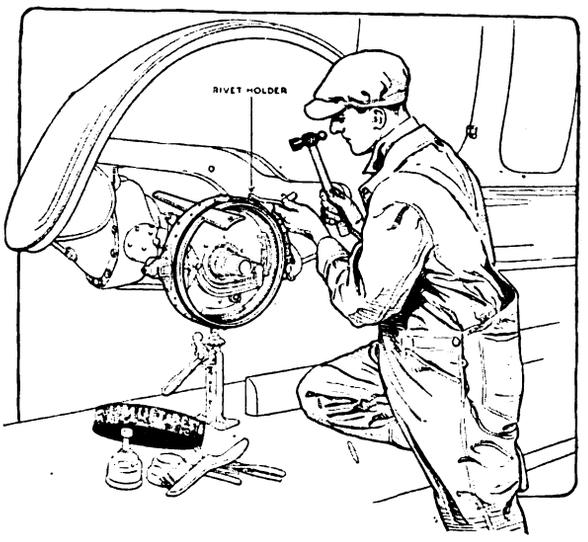


Fig. 7—The Multibestos method of relining external brakes

8—In riveting lining to the external band, rivet one end, then buckle the lining into a loop so that it is a little too long and rivet the other end. The buckle is forced in place and the other rivets put in. If the buckle is made too large, it will not go in place. The lining in internal shoes should be pulled as tight as possible.

9—Some service men claim that the method used in operation No. 8 is liable to cause a wrinkle in the lining when the brake gets in service and recommend that the external lining be pulled tight and cut short. This will leave flat places between the rivets, which will stretch out to meet the band as the lining is worked in.

10—Replace the bands and shoes, making the connections and fastenings good.

11—While it is customary to replace the wheel and make the adjustments to the bands directly to the drum, it is much quicker and easier to use a dummy drum with two peep holes cut in it. This is shown in Fig. 6. The drum is the same size as the regular drum and can be rapidly put on and taken off to make the necessary adjustments. When the right adjustment is secured, the wheels are replaced.

12—Lubricate all points needing oil on the rocker shafts, clevices, cams, etc. Brake anchor pins and toggles need oil at the joints.

Difficulties with Varying Loads

It sometimes happens that difficulty is experienced with a varying brake action which depends on the load carried. Brakes adjusted correctly for a light load will drag when the load is made greater. This is often caused in cars with a Hotchkiss drive by the axle slipping along the spring or the spring taking a set and throwing the axle out of position. If the axle and the brake rods swing from different centers, there is bound to be difference in the brake action at different loads, and if the springs cannot be set so that the rocker arm is always equidistant from the brake rod pivot, then a compromise adjustment will have to be made. Some of the older types of cars were subject to this difficulty, but this has been generally overcome in the newer models by more careful design.

Multibestos Brake Relining Method

A new and patented method of relining brakes has been developed by the Multibestos Co. This method saves considerable time over the method of removing the linings, but applies to the external bands only. As they are the service brakes and receive the most use, this is not a serious disadvantage, considering the time saved. The equipment necessary is a series of seven anvil rings, an anvil wedge and other tools. The wheels are removed, the old lining cut from the bands without removing the bands from the car, the new lining slipped in place and the proper size anvil ring placed between the linings. A wedge driven in the tapered split in the ring expands the ring against the new lining. Rivets are then driven through the holes in the bands, and they clinch against the anvil ring. The ring is then removed and the wheel replaced. The method is shown in Fig. 7.

Temper Colors of Steel

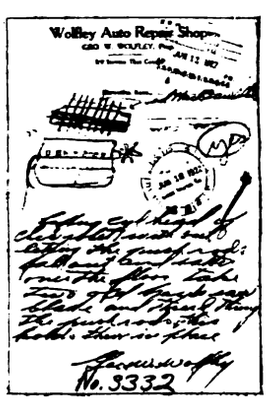
Fahr.	Color
420	Very faint yellow
430	Very pale yellow
440	Light yellow
450	Pale straw yellow
460	Deep straw yellow
470	Straw yellow
480	Deep straw
490	Yellow brown
500	Brown yellow
510	Spotted red brown
520	Brown purple
530	Light purple
540	Dark purple
550	Full purple
560	Full blue
570	Dark blue
572	Red—visible in the dark.
600	Very dark blue

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Repairshop Shortcuts

No Apology Needed

MANY of our contributor friends in sending in repairshop shortcuts apologize for the drawings or sketches. They see the pretty sketches in Motor World and imagine that their sketches should be as good. Not at all. The average sketch that comes in is just a few pencil lines to indicate the relation of parts. The very much reduced cut of No. 3332 is better than the average, but is sufficiently explanatory to enable our art department to make the finished drawing which appears on this page. Do not hesitate on account of lack of artistic ability. We pay $1 for each shortcut accepted and will accept those which have not been previously used and which are practical for shop use.



No. 3328—Tightening a Ford Rear Fender.—A Ford rear fender is tightened by placing a jack under the rear end of the runningboard and lifting it until there is a space of 6 or 7 in. between the wheel and fender bolt.—J. H. Kistner, The Kistner Co., Meredesia, Ill.

No. 3329—Oil Soaking for Transmission Linings.—Transmission linings are kept pliable and in better shape by soaking in oil. An old milk can is fitted with a bail on which the linings are hung.—H. V. D. Sweet, Canajoharie, N. Y.

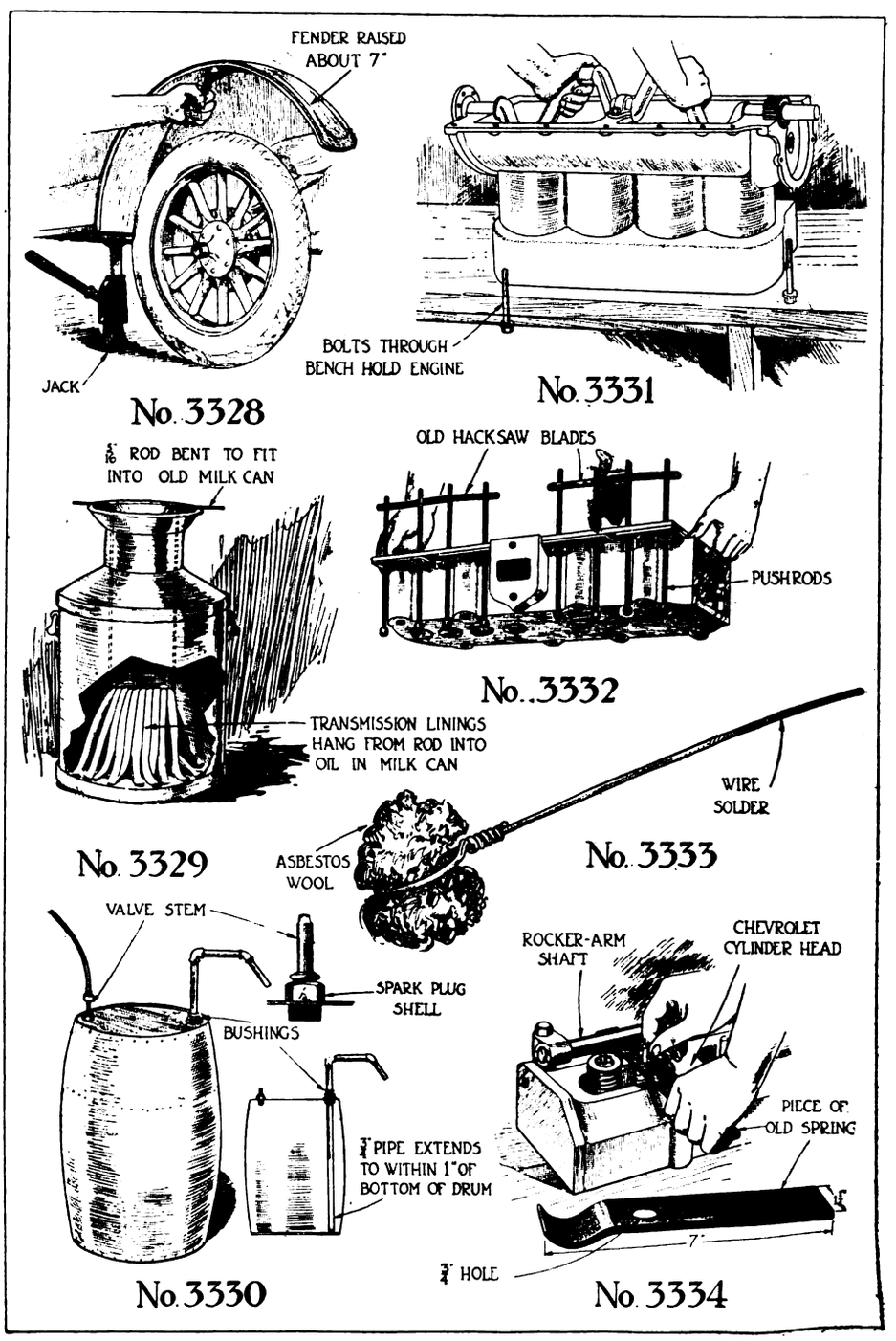
No. 3330—Air Pressure for Emptying Oil Barrels.—Air pressure is used for emptying an oil barrel by fitting a spark plug shell with a tire valve and applying air pressure through this. The other bung hole is fitted with a pipe which extends to within 1 in. of the bottom of the drum. The air pressure forces the oil up through the pipe.—J. W. Kozel, Midway Garage, Blunt, S. D.

No. 3331—Holding a Ford Cylinder Block.—A Ford cylinder block is held to the bench by drilling two holes through the bench which correspond with the holes for the cylinder head cap screws. The cap screws are inserted from underneath the bench.—A. E. Dailey, Ever Ready Garage, Chester, Pa.

No. 3332—Holding Chevrolet Push Rods.—The Chevrolet cylinder head is lifted without letting the push rods drop by inserting thin hack saw blades on alternate sides of the push rod so that the spring of the blade holds the push rod in place.—George W. Wolfley, Wolfley Auto Repair Shop, Hiawatha, Kan.

No. 3333—Indestructible Acid Swab.—An indestructible acid swab is made with a tuft of asbestos wool twisted on to the end of a piece of wire solder. The soldering acid does not affect the asbestos wool and affects the solder only slightly.—H. V. D. Sweet, Canajoharie, N. Y.

No. 3334—Chevrolet Valve Spring Compressor.—A valve spring compressor for the Chevrolet 490 is made of spring steel 7 in. long, 1¼ in. wide and ¼ in. thick, bent and drilled to the shape shown in the illustration. This lifter is inserted under the rocker arm shaft, and the hole goes over the valve and depresses the washer so that the key can be taken out.—Richard Spellerberg, City Garage, Highland, Ill.



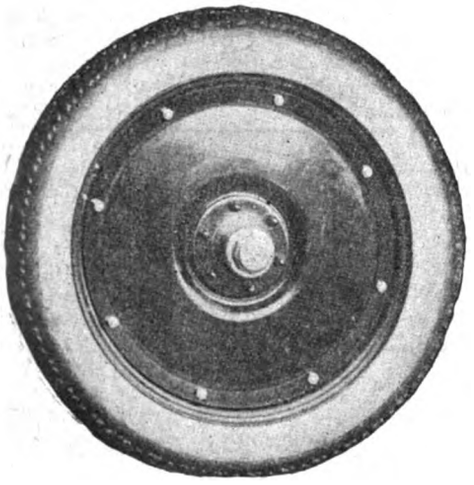
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Equipment to Sell

New Devices for the Car and Truck

Paragon Disk Wheel

Wilkinson Bros., Portland, Ore.



The disk wheels have demountable rims and are fitted with standard hubs. The construction is a two-piece disk built on the arch principle, each disk being dished and cupped and coming together at the edges. This construction allows the use of lighter disks than with the single disk type. The tire valves come to the outside of the disk to allow easy installation. The price for the Ford set is $50.

Woolwine Emergency Running-board Set

Woolwine Metal Products Co., Los Angeles, Cal.

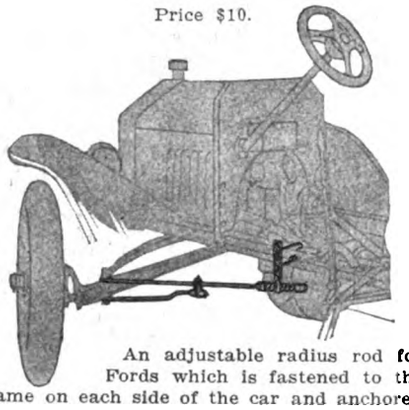


The cabinet is a runningboard set containing three cans, one for water, one for oil and one for gasoline. The cans are enclosed in a metal case of heavy steel which is japanned and baked. The cover of the box is hinged and the entire outfit is made noiseless by interlining and equipping the handle of each canteen with a spring which holds it in place. The spouts when not in use telescope into the canteens and are closed by mouth-pieces. The fastening arrangement prevents removing the cabinet without its destruction.

Common Sense Radius Rods for Fords

The Silver Mfg. Co., Salem, Ohio.

Price $10.

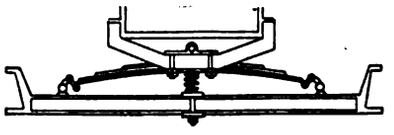


An adjustable radius rod for Fords which is fastened to the frame on each side of the car and anchored to the front axle both above and below. Through the adjustment feature, alignment of the front wheels can be maintained.

C. P. Springs for Fords

Fifield Bros Co., Augusta, Me.

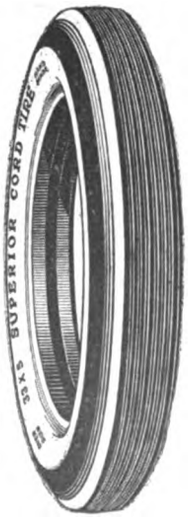
Price $2.



An auxiliary coil spring for Fords attaching to the center of the front axle extending upward to the spring. Two plates attached, one to the top and one underneath the axle and the spring fits over two humps which keep it in place.

Superior Seven Ribbed Tread Tire

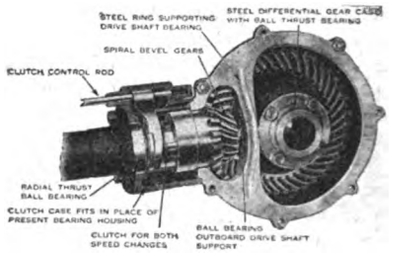
Cord Tire Corp., Chester, W. Va.



The seven ribbed cord tire has a wide flat tread and the tread surface is as wide as in the non-skid type. The tire was developed especially for larger and heavier cars.

Austin Two-Speed Axle for Fords

Two-Speed Axle Co., 15 West Second Street, Cincinnati, Ohio.

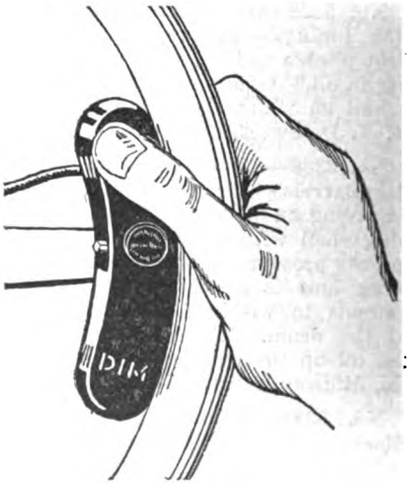


The axle gives the Ford car four forward and two reverse speeds. Two of the forward speeds are the same as at present and of the two additional speeds, one is between the present Ford low and Ford high to be used for long hill climbing. The other speed is 36 per cent higher than the present Ford high to be used on smooth level driving. The unit is constructed with ball bearings, the dominating feature being a ball bearing support on the outer end of the pinion shaft. This fits into a housing of a Ford without any alterations. The change can be made in the same time that it now requires to dismantle and assemble a Ford axle.

Roxwitch Headlight and Horn Control

Patton-Mac Guyer Co., Providence, R. I.

Price $3.85.



The device is fastened on one of the spokes of the steering wheel spider, bringing it close to the rim. The control of the headlamps, either bright or dim, and of the horn is brought within the range of the thumb without changing the hand on the steering wheel. The device operates by a simple rocker motion and in neutral position it puts the lights out. The horn in the center is operative in all positions. It is fully equipped with cable and terminals. It can be installed with a screw driver and a pair of pliers.

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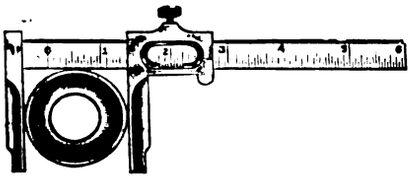
Equipment for the Shop

New Machinery and Tools

Stevens Universal Calipers

Stevens & Co., 375 Broadway, New York City

Price: 4 in. scale, $4; 6 in. scale, $4.50; 8 in. scale, $5



The calipers have four features—rule, inside calipers, outside calipers and depth gage. They are of sufficiently rugged construction to withstand rough service without affecting their precision. The jaws are hardened. The figures are large and clear cut for easy reading. The scale on the front, for inside and outside measurements, is divided into 16ths, which with the vernier on the slider gives readings to 32nds, 64ths and 128ths. The reverse side for measuring depths is divided for direct reading of 32ds.

Dorrance Nut Spinner

Charles J. Dorrance, 728 Monadnock Block, Chicago

Price 80 Cents



An inner tube valve stem nut spinner wrench made in the form of a wheel. After the nut is started the spinner has sufficient weight to take the nut completely off the valve. The weight is 1¼ lbs. and the wheel is 4 in. in diameter. It fits large and small inner tube base nuts.

Atlas Mikro-Indicator Cylinder Gage

George H. Wilkins Co., 180 North Market Street, Chicago

Price $15

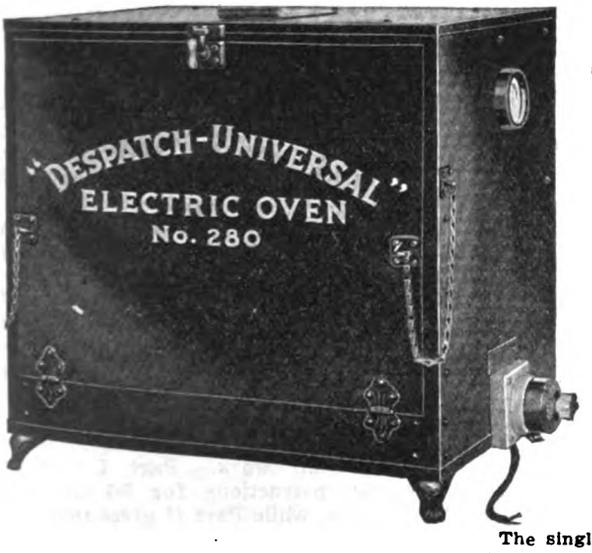


The gage is for testing straightness, size or scoring of cylinders. It consists of two units, the indicator or dial with two contact points which can be removed and used as an inside micrometer and a saddle with a supporting stud upon which the indicator dial is placed and which holds it at right angles to the axis of the cylinder. The indicator measures exact diameters from 2⅝ in. to 5 in., the adjustable rear contact passing through the saddle plate and riding the cylinder diametrically opposite the front contact point. The indicator has auxiliary uses for testing lathes, crankshaft bearings, direct reading inside micrometer, etc.

Despatch Universal Electric Oven

Despatch Mfg. Co., 120-122 First Avenue, No. Minneapolis, Minn.

Price $37.50.

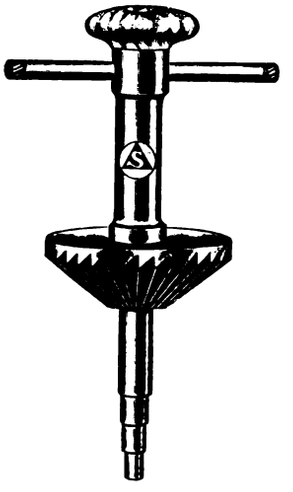


The oven has a temperature range of 100 to 400 deg. Fahr. and a maximum current consumption of 900 watts on high heat, 400 watts on medium heat and 200 watts on low heat. The desired temperature is selected by means of a three point rotary switch. The oven is used for baking armatures, enameled parts, etc. The oven is 18 in. wide, 14 in. high and 14 in. deep.

Stevens Universal Valve Reseater

Stevens & Co., 375 Broadway, New York City

Price $10



The single tool will reseat valves on practically all 45 deg. removable head engines. The pilot is one-piece and stepped off for the four popular sizes of valve stems, 5/16, 3/8, 7/16 and 1/2 in. Each step is slightly tapered to insure a snug fit in the valve guide. The pilot telescopes into the handle and readjusts itself to any valve seat. The large cutter will fit any job, as it tapers from 1⅛ to 3 in. Also furnished with pilot step 1/64 in. oversize at the same price.

Stow Flexible Radial Grinder

Stow Mfg. Co., Inc., Binghamton, N. Y.

Prices: 4 x ¾, $105; 6 x 1, $125; 8 x 1, $135; 10 x 1, $145; 12 x 2, $160.



The flexible radial grinder is belt driven to the top of the flexible shaft and the flexible shaft extends from the supporting arm down to the grinding wheel. It may also be furnished for drilling or with screw driver for assembling. The weight of the countershaft is balanced so that the operator is not obliged to support this weight.

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Wide Building Permits Use of Ramp

Cars Must Have Sufficient Room to Turn Off Top of Ramp Without Backing

MOST dealers planning the erection of a building of two or more stories favor the ramp to the elevator. The greater convenience and operating economy of the ramp are the big points in its favor. However, it takes up more space, it is likely to interfere with car storage, and in some buildings it may make it difficult to move cars. It is less difficult to fit a ramp into a two-story building, however, than it is with a building of three or more stories.

A ramp is used in the plans shown on this page. The building is two stories and the dimensions are 76 ft. wide and 173 ft. deep. The width of this building favors the use of a ramp. Assuming that the walls are one foot thick and that a row of cars is stored along the wall opposite to the ramp, there is about 58 ft. for a car coming off the top of the ramp to turn in. This width is ample for practically all cars.

The ramp does not interfere with storage capacity to any great extent. In a building of this width the obvious storage arrangement is a single aisle with one row of cars on one side and two rows on the other. This is the arrangement used, with the exception of the row across the back of the building and the single row beside the ramp.

Motor World's Department of

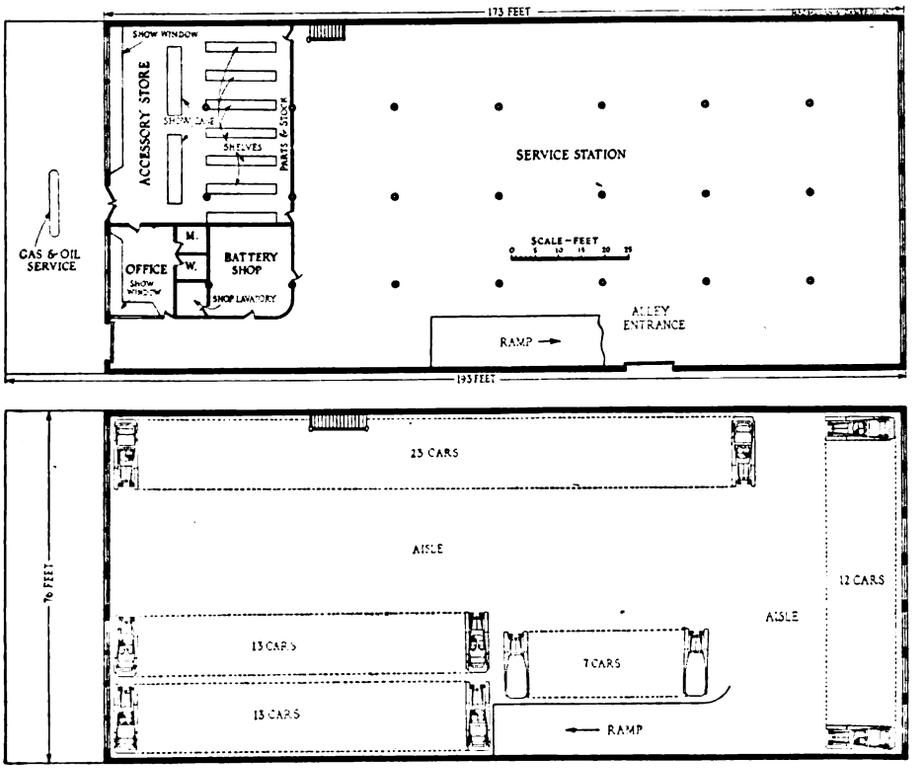
Better Business Buildings

Is a weekly feature of the paper. Motor World is glad to receive and answer inquiries for salesroom or garage plans, but in order that there may be as little delay as possible in submitting the plans desired it is imperative that the following information be given:

Size of plot, with rough sketch showing shape and its relation to adjoining plots; name and number of departments operated; number of cars to be shown in salesroom; number of cars in garage; any other pertinent details.

The building is set back 20 ft. from the street line to provide for a double driveway filling station. The accessory store and office face this driveway. The toilets are located in back of the office, and in back of them the battery shop is situated. The office has two display windows—one facing on the filling station and the other on the driveway to the garage. The accessory store is arranged with two combination counters and display cases across the front, and in back of these are shelves for carrying stocks of equipment and parts.

The balance of the first floor is used for service. This part of the building should be arranged so that fine work will be handled at the rear of the building where the light is best. The second story is used for storage exclusively.



Floor plans for two story service station garage on lot 193 x 76 ft. The storage capacity is about 68 cars. The accessory store and stockroom are combined

GEORGIA BILL WOULD REDUCE LICENSE FEE

ATLANTA, GA., July 18—A bill to reduce the state license fee on all classes of automobile vehicles has been introduced before the Georgia State Legislature, now in annual session here. The bill would also repeal the provision in the present law allowing sheriffs $1 for certifying applications for automobile tags made after March 1.

If the bill is passed present license fee reduction would be from $3.00 to $5.00, according to the size of the vehicle. For passenger carrying motor vehicles of not exceeding 23 h.p. the reduction would be from $6.00 to $11.25, and the fee on cars of more than 23 horsepower would be reduced from 40 cents to 60 cents per h.p.

BOOK REVIEW

Automotive Repair, Volume 2. Electrical Service Work by J. C. Wright. John Wiley & Sons, Inc., New York City. The volume has 417 pages and 405 figures. Price $3.

The needs of the electrical service man have been considered from the standpoint of training for the job. The principal repair jobs which make up the work of the electrical service shop have been analyzed into operations which must be performed in order to make repairs, the descriptions of the operations being illustrated by cuts of important parts and operations entering into the doing of the actual repair work. Part I contains working instructions for 56 electrical repair jobs, while Part II gives that part of the theory of electricity which is needed by the repairman for a thorough understanding of the function of each electrical unit. The volume is published June, 1922. The author is Director of the Federal Board for Vocational Education and was formerly Chief of the Industrial Educational Service, Federal Board for Vocational Education.

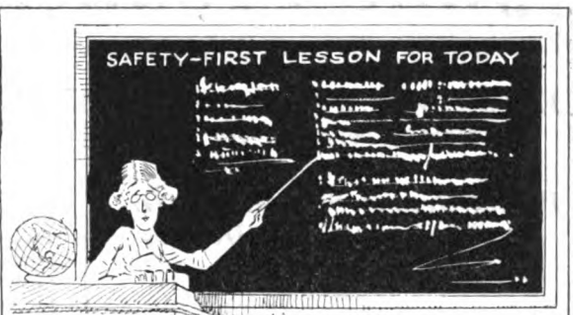
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Along the Automotive Newsway

By Leo Roche



JOHN C. LONG OF THE N.A.C.C. SAYS, IF EVERY WOMAN IN AMERICA WOULD ENROLL FOR THE DEGREE OF DOCTOR OF SAFETY, THE ACCIDENT QUESTION WOULD SOON BE SOLVED.



THE PUBLIC SCHOOLS OF WASHINGTON, OREGON AND IDAHO MAY HAVE SAFETY-FIRST METHODS TAUGHT AS PART OF THEIR CURRICULUM.



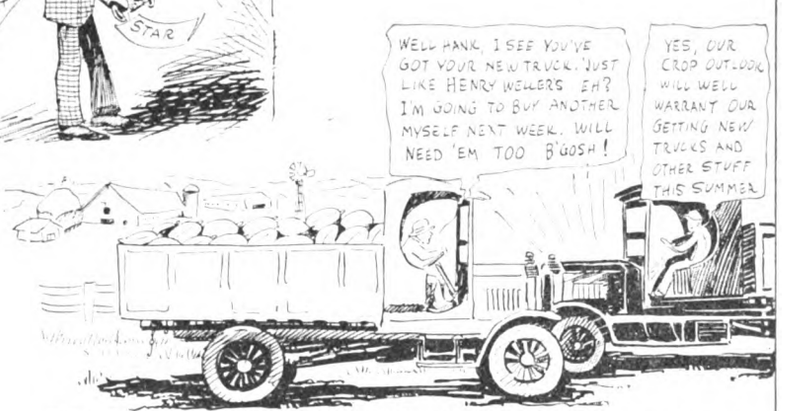
WHEN THE LOCOMOBILE PLANT IS PUT UP AT PUBLIC SALE DURANT WILL LIKELY BE VERY MUCH "AMONG THOSE PRESENT" AT THE BIDDING.



"HE WONT BE HAPPY 'TILL HE GETS IT"

NEW JERSEY HAS ORGANIZED A GOOD ROADS ASSOCIATION TO STIMULATE INTEREST IN THE $40,000,000 HIGHWAY BOND ISSUE WHICH COMES UP FOR REFERENDUM VOTE IN NOVEMBER.

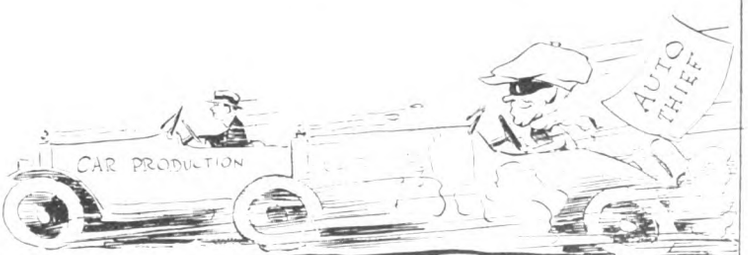




FARMERS IN KANSAS AND NEBRASKA HAVE STARTED BUYING. FARM DEMAND PROMISES TRUCK DEALERS SUMMER AND FALL BUSINESS.



NO WONDER THEY'RE HAPPY — WITH MOST PLANTS OPERATING AT CAPACITY AND MANY WORKING BOTH DAY AND NIGHT SHIFTS.



CAR THEFTS KEEP PACE WITH INCREASED PRODUCTION — NEWS HEADLINE
AND THE AUTO THIEVES TAKE NOBODYS DUST AS THEY SPEED ON.

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June Production Reached 271,000

EXCEEDED BY 15,000 RECORD MADE IN MAY

Plants Report Substantial Orders Received from Dealers in Farm Districts

NEW YORK, July 14—While the entire industry is awaiting the expected mid-summer lull in business and is prepared for it, a decline in sales has become apparent only in spots. There has been a slowing up in New York, Chicago and other big cities, but nothing which can be characterized as a slump.

Factories report, on the other hand, that dealers in agricultural districts who have been more or less quiescent for a long period, are sending in substantial orders. This is a positive indication that the farm market has come to life, because these dealers are not taking cars merely on a chance of selling them.

Production schedules have not been curtailed materially and while the output in July will not reach the June record of 271,000, it would not be surprising if it approximated 200,000. Last July, with a production of 176,000 passenger cars and trucks, was the best month of the year with the exception of August.

Gain Over June, 1921, 51 Per Cent

June production exceeds by 15,000 the May record of 256,000. This would make a total for the second quarter of 746,000 and for the first half year of approximately 1,120,000. The total for 1921 was 1,668,000. The gain over June, 1921, was 51 per cent.

Parts makers have noted no shrinkage in the volume of their business. All of them assert their July sales will be as large as those for June, and a good many say their business will be better this month. Commitments indicate that August will be equally good, but commitments under present conditions do not make a thoroughly reliable barometer. Manufacturers feel little hesitation in cancelling or holding up shipments. Collections in the parts branch of the industry are uniformly good.

Truck production continues to average between 10 per cent and 12 per cent of the total output. Substantial sales of light commercial vehicles are expected in the agricultural districts, but sales of heavy duty trucks still are handicapped by the presence in this country of a considerable number of unabsorbed American made army trucks sold in Europe after the armistice and reimported. Several thousand more of these trucks will be brought into the country unless Congress passes the Graham resolution, which would impose a prohibitive re-import duty.

Any forecast of production for the remainder of the year is complicated by the fact that a serious freight blockade on the railroads seems certain to follow the resumption of coal carrying together with the grain harvest which must be moved in a short time. With an unprecedented amount of equipment in bad order because of the shop men's strike, it appears inevitable that the carriers will be unable to handle the volume of miscellaneous freight which will be offered them during the third quarter.

TABLE SHOWING STEADY CLIMB IN SHIPMENTS OF CARS AND TRUCKS THIS YEAR

NEW YORK, July 18—With the figures only 90 per cent complete, reports made to the National Automobile Chamber of Commerce show that June shipments of passenger cars and trucks totalled 271,000, a gain of 15,000, or 6 per cent over May and of 51 per cent over June, 1921. The following table shows the factory shipment figures for the first six months of 1920, 1921 and 1922:

	Carloads			Driveaways			Boat		
	1920	1921	1922	1920	1921	1922	1920	1921	1922
January	20,057	6,485	15,241	29,283	3,185	7,397	....	93	154
February	25,505	9,986	19,600	43,719	1,507	9,950	....	99	169
March	29,236	16,287	27,380	57,273	9,930	15,800	....	75	264
April	17,147	20,187	30,200	64,634	14,197	22,500	....	1,619	3,200
May	21,977	18,608	33,810	74,286	15,193	28,710	....	2,381	7,220
June	22,516	20,269	33,000	60,746	18,384	30,500	8,350	3,947	7,900

Factory shipments for the other months of 1920 and 1921 follow:

	Carloads		Driveaways		Boat	
	1920	1921	1920	1921	1920	1921
July	23,082	19,470	52,342	15,320	8,702	3,725
August	23,386	20,350	34,060	14,290	7,095	3,565
September	20,804	20,150	24,431	13,550	5,469	3,580
October	17,209	17,323	14,127	11,257	2,519	2,300
November	13,253	14,061	9,497	10,509	659	1,385
December	11,802	12,100	6,469	7,500	89	134

WINTON RETURNING TO GOOD POSITION

CLEVELAND, July 18—The Winton Co., which was caught in the aftermath of the depression of 1920, has been making rapid progress in restoring its finances to normal condition.

Since October, 1921, the company has been operated under the supervision of a creditors' committee, represented by Edwin McEwen as general manager. During that time 50 per cent of the indebtedness has been paid off in cash and the company has current assets double the amount of the balance remaining to be paid.

During the past nine months, the company has brought out a new model which has met with favor in the trade.

Among more important matters of policy, it has been gradually substituting dealer representation for an extensive branch system for the distribution of its cars. In the past month it has disposed of the large New York and Boston branch establishments, and has been fortunate in making strong connections in replacing the branches.

CARAVAN WILL TEACH TRACTOR FARM VALUE

PORTLAND, ORE., July 17—A caravan of trucks, tractors and trailers has left Portland on a 4000-mile tour of Oregon, covering a period of three months, for the purpose of giving lectures and demonstrations on the use of trucks and tractors on the farms. The feature is being directed by the Ford Motor Co.'s Oregon branch at Portland, with a large number of other concerns co-operating.

More than 40 machinists, drivers and lecturers are with the caravan. The itinerary will cover the entire state, the caravan stopping not only at the main points but going out on side roads to reach the more distant points. Stops will be made at rural towns and at centrally located farms in the different communities, where programs including truck and tractor demonstrations with farm machinery, radio concerts, motion pictures, lectures and prize contests will be provided.

W. H. Goodwin, manager of the Oregon branch of the Ford company, is director of the caravan. Goodwin staged a similar caravan in Washington last summer which was a big success. At that time he was assistant manager of the Washington Ford branch at Seattle, but since then he has been promoted to head the Oregon branch.

600 Tires Daily by Victor Rubber

SPRINGFIELD, OHIO, July 15—An average of 600 rubber tires a day is being turned out at the plant of the Victor Rubber Co.

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War Trucks Still Menace to Trade

MANY ARE HERE NOW; MORE MAY BE BROUGHT

Speculators Sell Stocks at Prices Which Make Competition Impossible

DETROIT, July 18—Development of truck business in the United States by manufacturing companies is being seriously handicapped at this time by the presence of the still large stocks of war trucks brought back from Europe by speculating companies. Word has been received in this city of purchases by large fleet owners in recent weeks of war trucks at prices which made competition impossible.

A strong effort is being made by the speculators in war trucks to induce regular dealers in the trucks which they have in stock to handle these at retail to the trade at such profit as they are able to realize. The dealer trade of the entire country is being steadily canvassed by mail to line up a selling organization, and the belief is shared in the industry that with a sales organization formed, the speculators will undertake to bring in many more trucks from abroad.

Big Cut in Prices

Price reduction in five-ton models of two very prominent makes by the speculators in the past few weeks place these at $1,340 and $1,580 respectively, prices which are about on a par with the usual run of one-ton models. These price changes were broadcasted throughout the country to dealers. The most serious effect of the canvass is that it discourages dealers and is retarding the development of new truck business.

In the fact of competition of this kind, truck makers are turning to Washington to seek the passage by the Senate of the Graham resolution which imposes a 90 per cent duty on these reshipped vehicles. The harm done the industry by the presence in this country of war trucks at present is considered as nothing to the damage resulting if the bars are permitted to remain down.

At least five companies are known by truck manufacturers to be prepared to bring in these vehicles at the first indication that the truck market is in satisfactory condition to make for ready sale.

Truck makers report that they have received information from a reliable source that American trucks are being counterfeited in the Krupp factories in Germany, and that these will be shipped back with the war stocks as trucks that were originally made in this country. Because of conditions in Germany and the exchange situation, it is said these trucks can be made up at prices as low as the auction prices on the war trucks.

TRUCKS WILL CARRY MAIL IF STRIKE HOLDS

WASHINGTON, July 18—Postmaster General Work has had plans prepared under which the mails can be transported independently of the railroads if operations on the carriers are interrupted more seriously by the strike. Work says that the department has available 40 airplanes in addition to 40,000 trucks which are in daily use throughout the country, and a surplus of 2000. Two thousand more trucks could be obtained from the War Department.

SPECIALIZED TRUCK BUILDERS AROUSED

DETROIT, July 17—Motor truck companies manufacturing specialized unit vehicles are planning to investigate the reasons for discrimination by the city of New York against trucks in which specialized units are used. Decision to take this step follows the action of the city street cleaning departments in advertising for bids on trucks in which it is specified the engines must be built by the same company manufacturing the truck. By this stipulation the field of bidders has been limited to a half dozen companies.

It is planned to point out to the city that many of the specialized unit manufacturers have been long in the field, that trucks of this type are employed in many cities of the country with success and that the best interests of New York City or any community are not served by the limitation of its purchases to a certain restricted class. Furthermore, it will be asserted that this discrimination is unfair to the representatives of the companies doing business and maintaining properties in the city.

BUS AND TRUCK MEN TO START CAMPAIGN

ATLANTA, July 17—The Georgia Motor Bus & Transportation Association, which includes in its membership not only operators of motor bus and freight lines but also truck and passenger car dealers, will carry on a campaign of education in an effort to show the public and the state legislature the advantages of motor transport.

The main purpose of the campaign will be to defeat a bill presented to the legislature by railroad interests, under which the bus and freight lines would be made common carriers subject to the same rules and regulations as the railroad and under the jurisdiction of the state railroad commission.

NOW MERCHANDISING PERIOD, SAYS MOOCK

This Feature of the Industry Now Supreme, Says Former N. A. D. A. Official

SAN FRANCISCO, July 18—The history of the automobile industry will make the most wonderful and the most interesting reading for the generations to come the world has ever known, according to Harry G. Moock, assistant sales manager of the Hudson Motor Car Co. and formerly secretary of the National Automobile Dealers Association, in a talk he made to the sales organization of H. O. Harrison Co., Hudson-Essex distributors in this city.

"Our industry is now twenty-two years old and is in its third period," declared Moock. "The first ten years was the engineering period, when engineers racked their brains and worked like Trojans planning and designing a practical vehicle for individual transportation. At first the results of their labors were crude, but within the limit of their time their product evolved itself into virtually our motor car of to-day, which, of course, like any other commodity is being constantly improved."

Continuing, he said:

Factories at Acme of Efficiency

The second period, of another ten years, was devoted to production. It also was a mighty problem, but the manufacturers persevered until today automobile factories are the very acme of efficiency and it was not long ago that one plant announced it was turning out a motor car every six seconds. The Hudson and Essex factory can produce an automobile every two minutes.

The present time and third era is what might be called the merchandising period. There are 177 passenger car factories in the country today and fifteen of them could manufacture all the automobiles needed by the public, and consequently the industry is entering one of the most keenly contested campaigns for business that probably any line of business has ever experienced.

Moock has been away from the factory for about five months and has traveled all over the United States. He states that with the exception of a few labor difficulties good times prevail.

Speaking of conditions, he said:

The agricultural situation is particularly good, practically everywhere everything points to a much improved market for farm produce. And when conditions with the farmer are healthy, it is reflected in the money market, industrials and in every line of business.

Occasionally we hear the query, "when will the point of saturation in the automobile business be reached?" There never will be such a thing. As long as we have boys and girls, there will always be a demand for motor cars.

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FIAT 2-LITRE CAR TAKES GRAND PRIX

Italians Make New Records in French Classic with Light Engines

By W. F. BRADLEY

STRASBOURG, FRANCE, July 15 (*By Cable*)—The 2-litre cars, 122 cu. in., demonstrated in the Grand Prix race to-day that they can give higher speeds than those of 3-litres, 180 cu. in., did last year. Felix Nazzaro, a race driver familiar in America 12 years ago, won in a Fiat, covering the 499 miles at 79.3 m.p.h. The time was 6:17:17. Last year Jimmy Murphy in his 3-litre Duesenberg averaged 78.1 m.p.h. for the shorter distance of 322 miles. This year's race was over a triangular course, 8.3 miles per lap, and 60 laps were covered. All cars started in one group, three abreast across the roadway, as at Indianapolis. It was the first time such a start ever was used in a road race.

Italians Win All Honors

It was a veritable Italian field day with Bugatti cars finishing second and third, and another Bugatti still running when the race was called off. Of eighteen starters only three finished the 60 laps. The times of the Buggatis were:

Bugatti—Viscaya 17:15:09
Bugatti—Marco 7:48:04

None of the French or English cars finished the race. All three Ballots had to retire, as did the British Sunbeams.

Perhaps the greatest feature of the race was the fact that there was not a single tire blowout from start to finish. Drivers were forbidden to carry spare wheels, agreeing to complete the circuit to the pits on a flat tire if necessary. It was the first time such sustained road race speed for approximately 600 miles had been maintained without tire troubles.

While there were no tire troubles there was a perfect medley of mechanical troubles, indicating that the engineers of 122 cu. in. cars have still a good deal of refining to do before they are seasoned products. The mechanical troubles were broken crankshafts, connecting rods, pistons and valve stems. There were some cases of broken magneto drive and one of a wheel coming off. When it is remembered that the engines in some of the cars had a crankshaft speed of 5000 r.p.m. and higher, it is not surprising that mechanical troubles developed. This was the first Grand Prix race in which the rules restricted the entries to two litres. Last year one 2-litre car competed and finished third.

Four-Wheel Brakes Predominated

The race was run on a course slippery after heavy rains, but which dried considerably because of the strong wind which blew during the race. It was necessary to take the turns with caution. Four-wheel brakes were used on most of the cars.

The race was a Waterloo for many of the classic drivers of Europe, whose names will remain forever closely associated with early racing in Europe and America. Some of those to drop out were:

Goux, in a Ballot, who ran through a fence but was not hurt, and claimed to have been forced off by Nazzaro, the winner.

Wagner, winner of the American Grand Prix in 1908, went out with a broken connecting rod.

Hemery, who so frequently drove the Benz in American road races, was eliminated by his car catching fire.

Chassagne, familiar in Indianapolis races, broke a valve stem in his Sunbeam.

The same fate befell his running mate, Guinness.

Guyot was eliminated with broken crankshaft.

There was one fatal accident. The victim was Biagio Nazzaro, nephew of Felix Nazzaro, the winner. He was killed when his Fiat overturned in the fifty-third lap, when he was running in third position. His mechanic was seriously injured.

Fiat Made Good Showing

The Fiat team dominated the field throughout the race, except for a brief period of 5 minutes, when Frederic Bugatti took the lead. The Fiats ran one, two and three for most of the race, and two laps from the finish were holding second place, as well as leading. Bordino lost a rear wheel after having held all lap records during the race. His withdrawal and Biagio Nazzaro's accident, happening within a few minutes of each other, lost second and third places when they were leading the nearest Bugatti by nearly an hour.

In addition to the two Buggatis which finished second and third, three others were running at the finish, but were never dangerous competitors.

The two British Aston-Martin cars, 1½ litre capacity, made a good showing during the first half of the race, holding their position with all the cars, except the Fiats, but were eliminated at 300 miles because of magneto trouble.

VOISIN KNIGHT WINS FUEL GRAND PRIX

First Three Places Captured by Knight Engines in Fuel Race

By W. F. BRADLEY

STRASBOURG, FRANCE, July 16—To-day's race for four-passenger stock touring cars in which each was given a fixed quantity of fuel to cover the 444 miles was a great victory for the Knight sleeve valve type of engine, which won three and perhaps more of the first positions. It was won by Rugier, driving a Voisin Knight type. The race was an easy victory for Voisin who covered the distance in 6:35:09, or 67.4 m.p.h. The nearest competitor was Durai in another Voisin, 2 minutes behind. In this race the stock cars were allowed 13.7 miles per gallon, and were given enough fuel to cover the distance at that rate. The cars carried four-passenger bodies, the driver being the only passenger, but each car carried 154 lbs. weight for each of the supposed three additional passengers.

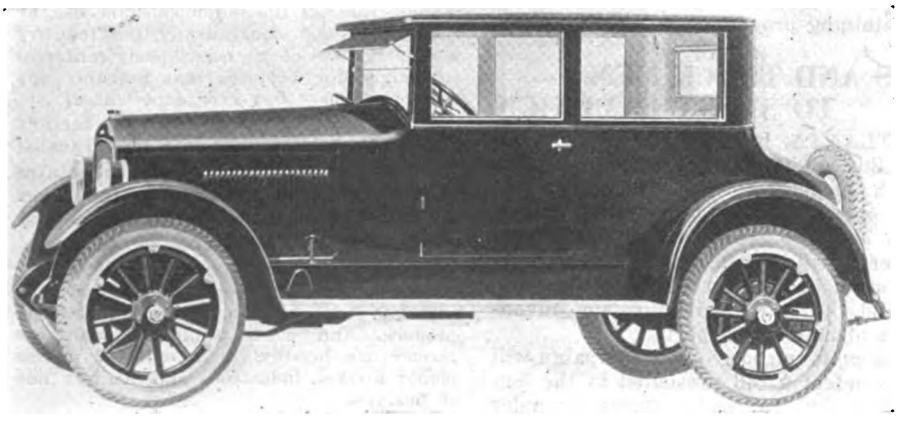
The winner used a Solex carburetor. The Voisin is a four-cylinder car, 95x140 mm. and used magneto and Delco ignition.

Those who finished were:

Voisin—Rugier 6:35:09
Voisin—Durai 6:37:31
Voisin—Gauderman 6:42:57
Peugeot—Boillot 6:46:41
Voisin—Piccioni 6:49:58
Peugeot—Artault 7:21 25

The Peugeot-Boillot used a sleeve valve type of engine.

Jewett Coupe, $1395, Which Will Be Delivered in July



The latest Jewett model to be announced is the coupe, $1395, which is now getting into production. Deliverics will start some time in July. It is a four-passenger car with all metal panels over a wood frame. The body is 77 in. long and 57 in. wide. The equipment includes cowl ventilator, sun visor, dome light, locks on the doors and lever window lifts

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FORD CANADIAN PLANT TO DOUBLE CAPACITY

Ultimate Plan 1000 Cars Daily —Buys Land for Additions

DETROIT, July 17—The Ford Motor Co. of Canada, Ltd., has paid $1,000,000 for the land adjoining its border city plant on which it is proposed to erect structures which will enable it to double its present capacity of 250 cars daily. An ultimate 1000 cars a day production is contemplated, according to W. R. Campbell, vice-president in charge of operations at the Canadian plant.

Plans for the extension of the plant activities have been worked out in conjunction with Henry Ford, president of the Canadian company. Engineers are now preparing plans for the buildings, which will include machine, forge and body shops, and foundries. Other buildings will be added later, which will provide for the manufacture of all parts and equipment used in the Canadian Ford car. With the completion of the new buildings, the former headquarters will become the body plant. The property provides a river frontage of 2000 ft. and is served by the Grand Trunk and Essex Terminal railroads. According to Ford, the establishing of a tractor plant is contemplated in conjunction with the extension of car manufacturing facilities.

Canadian Demand Good

Tractor building in Canada is contingent upon the location of a water power site. Vice-president Campbell, in explaining the car expansion plans, said:

We have done little construction for several years and we have come through the depression nicely. Our company has enjoyed a healthy year. The Canadian demand for our car is growing. Export business is increasing. Canada is again in a healthy condition. The Canadian market can absorb all the cars we can make and we feel that we should set the example for greater activities in the Dominion.

All engineering activities connected with the Henry Ford enterprises will be housed in a special laboratory building at Dearborn, adjoining the present buildings of the company, which will be razed when the new structure is completed. The new building will be of Grecian style of architecture, one story in height, and will be 800 x 200 ft. in size. The cost will approximate $500,000.

In a statement on the new building, Henry Ford said that about 200 men will be employed, half of whom will be mechanics, and "we may as well call the other half scientists."

Premier In Receivership

INDIANAPOLIS, July 17—The Premier Motor Corp. has been placed in the hands of a receiver by Judge Linn D. Hay of the Superior Court of this city. The Fletcher Savings and Trust Co. was appointed. The suit, said to be a friendly one, was filed by the American Foundry Co., a creditor.

The petition sought judgment of $2,970.82 and asked that the Premier Motor Corp. officers be enjoined from interfering with any property or control after the receiver had been appointed.

The receiver, it is said, will continue to operate the plant pending the effort of the reorganization committee to complete the plans now under way.

Second Receivership for Premier

INDIANAPOLIS, July 18—A second receivership suit has been filed in Wilmington, Del., against the Premier Motor Corp., incorporated under Delaware laws, Chancellor Wolcott appointing Elmer E. Mitchell of Wilmington receiver.

STUDEBAKER TO HAVE NEW SERVICE HOMES

CLEVELAND, July 18—The Studebaker Corp. of America will begin work at once on a new service station on East Twenty-fifth Street, near Payne Avenue, in this city, which will cost about $250,000. The building will be ready for occupancy about Oct. 1. The structure will be a model building of its type with 85,000 sq. ft. of floor space. It will be equipped with the most modern machinery and time-saving devices.

The floors will be connected with ramps in the center of the building and all doors will be operated electrically. There will be a large reception room on the ground floor for the convenience of owners while waiting for minor repairs or adjustments. A separate department will be operated to prepare new cars for delivery to owners.

BROOKLYN, July 15—Work has been started on the erection of a new service station here on property purchased by the Studebaker Corp. at Bergen and Dean streets. The expenditure, including the cost of land, will amount to about $500,000.

68,128 BODIES FORD'S OWN OUTPUT FOR MAY

Foundries Establish Record—Work on New Electric Furnaces Progressing

DETROIT, July 17—Ford Motor Co. body plant at the River Rouge reached a production of 68,128 bodies in May, 15,542 being sedan and the balance, 52,586, touring. With production of cars in that month reaching approximately 120,000 (excluding trucks and tractors), the company is now building more than 50 per cent of its own bodies. Of those made outside, the larger part is the coupe body, which is one of the company's most popular models.

Daily production schedules set in the body plant for June were 2400 phaetons and 900 sedans.

The Ford foundries at the Rouge established a record output for cylinder blocks in a single day on May 24, when 7687 were cast. The average daily output of cylinder blocks at this time is 7100.

Erecting of the electric furnaces at the Rouge is reported to be progressing rapidly.

Packard Has Big Quarter

DETROIT, July 15—Sales of the Packard Motor Car Co. for the third quarter of its fiscal year ending May 31 totaled 4305 vehicles and amounted to $11,226,958. Net profits from operation for the quarter were $317,959.

Factory inventories were reduced from $9,527,575 to $6,144,289 and inventories at factory branches from $7,250,487 to $5,117,016. The company's holdings of cash and bonds amounted to over $15,800,000, an increase of $5,000,000 in the quarter.

JEAN CHASSAGNE WINS FIRST ROAD RACE HELD IN GREAT BRITAIN SINCE LATE WAR

ISLE OF MAN, July 1 (*By Mail*)—The International Tourist Trophy Race run here under the auspices of the Royal Automobile Club and, incidentally, the first road race held in Great Britain since the war, was won by Jean Chassagne in an eight-cylinder Sunbeam at an average speed of 55.78 m.p.h. The course covered 37.75 miles.

F. C. Clement driving a Bentley finished the course only four minutes behind Chassagne Third place was won by O. Payne in a Vauxhall, six seconds ahead of the fourth arrival, W. O. Bentley, driving a Bentley.

Five cars out of nine entered, finished, the three Bentleys being the only team that completed the course.

Simultaneously the "Fifteen Hundred" Trophy Light Car Race over six circuits of the same course was won by Sir Algernon Lee Guinness, driving a four-cylinder Talbot-Darracq at the average speed of 53.30 m.p.h.

Inclement weather marred the race to a great extent, a heavy rain that set in at the start and continuing until the finish rendering the already difficult course still more trying.

The five cars finishing are as follows:

Driver and Car	Cylinders, Bore and Stroke	Time	M.P.H.
J. Chassagne (Sunbeam)	8—2 15/32 x 4 13/32	5.24:50	55.78
F. C. Clement (Bentley)	4—3 5/32 x 5 7/8	5.28:59 3/5	55.60
O. Payne (Vauxhall)	4—3 11/32 x 5 3/16	5.43:45 1/5	52.80
W. O. Bentley (Bentley)	4—3 5/32 x 5 7/8	5.43:51 1/5	52.69
W. D. Hawkes (Bentley)	4—3 11/32 x 5 3/16	6.28:41	46.61

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ALL NORTHWEST SENDS DELEGATES TO MEETING

Washington Holds First Convention Since Formation of One Association

OLYMPIA, WASH., July 18—The biggest and best convention in the history of the automobile industry of Washington State opens here Friday with delegations from all parts of the Northwest in attendance. The gathering marks the first convention since the dealers and the trades merged into a single association, and will draw the largest attendance ever seen here.

Organized opposition to a proposed gasoline tax of three cents a gallon, better merchandising methods in handling used cars and higher efficiency in service practice, will be some of the big topics of the convention, discussed by those attending.

Among the guests of the convention will be P. E. Chamberlain, Lynn Shaw of the N. A. D. A.; Gordon Lee, chief of the automotive division of the Department of Commerce, Washington, D. C., and tire and service managers from all parts of the West. Seven craft conferences will mark Friday's sessions, ending with a banquet and dance Saturday night. The general session of the convention, in which all branches of the trade will participate, will be held Saturday.

EXPECT G. M. PROFITS TO EXCEED ESTIMATE

WILMINGTON, DEL., July 18—While the balance sheet for the General Motors Corp. has not been issued, it is learned on reliable authority that it will show operating profits of between $30,000,000 and $33,000,000 for the first six months of the current year, considerably exceeding the expectations of the officers.

The company has liquidated all of its bank loans, which at their peak totaled $80,000,000. Resumption of dividends on common stock depends on the volume of business for the remainder of the year. The inventory, it is said, will show under estimates of values, rather than over estimates. The company showed a final deficit of $65,000,000 at the close of 1921.

N. A. C. C. SETS DATE FOR N. Y. SHOW WEEK

BUFFALO, July 17—The most important action taken at the meeting of the directors of the National Automobile Chamber of Commerce at the Buffalo Country Club was the decision to hold the annual New York show the week of Jan. 6.

Colonel Charles Clifton, president of the N. A. C. C., presided at the meeting. Reports received by General Manager Reeves show that sales of cars and trucks are holding up well all over the country, but that something of a slowing up may be expected soon. Much gratification was expressed over the extraordinary production record of 271,000 cars and trucks in June.

MASON TRUCK MAKES 1949-MILE TEST RUN

FLINT, MICH., July 18—The Mason Motor Truck Co. has completed a test run to New York and return with an experimental model of its one-ton "road king" truck, which covered the distance of 1949 miles without a single mechanical repair. When the truck reached New York it was accepted by W. C. Durant without change.

Durant declared it was the first experimental job he ever saw which was accepted without change after its maiden trip.

The truck averaged 15.5 miles per gal. of gasoline for the entire distance.

Production of the one-ton model will begin at once. Experimental work has been started on a two-ton model which will be produced in about 90 days.

Black & Decker Pays Dividends

BALTIMORE, July 18—The Black & Decker Manufacturing Co., Towson Heights, paid a dividend of 2 per cent on the preferred stock for the second quarter and at the same time paid a dividend of 2 per cent for the fourth quarter last year, which is the only dividend that the company had passed.

Sales for the first six months of this year were nearly a million dollars gross.

G. M. C. WORKS OUT UNIFORM CONTRACT

Can Be Cancelled Only for Cause—Sliding Scale of Discounts

DETROIT, MICH., July 18—Following a series of conferences between executives of the several car manufacturing divisions of the General Motors Corp., a contract with dealers has been developed which will embody the best features of former contracts of the several units and make them available to dealers in all cars made by the five divisions of the corporation.

The contract itself is made in perpetuity with the dealer and can be cancelled only for cause. Each division will continue as formerly to enter into contracts with its dealers and these contracts will be filed with the division headquarters. Complete authority in the merchandising of its products is vested in the producing division.

Under the new form of dealer relationship, there will be no renewing of contracts at stated intervals, but instead changes that may be advisable from time to time will be made in the form of appendixes to the contract proper. These will vary according to the needs of the particular manufacturing divisions.

Discounts According to Volume

An outstanding feature of the contract is that it provides discounts according to the volume of business done by the dealer. There is a sliding scale which gives to every dealer an opportunity to increase his earnings by increasing his business. In providing for this the corporation wishes every man to know the basis upon which he is doing business.

Through the contract it is hoped to establish division control over the freight and handling charges incident to the shipping of cars, so that each division may be in position to know just what its product should retail for in any given section of the country. The fixing of these charges has to this time rested with the dealer entirely and varied largely. Under the contract these charges will be brought to a more uniform basis.

Kansas City Sees the Fordson at Work



The industrial uses of the tractor were featured at the recent Fordson tractor show in Kansas City. The exhibition drew an attendance of 15,000 people from which 1500 prospects were obtained. The show was conducted by the Greater Kansas City Fordson organization of 13 dealers

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TRUCKS MAY BE USED BY MILK PRODUCERS

Steps Taken in Event I. C. C. Refuses to Allow Lower Freight Rates

WASHINGTON, July 18 — Steps are being taken toward the employment of motor trucks in the transportation of milk, on short line hauls from the "milk sheds" to large cities. This announcement was made here by Charles Holman, executive secretary of the National Milk Producers Association, composed of twenty-six allied associations having more than 200,000 members.

Because of the excessive rates on milk and cream, which are now being transported by the railways and on which the recent reduction of rates does not apply, the milk producers must turn to some other source of transportation, and the truck, the association believes, offers the solution.

Seeking a Solution

So convinced is the association that it will be necessary to resort to truck transportation that it has asked the National Automobile Chamber of Commerce to submit proposals and data on the best method of solving the problem of their members.

Pending the survey of the situation by the N. A. C. C., the milk producers are bending their efforts to have the Interstate Commerce Commission issue an order permitting them lower rates on the transportation of their product. Because of the fact, however, that all milk and cream is transported by passenger and express trains, little hope is entertained for a reduction in rates.

Chief among the problems submitted to the N. A. C. C. is whether it would be more economical for the association to operate its own milk trucks in fleets, or whether it would be best to organize a holding company, the stock to be sold to the milk producers, which would handle all short haul milk.

HUDSON JUNE SALES LARGEST IN HISTORY

DETROIT, July 17—Comparing business for the first six months of this year with 1920, the former leading production year, Hudson Motor Car Co. declares that sales for the six months period have been 95 per cent of the total sales in the same period in 1920. Before Sept. 1 production is expected to pass the production figure for the first eight months of 1920, and the output for the remainder of this year will run far ahead of the latter part of the former record holder.

July sales will be about 18 per cent greater than in July, 1920. The August output will be more than 50 per cent higher than in August, 1920, and more than 200 per cent greater than in 1921. June sales were the largest for any single month in the company's history.

Indications that the farmer will soon come into the market are found by the company in the fact that heavy orders are coming in from distributors in the farm belts. This is particularly true at the southern points. Dealers on the eastern coast and the Pacific northwest down to San Francisco and east to Salt Lake City are also reported placing unusually large shipments.

SAFETY-FIRST DRIVE HITS AT PEDESTRIAN

CLEVELAND, July 18—The entire community has been united under the leadership of the Safety Council of the Cleveland Chamber of Commerce in a drive to make the pedestrians obey traffic laws.

It is the first time since the automobile came into general use that safety drives have not been directed against owners of cars and the first time that the pedestrian has been directed in a city-wide campaign to watch his step.

The campaign was organized by Adam Lintz, secretary of the Safety Council, but a share of the credit for the movement is given M. F. Bramley, president of the Templar Motor Car Co. and president of the Safety Council.

On all down-town posts, pasteboard crosses similar to those at steam railroad crossings have been placed. Eighteen hundred of these are doing duty in the city. These warn pedestrians to "stop, look and live"; to "Don't Jay-Walk" and "Avoid Accidents."

One thousand boy scouts have volunteered for service, and they are distributing cards bearing this warning: "Don't be a Jay-Walker. Please cross at crossing; it helps to reduce accidents."

G. M. FINDS DEMAND FOR BUSES GROWING

PONTIAC, MICH., July 17—Healthy demand is being met by the motor bus model being turned out by the General Motors Truck Co. at the plant here, according to W. L. Day, general manager. Day said that while development of this field is naturally slower than with the standard truck models, there is every indication of big business ahead, and stated that the production of the plant thus far had been readily absorbed.

No special effort is being made to push the bus model at present, though factory officials have indicated that it is likely efforts will be made to place the bus generally on lines for interurban traffic and in consolidated district school use.

Gray Models Delivered

CHICAGO, July 18—The Gray car in the open model is now on display at the salesrooms of the Simmons-Handin Motor Co., Chicago distributor, and delivery is being made of the phaetons and chassis.

SENATE GETS STARTED ON GASOLINE PROBE

Huge Consumption of Fuel in May Draws on Reserve Stocks

WASHINGTON, July 18—The Senate's investigation of the price of gasoline and oil is under way. The inquiry is being conducted by a special committee, appointed from members of the Senate Manufacturing Committee, seeking to find the cause for recent increases in the retail prices of gasoline and allied products.

The personnel of the Committee includes Senator Robert M. LaFollette, chairman of the Manufactures Committee; Senators McNary of Oregon, Jones of New Mexico, and Smith of South Carolina.

Gasoline Consumption Jumps

Reflecting the tremendous increase in the use of motor vehicles during the late spring and early summer months, refinery statistics for May, as compiled by the Bureau of Mines, show that domestic consumption of gasoline is breaking all records. The May consumption figures are within 4,000,000 gallons of the August peak figures, although occurring three months before the customary month of largest consumption.

Stocks have been abnormally reduced through sales to jobbers and it is expected that the June consumption figures will exceed the high mark of August of last year. Total gasoline consumption for May amounted to 499,242,343 gallons against a production of 513,658,966. The daily average consumption amounted to 17,949,178 gallons, while the daily average production amounted to 16,798,834 gallons. These figures relating to consumption include exports and shipments to insular possessions. Production of gasoline increased 41,000,000 gallons over the month of April.

JULY WITH OAKLAND MAY SURPASS JUNE

PONTIAC, MICH., July 18 — More orders for motor cars are booked ahead for July production at the plant of the Oakland Motor Car Co. than have been on the books for any month in the past ten, according to W. R. Tracy, assistant sales manager. July promises to exceed June business, which was 50 per cent better than that of June, 1921, and closely approached that of June, 1920, according to Tracy.

Good Overland Quarter

TOLEDO, July 17—The Willys-Overland Co. reports that the second quarter of 1922 was one of the best business periods it has had in years. Orders on hand indicate that shipments for the next quarter will exceed 50,000 cars. Compared with the first five months in 1921, Willys-Overland sales increased 348 per cent in the same period of 1922. The increase in business was largest in the South, where it was 406 per cent.

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PIERCE ANNOUNCES BIG PRICE SLASH

All Models Cut—Closed Cars Show Trend with Heaviest Reduction

BUFFALO, July 17—The Pierce-Arrow Motor Car Co. announces substantial reductions in the prices of all its passenger cars. The list follows:

	Old Price	New Price
4 and 7 pass. Touring..	$6,500	$5,250
Coupe	8,000	6,800
Sedan	8,500	7,000

The reduction of $1,000 in the price of the coupe and $1,500 in the price of the sedan are significant of the sharp downward trend in closed car prices.

CASE HAS NEW MODEL; ALL PRICES REVISED

RACINE, WIS., July 17—The J. I. Case Threshing Machine Co. has brought out its new Model W which replaces the previous Model V. The new car is slightly longer, the wheelbase being 129 in. as against 126 on the older model. The engine bore is 3⅝ in. as against 3½ in. The stroke is the same, 5¼ in. The prices on the new model are:

5 pass. phaeton.....	$2,200
7 pass. phaeton.....	2,250
Coupe	2,850
Sedan	3,250

These prices are several hundred dollars higher than the previous Model V. Prices on the Model X, which is to be continued, have been reduced. Following are the old and new prices:

	Old	New
2 pass. roadster (new).....	....	$1,750
5 pass. phaeton.....	$1,890	1,790
Coupe (new).....	....	2,550
Sedan	2,790	2,690

20 PER CENT PRICE CUT MADE BY MASON

AKRON, July 17—The Mason Tire & Rubber Co. announces price reductions averaging a little more than 20 per cent on all sizes of cord tires. The 30x3½ clincher has been cut from $18.75 to $13.95 and a new straight side 30x3½ line has been added at $15.85. The company also has cut its prices on fabrics in Ford sizes. The 30x3 has been reduced from $11.90 to $9.25, and the 30x3½ from $13.50 to $10.60.

These reductions bring the Mason prices into line with those previously established by the other larger companies.

Increases on Davis

RICHMOND, IND., July 15—The Geo. W. Davis Motor Car Co. has announced an increase in price of $100 on its Model 71, five-passenger phaeton, the new price being $1,295.

Stanley Prices Revised

NEWTON, MASS., July 18—The following price changes have been announced by the Stanley Motor Carriage Co., affecting its entire line of models:

	Old Price	New Price
2-pass. roadster	$2,800	$2,700
5-pass. phaeton.....	2,600	2,700
7-pass. phaeton.....	2,600	2,700
Sedan	3,850	3,950

Monroe Prices Increased

INDIANAPOLIS, July 18—An increase in price of the Monroe, affecting both the roadster and five-passenger phaeton, has been made by the William Small Co. as follows:

	Old Price	New Price
2-pass. roadster.....	$875	$950
5-pass. phaeton...	875	950

Lafayette Increases Prices

INDIANAPOLIS, July 17—Lafayette Motors Co. announces an increase in the price of its coupe from $5,000 to $5,500 and of its sedan from $5,175 to $5,500.

International Cuts Prices

CHICAGO, July 18—Price reductions on three truck models have been announced by the International Harvester Co., effective July 8. The models and prices follow:

	Old Price	New Price
Speed truck (2000 lb. capacity)	$1,500	$1,250
Model 21—1-ton.....	1,750	1,550
Model 31—1½-ton.....	1,850	1,650

Lauson Cuts Prices

NEW HOLSTEIN, WIS., July 18—The John Lauson Manufacturing Co. has made the following reductions in the prices of its tractor models:

	Old Price	New Price
Model 5.....	$1,495	$1,295
Model 21.....	1,875	1,675
Road Model....	2,100	2,000

New Earl Model

JACKSON, MICH., July 17—Earl Motors, Inc., has announced a new closed job, a four-passenger car, called the Cabriole, the price of which is $1,395.

PRO-HORSE CAMPAIGN INCURS RESENTMENT

TORONTO, ONT., July 18—The Ford Motor Co. of Canada, Ltd., has issued a strong protest against the campaign now being carried on by the Dominion livestock branch of the Department of Agriculture, Ottawa, encouraging the use of horses on farms.

The Ford company and other tractor manufacturers resent the use of their money in propagating ideas detrimental to their business. Appeals have been made to the Department of Trade and Commerce, the Canadian Manufacturers Association and the Association of Canadian Advertisers.

PRICE IS BECOMING CHIEF TIRE FACTOR

Cuts, Increases and Cheaper Lines to Meet Competition Demoralizing

AKRON, OHIO, July 17—Price cuts, price increases and production of cheap tires to meet competition by some of the larger rubber companies have added materially to the demoralization of the automobile tire industry in Akron.

The Mason Tire & Rubber Co. has announced a 25 per cent reduction in its entire line and also announced a new oversized, non-skid, air bag cured Ford cord tire to sell for $11.80.

At the same time the American Rubber & Tire Co. announced an increase in its cord tire line of 5 to 10 per cent.

Mason Tire & Rubber stated in its announcement that the time had come to bring tire prices definitely to rock bottom to prepare for fall business and spring dating orders.

"Special discounts by dealers must stop. Everyone must know the price of tires, and they must become stabilized if we are to get any volume of spring dating business this fall. The time has come for a new 'true value tire list'," D. M. Mason, vice-president and general manager, said.

The American statement gives evidence in an entirely new direction.

"We made a thorough canvass of our dealers before making the announcement regarding an increase in tire prices, and we feel that they will support us in this move," H. L. Hauck, general manager, stated.

"We placed the proposition of increasing prices and maintaining quality, or cutting the price and decreasing quality, squarely up to our dealers. We explained the predicament in which we found ourselves, and we have been agreeably surprised in the manner with which the dealers back us in our suggestion of price raising," Hauck said.

Increase Confined to Cords

For the present the increase is confined to cord tires, and it is not likely that the increase will be extended to fabrics.

Official confirmation of the production of new brands of tires to meet the cheapest possible competition cannot be obtained at the larger factories, but dealers report they are being flooded with announcements regarding the new tires.

Some of the industrial leaders have practically confirmed the report privately, although all hesitate to make any statement for publication permitting the use of the company name.

One official of a large company who refused to have his company mentioned as manufacturing this class of tires stated privately, however, that the cheap tire business has become necessary because of the large demand for original low cost equipment and to use up some of the high cost raw materials which still remain on hand.

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CLEVELAND EXPANDS ASSOCIATION WORK

Under Buckman's Direction, Trade Body Is Active Through Three Divisions

CLEVELAND, July 19—A dealers' association with three active divisions is the achievement of only two months' work of the trade in Cleveland. Since the Cleveland Automobile Manufacturers and Dealers Association put itself on an aggressive trade association basis June 1 by employing a full time manager, it has organized a sales managers' division and service managers' division, in addition to the association proper, which includes only passenger car dealers.

The three groups are holding regular separate meetings and have in prospect joint meetings of two groups, or all three, as the work progresses.

The expansion of the association's work is being conducted by Herbert Buckman, who was assistant secretary of the association, publicity manager of the Cleveland show and editor of the Ohio *Motorist*, organ of the Cleveland Automobile Club, when the office personnel of the club and the dealers' association were one. When a complete separation came in June, Buckman severed all connections with the club and became the active head of the dealer organization.

Working on Trade Problems

The reorganized association took headquarters in the Stuyvesant Building in Euclid Avenue, in the heart of Automobile Row, and immediately undertook intensive trade activities. The association proper is working on the general problems of the trade, including study of the used car situation, investigation of methods of raising the quality of the employed personnel, in the city's dealer establishments, and planning for the annual show, which this year will be held in the new $8,000,000 Cleveland Exposition Building.

Buckman's first activity was the organization of the service managers' division, which meets every week with a chairman of its own and with no dealers present. Discussions have included the divergence in discounts on parts allowed other dealers and garages, the flat rate system, co-operation in hiring men so that good men will get good recommendations from one shop to another and poor men will not be able to impose their incapabilities on employers who do not know their history.

The sales managers' division also has been meeting weekly with its own chairman. One week's discussion was devoted to the question of raising the standard of salesmen in the business and the suggestion was offered that every effort should be made to use men of mental and personal quality, able to meet the biggest business men in the city, to talk the sale of cars. At one of the sales managers' meetings used car managers were called in and the discussion centered on the method of selling used cars, with considerable enlightenment for the assemblage through a frank interchange of ideas.

The association is getting along for the present with cramped quarters, while additional space, including restaurant facilities, is being provided. In the meantime, meetings are held at hotels and restaurants. In the case of divisional meetings, the firms represented pay the luncheon cost of the men who represent them.

The Cleveland association in past years gave most of its attention to the annual show. The present plan is to keep up a continuous round of trade activity, so there will be as nearly as possible complete acquaintance and understanding among dealers and their sales and service managers, thus avoiding employment of business tactics which cause loss to men in the trade without performing any constructive service for the public.

WORK ON SOUTHERN TRACKS UNDER WAY

KANSAS CITY, MO., July 18—The Kansas City Speedway Association is pushing work on the track and grandstand at the new speedway and expects to hold the first race Sept. 15.

Some of the topliners among the racing drivers will be entered in the competition.

HOUSTON, TEX., July 18—Work is in progress on the construction of a regulation speedway at Bellaire, a suburb of this city.

Present plans contemplate the building of the course only. If sufficient interest and support develops after the course is opened a grandstand will be erected.

NUMBER OF DEALERS INCREASING IN IOWA

Gloom Dispersed by Better Conditions That Exist Among Farmers of State

DES MOINES, July 18—Six months ago there was not a motor car dealer in Iowa who expected that the business would come back in Iowa as it has done in the past ninety days. Jan. 1 there was little but gloom in Iowa, as the business of the state is largely dependent upon the farmer and the collapse of produce prices had wrought havoc with him.

However, with general business rallying the motor car business came back with a bang, and during the past ninety days there has been a demand, particularly in the cities of the state, which was not expected for at least a year. Any number of Des Moines dealers report business far beyond that of 1921, and many of them are far behind their orders on account of failure to secure deliveries.

Although the demand from the farmers is still backward, the farmer has secured some money through the sale of hogs and the condition is better than it has been for eighteen months.

Evidences of the general improvement of the motor car business in Iowa are the renewing of contracts and the opening of new agencies in various parts of the state. Last winter there were a large number of retirements from the business by firms not well established. With the rebound there are at present almost the normal number of dealers.

SALES IN VANCOUVER REFLECT CONDITIONS

VANCOUVER, B. C., July 18—Taxes or no taxes, Vancouver people are buying new cars. During May over 300 were sold in Vancouver, representing every well known make. June sales will outstrip May, dealers believe.

Some idea of the prosperity of Vancouver may be gathered from the sales of new cars in this city during the past three weeks. Despite increased taxation they reached a total of 164, according to the motor license department at the provincial court house.

Philadelphia Accessory Business Men at Summer Outing



It's open season for annual outings of automotive associations, and not the least among those at which it is reported "a pleasant time, etc.," was the day's play of the Automobile Accessories Business Association of Philadelphia, at Betzwood, Pa., June 23. In the center, sitting, is W. H. Metcalfe, President.

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ASSOCIATION ACTIVITIES

Indianapolis Dealers Close Sundays

INDIANAPOLIS, July 17 — A movement for Sunday closing of all retail salesrooms of members of the Indianapolis Automobile Trade Association is now under way, and July 9 saw a considerable number of establishments closed. John B. Orman, secretary and manager of the association, says that there will be no compulsion in this movement, but that a majority of the leading dealers have agreed to plant the custom firmly in the city.

Cards for display in doorways and windows announcing "Closed on Sunday" were distributed during the last week in June and a number of dealers who had not yet agreed to the plan signified their intention of giving Sunday selling a long vacation.

Several of the dealers who have been forced by the custom to keep open house on Sunday say that it has never paid, and that a large majority of the prospects who come down the row Sunday morning and afternoon are mere "lookers" and not likely buyers. Among dealers interviewed were several who said that even Sunday opening for service stations seemed more or less unnecessary, particularly so at this time of the year.

St. Louis Officials Take Office

ST. LOUIS, July 18—The officials of the Motor Accessory Trade Association of St. Louis, who were elected at the annual meeting May 9, assumed office at an open-air meeting at Forest Park Highlands. The retiring president, G. G. Giese of the Alastic Tire Cushion Co., who was chosen as a director, made a farewell address, in which he told of some of the accomplishments of his administration. The membership of the association was increased from less than 70 to 138 during the past year.

H. H. Fleer of the Fleer-Petty Co., the new president, outlined the activities proposed for the new year. The other new officials are: H. W. Kruse, Beck-Corbitt Iron Co., vice-president, and H. Kollmer of the Auto Salvage Co., sergeant-at-arms. Directors in addition to Giese are Charles A. Merien of the H. & H. Machine Co., J. F. Quan, Fred Campbell Auto Supply Co., and L. B. Tebbetts of the L. B. Tebbetts Co. Robert E. Lee, one of the organizers of the association, was re-elected secretary and treasurer for the fourteenth time.

Sherman Speaks at Columbus

COLUMBUS, OHIO, July 17—Ray W. Sherman, merchandising director of the Automotive Equipment Association, was the headliner at a meeting held here under the auspices of that organization. About 200 dealers and guests attended the meeting, which was opened with a banquet at the Elks' Club. Members of the local branch of the association are the Griswold-Sohl Co. Pennsylvania Rubber & Supply Co., Columbus McKinnon Chain Co., Ironsides Co., J. H. & F. A. Sells Co., Justus & Parker and the J. P. Gordon Co.

Kansas City Reforms Taxation

KANSAS CITY, July 18—The Kansas City Motor Car Dealers Association has recently accomplished much in the way of tax justice to motor car owners.

A joint meeting with assessors was recently held at which the association made recommendations in order to adjust inaccurate assessments. The association took the stand that it was ridiculous to assess cars for more than they would sell for in the market. Assessors in Kansas City have now agreed to assess all cars on a standardized basis.

Under former conditions, cases often arose where owners of a 1920 model, which was assessed at its 1920 cost price, were obliged to pay a higher tax than owners of a 1922 model. This inequality arose because motor cars were assessed not on their market value at the time of the assessment, but at the price they brought in the year when the purchase was made.

Houston After Members

HOUSTON, TEXAS, July 18—The reorganized Houston Automobile Trades Association is now engaged in an active campaign for members. The association in the future will pay as much attention to the wants and needs of the car owner as to the dealer. This will be done with a view toward establishing a closer relation between the dealers and the owners which will aid in making cars stay sold when they are delivered and create a desire always to own an automobile.

A new department in the association is the adjustment department. This department will consist of a number of citizens forming a committee which will look into all questions or complaints car owners have to make.

Another department of the organization will devote its time to aiding the officers enforce the laws with reference to traffic and to assist in every possible way to reduce thefts to a minimum.

Syracuse to Hold Outing

SYRACUSE, July 17—The third annual outing of the Automotive Service Association of Syracuse will be held at Bay Shore Inn, Oneida Lake, July 22. The automobile dealers of the city are expected to join in the affair to make it the greatest automobile outing day in the history of the city.

The general chairman of the outing is William E. Chambers with S. K. Bresee in charge of the entertainment. Frank Gabriel will handle the baseball game and S. W. Allen is in charge of publicity. A ball game between the service and salesmen will be a feature. In addition other land and water sports are on the program. Dinner will be served at 6 o'clock with dancing during the evening.

Syracuse Plans Show

SYRACUSE, July 18 — Members of the Syracuse Automobile Dealers Association are making arrangements for the automobile exhibit at the State Fair, Sept. 11 to 16. The dealers look upon the fair exhibit as purely educational, coming as it does near the end of the summer season. Dealers are now agitating for a special automobile building at the fair. As it is now, the display of automobiles, tractors, trucks and equipment is not concentrated at any one spot.

Service Body Has Emblem

PHILADELPHIA, July 17—The Automotive Service Association of Philadelphia, which now has a membership of more than seventy, is planning for its first annual outing. The organization has adopted emblem buttons having the association's initials in dull gold within a gold wheel, inlaid with blue enamel. The members are service managers and department heads in the service departments of car dealers.

Memphis Sets Show Date

MEMPHIS, July 18—The annual automobile show will be held under the auspices of the Memphis Automobile Dealers' Association at the Tri-State Fair Grounds, Sept. 23 to 30. Many improvements are being made at the grounds and the changes in location of the buildings will place the automobile show in the heart of the various exhibits.

Montreal Closed Car Show

MONTREAL, July 18—The directors of the Montreal Automobile Trade Association, acting upon a suggestion expressed at the annual meeting, have taken steps to hold a closed car show early in the fall.

A. A. A. TO FORM NEW OHIO ASSOCIATION

NEW YORK, July 17—The executive board of the American Automobile Association decided at a meeting here that the Ohio State Automobile Association was not functioning properly and admitted the Cincinnati Automobile Club to direct membership. A vote of appreciation was extended to the Youngstown club for its loyalty in refusing to join the state association in leaving the A. A. A. President Diehl announced that the Cincinnati and Youngstown clubs would be made the nucleus for a new state association.

The board announced that the Illinois association had been expelled from membership because of protesting checks and stopping payment on a recent check sent in payment of dues.

A committee consisting of David Jameson, Robert Hopper and Laurens Enos was appointed to investigate the sentiment of local clubs in all state associations which have withdrawn from the A. A. A. No action was taken in regard to the appointment of a permanent executive secretary.

Noma Handled in Middle West

CHICAGO, July 18—The Noma Motors Corp. of New York has begun to market the full line of Noma cars in the Middle West through Noma Motors of Chicago, a division of Tivoli Motors, Ltd., which has opened new offices and salesrooms at 2437 South Michigan Avenue. E. E. Glatt is president and H. R. Crume is general sales general. The distributor's territory includes 14 Mississippi Valley states in which dealers are being sought.

Rieman Heads Air Bureau

CHICAGO, July 18—Charles S. Rieman, president of the Elgin Motor Car Co., is president of the Chicago Aeronautical Bureau, under whose auspices an aircraft exhibition and aeronautical congress will be held here Aug. 4 to 13. Contests of airplanes and hydroairplanes will be held in Grant Park extending along the lake shore.

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CHANGES IN THE TRADE

J. E. Smith Co., Detroit, will handle the Premocar in that city.

Kuhn Motor Co., Pittsburgh, has secured the agency for the Chevrolet.

Killy Motor Co., Omaha, has been appointed distributor of the Franklin.

Dominion Motors, Ltd., Halifax, is distributing the Nash in that territory.

Guaranty Motors Corp., Kansas City, has taken over the agency for the Mitchell.

Lymburners Motors, Inc., Montreal, have secured the distribution of the Stephens.

Annis & Haywood, Inc., will conduct the Maxwell and Chalmers agency in Greenfield, Mass.

Powers-Van Billiard Co., Philadelphia, has been appointed distributor for the new Portage tire.

Fred O. Clough has joined the **Mid-City Motor Co.** at Omaha as wholesale manager of the Maxwell.

Charles A. Revoir has been appointed sales manager of the **H. Barcroft White Corp.**, Syracuse, N. Y.

L. I. Ris, formerly with the **Star Rubber Co.** of Akron, has returned to the company as eastern district manager.

Missouri Motor Sales Co., Kansas City, has secured the agency for the Lexington. **Arthur Johnson** is the manager.

B. P. Strickland has been appointed manager of the **Quick Tire Service, Inc.**, Kansas City. Strickland was recently connected with the company's Atlanta branch.

Tenison & Blair, Marmon dealer and distributor in Dallas, Tex., has moved into its new quarters and has taken over the agency for the Oldsmobile car and Republic truck.

W. J. Daniel, Harry Daniel and **L. H. Reynolds** have organized the **Daniel Auto Co.** at Eastman, Ga., to distribute the Dodge Brothers car in five counties surrounding Eastman.

Keystone Tire Sales Co., Atlanta, has opened a branch in that city. **M. B. Kleinberg** of Atlanta is manager of the new branch. **D. C. Shepherd** is sales manager for the territory.

Frank Booghier, formerly wtih W. A. Kelley Ford agency, and **Virgil L. Circle**, recently with the George W. Higgins Co., have secured the agency for the Durant in Springfield, Ohio.

Clyde E. DeBolt has resumed his former position as sales manager of the Schillo Motor Sales Co., Mercer and Templar distributor in Chicago, after having been away for a year and a half.

Hannan-Odell-Van Brunt, Inc., Omaha, has been organized to handle the Ford and Lincoln. The principal stockholders of the firm are **Charles R. Hannan, Jr., George Van Brunt** and **R. S. Odell.**

W. E. Cobb has resigned as New York branch manager of Master Trucks, Inc., Chicago, being succeeded by **T. B. W. Zumstein**, formerly vice-president and sales manager of the Gary Motor Truck Co.

Lexington Sales Co., Nashville, Tenn., recently reorganized and has taken the Durant agency for middle Tennessee. **Clark E. Sloan**, formerly sales manager of the Broadway Motor Co., has assumed active management.

W. L. Sullivan, recently associated with the advertising department of the Oakland Motor Car Co. and later serving in the retail field in Washington state, is now connected with the Hudson-Essex agency at Mt. Clemens, Mich.

Conn. Motors, Inc., New Haven, Conn., has been formed to handle the Peerless in New Haven and New Haven County. **George D. Knox**, for many years Peerless distributor at Hartford, is president and general manager of the new company.

Robert Y. Jones, Syracuse, N. Y., has been placed in charge of sales of the Lee Tire & Rubber Co. in 13 counties in New York. He will be associated with Art Webb. Jones was formerly connected with the local branch of the Miller Tire Co.

R. P. Rice has sold his half interest in the **Rice-Miller Motor Co.**, Ford and Lincoln distributor in Kansas City, to **Don Miller**, the name of the company now being **Don Miller Motor Co.** Rice is continuing with his own business, **R. P. Rice Motor Co.**

Russell Y. Cooke has resigned as general manager of the Racine Rubber Co. to become head of the **Racine Distributing Co.** of Chicago. He has been succeeded by **L. M. Van Riper**, for several years western sales manager for the Ajax Rubber Co

George Pearson, Jr., has been appointed California distributor for the Deglarescope, a lens manufactured by a company of that name. Pearson was associated with the Union Motor Co. in Los Angeles and previously was associated with Maxwell interests on the coast.

R. S. Ledsinger and **M. R. Twitty** of Brunswick, Ga.; **P. S. Bird** of Darien, Ga., and **J. E. McMee** of Jacksonville, Fla., have purchased the Ford Sales Agency of Valdosta, Ga., from **G. G. Hearn**, who has operated the business for several years. This agency is one of the largest in the Southeast.

Hampden Rubber Co., for some time conducted as a Springfield, Mass., branch of the Standard Tire & Rubber Co., has been bought by a new company of which **I. L. Rachelson**, the former branch manager, is president, and **D. E. Newman**, formerly of the Citizens' Rubber Co., Boston, is treasurer.

Williams Motor Sales Co., Dodge Brothers dealer in Springfield, Mass., has had its sales territory increased by annexing a number of nearby towns in Connecticut. **Ralph L. Jager** has acquired from the **Northampton Garage Co.** the business of selling Dodge Brothers cars in that town as sub-dealer for the Williams Motor Sales Co.

PARDEE TO TAKE UP SALES CREDIT WORK

NEW YORK, July 18—The resignation of C. L. Pardee, Jr., who for the past two and a half years has been credit manager of the Commercial Investment Trust of New York, became effective July 15.

Pardee has been connected with automotive financing since 1916, and prior to his connection with the C. I. T. was assistant credit manager of the Continental Guaranty Corp., New York, and the Guaranty Banking Co., Chicago. It is understood that, after a few months vacation, he is planning constructive sales-credit work for one of the manufacturers to insure the extension of proper credit facilities to its dealers.

FORD RAISES PRICE OF LINCOLN MODEL

Town Car Now $7,200—Other Revisions, When Made, Will Be Increases

DETROIT, July 17—Forty-four aluminum parts for the Lincoln car are now being cast in the River Rouge foundries of the Ford Motor Co., in addition to the castings of the cylinder blocks and crankcases. The machining is continuing at the Lincoln Motor Co. plant. Additional equipment is being added at the Rouge to permit of handling castings for the entire Lincoln output.

Without formal announcement the town car of the Lincoln line has been remodeled and the price increased from $4,800 to $7,200. Previous to the sale of the plant to Ford in February the town car had been $6,000. The new town car is understood to represent an Edsel Ford idea in fine car construction, the body work being of an exceptionally fine type.

Since the severance of relations between the Fords and Lelands there have been no formal statements by either side, but a statement by Edsel Ford on Lincoln manufacturing policies is expected to be made soon. This statement will show that the Fords are undertaking to manufacture America's finest car, that the production will be on a limited basis and that prices, if changed at all, will be increases compensating for the extra fine character of the general construction.

Changes Have Been Increases

Changes in prices made by Ford since taking over the Lincoln have been increases, the new prices being materially higher than formerly. In both revisions to date the construction of the car has undergone important changes, the improvement being principally in the bodies. Apparently the thought of competition has not been allowed to enter into the manufacturing plans, as the sole idea has been to make a very high type of car, regardless of price.

Sales of Lincoln cars are reported to be running high, and orders are said to be four months ahead of production. Output at the factory is ranging from 30 to 35 cars daily. A constant flow of orders is reported to be coming in despite the long wait for deliveries. Sales are being handled through the Ford sales office, of which R. C. Getzinger, former Lincoln sales manager, is now a member.

Jordan Has Big Quarter

CLEVELAND, July 18—Notwithstanding price reductions, the volume of business done by the Jordan Motor Car Co. in the second quarter of 1922 exceeded the volume in the same period last year by 41 per cent. Production was 69 per cent larger than in the second quarter of 1921.

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Calendar of Trade Events

CONVENTIONS

Olympia, Wash.....July 21-22
Midsummer Convention of the Washington Automotive Trade Association.

Toledo .....September
Annual Convention of the Ohio Automotive Trades Association.

Chicago .....Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

SHOWS

Watsonville, Cal.....Aug. 12-15
Automobile Show under the Auspices of the Watsonville Motor Car Dealers Association, J. S. Martin, manager.

Toronto, Ont.....Aug. 26-Sept. 1
National Automobile Show held in conjunction with the Canadian National Exhibition.

Columbus.....Aug. 28-Sept. 2
Ohio State Fair.

Hartford, Conn.....Sept. 4-9
Connecticut Fair Grounds.

Wilmington, Del.....Sept. 4-9
Delaware State Fair.

Spokane.....Sept. 4-9
Annual Automobile Show held in connection with the Spokane Interstate Fair, B. J. Garnet, manager.

Indianapolis.....Sept. 4-9
Automobile and Accessory Show in conjunction with the Indiana State Fair, Automobile Show Building under the auspices of the Indianapolis Automobile Trade Association, J. B. Orman, manager.

Syracuse, N. Y.....Sept. 11-16
New York State Fair.

Memphis, Tenn.....Sept. 23-30
Annual Automobile Show held under auspices of the Memphis Automobile Dealers Association, Tri-State Fair Grounds.

New York.....Sept. 23-30
Closed Car Show, under Auspices of Automobile Merchants Association, Grand Central Palace.

Washington, D. C.....Oct. 21-28
Annual Closed Car Salon held under auspices of the Washington Automobile Trade Association, Convention Hall.

Chicago .....Nov. 13-18
Annual Show of Automotive Equipment Association.

New York.....Dec. 3-9
Eighteenth Annual Automobile Salon, National Automobile Chamber of Commerce, Commodore Hotel.

Chicago .....January
Annual Automobile Salon, National Automobile Chamber of Commerce.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

DURANT SUBMITS PLAN FOR BUYING LOCOMOBILE

NEW YORK, July 13—W. C. Durant has presented to the receivers of the Locomobile Co. a proposition to take over the property on a basis which is satisfactory to them. This proposal now has been put up to the creditors' committee with the recommendation of the receivers that it be accepted.

It is understood that the Durant plan does no contemplate a cash transaction, but rather the promotion of a new company and an exchange of stock for that of the present Locomobile Co. and to creditors in settlement of their claims. It is assumed that Durant will retain control. So far as can be learned he has not worked out in detail his plan for turning out the Locomobile in a lower price class if he gets the factory at Bridgeport. Announcement of a decision by the creditors' committee is expected very soon.

Dyneto Sold to Owen

SYRACUSE, July 8—The Dyneto Electric Corp., which manufactures electric starting and lighting systems for automobiles, has been sold for the benefit of creditors to R. M. Owen of New York for $205,000.

BUREAU INVESTIGATES LIGHTING EQUIPMENT

WASHINGTON, July 18—Because of the need of uniformity in illuminating registration plates on automobiles, the Bureau of Standards is investigating the proper illumination of these plates and the efficiency of the various forms of tail lights.

The research by the Government experts covers such points as color and position of tail lights on passenger cars. The bureau is also engaged in work covering automobile headlights with the idea of aiding in the unification of state laws governing these appliances.

The New Car and Truck Description Index

Giving the date and page number on which they appeared

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾-1	$1650a	3¾x5	34x5n	34x5n	W
Acason...RB	1½	1950	3¾x5¼	36x3½	36x6	W
Acason...H	2½	2750	4⅜x5¾	36x4k	36x8k	W
Acason...L	3½	3450	4⅜x5¾	36x5k	36x10k	W
Acason...M	5	4350	5 x6¼	36x6	40x12	W
Ace...C	1½	2295	3¾x5½	34x3½k	34x5k	W
Ace...A	2½	2795	4¼x5½	36x4k	36x7	W
Acme...20	1	....	3¾x5	35x5n	35x5n	W
Acme...30	1½	....	3¾x5	34x3½	34x5	W
Acme...40	2	....	3¾x5	34x3½	34x5	W
Acme...60	3	....	4½x5¼	36x4	36x7	W
Acme...60L	3	....	4½x5½	36x4	36x7k	W
Acme...90	4½	....	4½x5½	36x5	40x10	W
Acme...125	6¼	....	4¾x6	36x6	40x12	W
American...25	2½	3350	4 x6	36x4k	36x4dk	W
American...40	4	4275	4½x6	36x5k	36x5dk	W
Armleder...20	1	2350	3¾x5¼	34x3½k	34x5k	W
Armleder...21	1½	2425	3¾x5¼	34x3½	34x6	W
Armleder...40	1½	2850	4½x5¼	34x3½	36x6	W
Armleder...HW	2½	3200	4¼x5½	36x4k	36x7k	W
Armleder...KW	3½	4150	4½x6	36x5	36x5d	W
Atlas...MD	1	1185	3½x5	32x4½n	32x4½n	W
Atterbury...20R	1½	2475	3¼x5	34x3½	34x5	W
Atterbury...7CX	2½	3175	4⅛x5¼	36x4	36x4d	W
Atterbury...7D	3½	3975	4½x5½	36x5	40x5d	W
Atterbury...8E	5	4975	4¾x6	36x5	40x6d	W
Autocar...21UF	1½-2	1950	4¾x4½t	34x4k	34x5k	D
Autocar...21UG	1½-2	2050	4¾x4½t	34x4k	34x5k	D
Autocar...27H	2	2950	4 x5½	34x5	36x7	D
Autocar...27K2	2	3075	4 x5½	34x5	36x7k	D
Autocar...26Y	5	3950	4½x5½	34x6	36x12	D
Autocar...26-B	5	4100	4¼x5½	34x6	36x12	D
Available...H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available...H2	2	2775	4 x5	36x3½k	36x6k	W
Available...H2½	2½	3160	4 x5	36x4k	36x8k	W
Available...H3½	3½	4175	4½x5½	36x5	40x5d	W
Available...H5	5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x4s	34x5n	34x5n	I
Beck...A Jr.	1¼	1285a	3½x5	32x4½n	32x4½n	I
Beck...B-30	1½	2050	3¾x5	34x5	36x6	
Beck...C-40	2	2150	3¾x5	36x6	36x6	
Beck...D-50	2½	2850	4¼x5¼	38x7	40x8	
*Bell...(Penn.)	½	1000a	3½x5	31x4n	31x4n	B
Bell...M (Iowa)	1	1495	3⅜x5½	35x5	35x5n	W
Bell...E (Iowa)	1½	2100	3¾x5¼	34x3½	34x5	I
Bell...O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Belmont	½	725	3¼x4¼	31x4	31x4	B
Belmont...D	2	2575	4¼x5½	34x3½k	34x6k	I
Belmont...F	3	3500	4 x6	36x5k	36x5dk	I
Bessemer...G	1	....	3½x5	35x5n	35x5n	I
Bessemer...H-2	1½	....	3¾x5	36x3½	36x5	I
Bessemer...J-2	2½	....	4½x5¼	36x4	36x4d	I
Bessemer...K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem...KN	1	1195	3½x5	34x4½n	35x5n	B
Bethlehem...CN	2	1595	4 x6¼	34x4½k	34x6k	I
Bethlehem...HN	3	2195	4 x5¼	36x4k	36x8k	I
Brinton...C	1½	1500	3¾x5	34x4	34x5	W
Brinton...D	2½	2250	4¼x5¼	36x4	36x7	W
Brockway...E	1	....	3¼x5⅛	35x5n	35x5n	B
Brockway...S-5	1½	....	3¾x5	36x3½k	36x5k	W
Brockway...S5	1½	....	4⅛x5¼	36x4	36x6	W
Brockway...KR	2½	....	4½x5½	36x4	36x8	W
Brockway...K-5	2½	....	4⅛x5¼	36x4	36x8	W
Brockway...RT	3½	....	4¾x6	36x5	36x10	W
Brockway...R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway...T-4	5	....	4¾x6	36x6	40x6d	W
*Buick	...	945b	3⅜x4¾	31x4n	31x4n	B
Capitol...G1½	1½	2975	3¾x5	35x5	38x7	W
Capitol...H2½	2½	3700	4¼x6	36x4	36x8	W
Capitol...K2½	2½	4250	4¼x6	36x6	42x9	W
Capitol...M3½	3½	4425	4¼x6	36x5	36x10	W
Case	2	....	4¼x5¾	36x6	38x7	I
*Chevrolet...G	¾	745	3⅛x4	31x4n	34x4½n	B
*Chevrolet...T	1	1125	3⅛x5¼	33x4n	35x5n	W
Chicago...C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago...C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago...C3½	3½	....	4½x5½	36x5	36x10	W
Chicago...D5	5	....	4½x5½	36x6	40x12	W
Clydesdale...10	¾-1¼	1485	3¾x5	34x5n	34x5n	B
Clydesdale...18	¾-1¼	1890	3¾x5	34x5	34x5	W
Clydesdale...20	1-1½	2385	3¾x5	34x5	34x5k	W
Clydesdale...42	1½-2	2475	3¾x5	36x3½	36x6	W
Clydesdale...65X	2½-3	3250	4⅛x5¼	36x4	36x8	W
Clydesdale...65EX	2½-3	3150	4½x5½	36x4	36x8	W
Clydesdale...90	3½-4½	4100	4½x5½	36x5	36x10	W
Clydesdale...120	5-6	4500	4¾x6	36x6	40x12	W
Columbia...H	1½	1895	4 x5	35x5	38x7n	I
Columbia...G	2½	2335	4 x5¼	36x4	36x7	I
Comet...T	1½	1950	3¾x5	34x4	34x4	W
Commerce...T	¾-1¼	1450	3¾x5	34x4½n	34x4½n	B
Commerce...12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce...16	2	2150	3¾x5	35x5n	36x6	I
Commerce...18	2½	2495	4⅛x5¼	36x6n	36x7n	I
Commerce...25	2½	2425	4½x5¼	36x4	36x7	W
Cook...51	2½	3600	4 x5⅛	36x6n	40x8n	W
Corbitt...E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt...D-22	1½	2200	3¾x5	34x3½	34x4	W
Corbitt...C-22	2	2600	4⅛x5¼	36x3½	36x6	W
Corbitt...B-22	2½	3000	4⅛x5¼	36x4	36x7	W
Corbitt...R-22	*3	3200	4½x5½	36x4	36x8	W
Corbitt...A-22	3½-4	3800	4½x5½	36x5	36x10	W
Corbitt...AA-22	5	$4500	4¾x6	36x6	40x6d	W
Day-Elder...AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder...B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder...D	2	2400	4⅛x5¼	36x4	36x7	W
Day-Elder...C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder...F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder...E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn...E	1	1600	3⅝x5⅛	35x5n	35x5n	W
Dearborn...FX	1½	2300	3¾x5⅛	34x4	34x5	W
Dearborn...F	1½	2180	3¾x5⅛	34x4	34x5	W
Dearborn...48	2	2590	3¾x5⅛	34x4½n	34x7	W
Defiance...G	1	1695a	3¾x5	35x5n	35x5n	B
Defiance...D	1½	2095a	3¾x5	35x5n	36x6n	I
Defiance...E	2	2275a	3¾x5	35x5n	38x7n	I
Denby...31	1½	1485	3½x5	35x5n	35x5n	B
Denby...33	1½	2145	3¾x5	35x5n	38x7n	I
Denby...34	2	2395	3¾x5	36x3½	36x6	I
Denby...35	2½-3	2795	4⅛x5¼	36x4	36x7	I
Denby...27	4	3895	4½x5½	36x5	36x5d	I
Denby...210	5	4295	4½x5½	36x6	40x6d	I
Dependable...A	¾-1	1650	3⅝x5⅛	34x5n	36x6n	W
Dependable...C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable...D	2½	2650	4 x5½	34x5	36x6	W
Dependable...E	3	2950	4¼x5½	36x4	36x7	W
Diamond T...O-8	1-1¼	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T...T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T...U	2-2½	2650	4 x5¼	36x4	36x7	W
Diamond T...K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T...EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T...S	5	4500	4¾x6	36x6	40x6d	W
*Diehl	1	....	3½x5	34x4½	35x5	I
Diehl...B	1½	....	3½x5	36x6	36x6	I
Doane	2½	4100b	4¼x5¾	36x5	36x7	C
Doane	3½	5100b	4⅝x5¾	36x5	36x5d	C
Doane	6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers	½	730	3⅞x4½	32x4n	32x4n	B
Dorris...K-4	2-2½	3400	4¼x5½	36x4	36x7	W
Dorris...K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort	½	685a	3½x5	31x4n	31x4n	B
Double Drive...B	3	4000	4¼x5½	6	6	W
Duplex...A	2	2775	4 x5¼	35x5n	38x7n	W
Duplex...E	3½	3500	4¼x5½	36x8	36x8	I
Duty	22	2	1590	3½x5	34x3½	34x5	I
Eagle...101	1½	1875	3⅝x5⅛	34x5	34x5	I
Eagle...100-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D...B	3	4200	4¾x5½	36x6	36x6	B
Fageol...1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol...2½	2½	3900	4¼x5¾	34x4	36x7	W
Fageol...3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol...5	5	5700	4½x6¼	36x6	40x6d	W
Fargo...R	2	1700	3¾x5	36x4	36x6	I
Federal...SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal...TE	1½	2175	4½x5¼	36x3½	36x5	W
Federal...UE	2-2½	2425	4½x5¼	36x4	36x7	W
Federal...WE	3½-4	3150	4½x5½	36x5	36x5d	W
Federal...X2	5-6	4500	4¾x6	36x6	40x6d	W
*Ford...TT	1	430	3¾x4	30x3½n	32x4½n	W
Front Drive...C	1½	2800	3¾x5½	5	4	W
G & J**...20	1	2275	3⅝x5⅛	34x5n	34x5n	W
G & J**...A	2-2½	3375	4x5¼	36x4	36x7	W
G & J**...B	3½-4	4475	4½x5½	36x5	36x10	W
G.M.C...K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C...K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C...K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C...K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C...K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C...K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C...K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W	1½	1850	3¾x5½	35x5	35x5	I
*Garford...15	¾	1590	3⅜x5⅛	34x5n	34x5n	W
Garford...25-B	1¼	1990	3¾x5⅛	36x6n	36x6n	W
Garford...70-H	2	2750	4¼x5½	36x4	36x7	W
Garford...77-D	3½	3750	4½x6	36x5	36x6d	W
Garford...68D	5	4500	5 x6½	36x6	40x6d	W
Garford...150-A	7½	5200	5½x6	36x6	40x7d	C
Gary...F	1-1½	1675	3¾x5	36x3½	36x4	W
Gary...I	2	2250	4 x5½	36x3½	36x6	W
Gary...J	2½	2650	4¼x5½	36x4	36x8	W
Gary...K	3½	3650	4½x6	36x5	40x5d	W
Gary...M	5	4100	5 x6½	36x6	40x6d	W
Gersix...M	1½	3100	4 x5½	36x3½	36x7	W
Gersix...K	2½	3500	4½x5½	36x4	36x8	W
Gersix	3½	4500	4½x6	36x5	40x12	W
Graham Bros.	1	1265	3⅞x4½	33x4½n	34x5n	B
Graham Bros.	1½	1325	3⅞x4½	33x4½n	36x6n	B
[1]Gramm-Pion. .10	1	1365	3½x5	33x5n	33x5n	B
[1]Gramm-Pion. .15	1½	1900a	3¾x5	36x3½k	36x5k	I
[1]Gramm-Pion. .65	1½	2500a	3¾x5	36x3½k	36x5	W
[1]Gramm-Pion. .20	2	$2925a	4½x5¼	36x4k	36x7k	W
[1]Gramm-Pion. .30	3	3275a	4½x5½	36x4k	36x4dk	W
[1]Gramm-Pion.75P	3½	4225a	4½x5½	36x6n	42x9n	W
[1]Gramm-Pion. .40	4	3995a	4½x5½	36x5	36x5dk	W
[1]Gramm-Pion. .50	5-6	4895a	4¾x6	36x6	40x6dk	W
Hahn...B2	1	....	3½x5	34x5k	34x5k	W
Hahn...O	1½	....	3¾x5¼	36x3½k	36x6k	W
Hahn...K	2	....	4⅛x5½	36x7k	36x8k	W
Hahn...L	3	....	4½x5½	36x5k	36x8k	W
Hahn...M	5	....	4½x5½	36x5	36x10	W
Hahn...N	6	....	4¾x6	36x6	40x12	W
Hal-Fur...E	1½	2350	4x5½	34x5n	38x7n	W
Hal-Fur...B	2½	3000	4¼x5½	36x6n	36x8	W
Hal-Fur...F	3½	4000	4½x5½	36x6n	40x10	W
Hall...1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall...2½	2½	3275	4⅛x5¼	36x4	36x6	W
Hall...3½	3½	4100	4½x5½	36x5	36x5d	W
Hall...5	5	5100	4½x5½	36x5	40x6d	W
Hall...7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey...WOA	2	2650	4¼x5½	34x4	34x7	W
Harvey...WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey...WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye...K	1½	1850	3¾x5½	34x3½k	34x5k	I
Hawkeye...M	2	2650	4¼x5	36x4k	36x6k	I
Hawkeye...N	3½	3700	4½x6¾	36x5k	36x10k	I
Hendrickson...O	1½	2200	3⅝x5⅛	36x4n	36x5n	W
Hendrickson...N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson...M	3½	3000	4¼x5	36x5k	36x5dk	W
Hendrickson...K	5	4000	5 x6¼	36x6	40x6	W
Huffman...B	1½-2	1795	3¾x5	34x3½	34x6	W
Huffman...C	1½-2	1695	3¾x5½	36x3½	36x6	I
Huffman...D	2-3	2895	4¼x5½	36x4	36x7	
Hurlburt...A	1½	2850	4 x5½	34x4	34x5	W
Hurlburt...B	2½	3750	4¼x5½	36x4	36x4d	W
Hurlburt...C	3½	4590	4½x6	36x5	36x5d	W
Hurlburt...D	5	5500	4½x6	36x5	40x6d	W
Indep'd't(Iowa), B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa) G	1½	2040	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.) HI	2½	2940	4½x5¼	36x4	36x4	I
Indep'd't(Ohio) F	1½	2385	3¾x5	36x3½	36x5	W
Indep'd't(Ohio) H	2½	3085	4½x5¼	36x4	36x4d	W
Indep'd't(Ohio) K	3½	3985	4½x5½	36x5	36x5d	W
Indiana...12	1½	....	3¾x5¼	34x3½k	34x5k	W
Indiana...20	2	....	4½x5½	36x4k	36x7k	W
Indiana...25	2½	....	4½x5½	36x4k	36x8k	W
Indiana...35	3½	....	4⅜x5½	36x5k	36x5dk	W
Indiana...51	5	....	5 x6¼	36x5k	40x6dk	W
*International...S	¾	1500	3½x5	34x5n	34x5n	I
International...21	1	1750	3½x5¼	36x3½	36x3½	I
International...31	1½	1850	3½x5¼	36x3½	36x4	I
International...41	2	2100	3½x5¼	36x3½	36x5	I
International...61	3	2400	4¼x5	36x4	36x6	I
International...101	5	3600	4¼x5	36x5	40x10	I
Jackson...4WD	3½	3850	4½x5½	36x7	36x7	B
Jumbo...15	1½	2295	3¾x5¼	36x3½	36x5	I
Jumbo...20	2	2520	3¾x5¼	35x5n	38x7n	I
Jumbo...25	2½	2660	4½x5½	36x4	36x7	I
Jumbo...30	3	3060	4¼x5½	36x6n	42x9n	I
Jumbo...35	3½	3900	4½x6	36x5	36x10n	I
Jumbo...40	4	4400	4½x6	38x7n	44x10	I
K-Z...1	1	1750	3½x5	34x3½	34x5	W
K-Z...1½	1½	2075	3¾x5	36x4	36x6	W
K-Z...2½	2½	2550	4⅛x5¼	36x4	36x8	W
K-Z...3½	3½	3350	4½x5½	36x5	40x10	W
K-Z...5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo...T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo...G-1	1½	2495	3¾x5	34x4	34x5	W
Kalamazoo...LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo...NH	3	3145	1 x6	36x5	36x10	W
Kalamazoo...HL	3	3350	4½x6	36x5	36x10	W
Kalamazoo...LK	4	3845	4½x6	36x5	36x12	W
Kalamazoo...OK	5	4350	4½x6	36x6	40x6d	W
[2]Kelly-S...K-31	1½	2700	3¾x5¼	36x3½	36x6	C
[2]Kelly-S...K-34	1½	2700	3¾x5¼	36x3½	36x6	W
[2]Kelly-S...K-38	2½	2900	3¾x5¼	36x4	36x4d	W
[2]Kelly-S...K-35	2½	2900	3¾x5¼	36x4	36x4d	C
[2]Kelly-S...K-40	3½	3900	4½x6½	36x5	40x5d	C
[2]Kelly-S...K-41	3½	3900	4½x6½	36x5	36x10	I
[2]Kelly-S...K-42	3½	3900	4½x6½	36x5	40x5d	W
[2]Kelly-S...K-50	5	4400	4½x6½	36x6	40x6d	C
[2]Kelly-S...K-60	6	4600	4½x6½	36x6	40x7d	C
Keystone...40	2	2175	3¾x5⅛	34x5n	38x7n	I
Kimball...AB	2	3675	4 x6	36x4	36x7	W
Kimball...AC	2½	3975	4¼x6	36x4	36x8	W
Kimball...AK	3	4590	4½x6	36x4	36x10	W
Kimball...AE	4	5000	4¾x6	36x5	40x12	W
Kimball...AF	5	5590	5 x6	36x6	40x7d	W
*Kissel...Express	1	1585	3⅞x5½	34x5n	34x5n	W
Kissel...Utility	1½	1975	3⅞x5½	36x3½	36x5	W
Kissel...Freigter	2½	2875	4¼x5½	36x4	36x7	W
Kissel...H. D.	4	3675	4¼x5½	36x5	36x5d	W
Kleiber...AA	1	2200	4⅛x5¼	34x3½k	34x5k	W
Kleiber...A	1½	3100	4⅛x5¼	36x3½k	36x6k	W
Kleiber...BB	2	3600	4⅛x5¼	36x4k	36x7k	W
Kleiber...B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber...C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber...D	5	5300	5 x6½	36x6	40x12	W
Koehler...D	1½	2150	3½x5	34x3½	34x5	W
Koehler...M	2½	3175	4 x5⅛	36x4	36x7	W
Koehler...MCS	2½	3275	4 x5⅛	36x4	36x7	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—speed truck or delivery wagon. **—Canadian Make. trac.—tractor.

1—Gramm-Pioneer. 2—Kelly-Springfield.

Passenger car specifications on page 50

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Keohler.....F	3½	$4170	4½x5½	36x5	36x10	W
Keohler,MT. Trac	5	3275	4 x5½	36x4	36x7	W
Krebs-Cellier..23	¾	1260	3¾x5	34x4½	34x4½	B
Krebs-Cellier..24	1	1565	3¾x5	34x5	34x5	W
Krebs-Cellier..45	1½	2125	4½x5½	36x4	36x7	W
Krebs-Cellier..75	2½	2375	4½x5½	36x4	36x8	W
Krebs-Cellier..110	3½	2975	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1025	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2100	3¾x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½	3100	4½x5½	36x4	36x7	W
Larrabee.....K-S	2½-3	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5	4800	4½x6	36x6	40x6d	W
Maccar.....L	1½	2700	4½x5½	36x4	36x6	W
Maccar.....H-A	2	3400	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	3400	4½x5½	36x4	36x5d	W
Maccar.....H-3	4	4200	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	4950	4½x6	36x5	40x6d	W
MacDonald.....A	7½	6750	4½x6	10x7	40x14	I
Mack...AB D.R.	1½	3150	4 x5	36x4	36x3½d	D
Mack...AB Chain	1½	3000	4 x5	36x4	36x3½d	C
Mack...AB Chain	2	3300	4 x5	36x4	36x4d	C
Mack...AB D.R.	2	3750	4 x5	36x4	36x4d	D
Mack...AB D.R.	2½	3850	4 x5	36x4	36x4d	D
Mack...AB Chain	2½	3400	4 x5	36x4	36x4d	C
Mack...AC Chain	3½	4950	5 x6	36x5	40x5d	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4 x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	6750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
Maplesleaf....AA**	2	3775	4 x5½	36x4	36x7	W
Maplesleaf....BB**	3	4350	4½x5½	36x4	36x4d	W
Maplesleaf....CC**	4	5100	4½x5½	36x5	36x5d	W
Maplesleaf....DD**	5	6200	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x5	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4½x5½	34x4	36x7	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x5d	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4½x6½	36x6	40x6d	W
Master.....F	5	5090	4½x6½	36x6	40x6d	D
MasterTrac.,DDT	9	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	912	3½x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1¼	2000	3¾x5	34x3½	36x5	W
Menominee....H	1½	2475	4 x5	36x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	36x5	36x10	W
Menominee...J-3	5	4251	4½x6	36x6	40x12	W
Moline.....10	1½	1985	3½x5	34x5n	36x6n	I
3Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-6	4600	4½x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3¾x5½	35x5	36x6	I
Nash.....3018	2-2½	2150	3¾x5½	36x6	40x8	I
Nash.....Quad	2-2½	2750	4½x5½	40x8	40x8	I
Nash..3018, LWB	2-2½	2200	3¾x5¾	36x6	40x8	I
Nash..Quad, LWB	2-2½	2800	4½x5½	40x8	40x8	I
Nash.....5018	2½	2250	3¾x5¼	34x4	34x6	I
4Nelson.....G2	1½	....	4½x5½	30x3½	36x6	W
4Nelson.....G3	2½	....	4½x5½	36x4	36x7	W
4Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
4Nelson.....G5	5	....	4½x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5½	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5¼	36x4k	36x7k	W
Noble.....B30	1½	....	3¾x5½	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4½x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4½x5½	31x4	36x6	W
Northwestern..WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E.Spec	1½	2285	3¾x5½	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	36x3½	36x5	W
Ogden.....E	2½	....	4½x5¼	36x4	36x8	W
Old Hickory...W	1	1775	3¾x5	36x3½k	36x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4½x6	34x4	36x4d	W
Old Reliable....C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5250	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6¼	36x6	40x7d	C
*Oldsmobile Econ	1	$1095	3½x5¼	35x5n	35x5n	1
Olympic.....A	2½	3200	4½x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	2½	3700	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	3250	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	3400	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3850	4 x5½	38x7n	38x7n	B
Oshkosh.....BB	2½	4000	4 x5½	38x7n	38x7n	B
*Overland.....4	½	450	3½x4	30x3½n	30x3½n	B
Packard.....EC	1½-3	3100	4¼x5½	36x4	36x7	W
Packard.....EX	1½-3	3100	4¼x5½	36x6n	40x8n	W
Packard.....ED	2-4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	4-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige.....51-20	2½	2420	4½x5½	31x4	34x8	W
Paige.....51-13	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot....Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot....Lincoln	2	2050	4 x5¼	34x3½	31x5	W
Patriot .Washgt'n	3	2900	4½x5½	36x4	36x7	W
Pierce-Arrow....	2	3200	4 x5½	30x4	36x4d	W
Pierce-Arrow....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher....	1½-2	3000	3¾x5	36x4	36x6	..
Pittsburgher....	3	3800	4½x5¼	30x5k	36x8	W
Power.....F	2	3150	3¾x5¼	36x5	36x7	W
Power.....C	3½	4250	4½x5½	36x5	40x10	W
*Rainier....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4½x5½	34x4	34x6	W
Rainier.....R-20	2½-3	....	4½x5½	34x4	31x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	36x6	40x6d	W
Ranger...TK-20-2	1½	2450	3¾x5	36x6n	38x7n	W
*Reo.....F	1-1½	1245	4½x4½	34x4½n	34x4½n	B
Reliance.....10A	1½	2400	4 x5¼	36x3½	36x5	1
Reliance.....20B	2½	3100	4½x5½	36x4	36x4d	1
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	1
Republic.....10	1	1395	3¾x5	34x3	34x4	1
Republic..10 Exp	1	1695	3¾x5	35x5n	34x5n	1
Republic.....11X	1½	1795	3¾x5	34x3½	31x6	1
Republic.....19	2½	2195	4½x5¼	36x4	36x7	1
Republic.....20	3½	3095	4½x5½	36x5	36x10	1
Rowe.....CW	1½	3000	3¾x5	30x6n	36x6n	W
Rowe....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rowe....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rowe....G.P.W.	3	5250	3¼x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4¼x6	36x5	36x6d	W
Rowe.....F. W.	5	5500	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Sanford....W-15	1½	2150b	3¾x5	36x3½k	36x5k	..
Sanford.....25	2½	....	4½x5¼	36x4	36x4d	W
Sanford.....35	3½	....	4½x5½	36x5	36x5d	W
Sanford.....50	5	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ton	3	3800	4¼x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4400	4½x6	30x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5¼	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½-2½	3350	4½x5¼	34x5	38x7	W
Selden.....50	2½	3250	4½x5¼	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	3750	4½x5½	30x5	36x10	W
Selden.....90	5-7	4950	4¾x6	36x6	40x12	W
Seneca.....M	½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3¼x4½	32x4½n	32x4½n	B
*Service.....15	1¼	....	3½x5	34x4½n	35x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4¼x5½	35x5n	38x7n	W
Service.....52	3	....	4¼x5½	36x4	36x8	W
Service.....72	3½	....	4½x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	$1950	3¾x5	34x5n	36x6n	W
Signal.....H	1½	2450	4½x5¼	34x4	36x6	W
Signal.....J	2½	2875	4½x5¼	34x4	36x8	W
Signal.....M	3½	3675	4½x5½	36x5	40x5d	W
Signal.....R	5	4400	4¾x6	36x6	40x6d	W
Southern.....10	1	2090	3¾x5	34x3½	34x4	W
Southern.....15	1½	2590	3¾x5½	36x6n	34x4	W
Southern.....20	2	2990	4¾x5¼	36x6n	40x8k	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5½	36x4k	36x7k	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x10	W
Standard.....5-K	5-7	4400	4¾x6	36x6	40x12	W
Sterling.....1½	1½	2885	4 x5¾	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5¾	36x4k	36x6k	W
Sterling.....2½	2½	3290	4¾x5¾	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6¼	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6¼	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6¼	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6¼	36x6	40x7d	C
*Stewart.....14	1¼-1½	1245	3¾x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1¾	1445	3¾x5¾	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3¾x5	34x3½	34x5	I
Stewart.....7	2-2½	2190	4½x5½	34x4	34x7	I
Stewart.....7-X	2½-3	2390	4½x5½	34x4	34x7	I
Stewart.....10	3½-4	3190	4½x5½	36x5	36x5d	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x5d	I
*Steugaton.....C	¾	1240	3½x5	34x4½n	34x4½n	W
Stoughton.....A	1	1790	3¾x5½	34x5	34x5	W
Stoughton.....B	1½	2150	3¾x5½	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....F	3	3150	4½x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4½x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Thomart.....	1¼	1795a	4 x5½	34x5	34x5	C
Tiffin.....GW	1½	2100	4½x5½	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5½	36x4	36x3½d	W
Tiffin.....PW	3½	3600	4½x5½	36x5	40x5d	W
Tiffin.....FS0	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....F60	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4¼x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2900	4½x5¼	35x5	38x7	W
Tower.....H	2½	3200	4½x5¼	36x4	36x7	W
Tower.....G	3½	4100	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895n	3¾x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1195	3¾x5½	34x3½k	34x4k	I
Transport.....35	2	1835	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2335	4½x5½	36x4k	36x8k	I
Transport.....60	3½	2585	4½x5½	30x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Traylor.....B	1½	2390	3¾x5½	34x3½	34x5	W
Traylor.....C	2-2½	2850	4 x5½	36x4	36x7	W
Traylor.....D	3-3½	3300	4½x5½	36x4	36x8k	W
Traylor.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3¾x5	34x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3¾x5½	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5¼	36x4k	36x6k	I
Triangle.....B	2½-3	2585	4 x5¾	36x4k	36x7k	I
Twin City...B.W.	2	2750	4 x5½	36x6	40x8	I
Twin City...A.W.	3½	3950	4½x6	36x5	40x5d	W
5Twin City.....B	3½	....	5½x6	36x6	36x6	I
5Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4½x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4½x5½	30x3½	36x6	W
Ultimate.....B	3	3700	4½x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4½x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
Union.....FW	2½	3190	4 x6	36x5k	36x8k	D
Union.....HW	4	4650	4½x6	36x6	40x12	D
Union.....JW	6	5800	5 x6	36x6	40x14	D
United.....A	1½	2115	3¾x5½	36x3½k	31x5k	W
United.....B	2½	3150	4½x5½	36x4k	36x7k	W
United.....C	3½	3975	4½x5½	36x5	36x5d	W
United.....Y	5	4500	4½x6	36x6	40x6d	W
*United States .U	1	1875	3½x5½	34x5n	34x5n	B
UnitedStates,NW	1½	2225	3¾x5	36x5	36x3½	W
United States...N	1½	1975	3¾x5	36x3½k	36x5k	1
United States...R	3	3075	4 x5¼	36x4	36x4d	W
United States...S	4	3875	4½x5½	36x5	36x5d	W
United States...T	6	4850	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Veteran.....M**	1½	2699	3¾x5¼	35x5n	35x5n	W
Veteran.....P**	2	3699	4¼x5½	36x4	36x7	W
Veteran.....R**	3	4200	4¼x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	½	1050	3½x4½	31x4n	31x4n	W
Vim.....30	¾	1175	3½x4½	32x4½	32x4½	W
Vim.....31	1	1975	3¾x5½	35x5n	35x5n	W
Vim.....22	2	3150	3¾x5½	36x4	36x6	W
Vim.....23	3	3950	4¼x5½	36x5	36x5d	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—speed truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Walker-JohnsonA	2	$2250	3½x5	34x3½	34x8	W
Walker-JohnsonB	3	2750	4½x5½	36x4	36x8	W
Walter.....S	5	4850	4½x6½	36x6	40x6d	W
*Watson.....B	1	1865a	3¾x5½	35x5n	35x5n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2550	4½x5½	36x3½k	36x5k	W
Western....L1½	1½	2350	3¾x5	36x3½k	36x5k	W
Western....W2½	2½	3250	4½x5½	36x4	36x7	W
Western....L2½	2½	3250	4½x6	36x4	36x7	W
Western....W3½	3½	4250	4½x6	36x5	40x5d	W
*White.....15	¾	2400	3¾x5½	34x5n	34x5n	B
White.....20	2	3250	3¾x5½	36x4k	36x7	D
White.....40	3½	4200	3¾x5¾	36x5	40x5d	D
White.....45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick....E	1	1225	3¾x5	34x5n	34x5n	W
White Hick....H	1½	1375	3¾x5	36x3½	36x5	W
White Hick....K	2½	1675	4¼x5½	36x4	36x5	W
Wichita.....K	1	1875	3¾x5¼	36x3½	36x4k	W
Wichita.....M	2	$2400	3¾x5¼	36x3½k	36x6k	W
Wichita.....RX	3	3200	4½x5½	36x4k	36x8k	W
Wichita.....O	4	3500	4½x6½	36x5k	36x5k	W
Wilcox.....AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4¼x5	36x4k	36x3½k	W
Wilcox.....E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox.....F	5	$4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¾x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4½x5½	36x4	36x7	W
Wilson.....G	3½	3685	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin.....A	1	1750	3¾x5	34x5n	34x5n	W,B
Wiscensin.....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin.....C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin.....D	3½	3000	4¾x5¾	36x6n	40x8	W
Wiscensin.....E	5	3500	4½x6½	36x6	36x10	W
Wiscensin.....F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will.....N	1½	[illegible]	3¾x5	36x3½k	36x5k	W
Witt-Will.....P	2½	2750	4¼x5¼	36x3½k	36x7k	W
Wolverine.....J	1	2125	3½x5	34x3	34x4	I
Wolverine.....J	1½	2375	3¾x5	34x3½	34x5	I
Wolverine.....J	2	2640	3¾x5	34x4	34x7	I
Wolverine.....J	2½	3425	4¼x5½	36x5	36x10	I
Wolverine.....L	3½	4100	4½x5½	36x5	36x10	I

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price icludes several items of equipment. b—price includes body. *—speed truck or delivery wagon. **—Canadian Make. trac—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm...	15-25	1185	4	Midw.	4-4½x5¼	Gas.	3
Allis-Chalm...	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm..	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork...2-G	14-28	1695	4	Own	4-4¾x6	GorK	3
Allwork.....C	14-28	1395	4	Own	4-5 x6	GorK	3
AndrewsKin.D	18-36	2500	4	Clim.	4-5 x6½	GorK	4
ARO ..1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T....	15-30	2200	4	Clim.	4-5 x6½	G,K	4
Aultman-T....	22-45	3420	4	Own	4-5½x8	G,K	6
Aultman-T....	30-60	4500	4	Own	4-7 x9	G,K,D	9-10
Automot. B-3	12-21	1250	4	Herc.	4-4 x5½	Gas.	2-3
Avery,SR,Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery...Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4½x6	G,K,D	3-4
§Avery.....	....	....	*	Own	4-4x5½	G,K,D	3
Avery.....	12-28	....	4	Own	2-6½x7	G,K,D	3-4
Avery.....	14-28	....	4	Own	4-4½	G,K,D	3-4
Avery.....	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7½x8	G,K,D	8-10
Bates Mule .H	15-25	....	4	Mklw	4-4½x5½	Gas.	3
Bates Mule. F	18-25	....	*2	Midw	4-4½x5½	Gas.	3
‡Bates MuleG	25-35	....	*2	Mklw	4-4½x6	Gas.	..
Beeman.....G	2-4	240	4	Own	1-3½x4¼	Gas.	..
Best.....	18-30	3100	*2	Own	4-4¼x6½	G,K,D	4
Best.....	60	5450	*2	Own	4-6½x8½	G,K,D	8-9
Bering.....	5-10	395	4	LeR.	4-3½x4½	G	..
Bering ..1921	.....	1850	3	Wauk	4-4¾x5¾	GorK	2
Bern-Oil, 1922	15-30	1435	4	Own	2-6¾x7	Ker.	3-4
Capital.....	15-30	1000	2	Own	4-4¾x6	Gas.	3
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	3
Case.....	15-27	1320	4	Own	4-4½x6	GorK	3-4
Case.....	22-40	2550	4	Own	4-5½x6¾	GorK	4-5
Case 40-72	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar .5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Caterpillar T35	15-25	....	2	Own	4-4 x5½	Gas.	3
Centaur.....	5-2½	345	2	N Way	2-4½x4½	GorK	1
Chicago....40	40	2500	4	Own	4-4½x6	Gas.	4
Cletrac.....F	9-16	595	*2	Own	4-3¼x4½	G,K,D	2
Cletrac.....W	12-20	1345	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Depue.....A	20-30	2500	4	Buda	4-4½x6	Gas.	4
Dil.....D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dil.....N.W.	20	2980	4	Midw.	4-4½x6	Gas.	3
Do-it-All....A	3-6	495	..	Own	1-4½x5	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B.....AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol.....D	9-18	1525	4	Lyc.	4-3½x5	Gas.	2
Farm Horse..B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Farquhar.....	15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar.....	18-35	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar.....	25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch..4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Ferdson.....	-18	$ 395	4	Own	4-4x5	G,K	2
Franklin....G	18-30	4000	*2	Clim.	4-5 x6½	G or K	3-4
Franklin....C	18-30	3350	*2	Clim.	4-5 x6½	G or K	3 4
Franklin...G2	18-30	4350	2	Clim.	4-5 x6½	G or K	3-4
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt...A	18-36	2150	4	Wauk.	4-4¾x6¾	G or K	4
Gray.....1920	18-36	....	3	Wauk	4-4¾x6¾	Gas.	4
Gt. Western St	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr..20	20	765	4	Own	2-5½x6½	K.D.	2
Hart-Parr..30	30	895	4	Own	2-6½x7	K.D.	3
‡Hart-Parr....	....	1695	4	Own	6½x7	K.D.	..
Heider.....D	9-16	870	4	Wauk	4-4¼x5¾	G,K	2
Heider.....C	12-20	995	4	Wauk	4-4½x6¾	G,K	3
Heider....Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4.	12-25	1185	4	Wauk	4-4½x5¼	G or K	3
Huber Super 4	15-30	1885	4	Midw.	4-4½x6	Gas	3
Illinois.....C	15-30	....	4	Clim.	4-5 x6½	G,K	4
Imperial....E	40-70	4500	4	Own	4-7½x9	G,K,D	10
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International .	8-16	†670	4	Own	4-4½x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5½x8	G,K,D	4
J-T.....N	20-40	....	*2	Clim.	4-5x6½	G,K,D	3-4
La Crosse.....	12-24	985	2	Own	2-6 x7	G,K	3
Lauson.....5	12-25	1295	4	Midw.	4-4½x5½	Gas.	3
Lauson.....21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lausen Road	15-30	2000	4	Beav.	4-4¾x6	K	....
Leader.....B	12-18	685	4	Own	2-6 x6½	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn.....H4J	40-	4500	*	Cont.	4-4½x5½	Gas	4
Linn.....W	60	5000	*	Wauk	4-5 x6¼	Gas	6
Little Giant..B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant..A	26-35	3300	4	Own	1-5½x6	K	6
Lombard.1922	35-150	5950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
Master Jr.....	5-10	585	..	LeR.	-2½x4	Gas.	1
MerryGar1922	2	210	2	Evin	1-2½x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Med.D	22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD	35-70	3850	4	Own	4-7½x9	G or K	8-9
Mohawk .1922	8-16	650	2	Light	4-3¼x4½	K or G	1-2
Moline Univ D	9-18	....	2	Own	4-3½x5	Gas.	2-3
Moline Orch..	9-18	....	2	Own	4-3½x5	Gas.	2-3
Meter Macult.	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	425	4	Own	2-3¾x4	Gas.	1
Nichols-Shep.	20-42	2650	4	Own	8 x10	G or K	3-6
Nichols Shep.	25-50	3000	4	Own	9 x12	G or K	4-7
Nilsen Senior..	20-40	1975	5	Wauk	4-5 x6¼	G,K	4
Oil Pull.....K	12-20	....	4	Own	2-6 x8	K,D	3
Oil Pull.....H	16-30	....	4	Own	2-7 x8½	K,D	4
Oil Pull ....G	20-40	....	4	Own	2-8 x10	K,D	5-6
Oil Pull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
Oldsmar GarK	2½-5	225	4	Own	1-5½x5½	Gas.	1
Peoria.....L	12-25	$1600	4	Clim.	4-5 x6½	G,K	3
Pioneer.....G	18-36	1750	4	Own	4-5½x6	G,K,D	4
Pioneer.....C	40-75	3550	4	Own	4-7 x8	Gas.	10
Plowman....A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable.....	10-20	390	4	Own	2-6 x7	Ker.	2
Rex.....	12-25	1600	4	Wauk	4-4¼x5¾	G or K	3
Russell.....	12-24	1500	4	Own	4-4¼x5¾	G or K	2-3
Russell.....	15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson....M	.....	445	4	Own	4-4 x5½	G,K	2
Sandusky....J	10-20	1250	4	Own	4-4¼x5¼	G,K,D	2
Sandusky....E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
Shelby.....D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby.....C	9-18	....	4	Wauk	4-3¾x5¾	G or K	2
Steady Pull..	12-24	1485	4	Own	4-4 x8	Gas.	3
Stinson....4E	18-30	1835	4	Beav.	4-4¾x6	G,K	4
Tioga.....3	18-32	....	4	Wisc.	4-4½x6	Gas.	3-4
Toro Cultivator	6	750	3	LeR	4-3½x4½	Gas.	2
ToroTractor'22	6-10	495	3	LeR.	4-3½x4½	Gas.	2
Townsend.....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend.....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend.....	25-50	2500	2	Own	4-8½x10	Ker.	4-8
Traction Meter	40-60	....	4	....	8-3½x5	Gas.	4-5
Trayler....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar....10	25-40	3750	*2	Wauk	4-5 x6¼	G or K	4
Twin City.....	12-20	1200	4	Own	4-4½x6	G,K	3
Twin City.....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City.....	40-65	4750	4	Own	4-7½x9	G,K	8-10
Uncle Sam C20	12-20	1295	4	Weid.	4-4 x5½	G	2-3
Uncle Sam B19	20-30	1085	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam D21	20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utiliter....501	2½-4	295	4	Own	1-3½x4½	G	1
Utiliter...501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	†995	4	Own	4-4½x5¾	G,K	3
Waterloo....N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore 21-22	12-25	1185	4	Wauk	4-4 x5¾	G,K	3
Whitney....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wiscensin...E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wiscensin...F	20-40	2050	4	Wauk	4-5 x6¼	G or K	4
Wiscensin...H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba....12-20	12-20	2400	*2	Wisc.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4½x6	G,K,D	..
Yuba....20-35	20-35	3900	*2	Wisc.	4-5½x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
†Yuba.....	$25-40	4750	*2	Yuba	4-5½x7	D	..
Zelle.....	12-25	....	4	Buda	4-4¼x5½	G or K	3

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. Clim.—Climax. Cont.—Continental. Dom.—Domas. Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. T.C.—Twin City. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor.

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Specifications of Current Passenger Car Models

NAME AND MODEL	Engine Make	Cylinders, Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Ace.....F	G-B	4-3½x5	114	32x4	$1295	$1295	....	....	$2295
Ace.....L	H-S	6-3¼x5	117	32x4	2260	2260	....	....	3680
Ace.....C	Cont.	6-3⅝x5½	123	33x4½	2975	2975	....	....	4500
Ambassador.....R	Cont.	6-3⅝x5¼	136	33x5	....	b4500	$4500	....	6500
American.....C	H-S.	6-3¼x5	127	33x4½	b1995	1850	1925	....	2695
Anderson.....Series 40	Cont.	6-3¼x4½	120	33x4	2195	1650	1795	$2150	2550
Apperson.....8-21-S	Own.	8-3¼x5	130	34x4½	....	2620	2645	3625	3695
Auburn.....6-51	Cont.	6-3¼x4½	121	32x4	1575	1575	1615	2275	2395
Bell.....4-32	H-S.	4-3½x5	114	31x4	1095	1095	....	....	....
Bell.....6-50	H-S.	6-3¼x5	124	32x4	1545	1545	....	....	....
Biddle.....B1 & B5	Buda.	4-3¾x5½	121	32x4	2950	b2950	....	3950	3950
Brewster.....91	Own.	4-4 x5½	125	32x4½	5000	5000	....	....	7000
Buick..1922-34-35-36-37	Own.	4-3⅜x4¾	109	31x4	895	935	....	1295	1395
Buick.....1922-44-5-6-7	Own.	6-3⅜x4½	118	33x4t	1365	1395	....	1885	2165
Buick.....1922-48-9-50	Own.	6-3⅜x4½	124	34x4½	n1785	n1785	1585	2075	2375
Cadillac.....61	Own.	8-3½x5⅛	132	33x5	3100	3150	3150	d3875	4100
Case.....X	Cont.	6-3¼x4½	122	32x4½	....	1890	....	....	2790
Case.....V	Cont.	6-3½x5¼	126	34x4½	....	....	1935	2585	2990
Chalmers.....1922	Own.	6-3¼x4½	117	32x4	1345	1395	1495	1995	2295
Chalmers.....1922	Own.	6-3¼x4½	122	32x4	....	....	1495	....	....
Chandler.....Six	Own.	6-3½x5	123	33x4	1595	1595	1695	2295	2395
Chevrolet.....490	Own.	4-3⅛x4	102	30x3½	525	525	....	{850	875
								{k720	
Chevrolet.....FB	Own.	4-3⅛x5¼	110	32x4	975	975	....	1575	1575
Cleveland.....41	Own.	6-3 x4½	112	32x4	1175	1195	....	1550	1595
Cole.....890	Nort.	8-3½x4½	127¼	33x5	2485	b2485	2485	3185	3685
Columbia....Challenger	Rut.	6-3½x5	115	32x4	....	1195	....	1995	1995
Columbia.....DeLuxe	Cont.	6-3¼x4½	115	32x4	1475	1475	....	2295	2350
Columbia.....Light Six	Cont.	6-3⅛x4¼	115	31x4	995	985	....	....	1395
Comet.....C-53	Cont.	6-3½x5¼	125	33x4½	....	1985	2085	....	2985
Crawford.....22-6-60	Cont.	6-3½x5¼	122½	32x4	3000	3000	3000	....	4500
Daniels.....D-19	Own.	8-3½x5¼	132	34x4¼	a4350	b4350	4350	5250	5950
Davis.....71	Cont.	6-3⅝x4¼	114	31x4	....	1195	....	....	....
Davis.....61-67	Cont.	6-3¼x4½	120	32x4	1595	1595	b1695	2095	2195
Dixie Flyer.....H-S-70	H-S.	4-3½x5	112	32x4	1175	1175	b1295	1545	1595
Dodge Brothers.....	Own.	4-3⅞x4½	114	32x4	850	880	....	{1280	1440
								{980h	
Dorris.....6-80	Own.	6-4 x5	132	33x5	....	b3970	3950	4985b	5750
Dort.....19-14	D-Ly.	4-3½x5	108	31x4	885	885	....	{1315	{1445
								{1065k	{1115k
Driggs.....Own.	Own.	4-2⅝x4½	104	30x3½	1275	1275	....	....	1975
Duesenberg...Straight 8	Own.	8-2⅞x5	134	33x5	6500	6500	6750	7800	7800
Du Pont.....A	Own.	4-3⅛x5⅛	124	32x4½	3000	3200	....	3800	4000
Durant.....A-22	Cont.	4-3⅞x4¼	109	31x4	n890	890	....	1365	1365
Durant.....B-22	Anst.	6-3¼x4½	123½	32x4½	1600	1650	....	2250	2400
Earl.....40	Own.	4-3⅞x5¼	112	32x4	1485	1095	950u	....	1795
Elcar.....K-4	Lyc.	4-3½x5	118	33x4	1095	1095	n1095	1345	....
Elcar.....7-R	Cont.	6-3¼x4½	118	33x4	1395	1395	n1395	2065	2165
Elgin.....K-1	Falls.	6-3½x4¼	118	33x4	1345	1295	b1345	2195	2195
Essex.....	Own.	4-3⅜x5	108½	32x4	....	1095	....	1195k	{1895
									{1295k
Ford.....T	Own.	4-3¾x4	100	30x3½	r319	s348	u285	580	645
Franklin.....9-B	Own	6-3¼x4	115	32x4	1900	1950	u1750	2750	2850
Gardner.....T-R & G	Lyc.	4-3½x5	112	32x4	895	895	....	....	1595
Grant.....	Own.	6-3⅛x4½	116	32x4	1385	1385	....	1895	1945
Gray.....	Own.	4-3⅝x4	100	30x3½	....	490	....	....	760
H.C.S.....Series 3	Weid.	4-3⅝x5½	120	32x4½	2400	2400	....	2850	3150
Halladay.....4	Own.	4-3½x5	115	32x4	1095	1095	....	1990	2085
Halladay.....6	Own.	6-3½x5	115	32x4	1595	1595	....	2295	2395
Handley-Knight.....	Own.	4-4½x4½	125	32x4½	....	....	2650	3450	3450
Hanson.....30	Cont.	6-3½x4¼	112	31x4	....	995	....	....	....
Hanson Six.....60	Cont.	6-3¼x4½	121	32x4	1595	1595	1795	b2475	2585
Hatfield.....A-42	H-S.	4-3½x5	115	32x4	....	1345	b1315	1950	1950
Haynes.....75	Own.	6-3½x5⅛	132	34x4½	2395	b2395	2395	....	3395
Haynes.....55	Own.	6-3½x5	121	33x4	1645	1595	....	2295	2595
Haynes.....48	Own.	12-2¾x5	132	34x4½	2895	3595	2895	....	3895
Holmes.....Series 4	Own.	6-3¼x4¼	126	34x4½	....	b2500	2500	b3300	3600
Hudson.....Super 6	Own.	6-3½x5	126	34x4½	....	b1645	1695	2570	{2650
									{1745k
Huffman.....	Cont.	6-3⅝x4½	120	32x4	1395	1395	....	....	2295
Hupmobile.....Series R	Own.	4-3¼x5½	112	32x4	1250	1250	....	1835	1935
Jackson.....638	Cont.	6-3¼x4½	121	32x4½	....	1485	b1685	2985	2985
Jewett.....Six	Own.	6-3¼x5	112	31x4	1065	1065	....	....	1395
Jordan.....MX	Own.	6-3⅛x4¾	120	32x4	1895	1795	....	2785	2785
Kenworthy.....8-90	Own.	8-3 x5¼	130	32x4½	5000	5000	5250	6000	6000
King.....K	Own.	8-3 x5	120	32x4½	1795	1795	b1795	2400	2550
Kissel.....45	Own.	6-3⅛x5½	124	32x4½	n2385	1885	2385	b2975	3075
Kline Kar.....6-55-K	Cont.	6-3½x4½	121	33x4	1790	1790	1790	2850	2890
LaFayette.....	Own.	8-3½x5¼	132	33x5	3985	b4090	4090	5000	5175
Leach.....999	Own.	6-3¼x5¼	134	32x4½	6500	6500	6500	6500	6500
Lexington.....22	Anst.	6-3½x4½	123	32x4½	....	1745	....	....	....
Lexington.....T-22	Anst.	6-3½x4½	128	32x4½	....	....	2285	....	3350
Lexington.....ST-22	Anst.	6-3½x4½	122	32x4	....	2100	....	....	....
Liberty.....10-D	Own.	6-3½x5	117	32x4	1295	1295	b1345	2085	2245

NAME AND MODEL	Engine Make	Cylinders, Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Lincoln.....	Own.	8-3⅜x5	130	33x5	$3800	b3800	$3300	$3900	$4200
Locomobile.....48	Own.	6-4½x5½	142	35x5	....	b7600	7600	10500	11000
Maibohm.....B	Own.	6-3½x4½	116	32x4	1395	1395	b1495	2165	2165
Marmon.....34	Own.	6-3⅝x5⅛	136	32x4½	3385	b3185	3185	3985	4385
Maxwell.....	Own.	4-3⅝x4½	109	31x4	885	885	....	1385	1485
McFarlan.....1922	Own.	6-4½x6	140	33x5	6300	b6300	6300	7500	7500
Mercer.....Series 5	Own.	4-3¾x6¾	132	32x4½	3950	b3950	c3950	4850	5250
Merit.....	Cont.	6-3¼x4½	119	32x4	1895	1895	....	....	....
Mitchell.....F-50	Own.	6-3½x5	120	33x4	a1490	1490	b1690	2050	2275
Mitchell.....F-50	Own.	6-3½x5	127	32x4½	....	....	1690	....	....
Monroe.....1922-S-9	Own.	4-3¼x4½	115	32x3½	875	875	....	....	....
Moon.....6-40	Cont.	6-3⅝x4¼	115	31x4	....	1295	....	....	1695
Moon.....6-48	Cont.	6-3¼x4½	122	32x4	1785	1785	2285	2785	2785
Nash.....691-96-97	Own.	6-3¼x5	121	33x4	1360	1390	b1540	....	....
Nash.....692-94-95	Own.	6-3¼x5	127	34x4½	....	....	1540	2090	2390
Nash Four.....41-4	Own.	4-3⅜x5	112	33x4	965	985	....	{1485	{1645
								{1295k	{1350k
National.....BB	Own.	6-3½x5¼	130	32x4½	a2475	b2475	2375	3725	b3250
Noma.....3C	Cont.	6-3¼x4½	128	32x4½	2000	b2100	c2200	....	3200
Noma.....1D	Bea...	6-3½x5¼	128	32x4½	3000	b3100	c3200	....	5500
Norwalk.....430-KS	Lyc...	4-3½x5	116	32x3½	....	1035	....	....	....
Oakland.....6-44	Own.	6-2¾x4¾	115	32x4	1120	1145	b1265	{1685	1785
								{1285k	
Ogren.....6 T De Luxe	Cont.	6-3⅝x5¼	134	33x5	b3750	3750	3850	4500	4800
Oldsmobile.....43-A	Own.	4-3¼x5¼	115	32x4	....	1145	b1145	1645	1795
Oldsmobile.....46	Own.	8-2⅞x4¾	122	33x4½	....	b1735	1735	....	2635
Oldsmobile.....47	Own.	8-2⅞x4½	115	32x4	1595	b1595	....	2145	2295
Overland.....4	Own.	4-3⅜x4	100	30x3½	550	550	....	850	895
Packard.....Single-Six	Own.	6-3⅜x5	126	33x4½	2485	2485	u2250	3175	3275
Packard.....Single-Six	Own.	6-3⅝x5	133	33x4½	....	u2350	2685	....	3525
Packard.....Twin Six	Own.	12-3 x5	136	35x5	3850	3850	3850	5240	5400
Paige.....6-44	Own.	6-3¼x5	119	32x4	1465	1465	u1290	1995	2245
Paige.....6-66	Cont.	6-3⅜x5	131	33x4½	a2495	n2245	2195	3100	3155
Paterson.....22-6-52	Cont.	6-3¼x4½	120	32x4½	....	1550	1585	2595	2595
Peerless.....56-S-7	Own.	8-3½x5	125	34x4½	....	b2790	2790	3500	3760
Pierce-Arrow.....	Own.	6-4 x5½	138	33x5	7000	b6500	6500	8000	8500
Pilot.....6-50	H-S.	6-3¼x5	126	32x4½	2050	2000	2050	2950	3000
Premier.....6-D	Own.	6-3⅜x5½	126¾	33x5	3150	b3100	3250	4300	5100
Premocar.....6-40-A	Falls.	6-3½x4¼	117	32x4	1095	1095	...	1750	1825
R & V Knight.....R	Own.	4-3¾x5	116	32x4	..	1665	...	2385	2475
R & V Knight.....J	Own.	6-3½x4½	127	32x4½	2475	b2475	2475	3015	3105
Reo Series...B-T6 & U6	Own.	6-3⅛x5	120	33x4	1595	....	1595	2355	2435
ReVere.....C	Dues.	4-4½x6	131	32x4½	3200	3200	3200	....	4000
Rickenbacker.....A	Own.	6-3⅛x4¾	117	32x4	....	1485	....	1885	1985
Roamer.....6-54-E	Cont.	6-3½x5¼	128	32x4½	2850	b2585	2785	3850	3850
Roamer.....4-75-E	Dues.	4-4¼x6	128	32x4½	3985	b3585	b3750n	....	b4650
Rolls-Royce.....	Own.	6-4½x4¾	143½	33x5	....	10,900	....	....	....
Saxon.....125	Own.	4-3½x5	112	32x4	1195	1195	....	1795	1795
Sayers Six.....DP	Cont.	6-3¼x4½	118	33x4	1695	1695	....	2795	2795
Seneca.....L-2 & O-2	Lyc.	4-3½x5	108	30x3½	875	875	....	....	....
Seneca.....50 & 51	Lyc.	4-3½x5	112	31x4	1095	1095	....	....	....
Sperling.....A	Supr.	4-3⅜x5	114	32x4	980	980	....	1685	1685
Standard.....98	Own.	8-3¼x5	127	34x4½	2150	b2500	2500	2750	3200
Stanley.....	Own.	2-4 x5	130	34x4½	2800	2600	2600	3775	3850
Stanwood Six.....	Cont.	6-3¼x4½	118	33x4	1765	1765	....	2750	....
Star.....	Cont.	4-3½x4¼	102	30x3½	r319	s348	u285	580	645
Stearns-Knight.....SKL4	Own.	4-3¾x5⅝	125	34x4½	2250	2250	2450	3150	3450
Stearns-Knight.....6	Own.	6	...	.....	2700	2700	2850	3500	3700
Stephens.....90	Own.	6-3¼x4½	122	33x4½	1575	b1595	c1625	2450	2550
Stevens-Duryea.....E	Own.	6-4⅞x5½	138	35x5	7250	b6900	6800	u5600	b8900
Studebaker.... Light Six	Own.	6-3½x4½	112	32x4	1045	1045	....	1375	1750
Studebaker...Special Six	Own.	6-3½x5	119	32x4	1425	1475	b1475	2150	2350
Studebaker.....Big Six	Own.	6-3⅞x5	126	33x4½	....	n1985	1785	2500	2700
Stutz.....	Own.	4-4⅜x6	130	32x4½	2950	b2990	c2990	3990	4450
Templar.....A-445	Own.	4-3⅜x5½	118	32x4	2025	2125	b2175	2785	2785
Tulsa.....E-1-2-3	H-S.	4-3½x5	117	33x4	1175	1175	....	....	....
Velie.....48	Cont.	6-3¼x4½	115	32x4	1585	1585	b1800	2485	2485
Velie.....34	Falls.	6-3½x4½	112	32x3½	1235	1235	....	1750	2085
Velie.....58	Own.	6-3⅜x4¼	115	32x4	1395	1395	....	2085	2185
Washington.....6	Cont.	6-3¼x4½	116	32x4	....	1785	....	....	....
Westcott.....C-48	Cont.	6-3½x5¼	125	32x4½	....	....	1890	....	2890
Westcott.....A-44	Cont.	6-3¼x4½	120	32x4	....	1690	n1890	....	2690
Wills Sainte Claire..A-68	Own.	8-3¼x4	121	32x4½	2475	2475	....	3275	3475
Willys-Knight.....20	Own.	4-3⅝x4½	118	32x4	1350	1375	....	1875	2095
Winton.....40	Own.	6-3¾x5¼	132	35x5	3400	b3600	3400	4450	4550

a—3-passenger. b—4-passenger. c—6-passenger. n—Sport. h—All Metal Type. k—Soft Top Type. u—Chassis Price. r—Price without starter and demountable rims. Price with starter and demountable rims $414. s—Price without starter and demountable rims. Price with starter and demountable rims $443. t—Model 47—34x4½ Tires.

Engine Make: Anst—Ansted. Bea—Beaver. Cont—Continental. Curt—Curtis. D.Ly—Dort Lycoming. G-B—Grey Beal. H-S—Herscnell-Spillman. Lyc—Lycoming. Nort—Northway. Roch—Rochester. Rut—Rutenberg. Supr—Supreme. Weid—Weidely. Wisc—Wisconsin.

NOTE—The following price changes have been announced since the table was compiled: Case, X 5 passenger $1,790, sedan $2,690; Davis, 71, 5 passenger $1,295; Daniels sedan $6,000; Stanley 2 passenger $2,700, 5 passenger $2,700, 7 passenger $2,700, sedan $3,950; Monroe 2 passenger $959, 5 passenger $950; LaFayette Coupe $5,500, sedan $5,500.

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MOSSBERG

ALL STEEL WRENCHES AND TOOLS



No. 612 Speed Brace

Speed Brace Socket Wrenches

No wrench can handle that out-of-the-way nut or bolt like a Speed Brace Socket Wrench. And the Mossberg line contains a complete assortment of these efficient wrenches in all sizes and shapes for all kinds of work.

These are supplied the dealer, together with sales boards—Silent Salesmen—in assortments that correspond with the demand. All live ones. Mossberg all-steel construction, finished in burnished nickel. Rugged, practical wrenches, made for hard work. Popular among your customers.

No. 2400 Salesman

This well balanced display board **assortment contains 70** Speed Braces in quantities ranging from four to nine of each wrench. Each number is made of ½ inch steel bar, is 19¼ inches in length, and is finished in burnished nickel. The board itself is made of chestnut with nickeled steel hook. Size, 20 inches by 60 inches. Free with complete assortment.

"L" Salesman

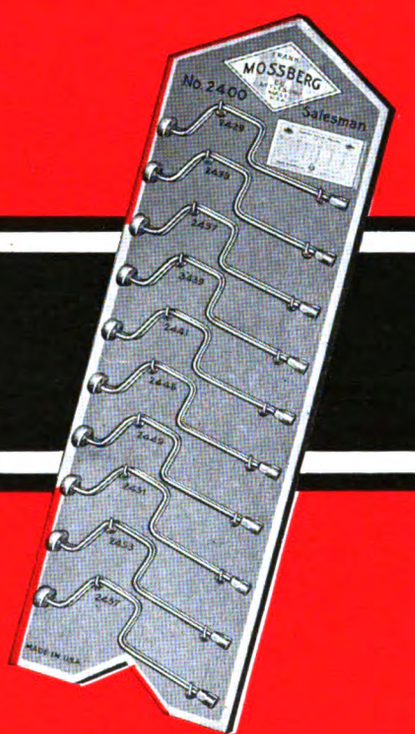
Assortment contains 140 Solid Socket Wrenches—47 6-inch "T" Wrenches—57 12-inch "T" Wrenches, and 36 10-inch Offset Wrenches. All fast sellers. Constructed of ½ inch steel bar, finished in burnished nickel. Board 20 inches by 60 inches—same high quality as "2400" board. Furnished free with complete assortment.

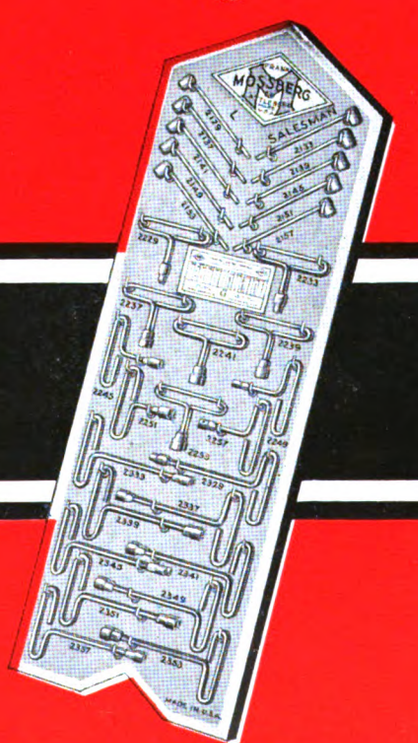
Write for 1922 *catalog and prices*

FRANK MOSSBERG COMPANY
WRENCHSMITHS FOR 25 YEARS
LAMB STREET
ATTLEBORO. MASSACHUSETTS

Branch Offices

CHICAGO, ILL.....180 No. Market Street
SAN FRANCISCO, CAL.....626 Underwood Building
LOS ANGELES, CAL.....503 Equitable Building
SEATTLE, WASH.....214 Maritime Building
DALLAS, TEXAS.....1129 No. Beckley Avenue
MONTREAL, QUE.....332 Bleury Street
FOREIGN SALES OFFICE....461-475 Eighth Avenue, New York City





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Gill One-piece Piston Rings

keep valves from pitting

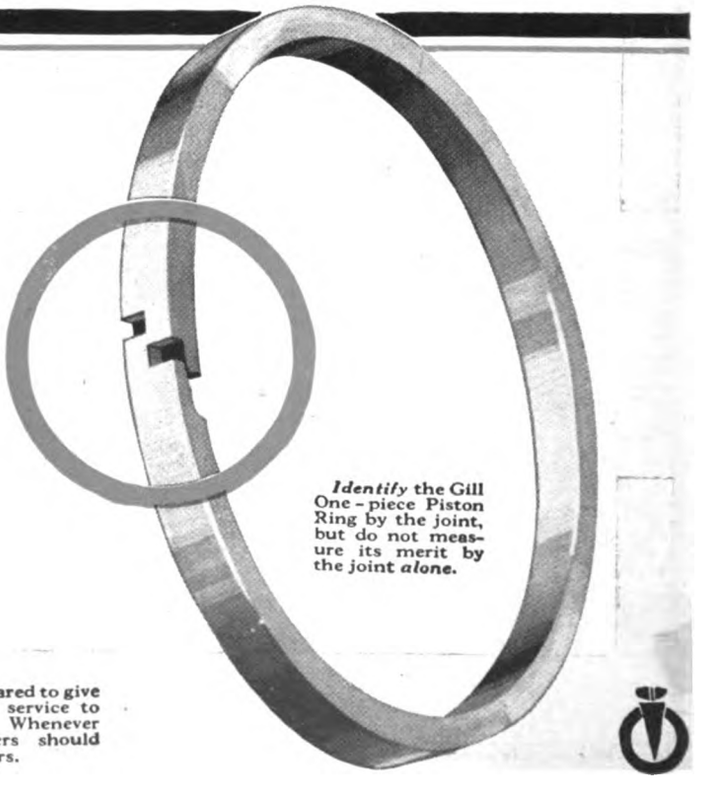
BECAUSE: oil cannot work up beyond them and get into the firing chamber. Thus carbon is kept from collecting on the walls of the firing chamber, the spark plugs, and the valves. And if a valve does not become carbonized it will not pit. While Gill Piston Rings are holding oil out of the combustion chamber, they also keep condensed gas from working down into the crank case where it mixes with, and thins, the lubricating oil.

THE GILL MANUFACTURING COMPANY,
8300 South Chicago Avenue, Chicago, Illinois

Canadian Manufacturer:
BROWN ENGINEERING CORPORATION, Limited
Toronto, Ontario

Sole Export Agents:
AUTOMOTIVE PRODUCTS CORPORATION
Woolworth Building, New York, N. Y.

Price Reduced to 75¢



Identify the Gill One-piece Piston Ring by the joint, but do not measure its merit by the joint *alone*.

39 Branch Offices prepared to give practically 24-hour service to the entire trade. Whenever possible, however, dealers should order through their jobbers.

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MOTOR WORLD

for

DEALERS, JOBBERS AND GARAGEMEN

Volume LXXII
Number 4

PUBLISHED WEEKLY AT 239 WEST 39th STREET
NEW YORK, JULY 26, 1922

Thirty-five cents a copy
Three dollars a year

Are you displaying this sign?

"Ask 'em to buy"—



DEALERS the country over are wiring and writing for the 1922 BOYCE MOTO-METER SERVICE STATION APPOINTMENT.

Under this new policy—authorized Service Stations may replace any BOYCE MOTO-METER which may have become damaged in any manner, with a brand new one at half price.

This new plan will make thousands of new BOYCE MOTO-METER boosters.

It is designed to bring BOYCE MOTO-METER owners to *your* store—giving you the opportunity of increasing your sales on *all* lines.

Write your regular jobber—or ourselves—for complete details today. Tomorrow may be too late.

BOYCE
MOTO METER

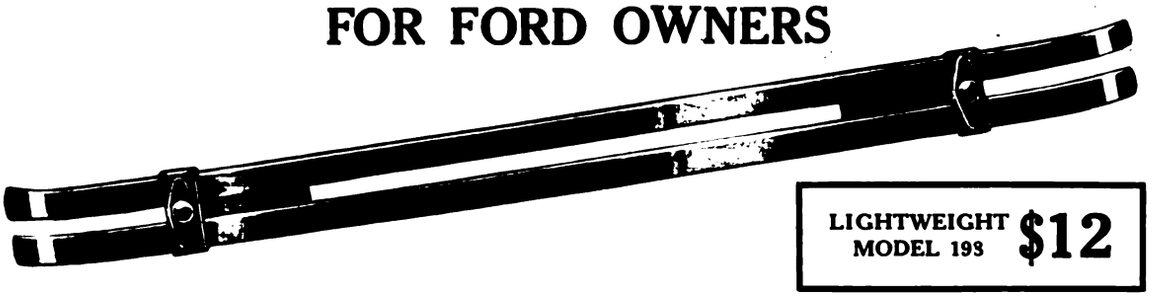
"On the radiator cap of millions of cars"

Entered as second-class matter Jan. 2, 1903, at the post office at New York, N. Y., under Act of March 3, 1879.

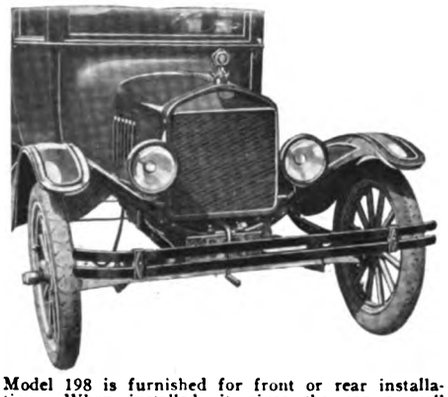
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100% BUMPER PROTECTION

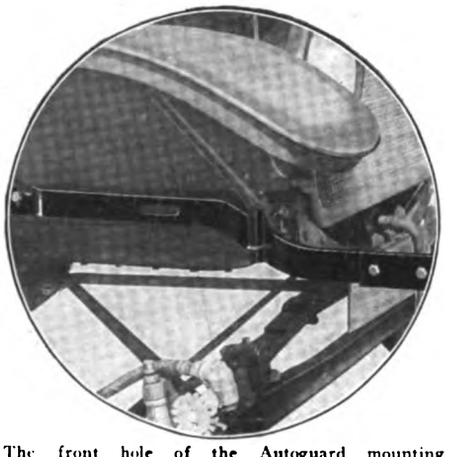
FOR FORD OWNERS



LIGHTWEIGHT MODEL 198 $12



Model 198 is furnished for front or rear installation. When installed, it gives the car a well balanced appearance. The double rails insure 100% protection.



The front hole of the Autoguard mounting bracket is fastened with a U bolt connection to a stud installed on the end of the front fender brace. With a longer bolt furnished with the set, the rear end of the bracket is bolted to the car frame, after removing bolt supporting rear fender brace. No drilling required.

THE three prominent features of the new Stewart Model 198 Autoguard make it a "live wire" addition for the bumper line of every dealer.

1. The new improved all-steel installation guarantees a firm, rattle-proof anchorage to the car frame. Quickly and easily installed.
2. It offers 100% bumper protection. Double rails extending the full width of the car prevent another bumper from slipping above or beneath to damage fenders, headlights, etc. The guardrails are of a lightweight but sturdy construction—not too heavy for the frame of the car.
3. The price is attractive. You can feature this double rail model at $12. With nickel-plated rails, $17.

DEALERS: Advertising on Stewart Autoguards includes full page advertisements in the Saturday Evening Post, Motor and Motor Life. Magazine advertising was supplemented with a nationwide newspaper campaign and a coast to coast poster and painted display. Model 198 is only one of the many models of Stewart Autoguards, the most widely advertised line of bumpers on the market today.

Write for our Autoguard Catalogue, giving complete information on all models and installations.

Stewart

PRODUCTS

STEWART-WARNER SPEEDOMETER CORP'N, Chicago, U. S. A.

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MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

Reg. U. S. Pat. Off.

239 West 39th St., New York City Phone Bryant 8760

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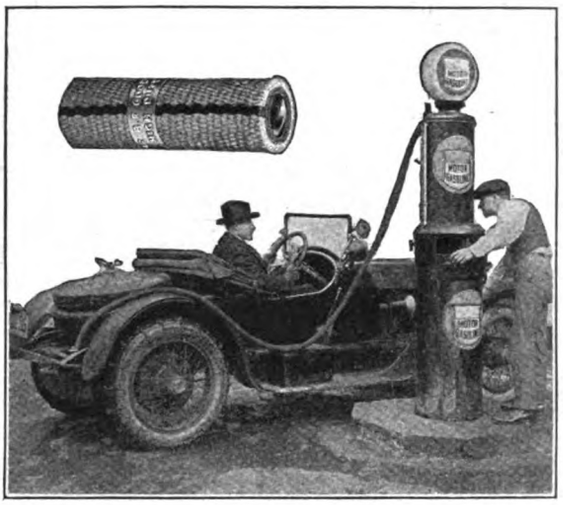
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The Gasoline Hose without a Drawback

Here is where Goodrich's half century of rubber experience saves you money, time and trouble. Gasoline and rubber are natural enemies—it has taken Goodrich years to discover how to make them friends, and Goodrich has patented the secret.

No more rubber in "gas" tanks

The devitalizing action of gasoline on the rubber tube is conquered by a special Goodrich compound. The tube is further protected by a fabric liner held firmly in place by an inner coil of flat wire. Tube cannot check, soften, crack, become porous or peel. Particles of rubber cannot find their way to the automobile gas tank—there are none.

Weather-proof

Goodrich "HIGH DUTY" Gasoline Hose has an extra heavy woven cotton jacket—dampness, dust, sun, rain, and frost cannot rot or crack it.

Meets all requirements of underwriters.

Your Goodrich Branch has this perfect gasoline hose in stock—any length up to 50 feet; in ¾", 1", 1¼", and 1½" sizes

THE GOODRICH RUBBER COMPANY

Akron, Ohio

GOODRICH

Gasoline Hose

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No "Hard Spots"

Because they are heat-treated, Spencer-Smith Pistons have no "hard spots", which cause uneven wearing surfaces.

Being annealed at high temperature—with no flame touching the castings—Spencer-Smith Pistons cool uniformly in the motor, hold compression and give long-continued service.

SPENCER-SMITH MACHINE COMPANY
HOWELL MICHIGAN

Largest Manufacturers of Pistons Exclusively



SPENCER-SMITH PISTONS

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXII New York, U. S. A., Wednesday, July 26, 1922 No. 4

She's Bound to Go Along but Can't We Find Some Way to Reduce Her Weight?



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Are Used Cars Merchandise?

And Can ALL the Trade Treat Them as Such?

Trade Association Secretaries Will Have a National Conference on the Subject in September—Meanwhile, Some Association Used Car Activities Are Worth Studying

INVITATIONS have been mailed to automobile trade association secretaries throughout the country to attend a National Used Car Conference in Chicago, Sept. 14-15, under the auspices of the National Association of Automobile Show and Association Managers. Secretaries are urged by the association to reserve the dates. There will be addresses and discussions on individual and co-operative used car merchandising plans, with the object of informing the trade generally on the most practical and progressive methods of handling used cars without loss. If the secretary of your association has not received an invitation, tell him to write for one to the office of the association, 239 West 39th Street, New York.

AN automobile dealer, apparently considerably discouraged over methods of selling cars in his territory, wrote to Motor World a few days ago suggesting an industry-wide discussion of the subject, "Are Automobiles Merchandise?"

Truth would compel an answer in the negative in some dealer establishments but, taking the trade as a whole, the thought arises, wouldn't the question apply more widely to used cars than new ones?

Merchandising, as every one knows, implies selling goods at a profit. Keeping this definition in mind, how many men in the trade can say they are merchandising used cars?

Some dealers are doing it. After acquiring used cars at prices which will permit their sale at a profit, or at least at a figure which will not cut into the profit on new cars, they move their used car stocks by advertising them properly, displaying them properly, demonstrating them properly and employing real salesmen—not shoddy second raters—to present these cars to the public.

Many cities, large and small, have co-operative used car plans. Some exchange allowance information, with dealers stating reasonable allowances on back models of the makes of cars they sell. Others confine the exchange to prices obtained in sales of used cars. In most cities where there are co-operative plans the dealers get together once a week, or at least once a month, for frank discussions of the used car situation.

With the idea of bringing out into the light all that is progressive in used car merchandising, a National Used Car Conference of automobile trade association secretaries is to be held in Chicago in September.

The conference will be held under the auspices of the National Association of Automobile Show and Association Managers. The dates will be Sept. 14-15.

To this meeting all dealer association secretaries and managers will be invited, regardless of their membership in the national association.

At this meeting men who have given thought and study to the used car question and who have accomplished something in improving conditions in their territories will be speakers. And there will be a round table discussion of both individual and co-operative used car merchandising methods.

The national association's officers believe that the conference will serve as a clearing house for progressive used car ideas at a time when the trade most needs them—at the beginning of the fall season. They believe that association secretaries and managers who take the time and spend the money to attend will be repaid by worth while information for their associations.

The National Association of Automobile Show and Association Managers is an organization of several years' standing. Robert E. Lee, secretary of the St. Louis Automobile Dealers' Association, is acting president. Neal G. Adair, editor of Motor World, is executive secretary and treasurer. The directors, in addition to the president and secretary, are: Prince Wells, Louisville Automobile Dealers Association; H. H. Shuart, Detroit Automobile Dealers Association; Herbert Buckman, Cleveland Automobile Dealers Association. The membership hails from all sections of the country.

Boston Used Car Plan Turns Losses Into Profits

BOSTON has worked out a plan for scientifically arriving at allowance prices on used cars. With arbitrary allowance estimates as a beginning, the Boston Used Car Statistical Bureau is now making up figures as a guide to dealers by studying and averaging prices covering a wide range of sales of virtually all makes of cars, as reported to the bureau by member dealers.

The plan works like this: At the start—last mid-winter—it was decided, in order to put the plan in operation, to value used cars as follows: 1921 models, 68 per cent of list price; 1920, 40 per cent; 1919, 30 per cent; 1918, 24 per cent, and 1917, 17 per cent. At the same time the dealers co-operating with the bureau began making weekly reports of used car sales, giving allowances, selling prices and other essential information. Study of these reports from week to week has enabled the bureau officers to revise the guide book scientifically, on the basis of actual market value of the cars, but it is interesting to note that in six months the listings have been changed very little from the original figures, remaining virtually the same in the case of most cars selling new for less than $3,000 and being raised a few points on some cars in the class above $3,000.

The Boston loose leaf allowance book indicates prices

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that dealers can allow, and avoid losses in trading. The figures are being widely followed, not only by members of the Boston bureau, but by many New England dealers outside Boston who have obtained copies of the guide.

The bureau, a co-operative effort of Boston automobile dealers, has been operating since late winter. Figures compiled show that the dealers participating lost $94,000, in the aggregate, on used cars in February and March. In April and May they made a profit of $9,574, that is, they did a little better than break even in those months.

The bureau was older and working more smoothly in the latter two months. They were months, too, when it was easier to sell used cars. Generally, conditions were favorable for the improved showing. The fact remains, however, that in April and May the dealers did not lose money on trades.

There are other interesting figures. In February and March Boston dealers handled used cars to the value of $593,807, on which they took the $94,000 loss stated.

In April and May used cars traded showed a total allowance value of $1,176,081. The dealers spent for repairs, replacements, storage and selling expenses, $216,644. That ran the total up to $1,392,257. These cars were sold for $1,402,300, showing a profit of $9,574.

The figures show that during April and May the dealers took in cars of their own make valued at $834,275 and spent $78,945 putting them into shape for resale, or about 10 per cent. In the same period cars valued at $341,806 not of the make dealers were handling were accepted by the dealers. And in reconditioning them for resale they spent only $11,086, or about 3¼ percent of the allowance price. This shows the different treatment accorded the dealers' own and other cars.

"If the Boston Used Car Statistical Bureau were to cease functioning to-morrow I would continue working along the lines upon which it is operating because I have learned motor values."

That is the way one of the best known dealers in Boston appraised it a few days ago.

Perhaps a good way to put it is that the bureau has been a sort of course in business administration for some of the co-operating dealers. Certainly it has taught many dealers what the fundamental principles are in the business world; what overhead means, what real commission values are, etc. Some idea of the widespread attention the bureau has achieved may be learned from the fact that while it has been in existence only a few months a stock of used car allowance books numbering 2000 has been sold, and among the buyers were dealers from the most northern points in New England to the New York territory in Connecticut.

When the bureau was formed quarters were chosen in the center of the automobile district and put in charge of an official who has had experience as a dealer. Now the bureau has on its list all but two or three dealers.

Each week there is a meeting of the general committee. Each month there is a meeting of the entire membership to hear reports. When necessary special meetings are held.

All the dealers send in to the secretary lists all models of their cars except current models, with reasonable allowance prices. These served as a working basis for the committee in getting up a loose leaf book as a guide to reasonable allowances. Dealers co-operating in the plan have copies of the book. Then each week a list is sent in of allowances and sales prices. Card indexes have been arranged whereby it is possible now to check up on, say, 10 sales of some particular model, showing whether the allowance price in the book is too high or too low.

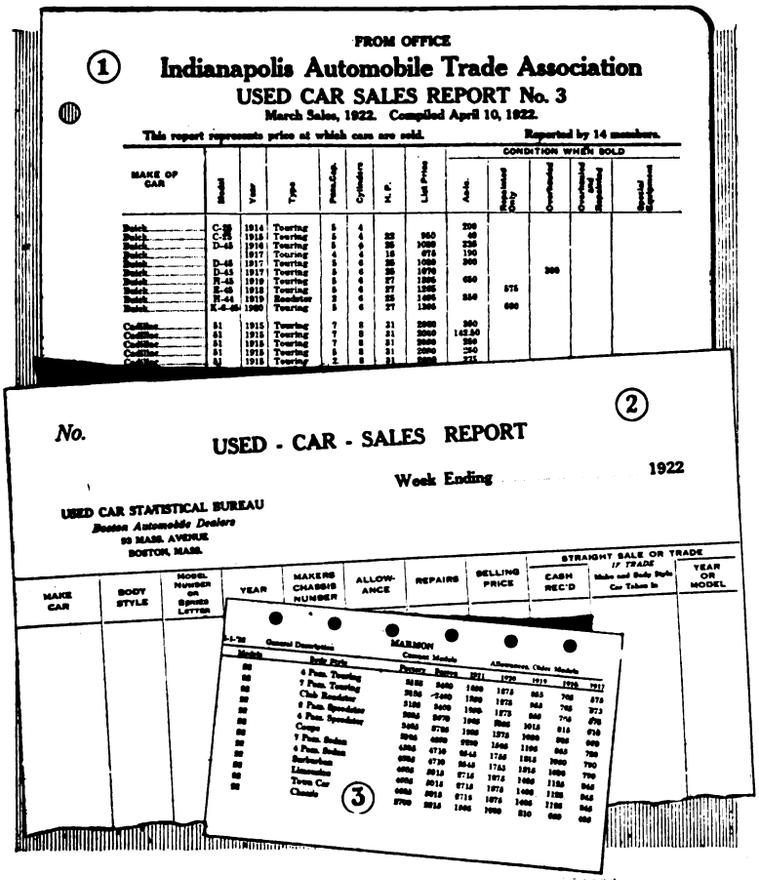
These Boston dealers, when they take in a car, allow anything up to the listed allowance price. The sale depends upon themselves. Generally they charge 10 per cent for reconditioning and selling. Some sell the car "as is." The light of facts is turned on fictitious allowance prices and selling is put on a stable basis.

It is no longer guesswork. All the listed allowance values are based on the weekly reports from dealers on allowance and sale prices. As the number of transactions reported increases it will be possible to work out closer averages, giving dealers still more accurate information as a guide in making allowances and resale prices.

Naturally there was opposition from the car owning public. But "selling" of the idea of reasonable depreciation has met with considerable success, and the slowing up of new car business which followed the establishment of the bureau plan was serious only for a time.

The Boston dealers have no penalty clause for dealers who do not keep within the maximum bureau allowance

A Glimpse at Some Co-operative Used Car Systems


FROM OFFICE

① Indianapolis Automobile Trade Association

USED CAR SALES REPORT No. 3

March Sales, 1922. Compiled April 10, 1922.

This report represents price at which cars are sold. Reported by 14 members.

CONDITION WHEN SOLD

MAKE OF CAR | Model | Year | Type | Pass. Cap. | Cylinders | H.P. | List Price | Ask. | Reconditioned Only | Overhauled | Overhauled and Repainted | Special Equipment

② No. USED - CAR - SALES REPORT Week Ending 1922

USED CAR STATISTICAL BUREAU
Boston Automobile Dealers
99 MASS. AVENUE
BOSTON, MASS.

MAKE CAR | BODY STYLE | MODEL NUMBER OR SPEED LETTER | YEAR | MAKERS CHASSIS NUMBER | ALLOWANCE | REPAIRS | SELLING PRICE | STRAIGHT SALE OR TRADE IF TRADE: CASH REC'D; Make and Body Style Car Taken In | YEAR OR MODEL

③ MARMON

At the top is the monthly report issued to members by the Indianapolis Automobile Trade Association as a guide to dealers in fixing allowance and resale prices. The report is made up from reports to the association by co-operating dealers. In the center is the weekly report which co-operating dealers file with the Boston Used Car Statistical Bureau. From these reports the bureau revises whenever necessary the allowance values given in loose leaf guide, a page of which is also shown

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figures. The plan is to show by example and experience that allowing more than used cars are worth is inviting loss, and to rely on the dealers' good judgment to keep the plan in operation.

"By buying right," a Bostonian says, "the Boston dealers are able to sell used cars right. They have no big stocks on hand. To-day in Boston the used car 'problem' is being solved."

The Indianapolis Plan

THE co-operative used car plan of the Indianapolis Automobile Dealers Association includes a monthly report on resale prices of cars actually traded, which, in turn, is made up from reports to the association by individual dealers.

Now, according to the best information in the hands of the leading motor car merchants of Indianapolis, the dealers who sell 85 per cent of all the cars are following the most approved used car methods, are estimating correct values and are making money on used cars they handle.

To carry out the continuous study of the used car situation the dealers' association employed an assistant for John B. Orman, who has been manager of the association for a number of years. The whole time of this man is devoted to used car work. Besides this a series of weekly meetings of the used car heads of the various establishments was started. The weekly meetings for discussion of the fine points of used car merchandising were found of great help. These meetings were continued up to May of this year, when the weekly feature was dropped, but monthly and special meetings are still held.

Back in the fall of 1918 the association began its first regular work on this problem. At that time the plan of gathering reports of prices at which used cars were sold from dealers was started. These reports gave the name of the car, the type, the condition in which it was sold ("as is," repainted, overhauled or renewed) and the price at which it was sold. These were then printed with omission of all dealers' names and distributed to all the local trade. These monthly used car sales reports are still being issued, and they serve to show the improvement that has been brought about by the seven months of educational work of the Indianapolis plan.

Just subsequent to the starting of the Indianapolis used car plan a local newspaper ran a story by an automotive writer that gave to owners the new used car slant, and warned them that the day of indiscriminate trade was gone. The story showed the subject in its true light and pointed out the advantage to the owner and buyer of having the dealer make money instead of losing it every time he traded. Eighteen thousand reprints of this news story were sent to local owners and prospects. They helped in the education of the owner to expect fair, but far less generous treatment than he had obtained in the past.

This Jobber's Store a Model for His Trade

IN order to improve the service to the wholesale trade, the Beck & Cordict Iron Co., equipment jobbers in St. Louis, has opened a branch in the center of the motor car industry in that city. It is the intention of the company to make this branch of the best possible service to the dealer. The general office and country shipping department will be continued at the old location at First and Ashley Streets.

The branch on Locust Street contains a fine salesroom with facilities for displaying accessories and equipment.

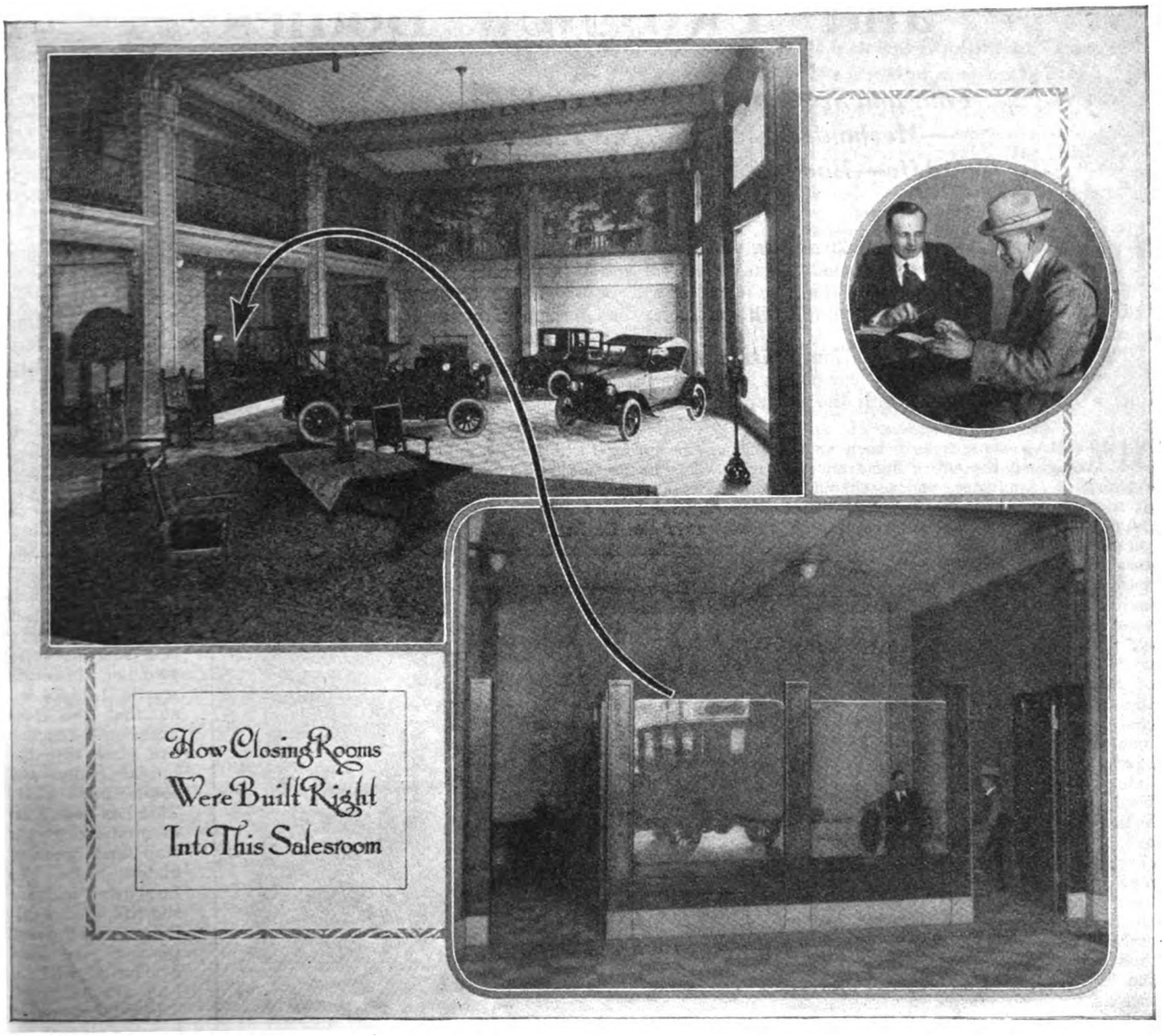
One of the strong features of the new store is a room on the second floor with a seating capacity of about 250 which will be utilized for sales and dealer meetings, forwarding sales promotion work and other merchandising activities of this jobber.



Here is a view of the salesroom of the new Beck & Cordict Iron Co. branch, St. Louis. This branch was established in the center of the automobile industry in St. Louis for the purpose of better service to the automobile trade. This is the west aisle, where an attractive display of garage equipment is made

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Leading the Prospect to the Dotted Line



WHEN a salesman has a prospect warmed up to the point of closing, he should have some appointed place in which to invite the prospect to talk over the final details of the sale. The individual closing room is the ideal place, as, in the study of the psychology of salesmanship—the science of mind—it is found that a prospect can be swung to a favorable decision much more readily in quiet and more or less privacy than he can if the salesman is handling him out in the main salesroom in the midst of considerable activity, with many people possibly near at hand. In the closing room, the salesman can get the prospect to concentrate on the matter at hand—the purchase of an automobile from the house. There's nothing to distract his attention—nothing to "go wrong" if the salesman guides his "ship of salesmanship" properly.

The W. P. Herbert Co., Cleveland and Chandler dealer in Los Angeles, has an ideal arrangement for their closing rooms. They are, in fact, a part of the main salesroom but are cut off by glass partitions. There are several advantages to the glass partition. In the first place, the customer does not lose sight of the cars on display in the main salesroom, if he chances to glance around. Further, he is not removed from the "automobile atmosphere" so ideally generated in the attractive display room of the Herbert company. The Herbert company has two closi g rooms, and it finds these ample.

There are direct phone connections in each of the closing rooms. This is a rather important feature, as it is a decidedly unwise policy to call a salesman away from a prospect when negotiations for the sale of a car are in their last stages. As a matter of fact, the Herbert company has found that when a salesman has a prospect in the closing room, it is not advisable to call him on the telephone except for a message of the utmost urgency.

Closing rooms have proved their worth in small as well as in large establishments. A small private office will fill the bill.

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1923 Buick Has Chassis Changes and Two New Bodies

Four and Six Cylinder Lines Remain Fundamentally the Same —Mechanical Changes Tend Toward Quietness and Longer Life—Body Changes Made for Appearance and Comfort

BUICK has disclosed its 1923 models, which will consist of the four and six-cylinder chassis and the special delivery truck. On the two chassis will be fourteen different bodies, including both passenger and commercial.

The truck is mounted on the four-cylinder chassis.

Two entirely new passenger car bodies are shown in the line, a touring sedan on both the six and four-cylinder chassis. There are a great number of detail changes both in the chassis and the bodies.

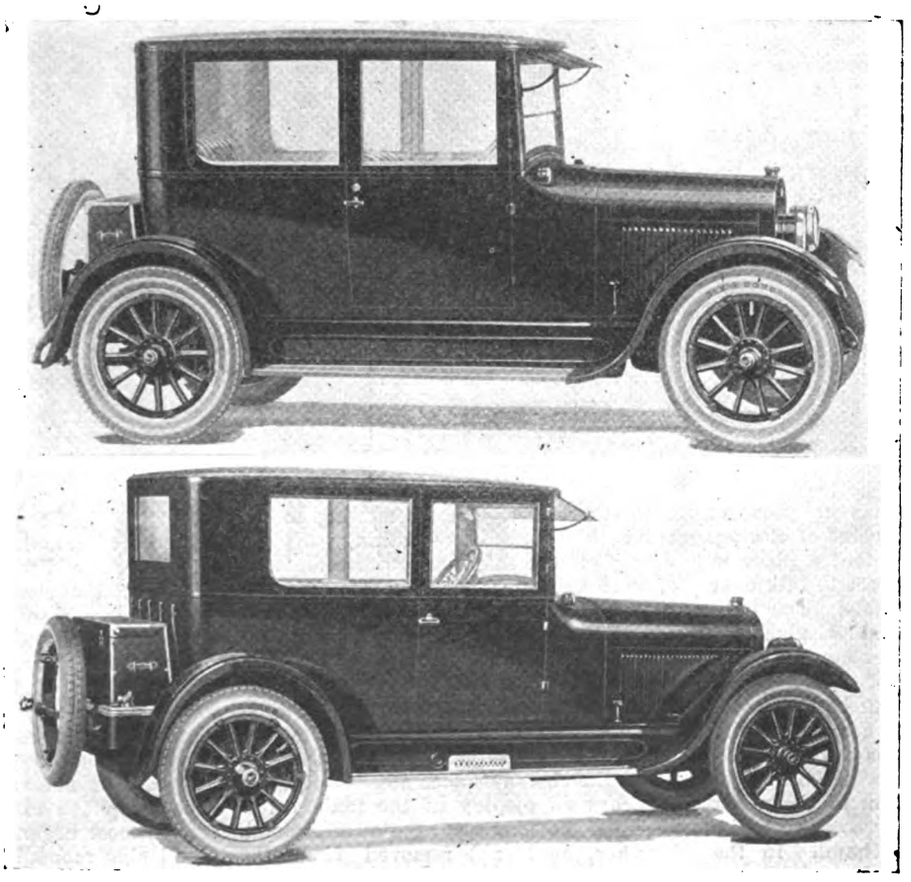
While these changes are of importance and many of them of a major character, fundamentally the Buick line remains much as before. The sport models which were announced several months ago have been made standard in the new line. The prices on the complete line will be announced on Aug. 6.

MATERIAL changes have been made throughout the entire line from an appearance standpoint, and mechanically, although there have been no radical changes, there have been a remarkable number of detail refinements to promote durability, silence and absence of minor mechanical difficulties. With the sport and touring-sedan bodies, which have been added recently, the Buick line now offers a choice of nine bodies on the six-cylinder chassis, which is made in two wheelbases to accommodate the different body styles, five bodies on the standard four-cylinder chassis, which is made in one wheelbase and six body choices on the special delivery truck models mounted on the four-cylinder chassis.

The Buick six-cylinder models have been greatly improved from the standpoint of appearance, riding qualities and durability. All of the models on this chassis have been lowered approximately 3 in. The lowering has been accomplished by a modification of the spring suspension by which the offset of the cantilever spring has been increased 4 in., making the forward end of the spring 14 in. longer than the rear. This has resulted in lowering the car and reducing rebound sidesway. An important series of changes which has resulted in the Underwriters' insurance rating of Class A, has been obtained by fitting a transmission lock, a drip bowl under carburetor, extra clips on the gasoline feed line and tail lamp wires and flexible steel covers for the three wires leading from the generator to the switch and the rounding of corners on all covers for wires.

Improvements have been made in the six-cylinder engine by lengthening the piston ½ in. above the wrist pin, lengthening the connecting rod 1 3/16 in. and raising the entire block by the amount corresponding to the sum of these two, or, in other words, 1 11/16 in., so that the compression remains the same with the longer piston and connecting rod. This has been done to minimize piston slap and wearing piston walls. To further increase the life of the cylinder bore, the new pistons are machined with a tapered relief. There is no longer a guide ring at the bottom of the piston, the skirt being plain at this point. The pistons no longer over-run below the bottom of the cylinder at the lowest point of the stroke.

The chilling of the cylinder bores is something new in foundry practice for cylinders. It is done to overcome the natural annealing process which takes place in the part of the casting surrounded



The two new Buick bodies, the touring-sedans. The upper is the 5-pass. model on the 4-cylinder chassis and the lower is the 5-pass. model on the 6-cylinder chassis

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by water jackets. Naturally, at this part of the cylinder, cooling is much slower, with the result that the castings are generally softer at the portion of the bore surrounded by the water jackets. As this is the point subjected to the greatest wear by the pistons, softness is an objectionable feature. By the chilling process, this part of the casting is cooled just as quickly as the remainder, resulting in a harder casting, although one which is just as readily machined, since the hard spots are not localized. The bores are finally finished by honing. The honing tool, which finally finishes these bores, is similar to a reamer, except that it has honing stones in place of the reaming cutters.

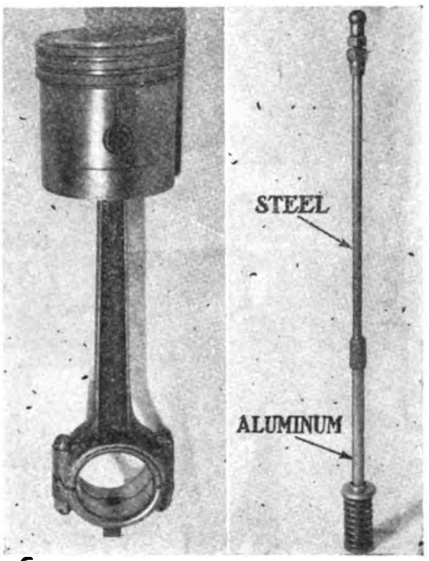
The crankshaft is now 2¼ in. in diameter and harder babbitt is used in both the connecting rods and main bearings. Individual pressure feeds are now brought from the oiling system to the center main bearing and the main bearing caps are drop forged with the babbitt tinned directly to the caps. To make the oiling of the piston more positive at high speeds, the oil troughs are covered to insure a supply of lubricant.

Other bearings throughout the powerplant have also been given attention to prolong life. The fan bracket bearing has been increased in length and diameter. The hole in the gearcase cover for the fan bracket now has a bronze bushing and holes have been placed in the rocker arm covers so that the rocker arms can be oiled without moving the large cover. These holes are provided with a sliding cover to close them against dust.

Quieting the Valve Action

A careful study of the valve system has been made with the idea of making this more quiet. In order to eliminate the varying clearance, due to expansion, a combination push rod of aluminum and steel is now being used, so that the valve will have about the same clearance from zero to boiling point. The lower portion of the push rod is aluminum and the upper portion is steel. The aluminum, on account of its greater coefficient of expansion, is employed to give a more rapid expansion to the push rods so that the expansion of the parts of the motor which tend to lift the rocker arms away from the push rod and to increase the clearance will be equalized by the expansion in the push rod itself. This permits the tappets to be adjusted several thousandths closer, eliminating push rod noises. Felt has been placed around the valve stems inside the valve springs to carry oil for the valve stems and guides. This provides enough lubrication to prevent sticking and squeaking valve stems. More positive lubrication is also assured for the front camshaft bearings by providing an oil well at this point.

Better construction is also employed for some of the auxiliary units. For instance, the means for driving the fan pulley have been revised so as to eliminate possibility of the key dropping into the timing gears. New water pump packing which eliminates cutting of the pump shaft has been employed and the pump shaft diameter is now stepped to insure proper assembly of the impeller. The location of the taper pin has also been changed to prevent damage to the water pump body in case the taper pin should back out.



At the left is the new Buick piston which is higher above the pin. The wiper ring has been eliminated. At the right is the composite push rod to maintain constant tappet clearance

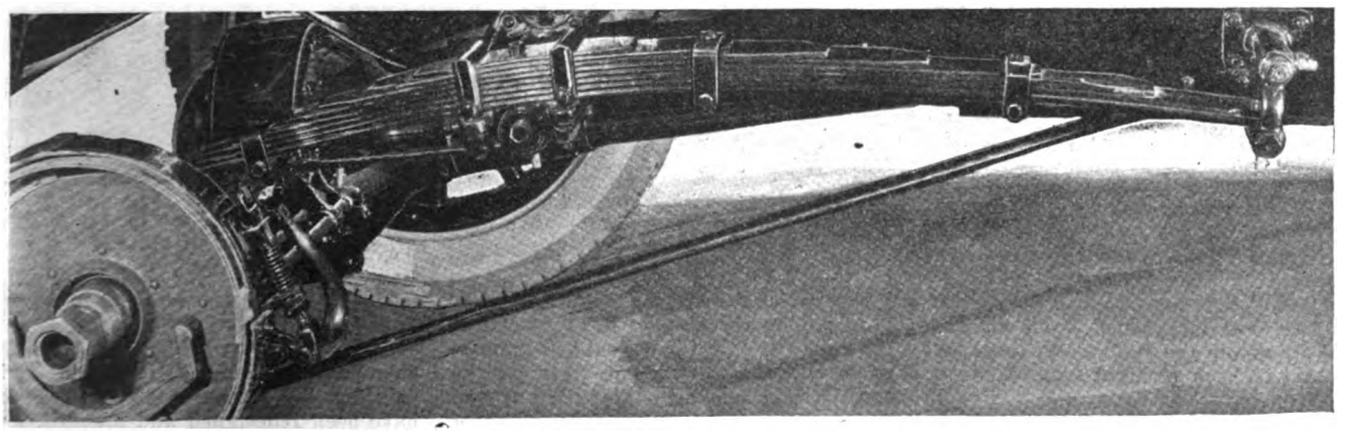
Greater durability has been secured in the clutch by changing some of the material. The material in the clutch hub, for instance, is now drop-forged steel in place of malleable iron. The splines are now case hardened and ground and the clutch plates are fitted to closer limits on the splines and pins. This will eliminate much of the wear and will take out rattles.

Electrical Equipment Changes

The electrical equipment has also been gone over completely. The motor-generator has been redesigned in regard to its electrical characteristics to give it a higher charging rate. The brushes and brush holders have also been altered to eliminate squeak and more accessible oilers are provided for the bearing. The brush holder is now a die casting with a bronze spring member which has sufficient give to eliminate the chatter which was found to be the foundation for squeaking. This new brush holder was worked out at the General Motors Laboratory in Dayton and is now standard equipment on this type of generator. A new type of silent over-running generator clutch is employed and spiral teeth are now used on the starting gears to prevent excessive noise when cranking the engine. A spring has been added to the starter pedal to prevent rattle.

The rear axles have been modified in some respects. On models 44 and 45, the three-passenger roadster and the five-passenger touring car, the brakes have been increased from 12 in. to 14 in., which now gives the same size brakes on all six-cylinder models. On the front axle, new style bushings are used in the steering knuckles and arms. These bushings are hard burnished bronze, which, according to the Buick engineering department, will give three times the life of the present bushing.

New Departure ball bearings are now used on the differential in place of the roller type formerly employed. The rear axle gear ratios are now 4.4 to 1 on all of the open cars and on the five-passenger sedan and 4.7 to 1 on the remaining models on the six-cylinder chassis. This is in combination with 32 x 4 cord tires on the three-passenger roadster and five-passenger phaeton, 33 x 4½ cords on the five-passenger touring sedan, the five-passenger sedan, the four-passenger coupe, seven-passenger phaeton and seven-passenger sedan. The tire size on



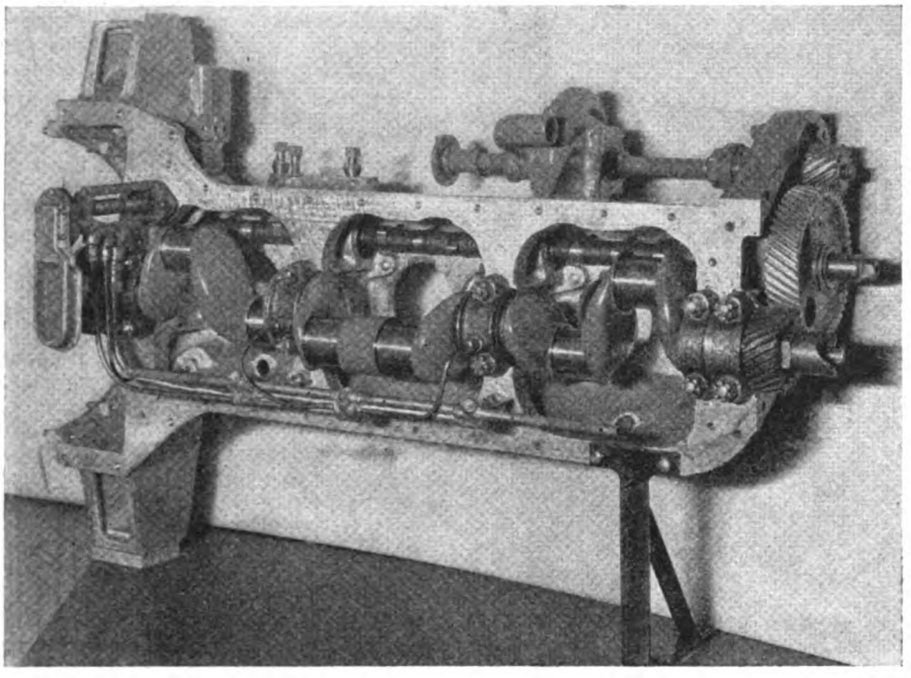
The new Buick spring suspension in which the hanger is much closer to the rear end to prevent sidesway

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the sport model is 32 x 4½. The strut rods on model 45 have been increased from ⅝ in. to 11/16 in. in diameter and the truss rods on the model 45 increased from ½ to 9/16 in. in diameter. These are now of better steel and heat treated. The frame has been stiffened considerably by increasing the thickness of the stock in the side members from 5/32 in. to 3/16 in.

The spring suspension has been altered, as mentioned, and in addition to the change in location of the spring hanger, the main plate and all the front springs of the six-cylinder model have been changed from carbon steel to vanadium steel. The steering gear housing has been changed to bring the clamp boss on top, which also brings the slots on top and prevents leakage of grease. The oil can bracket has been moved from the left to the right side, where it is more accessible.

The radiator shell has been reinforced on the inside and a bracket has been placed on the outside to eliminate the opening in the shell and eliminate breakage at that point. The radiator core support angles have been increased in thickness and the bolts for fastening the core to the shell have been increased in size.



.The new Buick crankshaft has pressure leads to the main bearing instead of the splash lubrication used before

Changes in the Four

The changes in the four-cylinder chassis parallel almost exactly the changes in the six. In general, the appearance of the entire four-cylinder line has been improved by redesigning the bodies and tops. The radiator has been raised 1¼ in., the cowl lengthened 3 in. and the hood line from the radiator to the windshield has been straightened. The top has been lowered 2½ in. and a kick-up has been placed in the frame over the rear axle which permits the rear end of the car to be lowered. The new model 35 car, which is the standard touring design, is 5 in. lower than its predecessors and complete line of cars is lowered in proportion.

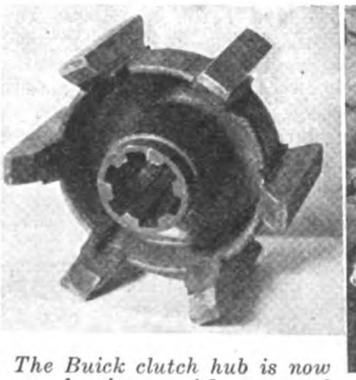
The changes made to secure the Class A Underwriters' rating have been also made in the four and the mechanical changes for quieting the engine and securing greater life throughout the chassis, which have been described for the six, have also been made in the four-cylinder engine and the chassis units.

Throughout the Buick body lines, there are certain changes which are common to all bodies and a few detail changes on each particular body model which apply to that body alone. On all of the six-cylinder models, nickel beading has been put on the cowl at the rear end of the hood not only for the sake of appearance, but also to prevent wear on the cowl. Nickel beading is also used around the radiator cores on all models except the sport. The sun shade design has been revised to give better appearance. It is of solid sheet metal panel with die-cast ends and is covered with imitation leather. The back lights in the bodies have been reduced in size and the rear quarter light frames have rounded corners. All of the molding is oval instead of sharp corners. In both the closed and open bodies the cushions have been lowered and the seats rearranged to increase the comfort for the passengers.

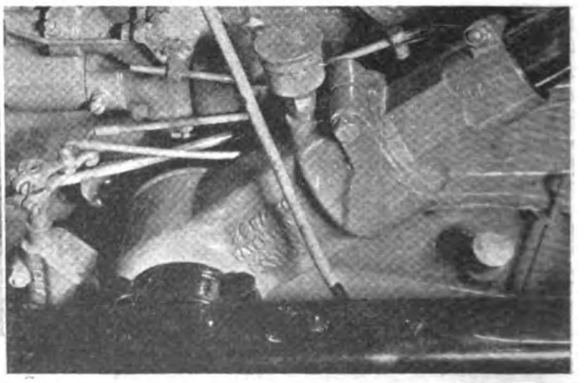
In the four-cylinder line, the body changes follow the changes in the six-cylinder line very closely. An interesting series of improvements amounting to really an entirely redesigned job have been made in the four-cylinder phaeton. Besides lowering the seats and rearranging the steering gear and control levers as in the six-cylinder model, the body is much more rigid in construction. The front pillar brace irons are heavier, as are also the rear tonneau brace irons. The windshield bracket and top seat rail have also been made heavier. The door locks are stronger and the entire body is tied to the chassis better by using ten body bolts instead of eight. All of the closed bodies have been entirely redesigned for greater rigidity and have been brought thoroughly up to date in appearance and trim. The general features outlined for the other models have been incorporated in them.

Probably the most impressive thing about the Buick body line is the great attention which has been given to detail and the number of small refinements which have been made in each of the bodies for appearance and comfort. The painting on the three-passenger roadster is now blue with gold stripes. A flush rear deck door with an improved lock is fitted, a tire carrier is used tilted toward the deck. The trimming at the sides of the seat is now piped instead of plain. The sides of the body under the cowl are trimmed. The rear curtain light glass is now 6 by 24 in. in a nickeled frame. The passengers sit lower in the car and although the top has been lowered and redesigned, more head room is provided.

On the six-cylinder, five-passenger phaeton deep black with gold stripe painting has been adopted. The tops have been redesigned and lowered, seats lowered and steering gear location



The Buick clutch hub is now a forging with ground splines instead of a malleable iron hub



The new Buick steering gear housing has been inverted with the slot at the top

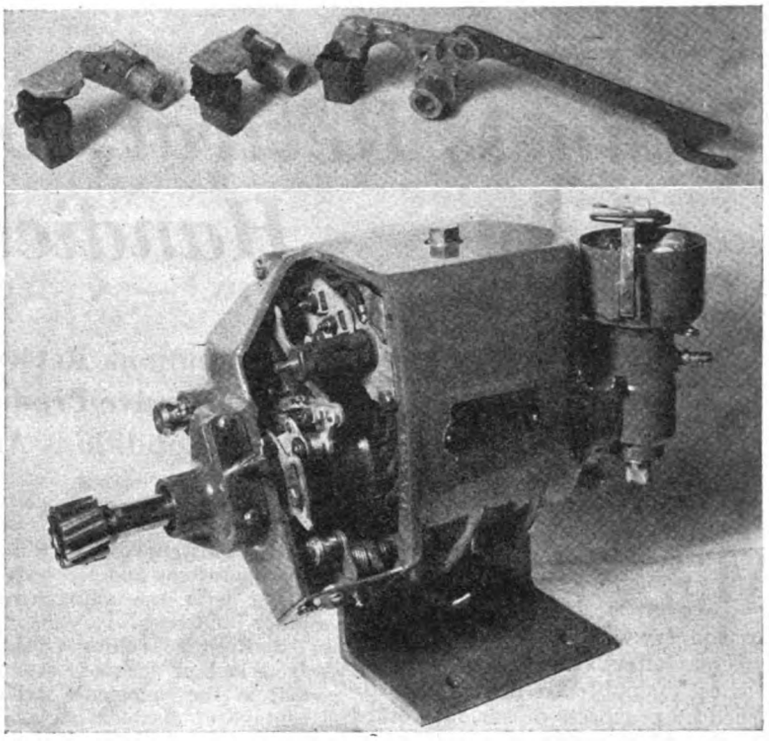
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changed to provide greater ease in driving. The trimming of the back of the front seat has been changed and a roll added around the top to improve appearance. There is now a large compartment for curtains in the back of the front seat.

On the six-cylinder, seven-passenger car, a rear vision mirror, sun shade on the windshield and gasoline gage on the instrument board are included as standard equipment. More room has been given the body by widening the rear seat 1 in. The back of the front seat has been entirely redesigned and a roll added around the top for appearance. The trimming of the auxiliary seats has also been improved and the front seat frame is now trimmed.

The model 41 touring-sedan, which has been put on the six-cylinder chassis, is an entirely new body. It is a five-passenger car with special touring equipment, including a trunk rack in the rear. The lower part of the body is maroon with a black top and the wheels are also maroon, but several shades lighter than the body. Nickeled guard rails are placed on the rear of the body. As a touring convenience on this model, the gasoline tank is increased to 22 gal. Extra wide doors are provided and ventilating windows are placed in the doors and side windows. A heater and trunk are standard equipment.

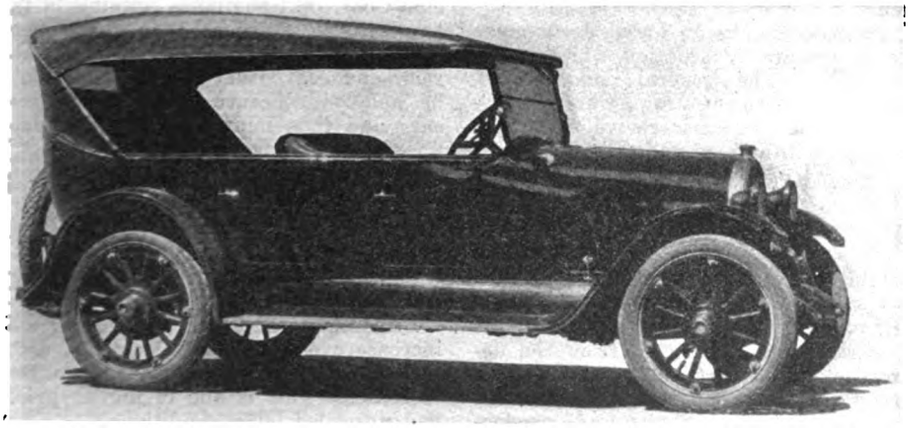
With all of these changes in detail, the fundamental specifications of the Buick chassis remain the same. The wheelbase of the four remains as it was, 109 in., and the six-cylinder chassis is put out on two wheelbase lengths, 118 in. and 124 in. On the 118 in. wheelbase are the five-passenger touring-sedan, two-passenger roadster, five-passenger phaeton and five-passenger sedan. On the 124 in. are the four-passenger coupe, seven-passenger phaeton, seven-passenger sedan, sport roadster and phaeton.



The new Buick generator which as a higher charging and cranking rate and spiral gears. The new brush holders shown at the top are composed of an aluminum die casting with a bronze spring part holding the brush to prevent chatter and squeaking

A New Oldsmobile Light Eight Open Car, $1595

A FIVE-PASSENGER open body is now being mounted on the light eight Oldsmobile chassis. This new body has very similar lines to the four-passenger light eight which has been on the market for some time, and has been brought out to meet the demand for a body of a little greater capacity on this same chassis.



The new Oldsmobile phaeton, $1595

The fittings as well as the lines of this car are quite similar to the four-passenger model. The car is finished in a wine color known as Oriford Lake, and the side rails are of Circassian walnut. The instrument board, horn button, steering wheel and spokes, and ball on top of the gear shifting lever, are also of walnut. The upholstery is hand buffed leather of autumn leaf brown, to harmonize with the finish of the body color. A new point is the nickel plated flaring radiator shell, and a cowl ventilator in black.

The top and side curtains are a new design, the top being what is called the clear vision type; that is, free from side bows permitting full view for rear seat as well as front seat. The new two-piece windshield is adjustable from the inside and is equipped with a weather strip. Standard equipment includes windshield wiper, rear vision mirror, tubular robe rail and snubbers on the rear. Cord tires are provided as standard equipment, and a single tire carrier, with spare rim, is mounted at the rear. The car is priced at $1,595.

EARL BRINGING OUT NEW CABRIOLE MODEL

JACKSON, MICH., July 24—Earl Motors, Inc., has completed plans for a cabriole which will augment its line of enclosed cars and which will sell at $1,395 f.o.b. factory. Production on the new car will be started at once and deliveries will be ready in time for the opening of the fall business. The car is designed to meet the rapidly increasing demand for low-priced closed cars.

The chassis of the car will be of standand Earl type having 56-in. rear springs. The overall length will be 167 in. and height 74 in. The top and sides of the rear tonneau are covered with black Duratex fabric and the body panels will be finished in blue fenders and chassis are black enameled.

The upholstery of the car is gray Spanish leather. Door and rear quarter windows are lowerable, and the one-piece windshield swings either in or out. A rain and sun visor is standard equipment, as are also dome light and windshield wiper. At the rear is a trunk platform protected with maple slats in natural color. Rear body panel is protected by nickeled slat irons.

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Business Revival Continues Despite Handicaps

Coal and Railroad Situations Retard Improvement and Are Likely to Affect Automotive Production and Distribution but Other Conditions Are Favorable

MEN in the automobile business who are looking beyond their own local horizons to learn how countrywide and sectional conditions may affect sales in their own territories undoubtedly have been disturbed by prospects of serious retarding of the business revival. There is cause for uneasiness and indications that both production and transportation of cars and trucks will be hampered by effects of the coal and railroad strikes. But, despite actual and indicated slowing up of business in some lines, the improvement in commerce and industry which began early in the year has continued and there are indications that it will continue throughout the last half of the year, though the recovery will be held back by the coal and railroad situations, regardless of their outcome.

There is no need here to dwell upon the giant forward strides made by the automotive industry Distributors, jobbers, dealers and garagemen have shared in the revival and the pages of MOTOR WORLD have kept step with it from week to week. The situation in other lines is not so well known. Complete June figures from all industries are not yet available, but there is enough information available to show that while the June gain over preceding months fell behind the gains of May and April, there was progress.

The United States Department of Commerce observes that "If a satisfactory settlement of the present labor difficulties can be reached in the near future there is every reason to believe that business will continue on its present level or even increase in volume."

Looking at the emergency situation created by the coal and railroad strikes, it is seen that:

1. The first pinch of an impending coal shortage is being felt. The iron and steel industry, which had been following a sharp upward curve until about a week ago, is suffering from lack of fuel and from congestion at railroad centers which is interfering with receipt of ore and shipping of finished products. This curtailment will affect building operations and highway construction, along with the automotive and many other industries.

2. Railroad rolling stock is suffering from lack of adequate attention as a result of the shopmen's strike. The percentage of disabled engines and cars is growing at a time when moving of the harvest will make heavy demands on transportation. Should full operation of the coal mines be resumed the situation would be complicated by the immediate necessity of devoting a large proportion of available railroad rolling stock to shipment of coal to the Northwest and other regions which are millions of tons short of the normal stocks of fuel at this time.

3. Production and distribution in the automotive industry and others undoubtedly will be affected shortly by curtailment of transportation of materials needed for manufacture and of shipment of finished products. Owing to the close association of the coal and railroad strike situations this temporary curtailment seems inevitable, whether the labor difficulties continue or are speedily settled.

The paragraphs 1, 2 and 3 summarize the emergency situation, which is unfavorable. The general condition of business is more encouraging and, fundamentally, the business revival is sound.

Crops will be good and prices are such that the crippled farm buying power will find itself in the late summer and fall well on the way to complete recovery.

Freight car loadings have increased steadily, showing the growing demand of reviving business for more transportation.

Building construction is still booming, giving new life to the lumber industry, which is not able to keep up with orders though running at full tilt.

The textile industry has held its own generally and has gained in some branches.

Wholesale and retail business in all lines, considered as a whole, is improving.

Bank business is on the upgrade and business failures are declining in frequency.

Business prospects in the automotive field are decidedly encouraging. Production and sales records of the first half of the year, which have broken all records, cannot be expected to continue, but the indications point to a good business through the fall and early winter. A normal seasonal decline is in progress in some of the large cities and on the Pacific Coast, but buying is gaining in the agricultural sections. If a curtailment of new car supply results from the railroad and coal situations dealers should be able to concentrate effort on used cars and thus improve their individual financial standings.

Interpreting the Curves on the Opposite Page

CAR and truck production continued to show an increase in June, which brings to an end the first six months of a most unusual recovery from the depression of the last half of 1921. The first six months will record 60 per cent and perhaps more of the total production for the year.

Parts and accessory business is continuing strong and shows the same rapid rate of recovery as production of cars and trucks.

Freight car loadings are irregular, due to extraordinary influences, first the coal strike and now the railroad strike, but they have been running far ahead of last year. It takes good business everywhere to keep up the demand for transportation.

Building construction showed a slight increase over April and May, but nothing compared with the earlier monthly increases. This is due to higher prices and unsettled labor conditions.

Iron and steel showed a steady increase, due largely to purchases for building construction, railroads, highways and the automotive industry. The coal and railroad situations will bend the curve downward in July.

Crop prices have increased slightly over last month, while live stock prices have remained practically stationary during May and June after a marked

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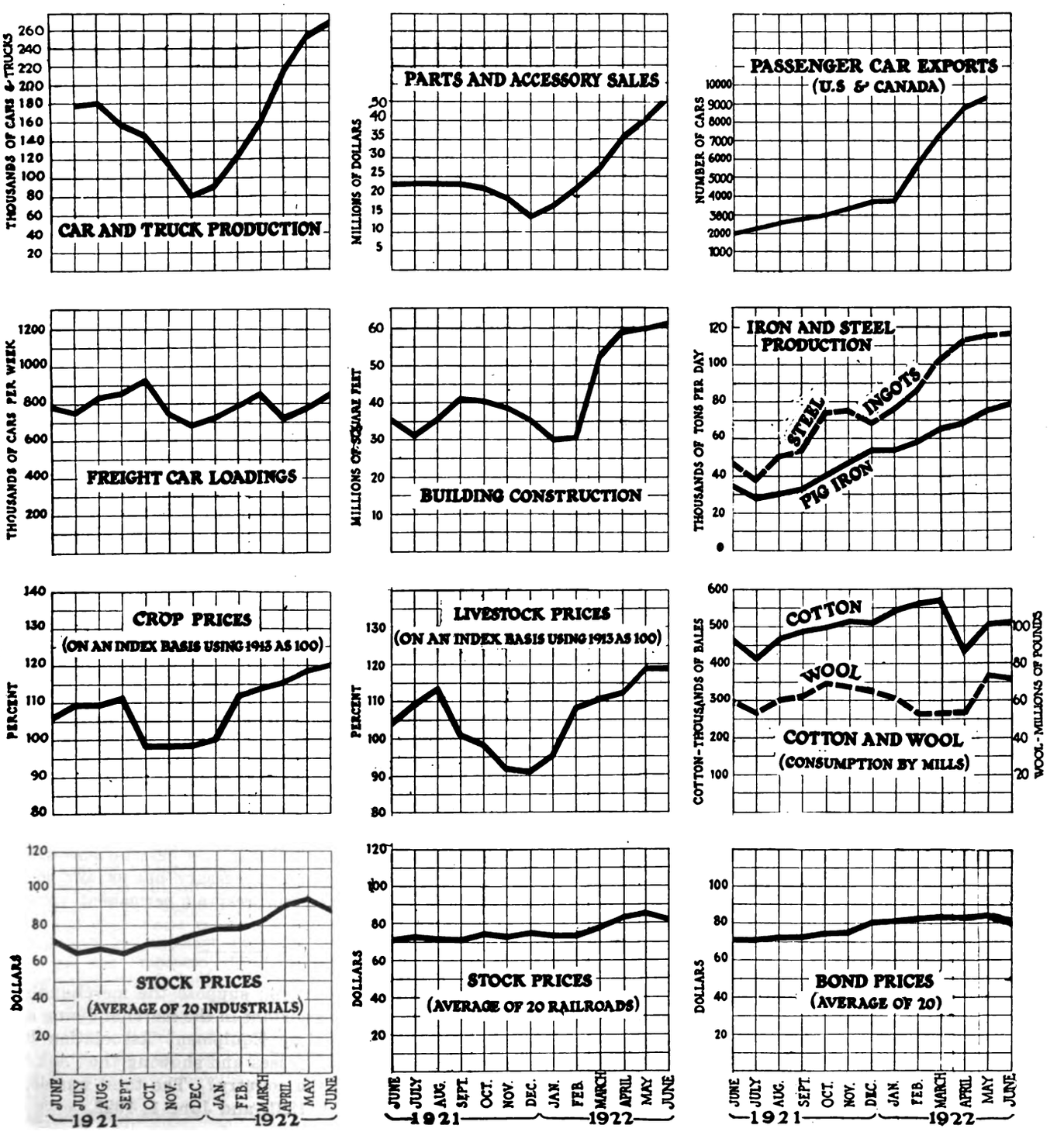
rise since the first of the year. Buying in the farm districts should be favorable this fall.

Cotton production, after a sharp rise in May, continued with a slight increase in June, while wool, which also had a sharp rise in May, showed a slight falling off in June due to seasonal and strike conditions.

Average stock prices of 20 industrials, after showing a steady gain the first five months, declined a little in June. Average stock prices of 20 railroads, after a slight recovery the first five months, suffered a decline in June, due to the railroad strike. Average bond prices have shown a steady gain the first five months with a slight falling off in June. Uncertainty caused by the coal and railroad situations has affected the securities markets.

What's Happening in Business—Curves Tell the Story

This is the fourth business chart printed this year in MOTOR WORLD, the others appearing in April, May and June. The chart shows the trends in twelve major divisions of American business for a year, ending June 30. It will help readers to understand the progress of the business revival and to supply the knowledge to finding and convincing buyers in their own territories.



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Editorial Notes

Service and Sales

AN official report on the recent advertising managers' meeting conducted by the National Automobile Chamber of Commerce is headed: "Training of dealers next big step." The headline then goes on to quote a manufacturer whose ideas were generally echoed at the meeting as saying that "The chief task of the industry is to find men equipped to sell and service motor vehicles." These headlines, with the text which follows them, coming as they do from an association which includes nearly all the passenger car manufacturers and many of the truck builders in the country, suggest the train of thought which is running through the minds of manufacturers regarding the immediate future of the business.

To dealers it will indicate that the most successful among them will be those who make their personal and mechanical equipment for selling and servicing so efficient that they will not merely retain their distribution contracts, but will build profits for themselves and the manufacturers they represent on the basis of satisfied ownership of the cars and trucks they sell.

The demand of the industry, which is merely an echo of the public demand, is for sales methods in marketing cars and trucks which will put them into the hands of owners without misleading claims, and these selling methods must be supported by service methods which will make good on the reasonable assurances of salesmen and give owners their money's worth in satisfactory performance.

It is not to be denied that the future of a car or truck which is poorly designed, or poorly serviced, or both, is becoming more shaky every day. There are still cars and trucks whose design and construction are so antiquated that the servicing of one part requires disassembling and reassembling of other parts which should not be necessary. This is a condition which dealers cannot remedy but they can keep up continual pressure on their factories to make their cars more accessible to the maintenance worker. Cars in this class are becoming fewer, however, as succeeding models are brought out, and the burden of proper servicing is being put, month by month, more squarely upon the shoulders of the dealer and repairman.

Various agencies such as the National Automobile Chamber of Commerce, the National Automobile Dealers Association, The Automotive Equipment Association and local service associations are doing what they can to help dealers who need help in improving their service facilities and raising the quality of their service work. Largely, however, the job is one which dealers must do themselves. This calls for earnest study on the part of every dealer of progressive methods in handling the personnel, mechanical and financial phases of the service question.

The dealer who has courteous, well-informed men to meet his service customers, who has put his charges for service on a basis that gives him a profit without overcharging his customer and who has men and equipment capable of doing skilled repair work, is "sitting pretty," as the saying goes. He is making himself solid with his customers and his factory, assuring the permanency of patronage on one hand and at least working toward permanency of his dealership on the other. He is supporting the manufacturer in his claims of a car of low upkeep cost and he is avoiding any sort of back-fire when he takes space in his local newspaper to tell his public that his car is a thing of utility as well as beauty.

A group of shop equipment manufacturers have coined the phrase, "This is a service year." Unquestionably it is, and the next year will be still more a service year, and so on as the industry becomes older and more stabilized.

In view of this fact and of the apparent leaning of manufacturers toward more careful selection of their dealer representatives, it behooves dealers and would-be dealers to put their service houses in order and keep them there.

Another Contract

THE movement for better dealer contracts is gaining in the industry. General Motors is the latest organization to do away with annual expirations and renewals and shortly dealers in cars under General Motors control will be making agreements with the separate operating units which will be perpetual in nature and cancellable only for cause.

Under the new arrangement allotment and other clauses of annual or periodical nature will be contained in appendices, the contract itself standing year after year.

This move of General Motors is in line with liberalizations of contracts made by several other manufacturers. It is just the sort of action Motor World has been advocating in the belief that the good of the industry demands the building of progressive, permanent merchandising organizations, of which we have many, but not enough, to-day. Such building can best be encouraged by assuring men with the necessary brains and money that their investments will rest on permanent contract foundations.

HOW many miles do you suppose the merchandising director and his assistant in the merchandising campaign of the Automotive Equipment Association have traveled in making addresses and showing the "Ask 'Em to Buy" film around the country? The total was 43,869 miles between Aug. 1, 1921, and June 1, 1922.

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How Cars Are Sold Through Finance Companies

The Dealer Gets All His Money at the Start and the Buyer Gives Notes, Paying About 18 Per Cent for the Accommodation

EDITOR, Motor World: We are considering the use of a finance company to assist us in financing the sale of cars on time. We would like some information on the following points:

How does the deferred payment plan operate?

On the average, what is the cost to the customer?

Is it necessary for the dealer to endorse the notes?

How do finance companies protect themselves against buying two sets of notes on the same car?

We understand that the finance companies borrow from the banks to carry on their businesses. Why don't the banks handle this business direct?—J. H. D.

Answer: The operation of the deferred plan is about as follows: The purchaser pays a certain part of the retail price, usually 30 to 50 per cent, in cash. He signs a series of equal monthly notes for the balance. These notes include the charge for the services of the finance company. They are arranged usually so that payment is completed in from 6 to 12 months. These notes bear the current interest rates, usually six per cent. On presentation of these notes with chattel mortgage, or other legal security on the car, to the finance company, the dealer gets the balance of the purchase price. As far as the dealer is concerned, he has made a cash sale. The purchaser makes all future payments to the finance company.

The cost to the customer for this service averages, in the case of many companies, 18 per cent. This includes the service charge, fees and interest, but not the insurance premiums. The service charge is usually five per cent of the price of the car, including tax and extras. In figuring the cash down payment, this service charge is added to the cost of the car.

Eighteen per cent is a heavy charge for this service. But the companies in this business say that the nature of the business, the hazards involved, the collection costs and overhead justify this charge. They claim that their profit averages about one-half of one per cent on the volume of business done.

Whether you will have to endorse your customers' notes depends on the company you use. Some companies require the dealer's endorsement, in which case they use the "recourse" form of note. Other companies do not require the dealer's endorsement, in which case they use a "non-recourse" note.

When the dealer endorses the note, the finance company can look to him in case the purchaser defaults in payment. Under this plan the finance companies keep out of the used car business, as the dealer recovers it and sells it to protect himself. Furthermore, the dealer is more likely to investigate the credit of the purchaser carefully if he is contingently liable. The non-recourse companies depend more extensively on their own investigations of the responsibility of car purchasers. Such companies have cars come back, but they say that the number is so small that it causes them no difficulty.

Some dealers add a small amount to the service charge made by the finance company. Others have their customers pay only the charge made by the company. Where the dealer endorses the purchaser's notes there is some justification for his making an additional charge, as he is assuming a liability. But where the dealer does not endorse the notes, there is little reason for making this additional charge.

Many of the finance companies are banded together in the maintenance of a central record office in New York City. All member companies send a record of the make, model, engine number and purchaser's name for all transactions to this central office, where files are kept. Before accepting any paper, a report is obtained from this office showing that there is no lien on the car offered as security for the notes. If a dishonest dealer tries to defraud a company by selling two series of notes on the same car, this office will detect the fraud.

The car acts as security for the notes purchased by the finance companies. Just what legal instrument is used depends on the laws of the individual states. The chattel mortgage is one of the more common forms of legal security used.

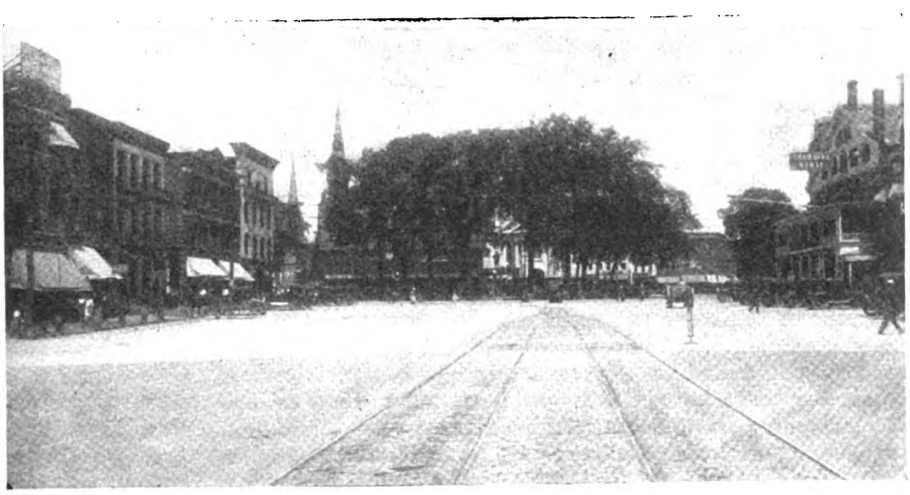
Finance companies use banks to finance their businesses. They take an accumulation of small notes and use it as collateral security for their own notes to the bank.

The banks do not like to handle time-payment paper for several reasons. The amount of the individual note is small. Some of the notes extend over too long a period, as a bank prefers to handle short-time securities. The finance companies give short term notes in large amounts, which are more desirable from the standpoint of the bank. The banks have no machinery for investigating credits of this character, nor have they facilities for making collections on the large scale that the finance company does.

Write to Motor World About It

This page every week is devoted to discussions of topics of the trade by Motor World readers. Have you a suggestion to overcome a difficulty or improve some condition within the industry? Write to Motor World about it.

The Widest Paved Street in America



When small cities and towns pave their streets, making connecting links with state-financed highways, we are beginning to get somewhere in providing adequate roads for automotive vehicles. Keene, N. H., has just done some paving and thereby has gained the distinction of having the widest paved street in the United States. Keene's Main Street is 140 feet wide and it has been surfaced with seven-inch concrete reinforced with steel mesh. Looks fine, doesn't it?

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How the Tractor Is Coming Back in Farming and Industry

Despite Deflation Period the Number in Use Has Increased 60 Per Cent in Two Years—Suggestions for Using the Dealer's Leading Sales Appeals, Utility and Economy

By E. A. WHITE

THE tractor is coming back. In fact, it never was quite as flat as some people would like to have us believe. Farmers recognize the fundamental advantages of power farming to a much greater extent than many of us imagine, but this does not mean that the buyers are going to rush headlong into the market. These prospects want to be certain that they are right before they go ahead. This situation furnishes an unusual opportunity for the manufacturer who can produce the proper equipment at an attractive price and for the dealer who can sell it on a constructive basis.

According to census figures there were 246,083 tractors on farms Jan. 1, 1920. Reliable estimates place the number of tractors on farms Jan. 1, 1922, at approximately 400,000, an increase of more than 60 per cent. Granted that the major part of this increase occurred during 1920, the showing is still remarkable, for during two disastrous years from an economic standpoint the number of tractors on farms increased over 60 per cent! That doesn't sound as though the farmer had lost faith in power farming, does it? In addition, although the farmer is not completely on his feet financially, more tractors have been sold from Jan. 1 to July 1, 1922, than were sold in the entire year 1921, and one sales manager reports that more have been sold in this period than in any similar period in the history of the industry.

Supported by Farmers' Statements

This sales evidence agrees with the reports of tractor surveys made by neutral organizations such as the United States Department of Agriculture and various state agricultural colleges. In these surveys, covering various sections of the country, the percentage of satisfied users ranges from 70 to 90. This is a remarkably good showing and in connection with the present rate of sales throws convincing light upon the farmer's belief in the fundamental advantages of the tractor.

While the year 1921 was unsatisfactory from a sales standpoint there are evidences that the year's experiences have given a marked impetus to tractor design and to sales and service methods. It is entirely possible that looking back five years hence, 1921 may be found to have been a remarkable year in power farming progress. The slump in sales caused manufacturers to revert again to fundamentals in design and sales methods. Many old models are being discarded and new ones developed. The old models retained are being refined. Production methods are being revised.

Along with these changes at the factory the importance of a strong dealer organization is more keenly realized by manufacturing executives than ever before. The tractor industry has always recognized the dealer as the logical selling channel but to-day the value of the good dealer stands out as never before and conclusive evidence of this is found in the fact that, generally speaking, tractor discounts have been increased during the past year. This is concrete evidence that the dealer's position and importance is receiving increasing recognition.

The Potential Demand

While the "potential" tractor market has been discussed to death, the fact remains that it must be considered in any consideration of the market possibilities for power farming equipment. If there is not a potential demand for tractors how can there ever be an active one? The farmer is a big user of power. The fact that he often uses it in relatively small units serves to dwarf, in our minds, a realization of the total amount required. To lend perspective to this picture, consider the relative amounts of power used in industry and agriculture. According to census figures, industry had 18,755,286 primary horsepower in 1910. Nineteen hundred and twenty figures are not yet available. But let us assume that the 1910 figure was increased by 50 per cent in 1920, which may or may not be correct. This would give 28,132,929 primary horsepower for industry. The primary horsepower used in agriculture is not reported by the Bureau of Census but data are given from which a satisfactory estimate can be made. The figures used are for Jan. 1, 1920:

Units	Primary horsepower
21,743,243 horses and mules two years old and over, 2/3 hp. each	14,495,496
139,169 motor trucks, 15 hp. each	2,087,535
246,083 tractors, 20 hp. each	4,921,660
Total	21,504,691

Here is more primary horsepower than was used by industry in 1910, almost as much as the estimate for 1920, and it is conservative for it does not take into account the primary horsepower available from windmills, stationary gas engines, lighting plants and steam engines, to say nothing of the 2,146,362 automobiles on farms Jan. 1, 1920. On this basis it is perfectly safe to assume that agriculture requires as many primary horsepower as industry. Nor is the weight of this comparison lost when it is admitted that because of the more constant use of the prime movers, industry requires more horsepower hours than agriculture. The fact is that there is a big potential market for power generators in agriculture. And

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there is need for a revision of the popular definition of power farming. It is more than tractor farming. The farmer's power needs for passenger transportation and hauling are just as vital as for power to work the fields and harvest the crops. The automobile and motor truck are just as truly power farming units as the tractor, although it has not been customary in the past so to classify them. In fact, the figures given below furnish irrefutable evidence that the automobile leads the power farming procession. On this basis large numbers of dealers are already power farming dealers and do not know it.

Motorization of the farm has been proceeding at a more rapid rate than is generally realized. Estimates for Jan. 1, 1922, give the following significant figures:

Automobiles on farms	2,000,000
Tractors on farms	400,000
Trucks on farms	150,000

In addition to the above there are a large number of stationary gas engines and farm lighting plants in use. Over 40 per cent of farms have automobiles, over 5 per cent have tractors and approximately 3 per cent have trucks. *It is no longer a question as to whether motor farming is a success but as to how far and how rapidly it will be extended.*

The farmer is interested in the tractor, truck, automobile and other power farming equipment. The sales during the first half of this year furnish conclusive evidence on this point, even though the farmer has not recovered complete economic balance. Fortunately the farmer's financial condition is improving. In this connection it must be remembered that power farming is relatively new. Few farmers have as yet a working acquaintance with its advantages. This is especially true with respect to the tractor. The tractor industry has just passed through a developing period and many of the causes of past failures have been removed by improved design. On the other hand the farmer is learning how to care for and use the tractor. Thus the failure gap is being narrowed from both ends and the dealer can do his part in this program by improved methods of selling and service.

The tractor offers a number of fundamental advantages which are the basis for sales effort. In the first place the tractor can be used for both belt and drawbar work. The farmer has never before known the advantages of a combination power unit of this character. It has been necessary to maintain two power systems, one for belt work and one for field work. Frequently when one of these systems is in use the other, or a considerable part of it, is idle. In many instances the farmer has not carried the investment in equipment for belt work but has had to pay prices to yield the custom operator a profit. It has been estimated that belt work constitutes from 12 to 20 per cent of the power requirements of the farm. The advantages of having one power system for both belt and drawbar work will show in reduced operating expenses and more timely completion of farm work. *In the past the farmer has not had control of his belt machinery operations, being dependent upon the inclinations of the custom operator, which interfered with the efficient planning and prosecution of the work. Belt machinery under the farmers' control, made possible by the use of the tractor, solves this continually pressing problem.* In practically every system of farming there is a peak of work for both power and man labor. This varies somewhat for different sections of the country but usually occurs at the time of seed bed preparation and planting. From the standpoint of efficient and economical farm operation it is essential that these peaks be cut down or taken care of in a more efficient manner than is possible with animal power. This the tractor does. This peak load problem is closely related to timeliness of operations. The farmer has relatively little to say regarding the proper time to do the most important farm operations. Nature dictates the general plan and man must govern himself accordingly. To get maximum yield from minimum efforts seed bed preparation, planting, cultivating and harvesting must be done at appointed times.

Power farming increases the efficiency of labor on the farm. A recent report on tractor uses made by the Michigan Agricultural College covering 312 farms says: "The average decrease in man labor hired due to the purchase of the tractor amounted to 2.6 months per farm. The labor was also better distributed, especially in the busy spring season." In regard to more efficient use of labor this same report says: "Better distribution of labor affords opportunity for better tillage of the land. The tractor may increase efficiency on the same acreage in two ways. It may come through getting the tilling done at the proper time, or through tilling the land more thoroughly. Eighty-seven per cent of the farmers reporting on this question stated that in their opinion they obtained increased crop yields due to better tillage because of the tractor." Allowing one man to do more work or to do the same work in less time is a fundamental advantage which is essential to a more profitable agriculture. The farmer is now giving much thought to ways and means of increasing his profits. To obtain this end labor must be used more efficiently.

It is possible to reduce the number of horses which must be kept for farm work by using the tractor. In some instances the horseless farm is already a reality, but for the present better sales results can be obtained in most cases by aiming at a reduction to the minimum number of animal motors required rather than their total elimination. Every horse which goes means just that much to apply toward the cost of tractor operation, and in many cases it is possible to reduce the number of horses or mules sufficiently to more than cover the cost of tractor operation. In such cases the other advantages are profit. In all types of farming there is some operation or set of operations coming at the same time which determines the number of animals which must be kept in conjunction with the tractor. In the corn belt, for example, it is the corn cultivating.

While there have been many reasons behind the sale of the tractor the farmer is more and more coming to ask: "Will it pay?" Therefore the logical sales appeal is an economic one. The fundamentals of this economic appeal are the same the country over but the details vary with the type of farming and the section of the country. The dealer is faced with the problem of working out these economic advantages for his own conditions and basing his sales appeal on this information. Ultimate utility is the foundation for tractor use and sales appeal.

Possibilities of Tractor Sales by Dealers

THE story beginning on opposite page says the tractor is coming back—then goes on to prove it. Sales opportunities are being multiplied for the dealer already selling tractors and allied equipment and for the dealer who may be considering their sale. This is true both in agricultural and industrial fields.

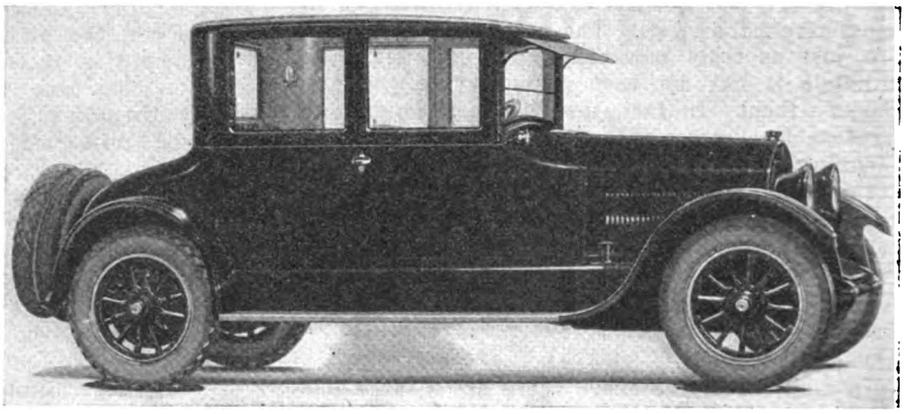
This story is the first of a series which Motor World will print taking up the fundamentals of tractor and power farming equipment merchandising. Early stories will go into the subject of prices and the industrial tractor field, and other stories will follow.

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New Cadillac Victoria Body Fitted to Model 61 Chassis

A NEW Victoria type of body is now being put out by the Cadillac Motor Car Co. on its type 61 chassis. The new model, four-passenger Victoria, has been altered in dimensions to give the effect of greater length and less height. The interior has been considerably enlarged to provide more room for the occupants. The seats are longer and the driver's seat is now placed in such a way that it is directly behind the steering wheel. The auxiliary folding seat, which is beside the driver's seat, is so arranged that it gives added leg room for the person occupying it. The rear seat has also been lengthened and widened.

The interior appointments have been refined by the use of new types of pull-to handles on the doors and other fittings. The features in the former Victoria model have been continued. These include rear corner lamps, parcel compartment directly behind the driver's seat, foot rest, cigar lighter, leather panel sun visor and the rear deck compartment which is large enough to accommodate a small trunk, several bags, golf clubs or fishing kit. The price on the new Victoria is $3,875 f.o.b. Detroit.



New Cadillac Victoria body mounted on type 61 chassis

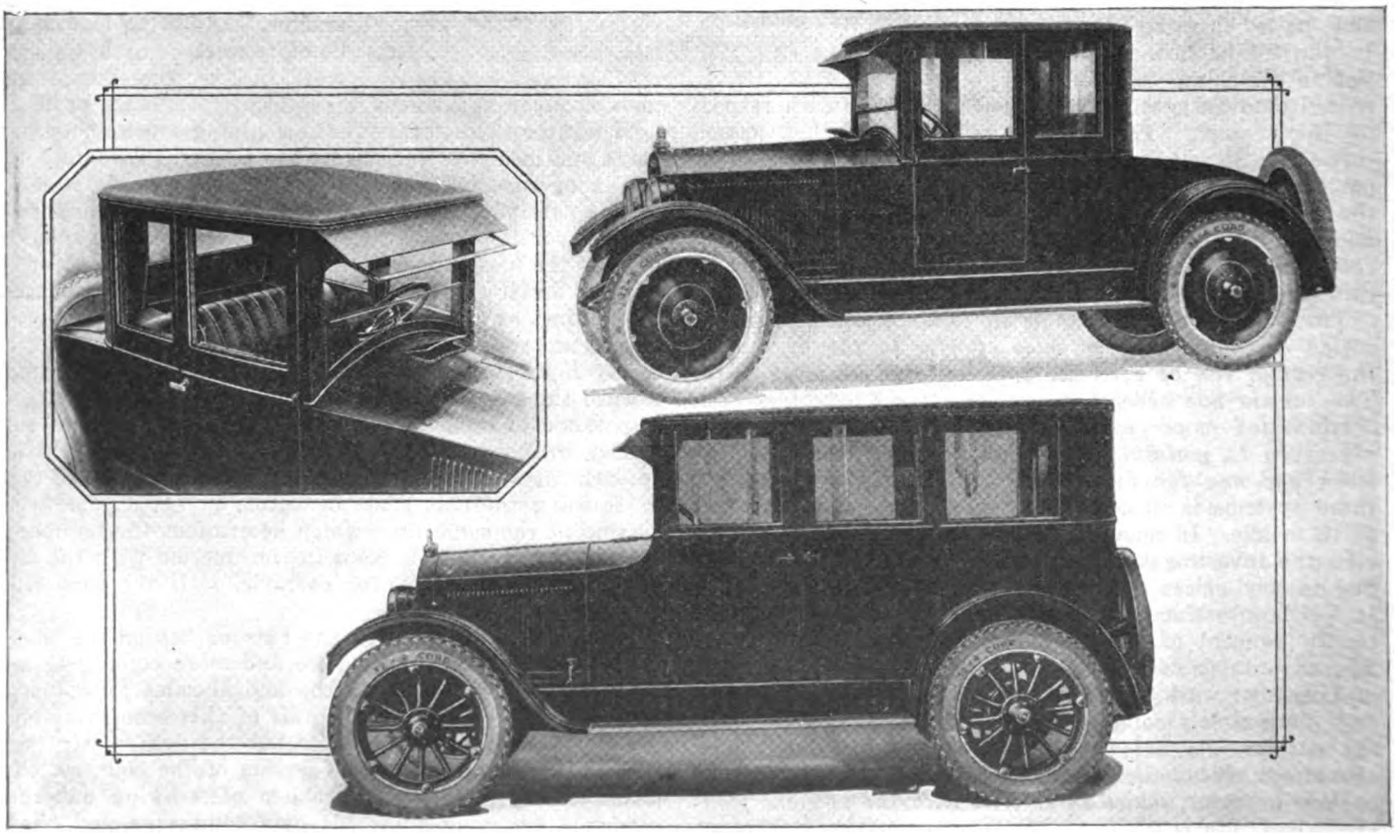
Gardner Has Two New Closed Models, a Sedan and Business Coupe

TWO new Gardner closed jobs are to be ready for delivery August 1. They are a 5-passenger sedan priced at $1,345 and a business coupe at $1,095. The body lines follow very closely the present phaeton. The business coupe has a wide, roomy seat upholstered in straight grain leather, and there is plenty of extra leg room.

Just back of the seat is a convenient compartment for carrying suitcases, packages, extra tools, etc. The door windows are raised and lowered with automatic rotary type noiseless lifters.

A special roof construction consists of cross bows covered with fine mesh wire screen and heavy duck, which is padded to give a smooth appearance and prevent sagging. Included in the equipment are a corrugated steering wheel, ventilator, sun visor and rain-proof windshield.

The sedan has smart straight lines which are accentuated by the finish, which is dark blue with black enameled fenders and nickel plated satin finish hardware inside the body. A forward tilting ventilator throws air around the feet of those in the driving compartment. The windows are fitted with silk shades and the hardwood is satin finish. The four door design allows easy entrance to both front and rear seats without disturbing those already seated. All doors lock from the inside, except the right front which locks with a Yale lock from the outside.



The new Gardner business coupe and sedan. The inset shows the package compartment in the back of the business coupe seat

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Overloading Is Worst Motor Bus Evil

This and Other Features Dealers Should Consider With Prospective Operators Discussed by Expert

THE greatest danger in bus operation, and the point that motor truck dealers need to bear in mind in selling buses, is that of overloading.

In speaking before the Society of Automotive Engineers, George Green, vice-president and general manager of the Fifth Avenue Coach Co., New York City, gave reasons why overloading cannot be profitably carried out on bus lines.

Green as general manager not only has charge of the operation of the Fifth Avenue buses, but the company manufactures its own buses which are designed by Green. Thus Green sees a bus from the viewpoint of the maker, the owner, the operator and the person who has to service it and maintain the schedule.

Trolley lines permit or have a regulation allowing for 30 per cent standees, which can be done in a trolley car, as overloading to this extent is not important or injurious to the equipment because of the excessive weight of the trolley car. Overloading with a motor bus is an entirely different problem. On the bus the spring suspension at best has to be a compromise between minimum and maximum loads. If there is overloading, the springs are overloaded and the tires as well. Overloading means because of this discomfort for 90 per cent of the overload. To get a good riding bus springs should be suited to the average load. Overloading increases the maintenance to such an extent that it should be discouraged at all cost. As proof that excellent service can be had out of motor buses when they are not overloaded and when they are properly cared for, is evidenced by the fact that the Fifth Avenue Coach Co. has its buses operating 358 out of 365 days in the year. In other words each bus is running every day in the year, except seven.

During these 358 days the buses of the Fifth Avenue Coach Co. average 30,000 to 60,000 miles, according to the routes they are on. Only once in twelve months are they given a major overhaul, and they generally run 2000 miles without an adjustment of any character. They are inspected every 2000 miles, and the bus is not expected to require any repairs between inspections. These inspections take place practically every two weeks and the maximum allowance of time for an inspection is 8 hours.

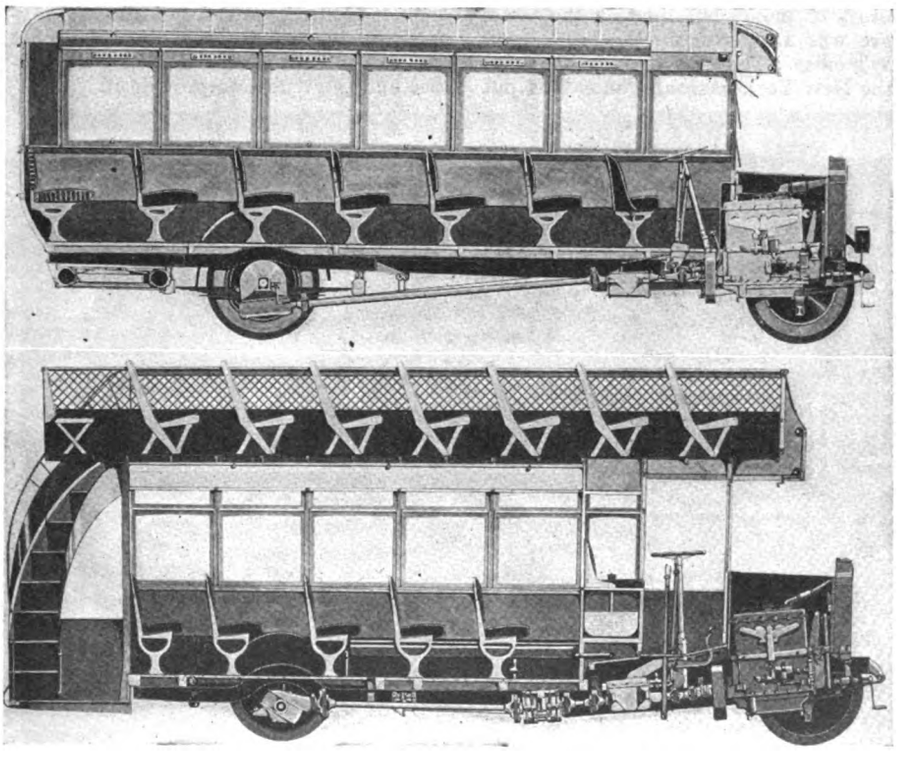
Colonel Green places the maximum life of a bus at 5 to 7 years, which is approximately 1800 days of service.

From a business point of view the comfort of the passengers is one of the secrets of financial success. If the passenger has a separate seat, is always sure of a seat, has a comfortable seat, and the bus rides easily, there is no difficulty in getting passenger fares adequate to make the business a success, providing it is conducted on a business basis. Colonel Green uses what he describes as a progressive spring, that is, one in which the upper leaves take the weight of the vehicle and a certain portion below it, and as the load is increased additional shorter leaves come into service. This gives easy riding, even with the solid rubber tires used on New York City streets.

The question of accessibility in a bus is one of prime consideration largely because a bus service to be successful must maintain a regular schedule. If a schedule is not maintained failure is certain to result. To get accessibility Col. Green has featured the unit system of assembly. The designer has given more thought to the subject of repairing or replacing units than to merely that of fitting them together when building the bus. In this there is one dominating rule, namely that units must admit of removal without dislodging other units. Very frequently repairs and adjustments must be carried out at night and often this work is done under the most unfavorable conditions. Because of this the successful bus must be designed from start to finish with this thought of accessibility in repairs constantly in mind.

Colonel Green, because of his long experience in connection with the design, construction and operation of buses, is convinced that modified or unmodified trucks or automobiles are incapable of giving satisfactory and economical service if operated as buses. He does not believe that the motor bus has reached a perfected state of design. We must bear in mind that the motor bus has not made good in some localities where it has been tried out. We know of such failures as those in Des Moines, Toledo, Kansas City and others, and Colonel Green declares that analyses have invariably shown that the failure was due to the combination of unsuitable buses, overloading and general lack of experience in operation.

Types of Successful New York Buses



Above—Sectional view of J-type single-deck bus. Below—Sectional view of L-type double-deck bus. Both are Fifth Avenue, New York, buses

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Ever Have a $16,000 Idea?—Here's One!

It Is Just Another Proof of the Fact That Good Ideas Are the Basis of Good Sales

THIS is a story about a $16,000 idea.

Like all good old-fashioned stories it has a moral—in this case a merchandising moral—but it also carries a practical suggestion that may mean truck sales and truck profits to some dealer.

Unlike the old-fashioned stories this one is going to carry the moral right up here near the beginning. It is: *Sell a man a good transportation idea and he'll buy trucks.*

That's what the Katz brothers, trading as the Katz Motor Car Co., White truck dealer in Paterson, N. J., did.

These Katz boys, Carl and Ed, were going to a baseball game in New York a few weeks ago by train, a ride of 20 miles. In the smoking car they met a dozen friends from their home town, and a lot more, some with their wives and sons and daughters when the train reached the Jersey City terminal.

Observance of this large gathering of baseball fans making the pilgrimage to New York was responsible for the birth of the idea.

"How much pleasanter it would be to make this trip direct to the ball grounds from Paterson in a fine, big, easy riding WHITE bus?"

When the Katz boys got home that night they talked about the idea some more. Then they phoned a few proprietors of motor bus lines in the town. There was a meeting in the truck company's office. The idea of daily bus trips to the New York baseball games was put to the bus operators. It was SOLD to them by the Katz boys in one sitting. And, along with the sale of the idea went the sale of two White bus chassis and fine big bodies for them—for $16,000.

The practical suggestion in this story is that in your town there may be some use for trucks in a similar capacity, for trips to ball parks, race tracks, amusement parks, summer resorts, etc., that has not been recognized and filled by anyone, and there may be sales and profits for you in selling the idea of such service and the trucks to provide it.

Ideas On Selling and Management

You will find them on this and the opposite page—ideas that will make dollars or save dollars for the

Car Dealer Truck Dealer Equipment and Tire Dealer Tractor Dealer Repairman

Some of our readers are contributors to this section of Motor World. Have you developed a plan that might help some other men? If you have, will you write it out and send it in?



Bus that takes Jerseymen to ball games. Could you sell transportation like this in your town?

The White buses that came into existence as a result of the Katz boys' idea are making regular daily trips from Paterson to New York and return now, and they are in considerable demand, also, for group rides to adjacent cities and resorts nights. On the whole the investment promises to be a very profitable one for the bus operators.

Some Salesmen Find Writing Letters Helps

THE letter-writing habit is a mighty good one for the motor car salesman to acquire regardless of how much or the nature of the direct mail advertising done by the dealer.

Every salesman who has been selling for a reasonable period has built up a fairly wide acquaintance with a number of persons who sooner or later will be an active prospect. While it may not be profitable for him to spend very much time in canvassing them regularly, he can, with very little effort and time, keep himself and the car he sells before various prospects with an occasional note.

Such notes are most effective if they are just an informal communication written in the salesman's own handwriting, short, cheerful and individual. An Elgin salesman, in telling how he operated his plan, in the *Auto-Gram*, house organ of the Elgin Motor Car Corp., says that he devotes all of his spare time to checking his prospects and writing them short notes. Sometimes a newspaper item gives him a hint that one of his friends may be a prospect. Births frequently form a good excuse for approaching a man on the sale of a new car. Letter-writing has become a hobby with the salesmen. It keeps them busy and happy, in addition to being a very material benefit.

A Standard Demonstration Route

LAY out a standard demonstration route made up of roads that will impress the prospect with the capabilities of the car you sell. Your demonstrator drivers will get to know the route and their driving will improve. And with carefully selected road conditions, you can show the selling points of your car to the greatest advantage.

The route may be advertised as your standard demonstration trip. You can ask your prospects to compare the performance of your car with any other car over the same route. Of course, if the prospect desires a demonstration over another route, his selection should have the preference over the standard route.

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Telegrams Used to Collect Old Accounts

Here's an Idea That Might Be Profitably Used by Some Jobbers and Dealers

WHILE this little story concerns a plan used by a retail clothing merchant to collect some old standing accounts that had been on his books for months, it is nevertheless of as much value to the automotive dealer as to the clothier, for in the collection of accounts the principle of getting the money and the methods employed in doing so are exactly the same in one field as they are in another. So the method employed by this clothing merchant can doubtless be just as successfully used by the automotive dealer, and it commends itself to action because of the somewhat remarkable results it obtained for the merchant referred to.

It was during the latter part of June that the George Muse Clothing Co. of Atlanta, Ga., one of the large retail clothing firms in the South, employed the unique plan of trying to collect a number of old standing accounts by sending telegraphic reminders to the customers in question, and with the result that out of 80 telegrams dispatched a total of more than $1,000 was collected in less than ten days' time.

A few of the accounts referred to were only three or four months in arrears, but the majority of them were from eight to twelve months behind, and were customers either located in other cities or who had left Atlanta to take up residence elsewhere without going to the trouble of paying the bill due the Muse store. The old standing accounts ranged from $50 to as high as $300, while there were a few only three or four months in arrears ranging from $10 to $25.

The average cost of sending out these telegrams was 50 cents each, nearly all of them going as night letters. Therefore, it will be seen that the total investment amounted to only about $40, whereby collections resulting from these telegrams exceeded $1,000. Truly an entirely satisfactory return, considering the fact that most of these accounts had been standing on the company's books unpaid for many, many months.

Dozens of the customers thus appealed to paid from one-fourth to one-half of the entire account due, while several paid the full amount. The largest check received in direct response to the telegraphic appeal was for $75, while the smallest was for $10.

In addition to sending out the telegrams the store also used the plan of calling up a number of the customers throughout Georgia and also in the city of Atlanta on the telephone, and thus reminding them of the old account still unpaid, while a few others were billed by registered letters. The latter two methods netted several hundred dollars more in collections from the old bills.

The basic principle here involved is the psychological effect this method had on the customer's mind. The receipt of a telegram, a long distance telephone call or a registered letter reminding him of his unpaid account was sufficient to show the customer that the store was right behind him in the effort to get this money, and that apparently the time had come when he should either pay part or in full to save himself possible embarrassment. One of the most interesting features about the plan, and one, too, that indicates its real worth as a money-getter, was the fact that several of the accounts on which payments were made had been considered by the Muse store as virtually "dead," with suit the only hope of every collecting the amount due. To such accounts the messages were sent merely as a last resort, or in other words as a sort of an experiment. Of these accounts, which were all from 10 to 12 months in arrears, the total amount collected was well above $250.

Following are a few of the telegrams sent out which accomplished the best results:

"We must insist on remittance of $76.50 to cover your August and December account. As this account is now considerably past due we believe we are entitled to immediate payment. Let us hear from you at once."

"Failing to hear from you in the next few days relative to your account of $104.75 of last October and November, we shall be compelled to pursue another course to perfect settlement."

"Is there any reason why we should not receive a remittance covering your account of $98.65, due now since last November and December?"

"We wish to advise that it is necessary we have your check at once covering your account, which now is nearly one year old. Failing to hear from you at once, we shall be compelled to force settlement."

"We find that your October and November account, amounting to $88.90, remains on our books unpaid. At time purchases were made we understood same would be paid according to our terms. Inasmuch as the account is long past due we must insist on check to cover same at once."

"We have received no reply to our telegram sent you several days ago. What may we expect in the way of remittance covering your old account? We must hear from you without fail or we shall be compelled to employ another means to perfect settlement."

Signs Carry the Selling Story



The use of signs makes this display window showing Kester Acid Core Wire Solder a real "talking" exhibit. It suggests how this and other items in small cans may be made into attractive displays

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Washing and Polishing the Automobile

Methods and Appliances Show Little Change in Ten Years —Finer Finishes Require Greater Care

By J. HOWARD PILE

A SERVICE that practically every garage and service station is called upon to perform frequently is washing and polishing. Very few owners are able to do their own washing unless they have help skilled in this work. The big bulk of the washing business goes to the garage. The service station does not do washing as a regular business, but does wash cars that are sent in for repairs.

There are a number of different parts of the car to be considered in washing, and each of these is of a different material or is finished differently. In considering the problem of washing, these different parts and finishes must be treated separately. But before taking up the actual operations, it is well to consider the equipment necessary.

The Wash Rack

The most important requirement is a place to wash the car. Most garages have a space set aside for this purpose and call it the wash rack or wash stand. The space required is from 10 to 15 ft. wide and from 14 to 18 ft. long for one car. The floor should be made of concrete and should have a drain at the center to carry off the water. The floor should slope from the sides toward the drain. Cars stored near the wash rack will be better protected if there is a water-tight partition around the rack.

A water hose is needed for washing the body and chassis. In a small shop this can be a simple piece of garden hose connected to a faucet, the hose being long enough to get all around the car. There are better and more convenient washers that are attached to the ceiling and which swing around on a swivel so that the hose is not dragged on the floor. Some of these are turned on and off with a rope or chain and others operate by a slight pull downward on the hose. Still others have the water stop at the end of the hose and operated by the washer's thumb. Where cars are washed in quantities, it is economical to consider using one of these improved forms and the work can be more quickly done and the hose will last longer. Where such washing is done a heavier grade of hose is used, as the ordinary garden hose would not last very long. Ordinarily the hose is not equipped with a nozzle as accidental scratching of the finish might occur.

The washer will need a pair of hip boots and a rubber apron which comes almost to his neck and extends to his knees. It is pulled around well in back with tapes, so that any splashed water which hits him from the chest down will run off.

Washing "Tools"

Additional equipment needed at the rack are sponges, chamois skins and two or more 10 quart galvanized pails. The sponges should be of the grade known as wool sponge and should be free of grit and cinders. Sponges are liable to contain cinders in the interior due to the discharge of cinders from ships steaming over the sponge beds. Genuine chamois skins are hard to get, and most of the skins on the market are sheep skins which are heavier and a little harder to work with. There are a number of washing brushes on the market which are very excellent. These brushes have hollow handles and are attached to the hose so that a constant stream of water flows over the surface being brushed.

The polishing equipment needed consists mostly of soft wool or canton flannel cloths and brass and nickel polish. There is extremely little brasswork on the modern car but the use of nickel, especially on the sport models, is increasing.

The general conception of a wash and polish is a brushing out of the inside of the car, the washing of the outside of the body and chassis, cleaning the top and polishing bright metal parts and washing windows and lenses or glasses. The price for a wash and polish varies considerably, according to locality, reputation and competition.

Here are the different parts that are to be considered in washing and polishing:

Top	Upholstery
Body	Floor coverings
Windows	Running gear.

On open cars tops are either of mohair or similar material or else of artificial leather. The mohair tops are cleaned by brushing on the top and underneath with a whisk broom, or, still better, cleaning with a vacuum cleaner. Stains or grease are removed with castile soap and water on a rag. Gasoline, naphtha or benzine must not be used on the top, as it dissolves the waterproofing material in the top and makes it leak. Artificial leather tops are washed either by turning the hose on top of the car or with a sponge soused with water. Stains are removed in the same way. The underneath side is cleaned either with a whiskbroom or vacuum cleaner. The bows are washed with a wet sponge and wiped off, and leather straps after washing can be made to look more presentable by applying some harness dressing.

The Upholstery

The upholstery treatment depends on the material. Leather and imitation leather is cleaned with a sponge wet with clear water, squeezed out and wiped over the surfaces. If the surface is very dirty, use a little castile soap and follow with a good rinsing to get all the soap out. After the leather is thoroughly dry, a good leather dressing may be applied or the luster can be brought up by rubbing with a small rag on which a few drops of 3 in 1 oil have been squirted. This is followed by a brisk rubbing with a clean soft wool cloth. Whipcord, broadcloth and other fabric materials are cleaned by beating with a carpet beater or light stick, followed by a good brushing with a whiskbroom. A still better method is to use a vacuum cleaner. Stains on fabric material are difficult to handle. Gasoline and benzine have a tendency to spread the stain and also to leave a ring where the liquid stops. A better method is to use castile or Ivory soap on a piece of rag. If the soap is made too strong or the rubbing is too hard, this treatment is liable to lighten the color of the material and leave a much worse appearing spot than the original stain. All the soap must be rinsed out after the rubbing is done. Sometimes a small brush like a finger nail brush will work better than the rag. An old familiar remover for butter and lard and other animal oil stains is to cover the stain with a clean blotter or piece of absorbent brown paper and apply a hot flat iron over it. The heat thins the grease and the blotter or paper absorbs it.

The floor coverings can usually be

Better Mechanics

ARTICLE No. 250

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.

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taken up either by lifting right out or by undoing the snap fastenings. Carpets can be treated the same as any house carpet, with a vacuum cleaner or a broom. Stains are removed the same as in fabric-covered upholstery. Rubber mats are best washed off with soap and water. Do not use any gasoline on rubber mats to remove grease. Gasoline will soften up the rubber and leave it gummy on the surface and will also separate the fabric backing which is cemented to the mat with a cement soluble in gasoline. The steering column, spider, rim, brake and clutch pedals and emergency brake lever can be washed off with gasoline to remove grease, which may otherwise find its way to the mat or to the hands, shoes or stockings of the driver. The instrument board can be simply wiped dry unless some grease has gotten to it, in which case a gasoline rag followed by a good wipe will do the trick. If the surface remains dull, apply a few drops of oil on a soft rag and rub briskly.

Washing the Body

The washing of the body proper requires considerable care and some little skill. Plain water is used here, and the water should be between 50 and 70 deg. Fahr. Water which is either too hot or too cold will harm the finish. The washing is started by flowing water gently over the body, working one side at a time. If there is mud caked on the finish, it is soaked with water till it drops off itself or can be easily loosened. The water must flow out of the hose in a gentle stream, not more force than will push the water 6 in. from the end of the hose. A strong stream or rubbing while mud is still on the finish will act just like fine sandpaper, driving the fine particles of sand against the finish. After the flushing has removed all caked dirt and mud, a sponge is used. The sponge must be absolutely clean and free from grit. Do not use a sponge that has been used on the wheels or running gear, as it is liable to have grease on it. The sponge is used by turning the hose into one of the buckets and letting it run. Soak up water from the bucket and dash it gently against the body, doing as little wiping as possible and following by a good rinsing with the hose. Soap is never to be used on the body finish, except as a last extremity, and then only a neutral soap or one containing no alkali. Linseed soap answers the requirements. A new car especially should never have soap used on it. Sometimes a body gets particles of tar on it, and the removal of this requires time and patience if the finish is not to be harmed. Gasoline or kerosene will remove the tar, but will dull the finish also, so these should never be used, except on the running gear. Vaseline will soften the tar, and this is probably the best thing to use. If the tar is caught while it is still soft, it will come off fairly easy, but if allowed to harden there is likelihood of pulling the varnish and paint off along with it.

After the body has been thoroughly washed, dry off with a chamois skin which has been soaked in clean water and wrung out dry. If the body has dried in the meantime, wet it again before applying the chamois. The chamois should make the surface practically dry and should give it a gloss. Be sure that the chamois has no grease on it, and do not use a chamois that has been used on the running gear.

The body should never be dusted dry nor should a feather duster be used at any time on the varnished surfaces. Dusting simply rubs the tiny particles of sand and grit over the surface, and while there may be no apparent injury from doing it once or twice, it will eventually dull the surface.

There is no particular trick about washing the windows. They are simply rinsed off with clear water, rubbed with a sponge, rinsed again and then wiped dry with a chamois. Any bits of paint or tar can be removed from the glass with an old safety razor blade which has been fitted to a wooden handle.

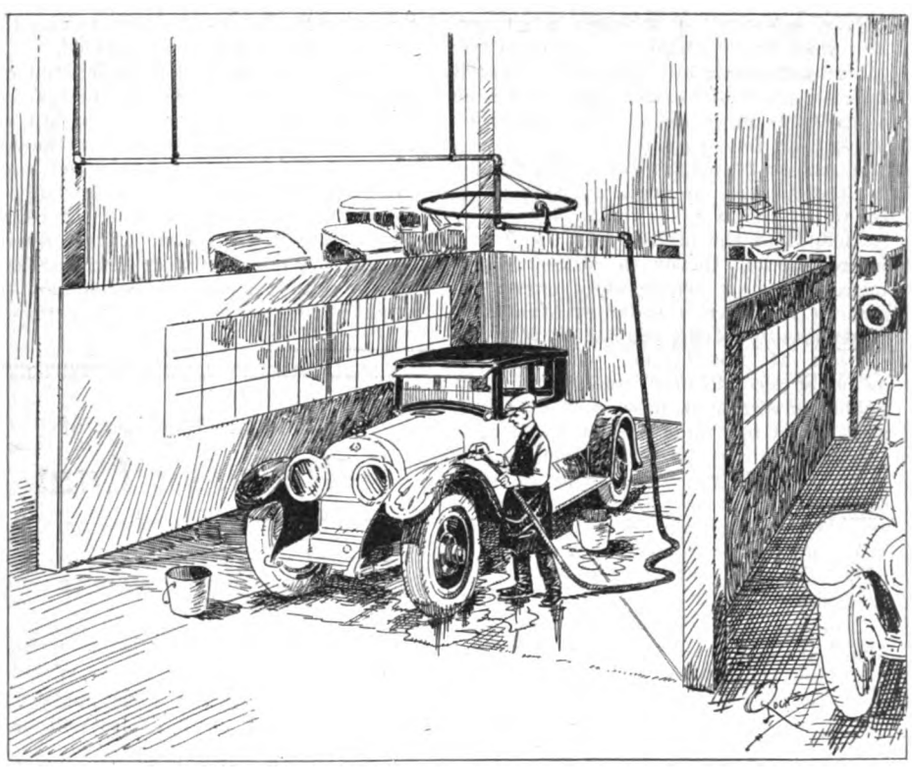
Chassis and Running Gear

The chassis and running gear are washed in much the same way as the body, but it is permissible to use a strong stream of water and to use a good neutral soap generously. Where grease and oil have collected very heavily, they can be removed with gasoline and a small paint brush.

If the radiator is clogged with mud, this is removed by squirting the hose from the back of the radiator. Do not squirt it through from front to back, as the water is liable to get on the electrical equipment and possibly into the breather of the engine. Do not poke any sticks or metal objects into the radiator spaces, as the metal is extremely thin and is liable to be punctured.

The car should never be washed in strong sunlight, as it will not be possible to wipe the water off before it dries itself and the result will be a streaky and spotty finish.

The hood should not be washed while hot, as this will cause water marks, spots and streaks. Wait till it cools down.



A well arranged wash rack with partitions

Mud spotting and rain spotting can sometimes be cured by frequent washings with cold or cool water.

Polishing

Brass parts of the car can be polished with any one of the hundreds of metal polishes on the market. Care must be taken not to get any of the polish on the varnished parts of the car, as this will cause stains that cannot be taken out. If the brass part comes very close to a varnished surface, cut a mask out of cardboard so that the rag with the polish will hit the cardboard.

Never use metal polish on nickeled surfaces. The action of most metal polishes is a scouring one, and the abrasive will remove the nickel plating which is usually very thin. Nickel is best cleaned with a soft woolen rag with a speck of vaseline on it. If the nickel is badly corroded use 3 in 1 oil or a fine silver polish which will not scratch.

When necessary to polish the headlamp reflectors, use only putz pomade and a soft canton flannel rag, rubbing always from the center where the bulb is to the rim, using straight line strokes. Use no more rubbing than necessary, as the silvering is thin and too much rubbing will remove it.

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Can Garageman Hold Car for Old Repair Bill?

Vexatious Question Still Unsolved in New York State—Some Opinions For and Against Procedure

THE question of whether a garageman or repairman can hold a car for an old repair bill when it is brought into his place of business has long been a vexatious one in New York. The New York Lien Law provides:

A person keeping a garage or a place for the storage, maintenance, keeping or repair of motor vehicles, as defined by Article II of the highway law, and who in connection therewith stores, maintains, keeps or repairs any motor vehicle or furnishes gasoline or other supplies therefor at the request or with the consent of the owner, whether such owner be a conditional vendee or a mortgagor remaining in possession or otherwise, has a lien upon such motor vehicle for the sum due for such storing, maintaining, keeping or repairing of such motor vehicle or for furnishing gasoline or other supplies therefor and may detain such motor vehicle at any time it may be lawfully in his possession until such sum is paid.

Time and again dealers who have been unable to collect for storage or repair of motor vehicles have been confronted with the question as to whether they could hold a car on an old bill when the owner of it brought it into their place of business for further repairs. It has been sometimes contended that the dealer had the right to hold the car for the first bill and also for the second bill. On the other hand it has often been contended that the dealer's right of lien only extended to the amount due under the second bill. Unfortunately, up to this time the courts have never passed on this point and the New York statute which gives a lien to dealers has not been legally construed.

Those who contend if a motorist who owed a bill for work done several months ago brought his car to a garageman for further repairs that the garageman would have a lien for the old bill as well as the new, arrive at their decision because of the provision in the lien law which says: "A person keeping a garage, etc., has a lien upon such motor vehicle for the sum due and may retain such motor vehicle AT ANY TIME it may be lawfully in his possession, until such sum is paid."

They contend that the lien law is plain and that it gives a garageman a lien any time the car is lawfully in his possession until he is paid.

Before this statute was enacted, garagemen had a common law lien for storage and repairs, but that lien was lost where the owner was allowed to take the car out. Thus, before the present enactment, garagemen had practically no lien where cars were kept on live storage. It was to remedy this that the law set out above was passed.

Those who claim that under the circumstances outlined above the garageman has a lien only for the new bill, say that, although it is true that the law provides a garageman has a lien on a car at any time he may be lawfully in possession of it, this means before the transaction is concluded, that is, during the time a motorist keeps his car in a garage and that the garageman's lien attaches every night that he brings it back to the garage even though he may take it out every day. When the car is finally voluntarily given up by the garageman, however, the transaction is ended and the lien is waived.

Those who uphold the latter view allege that when a lien is once waived it is waived forever and they say that where a car is voluntarily surrendered the provision of the law that a garageman may have a lien at any time a car is in his possession does not apply, because it relates only to a case where the dealings between the owner and garageman are not terminated.

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

Some Interesting Rulings on Yellow Taxi Cases

In a recent issue of Motor World, the New York case of American Yellow Taxi Operators vs. Quinn was reviewed at length. In this case an injunction was sought against the owners of taxicabs who, it is claimed, so closely imitated the "Yellow Taxis" as to mislead the public. The injunctions were granted on that ground.

Since the printing of the decisions in the above cases on this page, a number of other cases have come before the Special Term of the New York Supreme Court. The decisions in these other cases, which are also applications for injunctions, are as follows:

American Yellow Taxi Operators, Inc., vs. Pias—Denied, with leave to renew in case the defendant adopts any lettering upon his car, calculated to mislead the public into believing that the cars of the defendant are those of the plaintiff, as was the case when this action was commenced.

Same vs. Scheiner—Denied, with leave to renew in case the defendant causes any lettering upon his car calculated to mislead, as existed when action was commenced, but which has now been discontinued by the defendant.

Same vs. Lauter, Same vs. Katowski, Same vs. Comfort Touring Co., Inc., Same vs. Gantz, Same vs. Lee Auto Service Co.—Granted. Submit orders on notice in accordance with the decision of Mr. Justice Cohalan in the Quinn case (reported in N. Y. Law Journal, April 17, 1922).

Same vs. Cohen—Granted. Settle order on notice. See memorandum in case of this plaintiff against Diamond et al., this day decided.

Same vs. Vassallo, Same vs. Trivero—Denied. The defendant uses no lettering upon his car, and the plaintiff is not entitled to an injunction under the decision of Mr. Justice Cohalan in the Quinn case (reported in N. Y. Law Journal, April 17, 1922.)

Same vs. Barry—Denied. The answering affidavit of the defendant shows that, about one week prior to the commencement of this action, he changed the lettering upon his taxicab, so as to strike out the word "Yellow." Thus the present lettering and name of "Globe Taxi" would not mislead the public, and the plaintiff is not entitled to an injunction under the disposition of Mr. Justice Cohalan in the Quinn case.

American Yellow Taxi Operators vs. Travelers Taxicab Corp., Inc.—Denied. The corporate name of the defendant, adopted before plaintiff was incorporated, is so entirely different from that of the plaintiff, and the lettering and general appearance of the name upon the defendant's taxicabs are such as not to mislead the public into the belief that the cars of the defendant are those of the plaintiff.

Same vs. Giordano—Granted to the extent of granting leave to the plaintiff to bring in the Pleasantville Taxi Co., Inc., as a party defendent by supplemental summons and complaint, and with leave to renew this motion after such service of said summons and complaint on said corporation, of which the defendant is the president.

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Complete Dealer Building on Unit Plan

Property Divided Between Sales, Service and Storage Units— Main Street Frontage Used for Display Exclusively

THE plan on this page is for a typical dealer building on a corner property. It provides for car, accessory and parts sales, storage and service. The building is arranged on the unit plan. The salesroom, accessory store, stockroom, battery shop and office form one unit across the front of the building. The second unit is the storage garage and the third unit the service station.

The street frontage is divided equally between the car salesroom and the accessory store. The former has a display capacity of two cars. Both have fine display window facilities. The store is intended for accessory, tire, parts and battery sales. It is provided with counters, shelves and tire rack. It is conveniently located with respect to both the tire and battery shop and the stockroom.

The cars in the garage are placed facing an aisle extending across the width of the building. The indicated capacity is twenty cars. In planning a building of this character, the dimension of the garage parallel to the length of the building should be at least 50 ft., as this space is necessary if the movement of cars in the garage is to be convenient. If it is impossible to provide this space, it is usually better to make an entirely different type of layout.

The service station is large and well-lighted. There is plenty of room around the cars. Only such cars as can be worked on should be run into the shop. Cars awaiting their turn should be kept in the garage.

The lubricating stand shown in the corner consists of two elevated tracks with inclines leading up to them. This stand can also be used when it is necessary to perform mechanical operations underneath the cars. The machine equipment shown includes lathe, drill press and grinding stand. The drill press may also be used for cylinder reboring if it is desired to handle this class of work. Other equipment indicated is the engine stand and the axle stand.

The roof should be carried by trusses. There are two arrangements possible—one with the trusses across the width of the building and the other with the trusses parallel to the length of the building. In the latter cases, the partitions separating the units would be used to support the ends of the trusses.

Motor World's Department of

Better Business Buildings

Is a weekly feature of the paper. Motor World is glad to receive and answer inquiries for salesroom or garage plans, but in order that there may be as little delay as possible in submitting the plans desired it is imperative that the following information be given:

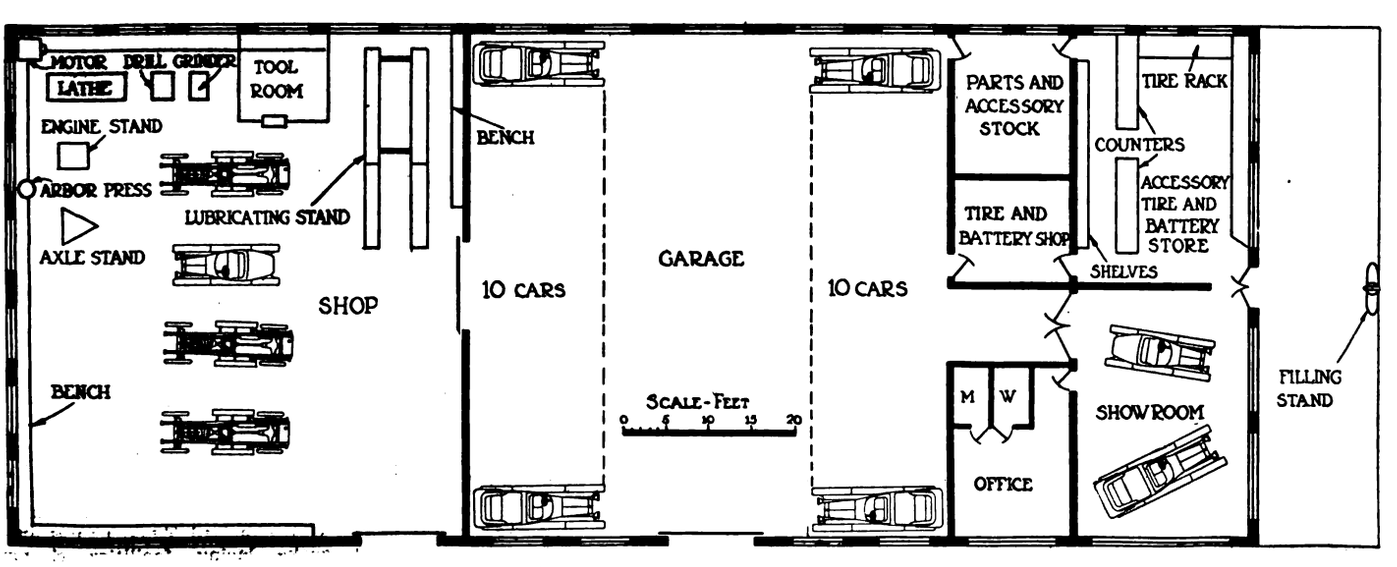
Size of plot, with rough sketch showing shape and its relation to adjoining plots; name and number of departments operated; number of cars to be shown in salesroom; number of cars in garage; any other pertinent details.

NEW YORK DEALERS PLAN CLOSED CAR SHOW

NEW YORK, July 24—Virtually all space available in Grand Central Palace has been sold for the closed car show of the Automobile Merchants' Association of New York, which will be held Sept. 23 to 30. This is the first time the metropolitan dealers have attempted anything so elaborate as a closed car show in the Palace, scene of the mid-winter show conducted by the National Automobile Chamber of Commerce.

It is planned to charge an admission of 75 cents, with dealers' tickets for distribution to prospects at 35 cents. Space will sell for $1 a square foot.

The show plans are being made by a committee including Charles H. Larson, Oldsmobile, chairman; Harry W. Gaston, Lexington, vice-chairman; H. T. Porter, Lafayette; Harry S. Houpt, Hudson-Essex; William C. Poertner, Durant and National; Lee J. Eastman, Packard; and E. P. Herman, Stewart truck. It has not yet been decided whether there will be an exhibition of trucks in connection with the show.



Floor plan for complete dealer building on corner property 60 *x* 158 *ft. The salesroom has a two car capacity. The indicated storage capacity is* 20 *cars*

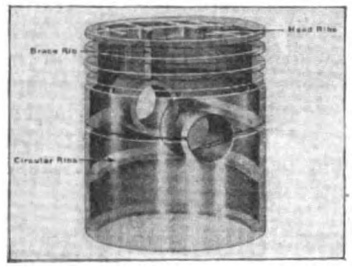
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Equipment to Sell

New Devices for the Car and Truck

Elmco Pearlite Piston

Electric Machine Corp., Indianapolis, Ind.

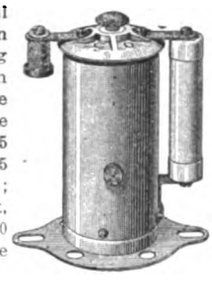


The pistons are semi-finished or finished in all sizes and oversizes for all makes of automobiles, trucks and tractors. The Pearlite metal is gray iron of great density. The machined oil grooves have drains below all ring grooves and the oil grooves on the joint of the spiral oil groove. The head rims permit a lighter piston and brace strips on the top of the boss to the piston heads give additional strength. Circular rims on a line with the bosses and below the bosses reinforce the piston wall and maintain a uniformity of expansion.

Rico Standardized Coil

Rico Ignition Co., Pittsfield, Mass.

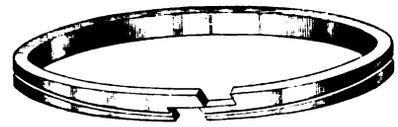
Price $7 for coil units.



A replacement coil that can be installed on any make of car having battery ignition with the exception of the Ford. Parts besides the coil units are base, 15 cents; brackets, 15 cents; adapter, 10 cents; 6 volt resistance unit, 25 cents; condenser, 90 cents; 12 volt resistance unit, 25 cents.

Wicaco Twin Cut Piston Ring

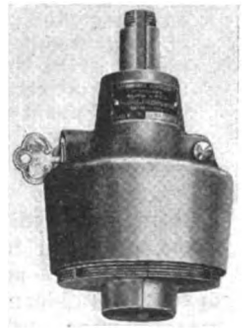
Wicaco Screw & Machine Works, Inc.
Stenton Avenue & Louden Street,
Philadelphia.



The rings are concentric and ground to size. The joint combines a diagonal and step joint and has a wandering oil groove which on account of its sloping construction is said to carry the oil on the up stroke to lubricate and to scrape on the down stroke. Made in standard over sizes .005, .010, .020, .030, and .040.

Defiance Lock for Fords

Disco Electric Mfg. Co., 2100 Howard Street, Detroit.

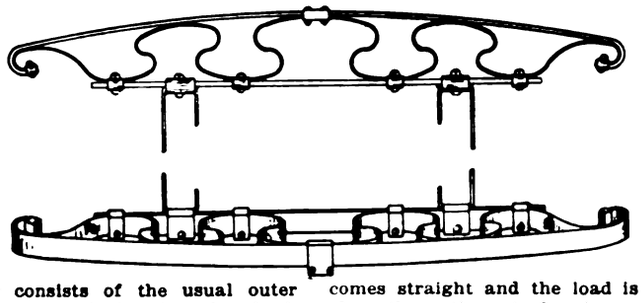


A loose wheel lock with a split bottom plate, comprising two separate parts which fit around the steering column and to screw into the housing of the lock. This prevents tampering with the gears from underneath. Turning the key raises the gear clutch above the lower pinion throwing the steering gear into neutral. Thus the wheel is caused to revolve freely on the steering post, making it impossible to steer the car. A safety plunger prevents the lock from becoming operative while the car is being driven. The wheel is 17 in. walnut with aluminum spider arms.

Protection Automobile Bumpers

Protection Automobile Bumper Co., Grand Rapids, Mich.

Price $20 to $27.

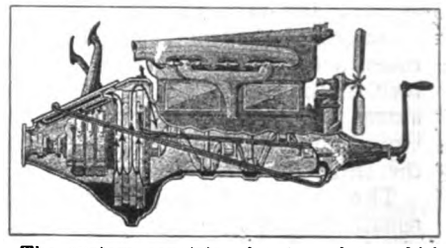


The bumper consists of the usual outer bar and a back rail which takes the shock at four points through the curved springs which go between the outer bar and the back rail. The front bar is convex and deflects the impact to a certain degree and when the load is extreme the front bar becomes straight and the load is then divided along the entire set of springs, equalizing the shock. Made in two sizes, one for 3,000 and one for 4,000 lb. car class. The prices are $20 for black, $22 for nickel in 3,000 lb. class; $25 black and $27 nickel in 4,000 lb. car class.

Ford Faithful Oiling System

W. O. Thompson Mfg. Co., Pasadena, Cal.

Price $5.75.



The system consists of a top plate which replaces the transmission cover door, a tube which extends from this door to the foot plate at the front of the engine. The oil drawn by the flywheel is taken up by a receptacle underneath the new cover plate and goes down the tube to the front of the engine.

Ames V. D. A. Electric Horns

Ames Products Corp.,
30 Church Street, New York City.

Price $3.50.



An electric horn operating from the battery. It is said to use a minimum of current and have a note sufficient to cut through noisy city traffic.

Hayes Demountable Rim Wire Wheel

Hayes Wheel Co. of New York,
250 West Fifty-fourth Street, New York City.



The wire wheels are for Ford, Chevrolet, Durant, Nash, Dodge and Earle. The attached lug rims are used on all types and the wheels are held on by the same nut and pin as are used for wood wheels. The wheels are equipped with standard Timken races and a special spoke lacing facilities cleaning. Standard colors are cream, white, red and black.

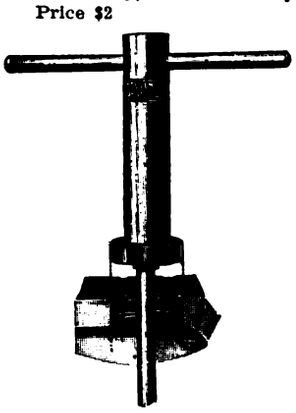
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Equipment for the Shop

New Machinery and Tools

Stevens Valve Port Reamer for Fords

Stevens & Co., 375 Broadway, New York City
Price $2



A reamer for increasing the diameter of the valve port on the Ford engine. This is used when the seats have widened out through wear or excessive grinding.

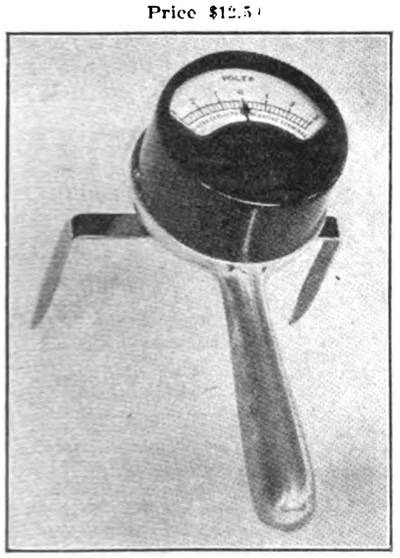
Warner Liquid Solder

Warner-Patterson Co.,
914 South Michigan Avenue, Chicago

A radiator sealing compound which is placed in the radiator at any time and seals leaks as they develop. It is claimed that the solution does not interfere with circulation and that it prevents rust and corrosion and does not injure the metal parts of the rubber hose connection.

Hyrate Volt Checker

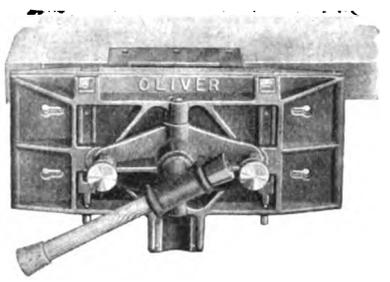
Service Station Supply Co., 30 East Larned Street, Detroit
Price $12.5[illegible]



The volt checker is a voltmeter with a zero center scale reading to 3 volts on either side. It is equipped with two side spikes and a handle. Only one hand is necessary to make the reading, leaving the other hand free to record the readings of the instrument and with the zero center scale there is no danger of reversing the meter as the needle will swing either way. The checker will also find polarity as the needle swings always to the negative post.

Oliver No. 1 Universal Vise

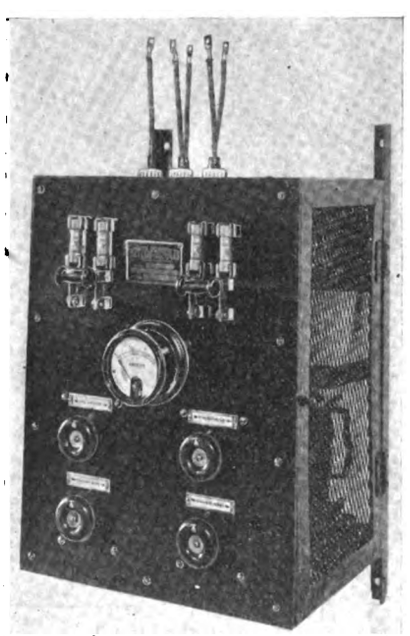
Oliver Machinery Co., Grand Rapids, Mich.



The vise is for pattern makers and wood workers and is especially adapted to handling awkward, special or irregular work. The jaws are 7¾ in. wide, 18 in. long and will open up to 16 in. The screw is steel 1⅛ in. in diameter with a self-centering and detachable nut.

Heyer Thirty Battery Charger

A. T. Heyer, 34 Valley Road, Montclair, N. J.
Price $195



The charger is for use on alternating current and has a capacity of one to thirty batteries, and charging rates from 1 to 12 amperes. The transformer is designed to operate on 220 volt, 60 cycle circuit, or 110 volt, 60 cycle circuit. It has a 1½ kw. rating. The machine will pick up at 2 or 3 amperes and will not let the battery discharge back in case the power is shut off. It will then pick up automatically when the power comes on again. The two fuse panel switches make it possible to use either one or two volts if desired, depending on the number of batteries to be charged and the rate. An ammeter indicates the charging rates, and hinged side makes the bulb easily accessible.

Invincible Acid Apron

Defiance Welding Co., Defiance, Ohio.

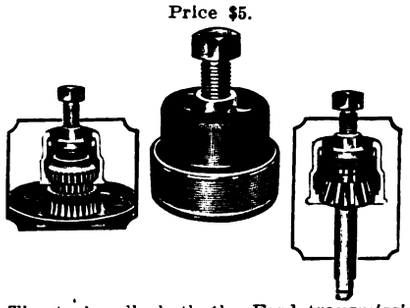
40 x 24 in..... $3.00
46 x 32 in..... 4.25
24 x 24 in.
(waist style) 1.75
Overalls
(split style).. 5.50



Acid proof aprons and overalls are made of a fabric that will stand acid without cracking. In addition to the acid resisting qualities, the material has unusual mechanical strength. The material is said not to crack or scale. The articles are furnished complete with adjustable neck tape and chain waist fasteners.

Stevens Duplex Gear Puller

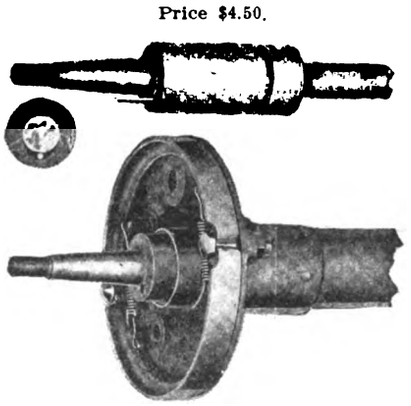
Stevens & Co., 375 Broadway, New York City.
Price $5.



The tool pulls both the Ford transmission drive gear, No. 3317 and also the Ford drive shaft, No. 2597. The screw and nut are made from forged steel and the body of the tool is a malleable casting.

Barny's Emergency Axle for Fords

Hoeffler Robechaud Co., 275 Fifth St., Milwaukee, Wis.
Price $4.50.



An emergency axle for Fords which allows the car to be driven. The roller bearing is removed and the emergency axle inserted, and locked to the broken axle by inserting the locking pins through the end of the emergency axle wedging the parts together.

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Repairshop Shortcuts

Using Brains to Save Money

ON this page are several shortcuts from the shop of Williams & Hastings, Detroit distributor of the Hupmobile. More are to appear in issue to come. Don Hastings, who looks after the service end of the business, has worked out many ideas for doing work more quickly and in a better manner. He is responsible for the Hupmobile flat rate schedule that was published several weeks ago. It is in such advanced shops as these that men think up ideas that save money. The smaller shop can profit in proportion. Look over these ideas of Hastings. They are good. So are the others. Save yourself time and money. Then send Motor World some of YOUR ideas.

We will pay $1 *for any ideas which are practical and which have not been used previously.*

No. 3335—Vise Mounting for Front Axle Work.—Two vises are mounted on the bench the right distance apart to grip the front axle for bushing work, straightening and aligning.—Don Hastings, Williams & Hastings, Detroit.

No. 3336—A Ford Radius Rod Rack.—A rack to hang radius rods on is made from two old radius rods with a spindle connecting rod between the two balls. A hole is drilled and bolts put through and tightened up so that the two radius rods act as the end frame.—Fred S. Tatman, Manager, Cains Garage, White Halls, Ill.

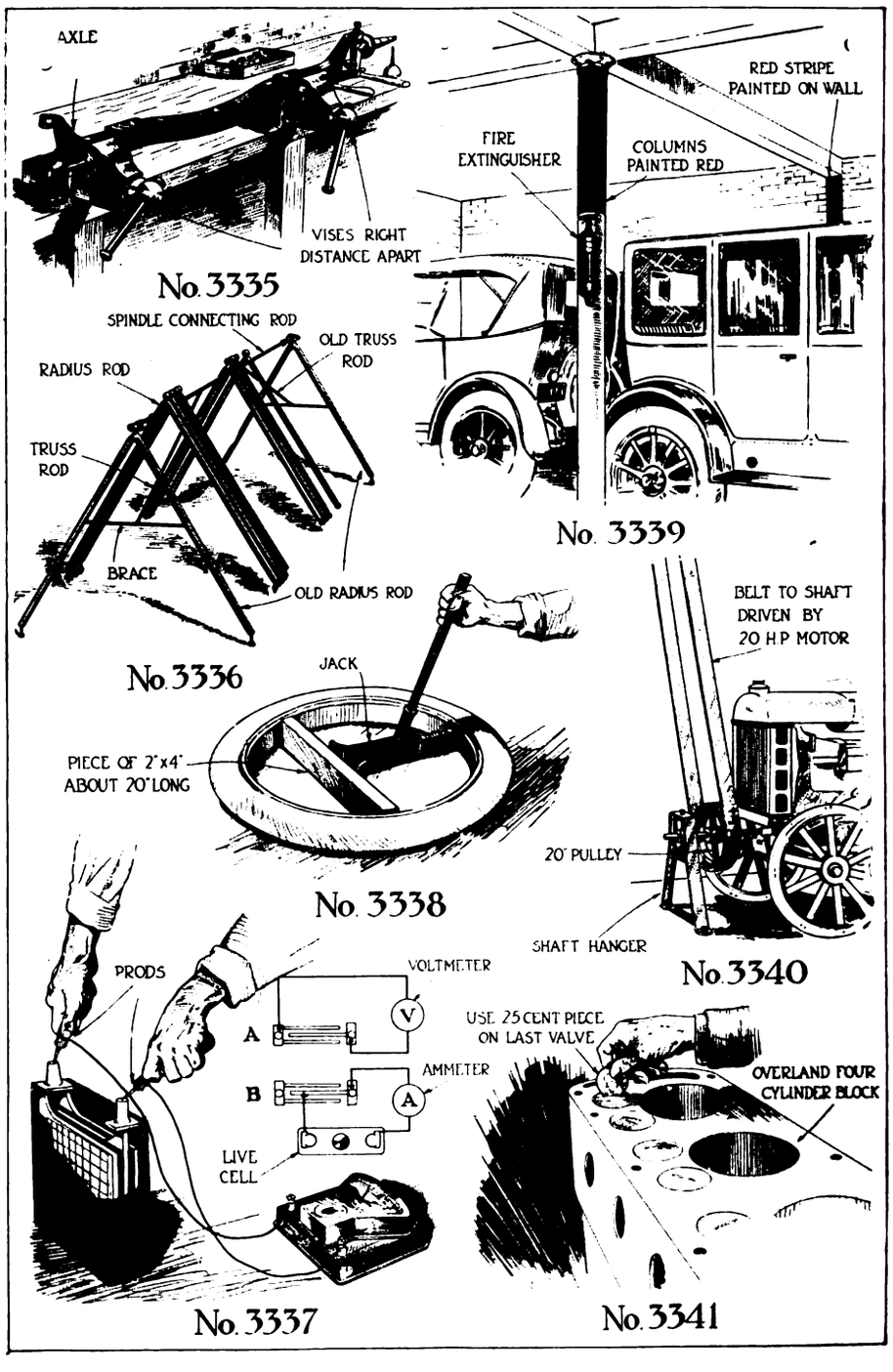
No. 3337—Determining Battery Cell Condition and Polarity.—To tell the polarity of a storage battery cell, whether alive, dead or reversed, a ringing out circuit is used. There is a positive or negative plate in the center seen through the vent. In an 11 plate cell this is positive. In a 13 plate cell it is negative. A voltmeter placed on this plate will show voltage when the other prod is struck in the terminal of the opposite group. —Orin F. Niebuhr, Madison, Wis.

No. 3338—Replacing a Sprung Rim.—A sprung rim can be replaced by using a jack and a piece of two by four about 20 inches long.—H. W. Moffett, J. E. Moffett & Co., Bradford, Pa.

No. 3339—Locating Fire Extinguishers.—A bright red band of paint about 6 in. wide is put on the wall over every extinguisher in the shop, this running clear to the ceiling. Where the extinguisher is on a post, the whole post is painted red.—Don Hastings, Williams & Hastings, Detroit.

No. 3340.—Burning Bearings in a Fordson Without Removing Motor.—A shaft is turned up the same size as the crank and a hole drilled for starting pin. A pulley 20 in. in diameter is mounted on the shaft and the outer end hung in the shaft hanger. The tractor is set in line with a line shaft or driven by a 20 hp. motor and rods are set up from the bottom.—H. R. West, Hall Motor Co., Fort Collins, Col.

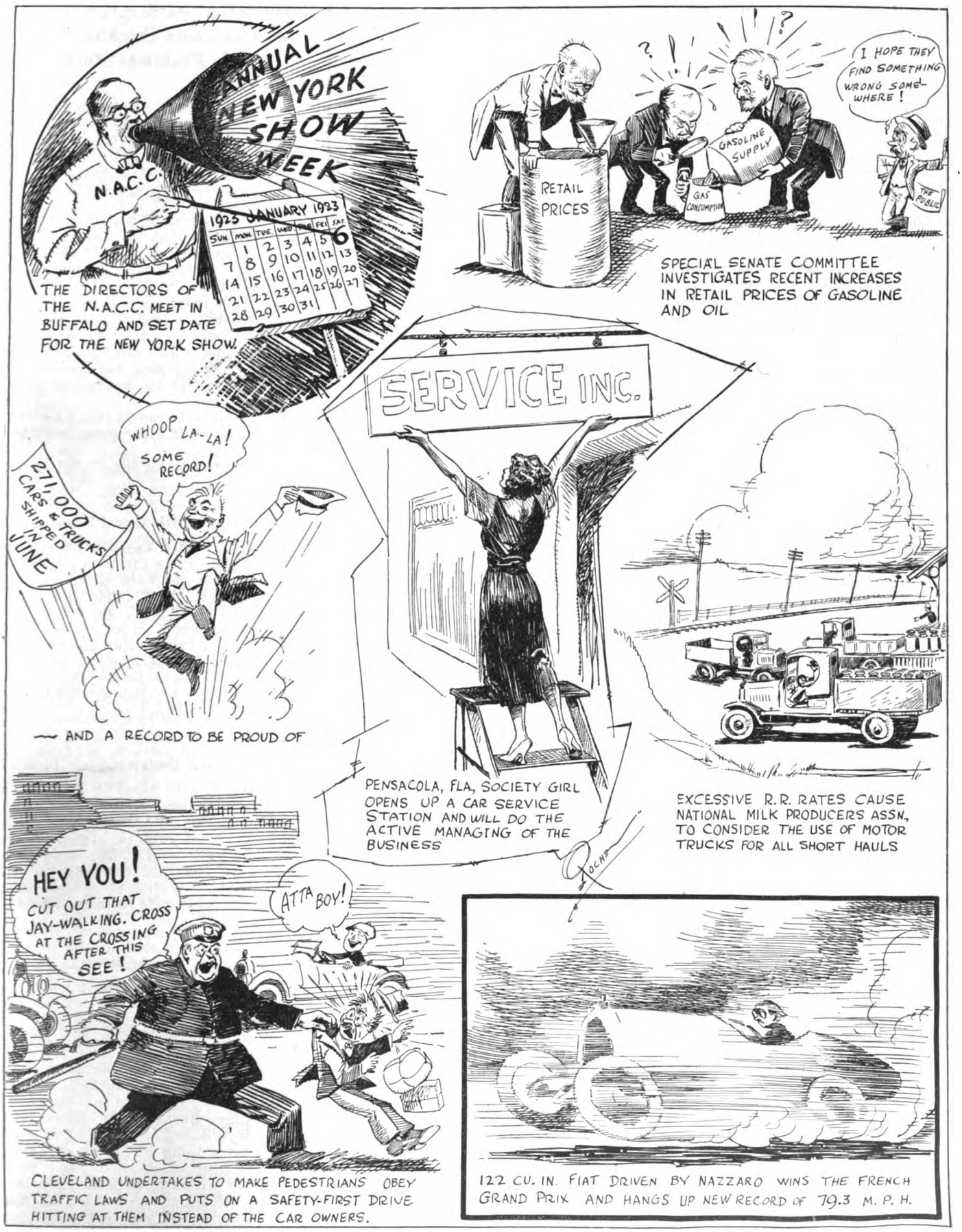
No. 3341—Grinding Overland Four Valves.—A twenty-five cent piece held in the fingers will grind the last valve on the Overland Four if no special valve grinder is available.—H. V. D. Sweet, Canajoharie, N. Y.



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Along the Automotive Newsway

By Leo Roche



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INDUSTRIAL CENTERS FEEL STRIKE EFFECT

Shipments Meet Delays—Continuation of Walkout Will Slow Up Operations

NEW YORK, July 25—While the coal and rail strikes have not yet seriously interfered with automotive production, their effects are becoming apparent in such centers of the industry as Detroit and Cleveland. If the walkouts continue another week, they will result in a considerable slowing-up of operations.

Curtailment of steel production and reluctance of companies to accept orders has brought keener competition and the payment of larger premiums by automobile makers for immediate deliveries of much needed supplies. This shortage will rapidly become more acute.

Parts makers have encountered no actual car shortage as yet, but deliveries of their shipments of finished products and of raw materials to them are showing steadily lengthening delays. Freight congestion is becoming more severe at the strategic gateways, and embargoes are being declared at such important centers as St. Louis.

Passenger car and truck manufacturers will be able to deliver a large part of their products by resorting to the expedient of driving their vehicles from the factories to their destinations, but their output will be seriously impeded in a very short time by difficulty in obtaining supplies. "Driveaways" from the factories are no novelty for automobile makers. The Detroit Edison Co., which supplies power to most of the plants in that city, still has on hand considerable stocks of coal.

The seasonal decline in passenger car sales has become a little more general in the past week, but has not reached serious proportions and is considerably less than normal. If serious industrial stagnation results from the strikes and the shortage of railroad rolling stock, buying power naturally will diminish and the demand for automobiles will fall off.

The market for heavy trucks is dull, but it probably will be stimulated by inability of the railroads to move the freight offered them. Farm demand for light trucks is expected to increase in a short time.

Manufacturers in the automotive field will resort so far as possible to the use of trucks to bring in their supplies, and they probably will be able to avoid closing their plants, provided the strikes do not cause comparatively complete suspension of iron and steel production. This would be a situation with which trucks could not cope.

Messenger Company Expanding

DES MOINES, IOWA, July 24—The Messenger Manufacturing Co. has taken over the manufacture and sale of all the products formerly produced by the Auto Metal Parts Co. of this city.

PLACES AND DATES FOR MAJOR SHOWS

NEW YORK, July 22—The directors of the National Automobile Chamber of Commerce have decided to use the Grand Central Palace again for the 1923 show, which will be held the week of Jan. 6-13. The Chicago show will be held from Jan. 27 to Feb. 3 in the Coliseum and the First Regiment Armory as usual.

DURANT PRODUCTION HAS REACHED 24,456

NEW YORK, July 24—Durant Motors, Inc., turned out 5119 fours and 767 sixes, a total of 5886 cars, in June. July production will somewhat exceed 6500. June output was divided among the different plants as follows: Long Island City, 2587; Lansing, 2191; Leaside (Toronto), 341; Muncie, 767.

A total of 24,456 Durant cars now has been produced.

The first of the new Stars was delivered from the Long Island City plant Saturday. The company took formal possession of the Willys Corporation Elizabeth plant on Tuesday of last week. Large quantities of parts for the Star were on the side tracks adjoining the factory ready to be unloaded and it now will be possible to get into production within a very short time.

WILLYS-OVERLAND SHOWS GOOD PROFITS

TOLEDO, July 24—The position of the Willys-Overland Co. has been greatly improved in the last three months. May was the first month in a year and a half to return a profit of a definite nature of more than $600,000. June profits are believed to have been between $900,000 and $1,000,000. Inventories have been reduced to $19,000,000, as compared with $35,000,000 at the end of 1920. The company has approximately $10,000,000 in cash. Production for the second quarter was approximately 33,000, as compared with 17,000 for the first quarter. The first half year thus exceeded by 2,000 the total output for 1921.

Coast Plant for U. S. L.

NIAGARA FALLS, N. Y., July 24—U. S. Light & Heat Corporation of California has been organized as a subsidiary of U. S. Light & Heat Corporation, manufacturer of USL storage batteries, railroad car lighting devices and electric arc welders. A site has been leased and construction started on a new plant at Oakland, Cal. The purpose is to enable the corporation to handle more efficiently its growing business on the Pacific Coast. It is anticipated that production will start in the new factory about Oct. 1.

JUNE A RECORD MONTH IN FORD PRODUCTION

Average of 5709 Cars, Trucks and Tractors Established—July Promises Much

DETROIT, July 24—Sales of Ford cars, trucks and tractors established a new record in June with a total of 148,439, an average of 5709 a day. Sales by the Ford Co. of Canada were 6054, and 9435 were sold by the European and South American branches.

With the closing of business for June, records showed that the total sales for the first six months of 1922 were 652,251, which is materially ahead of any previous half-year record.

July Ford sales are expected to equal and probably exceed those of June. Schedules have been fixed at 151,767, although dealer orders call for more than 200,000. The company has been unable to keep pace with the demand for closed models.

Ford truck sales up to this time show an increase of 84 per cent over last year.

Ford now is employing 75,000 men in Detroit.

Ford Making His Own Plate Glass

DETROIT, July 24—Manufacture of its own plate glass for windshields has been begun by the Ford Motor Co. in a modern plant. Ford production methods have been applied, and there is a radical departure from established practice. The Ford continuous conveyor system features the operation, so that from the time the glass leaves the furnace until it becomes a polished windshield it is always in motion.

Canadian Ford Declares Cash Dividend

DETROIT, July 24—The Ford Motor Co. of Canada has declared a cash dividend of 15 per cent payable July 20 to stock of record July 15. Stock of the company, which sold at 260 in January, has passed 440. The company has had cash on hand exceeding $10,000,000 when its current needs were not more than $3,000,000.

Ford Going Slow on Mexican Plans

DETROIT, July 24—The Ford Motor Co. stated to-day that it has not yet definitely decided to erect an assembly plant at Tampico, Mexico, and that no action will be taken for several weeks, pending investigations now being made into Mexican trade conditions. Unless the company is convinced that the potential business warrants the erection of a plant, it will not be built. This business now is being served by shipments from the plant at Houston, Tex. While shipments are being made steadily, they are not of record proportion, as they were last year.

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BUSINESS RAPIDLY GAINS MOMENTUM

Packard Questionnaire Brings Favorable Reports from All Sections

DETROIT, July 24—Five hundred inquiries on business conditions made by the Packard Motor Car Co. in as many sections of the country brought back the response that the general outlook is improving all the time. The inquiries were directed to dealers, bankers, state officials and others, and with few exceptions told of perceptible gain over former conditions.

In Kansas City and Omaha there was a somewhat pessimistic tone to be observed from the responses, but this was due rather to conditions as they have existed than to prospective conditions. The banking situation there has left a bitter taste with dealers and the prospect of bumper crops and better prices has not eradicated it.

Southern Crops Good

J. E. Bouden, Jr., president of the Whitney Central National Bank, New Orleans, said business is improving rapidly. Crops promise to be excellent, he said; were planted at low cost and from present indications will bring good prices.

Robert F. Maddox, president of the Atlanta National Bank, Atlanta, Ga., said bank deposits show increases, money is easy and business outlook is cheerful.

Edgar T. Bell, farm statistician, Oklahoma City, reported Oklahoma farmers will get $30,000,000 for their wheat alone this year.

"We expect a continued improvement in business," said M. N. Avery, vice-president of the Security Trust and Savings Bank, Los Angeles, Cal. He said labor is well employed at good wages, crops are abundant and there is a gradual increase in bank deposits.

Pacific Northwest Improving

J. W. Spangler, president of the Seattle National Bank, Seattle, Wash., said business conditions throughout the Pacific Northwest are gradually improving in substantially every line with prospects for a continued betterment.

Samuel R. McKelvie, Governor of Nebraska, predicted a big era of prosperity in his state. "I believe," he said in a telegram, "that there lies ahead of the farmer an era of sustained prosperity which, in turn, will insure general prosperity."

T. W. LaQuatte, Des Moines, Iowa, sent word that there is no reduction in acreage, cost of farm production is reduced, surpluses are disappearing and crops and prices point to great prosperity for farmers of the state.

A report from Denver was that conditions are steadily improving, with good mercantile business, good prospects for crops and increasing bank deposits.

CANADIAN SHOW SPACE BOOKED TO THE BRIM

TORONTO, ONT., July 24—Every inch of space has been taken for the automobile show at the exhibition slated for September, and two big tents will be necessary to house the overflow already booked, according to a report from George Pink, president of the Central Canada Exhibition Association.

Clearing house banks in Boston, the National Shawmut Bank reported, show increased deposits of $50,000,000 in the last three months.

Banks in Philadelphia agreed that business conditions there are improving with industries, except shipbuilding, making a better showing each day.

The Continental and Commercial Bank of Chicago says a new business cycle has begun with business barometers indicating the beginning of a slow expansion.

J. D. Ayres, vice-president of the Bank of Pittsburgh, said the steel industry now is operating at about 80 or 85 per cent of normal. There is little unemployment outside of the coal industry, and business conditions generally are good and growing better, he said.

EDUCATIONAL TOUR SELLS OVERLANDS

INDIANAPOLIS, July 24—The Indianapolis branch of Willys-Overland, Inc., is conducting an eight-car caravan educational tour throughout its Indiana territory, showing all the models of the Willys-Knight and Overland and introducing the new commercial Overland chassis with several body types built by the Martin-Parry Company. The caravan leaves Indianapolis every Tuesday and makes a circle of important territory, visiting every Overland dealer en route and returns to the city Saturday night. During the first week a circle of northern Indiana was made and stops made at twenty-two cities. A total mileage of 1000 miles was run up during the first week of the caravan trips, and every dealer visited bought new commercial chassis and most of them ordered special bodies of the sort exhibited on four of the vehicles.

More Than 500 in A. E. A.

CHICAGO, July 24—It is announced at the offices of the Automotive Equipment Association here that for the first time the membership of that organization exceeds 500. The membership has hovered about the 500 mark, for several years, always just below that number. A recount of the happenings at the Colorado Springs meeting shows that the number has reached 507. Of these members, 240 are jobbers and 267 are manufacturers.

JULY IS SURPRISING DEALERS IN NEW YORK

Sales So Far Have Exceeded Expectations and Seasonal Decline Is Slight

NEW YORK, July 24—Distributors and dealers of the Metropolitan territory have gone more than a week past the middle of July without knowing what might be termed a real slump in passenger car sales. The June selling record, of course, is not being equalled, but orders in the majority of establishments are running above what the trade has expected, and the seasonal decline is so slight that it would hardly be termed normal up to this time.

Dealers are beginning to get recapitulations on the first six months' business, and in some cases results have been little short of amazing. One distributor handling a car outside of the first 15 had a retail sales record in New York for the first four months of the year which ran far ahead of the entire year 1921, and sales for the first six months were 275 per cent of all of 1921. More than a dozen distributors and branches could easily be found on Broadway with sales of the first six months running 100 to 150 per cent of the total for 1921. There still is a shortage of cars with several of the dealers in the fastest selling lines. Others are suffering from a shortage of closed cars, owing to demand for these models which is running ahead of factory expectations even for the metropolitan territory.

Heavy Demand for Closed Jobs

The low-priced closed jobs, including those with soft tops, have been in heavy demand right along. Such cars as Hudson and Essex coaches, the Nash Cabriole, Hupmobile coupe-roadster and the Dodge Brothers business coupe have been selling heavily, and distributors are far behind on deliveries. The territory is in good shape on used cars, generally speaking.

The used car market has fallen off since the latter part of June, but stocks have not approached an alarming stage, and expected care in trading from now on probably will prevent anything resembling a crisis, provided business holds reasonably good throughout the year.

It is significant that several cars which are not in the first 10 or 15, nationally speaking, have had remarkable sales records in New York this year. Intensive selling methods by the organizations distributing these cars has put them up front.

N. M. A. Headquarters

WASHINGTON, D. C., July 24—The National Motorists Association has opened headquarters in this city in the Edmonds Building at 911 Fifteenth Street, N. W. A touring and information bureau has been established, the use of which is extended to all tourists

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HOOSIERS SELL MANY USED CARS IN MONTH

INDIANAPOLIS, July 24—Sales of used cars in Indianapolis in June were about 20 per cent better than in May. Reports to the Indianapolis Automobile Trade Association show that 21 members have sold 368 cars in June, as against 24 establishments that sold 334 in May. The dealers who generally report but who did not do so in June also are known to have sold about as many cars as they did previously, but the reports to the association were not on hand when the tabulation was made up.

In certain quarters retail sales for June were a little slower than they had been, but on the whole there seems to have been little slowing up in the local situation. State business, according to the distributors, was at least as good and in some cases much better than it had been. Rains that began about the first of the month and which have continued have put heart into the farming districts and dollars into the pockets of farmers who have a vast acreage in corn. The day after the first rain one wholesaler reported that three men from the rural districts came in to drive cars home.

DISTRIBUTOR LICENSE TAX WILL BE FOUGHT

CHARLOTTE, N. C., July 22—The North Carolina license tax of $500 on automobile distributors is again being contested, it is learned here. It was announced in the last meeting of the local automotive trade association that the General Motors Truck Corp. is preparing a test case to fight the tax. Originally the law exempted automobile manufacturing companies in the State from this tax. Payment was contested and the law held invalid.

Automotive Folks in a





The panorama picture shows delegates and guests to the June convention of the Automotive Equipment which begin almost at the edge of the hotel

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PIERCE-ARROW WILL REORGANIZE FINANCE

NEW YORK, July 24—Bankers for the Pierce-Arrow Motor Car Co. are working out a readjustment of the company's financial affairs, but the details have not been divulged. It is stated officially, however, that some new securities will be offered. Bank loans have been reduced another $250,000, which brings them down to $7,900,000.

The company has rearranged its production departments to speed up output and sales are said to be steadily expanding. The high-priced inventory has been practically liquidated and the company now is in position to take advantage of current conditions. The sharp price cut is expected to stimulate sales.

Setback for Henry Ford

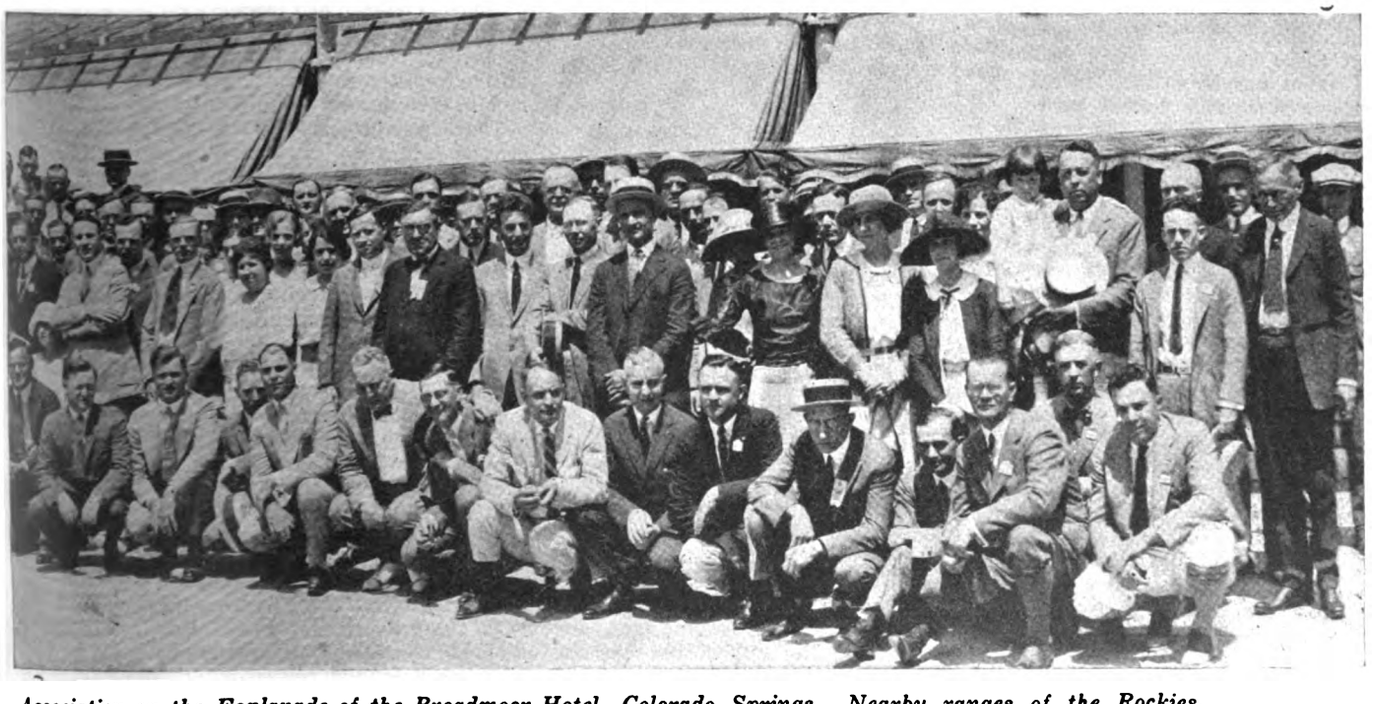
WASHINGTON, July 24—The Senate Committee on Agriculture has rejected by vote of 9 to 7 Henry Ford's offer for the purchase and lease of the Government projects at Muscle Shoals, Ala. Notwithstanding the adverse vote, the Ford proposals will be presented to the Senate for final decision.

PORTLAND REPORTS HEAVY SALES VOLUME

PORTLAND, ORE., July 24—June was an excellent month for the dealers, particularly those handling the standard makes of cars. Several firms reported doing a greater volume of business than ever before in their history, exceeding even 1920, and with prospects for July to surpass June by a considerable margin. For the dealers handling the little known lines, but little improvement has manifested itself during the last several months.

Rocky Mountain Setting





Association on the Esplanade of the Broadmoor Hotel, Colorado Springs. Nearby ranges of the Rockies, property, are seen in the background

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GENERAL MOTORS HAS BIG HALF YEAR

First Six Months Show Net Earnings of $26,839,391 on the Common Stock

NEW YORK, July 24—Preliminary estimate of the income account of the General Motors Corp. for the first six months of 1922 shows net earnings of $26,839,391 on the common stock. Net sales for the half year aggregated $218,490,887, of which $137,800,000 were in the second quarter. Net earnings, before Federal taxes and interest charges, were $35,116,481 with $25,970,000 in the second quarter. Net earnings, after all charges, for the six months were $29,997,391. Dividends on the preferred and debenture stock for the six months required $3,158,000.

In the six months ending June 30, approximately $6,200,000 net has been added to reserves for depreciation and the balance in these reserves now stands at $43,700,000.

Bank Loans Paid Off

All bank loans were paid off by June 30 and, except for approximately $5,400,000 of purchase money obligations, General Motors Corp. has no indebtedness underlying its preferred and debenture stocks, except ordinary current accounts payable for merchandise, etc. Cash in bank as of June 30 was approximately $35,000,000.

Net working capital as of June 30 was approximately $123,000,000, an increase of $26,000,000 over December 31. Inventories which were written down to cost or market on December 31 were well balanced and have been reduced to below $98,000,000, a reduction of some $10,000,000.

The preliminary statement demonstrates that there has been sound reason for the recent activity in the General Motors common stock and that, if earnings continued at anything like the present rate, the corporation soon will be in a position to resume payments on the common.

Objects to Parenti Sale

BUFFALO, N. Y., July 24—About 1000 stockholders of the defunct Parenti Motor Co., Inc., living at Farrell, Sharon and New Castle, Pa., through an attorney, filed papers in the Federal Clerk's office here yesterday, asking that the sale of the company, by the Marine Trust Co. as trustee, to the Hanover Motor Car Co. of Hanover, Pa., be declared null and void. The out-of-town stockholders claim that the option given to them at the time the firm went into bankruptcy did not cover a long enough period, and it is now understood they are ready to buy the factory. The property is appraised at $328,000. Federal Judge Hazel appointed William C. Reilly temporary receiver of the property until the decision is made.

FREE GASOLINE AIDS SALE OF USED CARS

DALLAS, TEX., July 24—The Oakland Motor Car Co. disposed of its accumulation of used cars in a "hurry up" sale. The company put forty of these cars, all standard makes, practically rebuilt and all guaranteed for specific duties under one roof, then announced the coming of the sale through the daily papers. As an inducement to buy guaranteed cars a 50-gal. barrel of gasoline was given free with each car purchased. The prices were marked down to the rock-bottom. Terms were given and the cars were removed. The forty used cars were taken before the time for the sales had expired and the company put on what other used cars it had in shape to back with its personal guarantee, and disposed of them.

CALIFORNIA SETTING PACE IN SALES GAIN

OAKLAND, CAL., July 24—A survey of automobile sales in California made recently by Motor Registration News shows that there were 41 per cent more cars sold in the state during the first six months of this year than there were in the same period last year.

Since January 1, 1922, sales have amounted to 66,246, as against 46,725 last year. Southern California sold more than the north, 51 per cent, as against 30 per cent increase, in each case compared with last year. Of the counties, Los Angeles made the most sales in the state.

If the present average is maintained California will advance its position among the states of the Union to third and possibly second, for while every state is showing an increase this year none are registering a total which ranks with this state, says the survey.

Crawford Producing Dagmar

HAGERSTOWN, MD., July 22—A new sport model to be known as the Dagmar has been announced by the Crawford Automobile Co. and is priced at $3,500. The specifications of it are as follows: Continental 6, 3⅝ x 5¼; 135 in. wheelbase with 33 x 5 tires. This model is similar in all other respects to the regular Crawford chassis.

House Organ for Durant

NEW YORK, July 24—Durant Motors, Inc., has blossomed out as publisher of a house organ for dealers, entitled "Durant Success." In addition to information about the Durant line of cars and the facilities for making and developing them, the publication has an interesting section devoted to the activities of Durant dealers.

CHAMBER FEELS PULSE OF THE RETAIL TRADE

Data Gathered by N. A. C. C. Show Prospects Are Brighter Than Usual

NEW YORK, July 24—Retail sales data gathered by the National Automobile Chamber of Commerce for the information of its directors show that prospects for July and August are better than the seasonal outlook for the mid-summer months. Cities which state that sales for the next six weeks probably will be "very good" are Denver, Peoria, Des Moines, Cleveland, Sioux Falls, New York, Seattle and Kansas City.

Reports of a slight seasonal decline were made by Indianapolis, Boston and Richmond.

Atlanta reports that the outlook for July and August is not good, and there has been a considerable decrease in Detroit.

Fall Closed Car Sales

All these cities without exception report that the prospects are good for closed car business in the fall.

The used car market is good in Denver, Boston, Detroit, Sioux Falls, Richmond, Seattle, Kansas City and Los Angeles. It is slowing up in Peoria, Indianapolis, Fargo, Atlanta and Cleveland.

The reports generally give little encouragement for increased truck sales for the next six months.

CAR MAKERS PLANT SAFETY FIRST SEED

NEW YORK, July 24—Prizes aggregating $6,500 for the best essays written by school children and teachers on Safety in Highway Traffic are announced by E. S. Jordan, chairman of the special committee representing the National Automobile Chamber of Commerce.

There were 500,000 contestants in the contest last year. School teachers will be awarded $1,500 of the prize money and the remainder will go to their pupils. Direction of the contest will be under the direction of the highway and highway transport education committee at Washington, which will supply information.

In a statement regarding the contest, Jordan says that it is not too much to hope that 1922 will see the number of automobile injuries cut in half. While many estimates have been made of the annual total of automobile injuries, he contends that the correct figure is not over 325,000. The number of motor fatalities in 1921 was 12,500.

Dorris Increases Production

ST. LOUIS, July 24—Simultaneously with the reduction of prices the Dorris Motor Car Co. has increased its production schedule and proposes an aggressive selling campaign.

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DYER ANTI-THEFT LAW PRODUCING RESULTS

Department of Justice Has Investigated 2391 Cases and Secured 1113 Convictions

WASHINGTON, July 24—A total of 2,120 automobiles, valued at $2,567,208, have been recovered by the Bureau of Investigation, United States Department of Justice, since the passage of the Dyer anti-theft Automobile Law in October, 1920, according to figures of the Bureau. The department has investigated 2,391 cases of stolen cars involving 4,385 persons. There were 2,773 arrests made in connection with the theft of the mentioned number of cars and of this number 1,533 have been indicted and 1,113 were convicted.

The average sentence was slightly more than two years in the case of each person indicted for the theft of an automobile.

In a great many cases the investigation was made in connection with the American Automobile Association, which is generally accredited in successfully supporting the anti-theft bill, introduced in Congress by Congressman L. C. Dyer of Missouri.

The outstanding feature of the law is the fact that it places interstate transportation of stolen motor vehicles under Federal law and makes such an action punishable in Federal courts.

Before the passage of the Dyer Act it was found that there had been built up a growing traffic in stolen motor vehicles by thieves who maintained assembling factories at various points and who through their ability to transpose parts of various machines were able to so alter a stolen automobile as to make it practically unrecognizable to the original owner. Under the Dyer measure this practice has been materially lessened, says the Bureau.

OAKLAND COUNTS ON BIG FALL BUSINESS

PONTIAC, MICH, July 24—Oakland Motor Car Co. branch managers to the number of sixty attended the two day sales assembly held at the plant here.

Two business sessions were held daily at the plant, and an evening meeting took place at the Bloomfield Hills Country Club, with C. J. Nephler, general sales manager, in charge, assisted by W. R. Tracy, assistant sales manager.

The branch managers agreed that the autumn months offer a bright prospect for even better business than has been experienced in the spring. July production of the Oakland has held up at a level consistent with June business, but it is anticipated that increased output will be necessary for August and September.

Branch managers of the General Motors Truck Co., representing ten factory branches, were at a three day convention held at the plant here. Business at the General Motors plant has been brisk on light models of the truck produced, and, while there has been considerable heavy duty business, it has only recently begun to feel the stimulus that has attended the ton-truck demand, according to V. H. Day, general sales manager.

METROPOLITAN DISTRICT REGISTRATION HEAVY

NEW YORK, July 24—Registrations of new automobiles for ten counties in and around New York City numbered 9068 in June as compared with 9431 in May and 9290 in April. Registrations for the year up to date are 39,579 as compared with 24,577 for the first six months of 1921.

The June registration report as compiled by Sherlock & Arnold, publisher of the *Automobile Sales Analysis*, shows that eight cars have what might be termed a considerable lead over their competitors in the high priced class, while in the medium and low priced classes five cars are far ahead of the field and ten others well in the lead of those following.

A summary of registrations for the first six months in the high and medium and low priced classes follows:

	High Price	Medium and Low Price
January	283	2,017
February	273	2,231
March	632	6,354
April	862	8,428
May	961	8,470
June	865	8,203
Total	3,876	35,703
Total (1921)	2,491	22,086

$750,000,000 READY FOR ROAD BUILDING

WASHINGTON, July 24—Compilations of monies now available, made by the Bureau of Public Roads, Department of Agriculture, for automotive highway construction, show that there is approximately $750,000,000, which includes the Federal as well as local funds.

Reports made by each of the 48 states show that California leads in the amounts to be spent the current year for good roads with $53,000,000. Pennsylvania has $52,000,000; Illinois, $47,500,000; New York, $47,000,000, and Texas, $43,000,000.

White Building in Oakland

OAKLAND, CAL., July 24—The White Co. has commenced construction of a building here, extending still further the range of Automobile Row. The new building will be 90 x 100, one story, with provision in foundations and side walls for the addition of another story if necessary. It will house the offices of the White company on the mainland side of San Francisco Bay, of which C. L. O'Brien is manager. It also will contain a service station for White trucks and a factory branch for assembling purposes.

G. M. C. WILL BUILD 5000 OF NEW LINE

Production of Copper Cooled Cars on Small Scale Will Be Started at Flint

DETROIT, MICH., July 24—The General Motors Corp. has placed commitments for material for 5000 of its "copper cooled" cars, shipments to begin in August. The corporation is planning to get into production on a small scale in August the original commitment being intended for first work on the new car and will cover production over a period of several months.

The first cars in the "copper cooled" line will be built at the Chevrolet factories in Flint, but no announcement has been made as to whether this car would bear the Chevrolet nameplate. Prices will be higher than the Chevrolet 490 line, but the car will be in the low priced field and is intended to meet primarily the demand for a low priced air cooled vehicle.

CHICAGO TACKLING BIG GARAGE PROJECT

CHICAGO, July 24—Plans for the construction of a 10-story garage, or automobile hotel, in the loop district of Chicago, first announced in August, 1921, are nearing completion, according to Homer D. Jackson, president of the Interstate Garage Corporation, the company which was organized to carry out the undertaking.

Jackson expects work on the construction of the garage to start within 60 or 90 days, and be ready for operation by next summer. The financing of the company, having an authorized capital of $1,750,000 and incorporated under the Illinois law, is practically complete, Jackson said.

The building is to be at Wabash Avenue and South Water Street, just north of the loop and one block from Michigan Avenue, the city's great north and south through automobile boulevard. As planned it will have storage space for 1000 automobiles and it is to be so constructed that its capacity may be doubled by the addition of 10 stories if business justifies it.

As planned the building will be in two sections with floor levels of one falling midway between the levels of the other, so that the ramps or inclined planes connecting the floors will have a rise of only six feet from one floor to the next. Elevators are to be provided.

Death of Henry Stryker

KINGSTON, N. Y., July 24—Henry Stryker, head of Stryker & Youmans Co., Mitchell, Oakland, Chandler and Stewart dealers in the Kingston territory, is dead. Stryker was president of the Automotive Dealers of Kingston, which is affiliated with the Chamber of Commerce.

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DURANT ADDS TWO MORE TO HIS LINE

Takes Over Locomobile—Will Sell Redesigned Chrysler as Flint

NEW YORK, July 22—Two more spectacular moves for the expansion of Durant Motors, Inc., have been announced this week by W. C. Durant.

The first was that Durant will assume the presidency of the Locomobile Co. and control its destinies hereafter.

The second was the incorporation in Michigan of the Flint Motors Co., which will manufacture at Long Island City and in Flint a light six-cylinder car which will sell for $1180.

The Locomobile announcement, which came first, had been discounted. It did not include details of the financial arrangements under which Durant takes control, but it paid high tribute to the character of the Locomobile and stated emphatically that this car will be continued in its present exclusive class and that it will be manufactured as originally in the factory at Bridgeport. No price change is contemplated at this time. Present owners will be assured of adequate service. Production will be governed entirely by demand.

By the incorporation of the Flint Motors Co., which will have a plant at Flint, Durant has kept the pledge he made to the city of Flint, his former home, when he organized Durant Motors, that one of its plants would be located there. The factory will be similar in size to that built at Lansing for production of the Durant Four.

The Flint car will be a refinement of the so-called Chrysler Six which was to be manufactured in the huge Elizabeth, N. J., plant of the Willys Corp., which recently was taken over by Durant Motors. When Durant purchased this plant he acquired the rights to the Chrysler car, which had been designed at a cost of approximately $2,000,000. The car will be redesigned and made somewhat larger than the original model. It will include the seven bearing crankshaft and other special features.

The Flint will have its first showing September 15 and deliveries will begin January 1, 1923. It is named after the city of Flint, where the main plant will be located.

Flint cars to meet the Eastern demand will also be manufactured at the Long Island City plant, which has been occupied by the Durant Motor Car Co. of New York to manufacture the Durant Four. The building of Durant Fours for the Eastern territory will be transferred to the Elizabeth plant, which is large enough to house both the Durant Four and the new Star.

With the addition of the Locomobile and the Flint to his line, Durant will have factories at Bridgeport, Conn., Long Island City, Elizabeth, Muncie, Ind., Lansing, Flint, Leaside (Toronto) and Oakland, Cal.

The Durant line will include the Locomobile, Durant Six, Flint Six, Durant Four and the Star. He also will control the new Mason truck, which will be manufactured in its own plant at Flint and in the Locomobile plant at Bridgeport.

Durant's achievements with the General Motors Corp. never were so spectacular as those which have attended the building up of Durant Motors, Inc., to its present size in almost exactly two years.

QUESTION PURPOSE OF TRACTOR "SURVEY"

CHICAGO, July 24—A purported survey of the farm tractor industry of the United States, sent out from Minneapolis and St. Paul over the signature of the "Farm Implement Research Bureau," whose identity and place of business were not made known, has aroused considerable interest in tractor and farm implement circles here.

At the headquarters of the recognized national organizations of the industry, including the National Association of Farm Implement Manufacturers and the National Institute of Progressive Farming, it was said that nothing was known of such an organization as the "Farm Implement Research Bureau."

The purported survey, which painted a dark future for most of the tractor manufacturers, was mailed in plain envelopes on which there was no printing or writing other than the address to which it was sent. The survey was in typewritten form with typewritten signature. A notice at the end stated that similar surveys would be issued later on on other agricultural subjects.

S. A. E. Calls October Meeting

NEW YORK, July 24—A national meeting of the Society of Automotive Engineers will be held in Detroit, Oct. 26 and 27, to discuss problems of automotive production. Papers relating to production problems will be read at the morning sessions each day and the afternoons will be devoted to factory inspection trips. These inspections will appeal particularly to tool inspection and production men.

A dinner will be held the evening of Oct. 26. K. L. Herrmann is chairman of the committee which is arranging the program.

May Expand Territory

MILWAUKEE, July 24—That the Rolls-Royce Co. plans to enlarge its field of distribution was made evident by a conference held by R. B. Jackson of Chicago, the Western sales manager of the company, with officials of the Milwaukee Association of Commerce.

TIRE PRICE UPHEAVAL THREATENS INDUSTRY

Goodrich Blanket Cut Effect Uncertain — Manufacturers Look Toward Price Increase

AKRON, OHIO, July 24—Possibilities of another tire price upheaval face the tire industry following the unexpected announcement of the B. F. Goodrich Co., of a blanket 10 per cent cut in the prices of all Goodrich cord tires, and a 15 per cent price reduction on all Goodrich fabric casings, which were made effective as of July 20.

Goodrich is the first major tire company to slash tire prices instead of introducing new lines of cheaper tires in lieu of price cuts, as has been done by several others of both the larger and smaller tire producing corporations in the Akron district.

Last month the Goodyear Tire & Rubber Co. and several smaller concerns took action tantamount to a price cut by introducing new lines of cheaper cord tires to sell from 20 to 25 per cent below the standard cord tire price lists. The new Goodyear casing is known as the cross-rib.

The Goodrich policy, according to announcement of officials, will not be to continue a standard grade of tires at standard prices and at the same time to put out a cheaper tire in lieu of a price reduction, but will be to cling to the well advertised, popular and long standing standard Goodrich tires and of adjusting their prices downward to compete with other companies. No revision is made by Goodrich in truck tire or tube prices.

The Mason Tire & Rubber Co. this month made a 28 per cent cut in tire prices, while the American Rubber & Tire Co. increased prices 5 and 10 per cent.

Just what effect the Goodrich blanket cuts will have on other major companies is problematical, for the Goodrich cut comes at a time when nearly all manufacturers admit there is more justification for a price increase than a price reduction.

Goodrich Cuts Line

NEW YORK, July 24—New Goodrich tire prices announced July 20 follow:

CORDS

	New Price	Old Price
30 x 3½ cl	$13.50	$18.00
32 x 3½ s.b	22.95	25.50
31 x 4 s.b	26.45	29.40
32 x 4 s.b	29.15	32.40
33 x 4 s.b	30.05	33.40
34 x 4 s.b	30.85	34.25
32 x 4½ s.b	37.70	41.90
33 x 4½ s.b	38.55	42.85
34 x 4½ s.b	39.50	43.90
35 x 4½ s.b	40.70	45.20
33 x 5 s.b	46.95	52.15
35 x 5 s.b	49.30	54.75

FABRICS

	New Price	Old Price
30 x 3 "55"	$9.65	$10.35
30 x 3½	10.65	10.90
32 x 3½ s.b	16.30	19.15
32 x 4 s.b	21.20	24.95
33 x 4 s.b	22.35	26.30
34 x 4 s.b	22.85	26.85

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OLDSMOBILE MAKES CUT IN CAR PRICES

Biggest Reduction on Light Eight—Large Eight and Truck Unchanged

DETROIT, July 26—Lower prices on the Oldsmobile eight and four-cylinder lines are effective July 30, the reductions on the eight ranging from $100 to $150, and on the four from $30 to $50. Prices on the large eight and the Oldsmobile Economy truck are unchanged. Comparison of new prices and old is as follows:

	New	Old
8 Cylinder		
Touring and roadster	$1,495	$1,595
Sport	1,725	1,825
Coupe	1,995	2,145
Sedan	2,145	2,295
4 Cylinder		
Touring and roadster	1,095	1,145
Semi-sport	1,225	1,265
Calif. top tour.	1,395	1,425
Coupe	1,595	1,645
Sedan	1,745	1,795

Velie Reduces Prices

MOLINE, ILL., July 22.—Velie Motors Corp. announces a price reduction on Model 58 open body types as follows:

	Old Price	New Price
2 pass. roadster	$1,395	$1,275
5 pass. touring	1,395	1,275

Pierce Price Revision

BUFFALO, July 22—The Pierce-Arrow Motor Car Co. price reduction is effective on all models. The complete list is as follows:

Model	Old	New
Runabout	$7,000	$5,250
4 pas. touring	6,500	5,250
7 pas. touring	6,500	5,250
Brougham	8,000	6,800
Landaulet	8,250	7,000
4 pas. sedan	8,250	6,900
Coupe	8,000	6,800
7 pas. sedan	8,500	7,000

Kline Reduces Prices

RICHMOND, VA., July 24—The Kline Car Corp. has cut prices of its two, five and seven-passenger touring cars from $1,970 to $1,690. The coupe has been reduced from $2,850 to $2,750, but no change has been made in the price of the sedan.

Power Truck Slashed

GREENVILLE, MICH., July 24—Price revisions made by the Power Motor Truck Co. follow:

Model	Old Price	New Price
1½-ton	$2,900	$2,000
2½-ton	3,200	2,475
3½-ton	4,100	3,475

International Makes Cut

CHICAGO, July 24—The International Harvester Co. has increased the capacity of its delivery wagon from ¾-ton to 1-ton, and has cut the price from $1,500 to $1,250.

288,000 FINAL JUNE PRODUCTION FIGURE

NEW YORK, July 21—Practically complete returns to the National Automobile Chamber of Commerce on production of cars and trucks for June show that the total approximated 288,000. This exceeded by 17,000 the estimate of 271,000 based on returns from companies making 90 per cent of the motor vehicles turned out. It was an increase of 12 per cent over the May record of 256,000.

The June figures, according to of N. A. C. C., indicate a production of more than 2,000,000 motor vehicles for 1922. The output for the second quarter now stands at 763,000.

Huber Tractor Lower

MARION, OHIO, July 22—The price of the light four tractor manufactured by the Huber Mfg. Co. has been reduced from $1,185 to $985.

Beck-Hawkeye Cuts Prices

CEDAR RAPIDS, IOWA, July 24—The Beck-Hawkeye Motor Truck Works has made the following price revisions on three of its models:

Model	Old Price	New Price
1½-ton	$2,050	$1,725
2-ton	2,150	1,810
2½-ton	2,850	2,395

Aultman & Taylor Tractor Reduced

MANSFIELD, OHIO, July 24—The Aultman & Taylor Machine Co. has cut the price of its 15-30 tractor from $2,200 to $1,900; its 22-45 tractor from $3,400 to $2,800, and the 30-60 from $4,500 to $4,000.

New Model for Stanley

NEWTON, MASS., July 24—The Stanley Motor Carriage Co. is bringing out a new model 740 which embodies a number of changes in both body and chassis, and an increase of $100 in both open and closed models. The new model is built closer to the ground, has lower running-boards and mudguards. The boiler is higher and has a 30 per cent increase in heating surface and 50 per cent in power storage capacity. Other changes include larger drive shaft, keyed wheels, increase in braking surface, improvement in lubrication system and changes in the burner. The 5 and 7-passenger open cars are $2,700, the roadster $2,700, sedan $3,950, and the brougham $3,950.

Daniels to Double Production

READING, PA., July 24—The Daniels Motor Co. has made plans to double its production beginning Sept. 1. It is expected that the closed car business will be larger than ever as the fall season approaches. The Daniels company will be in a position to meet this demand as it builds all its own bodies.

ALLAN RYAN FAILS OWING 18 MILLION

Stutz and Frontenac Unaffected by Failure—Had Severed Connections Recently

NEW YORK, July 24—The personal failure of Allan A. Ryan has been recorded through a voluntary petition in bankruptcy filed here, with liabilities fixed at about $18,000,000 and assets at $643,533. Secured claims, held mostly by the financial institutions, amount to about $14,000,000. The principal creditors are the banks which took over the management of Ryan's affairs following the famous Stutz corner of 1920. The brokerage house of Allan A. Ryan & Co. and his other business interests are not affected.

Ryan has figured most prominently in the automobile industry through his financial support of Stutz, Stromberg carbureter, Bethlehem Motor and the Times Square Auto Supply Co.

Stutz Not Affected

INDIANAPOLIS, July 25—Officials of the Stutz Motor Car Co. say that the bankruptcy of Allan Ryan will have no effect whatever on the Stutz company as Ryan has not been identified with Stutz control since last January when he relinquished his position on the Stutz board of directors. Neither will the Ryan failure have any effect on the Frontenac Motor Co., as he has not been associated with the board of directors of that company since early May.

NEW PROCESS GEAR PLANT UP FOR SALE

SYRACUSE, July 24—The plant and all other assets of the New Process Gear Corp., estimated at more than $3,000,000 in value, will be sold here on August 22 by Mayor George R. Lunn of Schenectady and Francis G. Caffey of New York as special masters appointed by Federal Judge Frank Cooper of Albany. The upset price has been fixed at $1,900,000.

This sale will complete the liquidation of the Willys Corp. so far as physical properties are concerned. There will remain, however, several million dollars worth of Willys Corp. treasury assets to be sold.

The New Process Gear is to be continued, it is learned through an authoritative source. It is understood that strong interests in the automotive field are preparing to bid in the property and carry on the work. The plant is at this time working day and night shifts of men, more than 800 being employed, which is about the capacity of the plant. The work at this time is the manufacture of gears for the Durant car and also the new Star car.

John N. Willys, president of the Willys-Overland Co., Toledo, acquired the New Process Gear Corp. from the late Thomas W. Meachem and other members of the Meachem family, in November, 1918.

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MILWAUKEE DEALERS FIND NEW BUSINESS

Conservative Business Men, Now Satisfied with Conditions, Are in Market for Cars

MILWAUKEE, July 24—Dealer business so far in July has come up to every expectation, and while some have not been able to maintain the average of May and June, others are able to report increases in sales. It has been expected generally that, as usual, July might show a uniform decline that might carry through August, with a rising sales curve in September, under the influence of offerings of 1923 models, the exhilaration of the annual state fair in Milwaukee upon local and state business, city and rural, and the fall buying period.

Heads of corporations, department managers, merchants, salaried men and small business men who have been delaying purchases to await developments and determine whether or not the rising trend of general business was of a momentary or permanent nature, are now coming into the market slowly but steadily. This source of new business is compensating for the gradual elimination of prospect lists by past sales.

Thus there has been no real exhaustion of prospects; on the contrary, while the cream has been skimmed off, new layers are forming on the top every day and there is plenty of material for salesmen to work upon. While selling is a harder proposition than it was one, two, three and four months ago, its prosecution is made more intensive as the difficulties increase, with the result that the level of business is not developing into a downward curve.

Motor truck sales are increasing steadily, and unless the railroad labor troubles are settled soon, with a consequent serious impairment of service, makers as well as dealers look for a spurt in commercial car business.

Central Ohio Prospering

COLUMBUS, OHIO, July 24—Demand for passenger cars in Columbus and central Ohio has shown a rather remarkable increase during the past two months. All classes of cars are selling briskly, but the principal demand centers in lines priced between $800 and $2,500. In some instances agents can not make deliveries on cars sold, and this applies especially to closed jobs. All lines are moving freely however, including touring cars, runabouts, limousines and sedans.

The farming sections of the State, helped by rather bountiful crops and gradually getting over the pessimism into which the people were thrown a year ago are buying passenger cars. Farmers are paying cash to a certain extent, showing that money is much easier in agricultural sections.

Agents and distributors look for a continuation of the good demand for the remainder of the summer months.

Association Activities

Atlanta Has New Quarters

ATLANTA, July 24—The Atlanta Automobile Association has moved its office from 305 Connally Building to the new Gould Building at 9 Edgewood Avenue. C. V. Hohenstein is secretary.

Atlanta Set for Outing

ATLANTA, July 22—All preparations are ready for the annual summer outing of the Atlanta Automobile Association to be held Aug. 2. Floyd Norcutt, general chairman on the committee on entertainments, assisted by Bob Martin, has arranged a golf tournament and other sports. The outing will be held at the Brookhaven Country Club.

Baird Chosen Secretary

YOUNGSTOWN, OHIO, July 24—Charles A. Baird has been chosen new secretary of the Youngstown Automobile Dealers' Association. He was a member of the Board of Education for almost six years. He has already assumed active charge.

Indianapolis Show Decided

INDIANAPOLIS, July 22—A lease has been signed by the Indianapolis Automobile Trade Association with the Indiana Board of Agriculture by which the association renews a three year lease of the automobile show building on the state fair grounds.

This building erected by the State Fair Board in 1919 was the direct result of concerted action and pleas of the directors of the Indianapolis association which had striven for a long time for the erection of a proper building for exhibition purposes.

The renewal of the lease makes certain the holding of the automobile show at the time of the next fair, the first week in September. Like all the fair shows held in the building the association makes no profit. No admission to the building can be charged during fair time, general admission to the grounds giving free entrance to the automobile exhibit.

N. A. D. A. STATEMENT WELCOMED BY TRADE

ST. LOUIS, MO., July 24—The statement of merchandising principles recently sent out by the National Automobile Dealers Association has been widely used by the trade.

One of the strongest reactions according to the association, was the number of letters from members asking about the possibility of a national advertising campaign to acquaint the motoring public with the high standards adopted by the Association and calling attention to the advantages of the car user to patronizing the merchant who is a member of the association.

This, doubtless, was caused by the fact that some manufacturers of important articles used daily have carried on strong advertising through their associations resulting in a great educational work being done with the public.

The association has taken suggestions offered and summarized them. It is now seeking ideas on the subject from all members.

AID FOR CAR DEALERS FOUND IN NEW SERVICE

Monthly Tabulation of Registrations in New Jersey and Part of New York Available

NEW YORK, July 24 — Publication monthly of new car registrations for the entire State of New Jersey has been undertaken by Sherlock & Arnold, of this city, publisher of the Automobile Sales Analysis, which covers the same information for ten counties in and around New York City. In New Jersey the publisher will record not only passenger car but motor truck registrations, and for the convenience of distributors and dealers, some of whom are in the New York territory and others operating in Philadelphia, the report will be published in two sections, one for 13 counties of North Jersey and the other for eight counties in South Jersey. The publisher expects next to undertake a compilation of registration information in Pennsylvania and eventually hopes to have records for upwards of 15 states which, combined, would give an accurate indication of sales conditions.

Complete Sales Information

The Automobile Sales Analysis for New York and vicinity has been furnished to a steadily growing list of dealers, manufacturers and others in the industry for more than a year and there are now several hundred subscribers of the service, which includes a monthly tally sheet showing the number of new cars of each make registered by counties and in the territory as a whole and giving also the territorial sales for each preceding month of the year, as well as grand totals for the preceding year. Another section of the service gives the names and addresses of new car registrants during the past month, together with the make, model and other detailed information regarding the car purchased.

The report, which subscribers usually receive about the middle of the month, effectually clears up any doubt which dealers have regarding sales made by representatives of various manufacturers. Owing to frequent delays in delivery, the report does not show the actual sales made during the month, but taken month by month throughout the year, it gives a complete report of cars placed in the hands of owners.

The Automobile Sales Analysis is compiled on the basis of reports filed daily by a representative of the publisher at the various county registration offices. This, together with compilation and printing, is necessarily an expensive process, but the large number of subscribers permits the work to be carried on, thus giving individual subscribers at a minimum charge information which they could not obtain for themselves, except at prohibitive cost. The New York report, including the tally and the names of the owners, is sold on yearly contracts at $10 a month.

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CHANGES IN THE TRADE

Eugene Dautell, has become manager of the **Toledo Cadillac Co.,** to succeed **Ralph A. Parker,** who goes to Atlanta for the Cadillac.

Clark & Breck Co., distributor of the Winton and Velie, has opened a new and larger store in that city, with maintenance station in connection.

L. E. Watson, recently manager of the **Gramm-Bernstein Motor Truck Co.,** of Philadelphia, has become associated with the White Co. in that city.

Polhemus-Cram Motors Co., Syracuse, N. Y., factory representative of the Hatfield Motor Car Co., has been appointed distributor for the Gardner.

Harry U. Sharp, formerly sales manager for the **Fanning-Hatch Co.,** Philadelphia, has been appointed sales manager of the **Lexington Motor Co.** of Penna.

W. S. Arbogast, who for several years has operated a big accessory department store in Toledo, has taken over the distribution of the new H.C.S. line in this section of Ohio.

The Burr Reilly Co., Milwaukee, Wisconsin, distributor of Oildag and Gredag, has moved its offices, store and warehouse to new and larger quarters at 522 East Water Street.

Universal Motor Co., Portsmouth, Ohio, has begun the erection of its new $80,000 garage, which will be of fireproof construction throughout and contain 51,000 sq. ft. floor space.

Louis C. Block, formerly general manager of the Ford Motor Co. in Philadelphia, has opened as distributor of the new Gray car for eastern Pennsylvania, New Jersey, Maryland and Delaware.

Glenn E. Holmes Co., Ford dealer in Chicago for a number of years, located in the loop district, has just been incorporated for $100,000 by Glenn E. Holmes, Mary L. Holmes and Louise Holmes.

Simmons Motor Car Co., Cleveland, Ohio, Chandler distributor in this district, will move into the former quarters of the Packard company on Aug. 1. This will double the sales and service quarters.

Osmond Barringer Co., Charlotte, N. C., has been appointed distributor for the Chandler in this territory. The company will continue to handle the Peerless and will increase its service department.

Stanton Latham, formerly in charge of eastern Connecticut territory for the **Wetmore-Savage Co.,** has been made sales manager of the automotive division of the company's Springfield, Mass., branch.

United Tire Jobbers has opened a wholesale and retail tire store in Springfield, Mass. It is under the management of **Maurice Ashley,** formerly of the **Southern Tier Tire Co.,** Binghamton, N. Y.

Sherwood Hall, original Paige-Detroit distributor in Boston, and later handling the Hupmobile line for Metropolitan Boston, has sold out his various business enterprises and gone to California to settle permanently.

Arthur E. Barker, vice-president in charge of sales of the Maxwell Motors Corp. and Chalmers Motor Corp., sailed this week for Europe on a six weeks' vacation trip, on which he is accompanied by Mrs. Barker.

W. S. Kip Motor Co., Philadelphia, has been appointed distributor of the National, which it will handle in connection with the Dort. Territory includes eastern Pennsylvania, southern New Jersey and Delaware.

James M. Lincott, Reo distributor in Boston, has secured the entire State of Vermont in addition to territory already held which includes Massachusetts east of and including Worcester County and all of New Hampshire.

Prasp Motor Car Co., headed by **F. W. Prasp,** has taken over the distribution of the Moon in Oregon and southern Washington. The Prasp Motor Car Co. for nearly a year was the Lincoln distributor for this territory.

Traffic Truck Sales Co., Syracuse, N. Y., has been organized to handle sales and service for the Traffic truck. **Thomas Bailey and D. M. Foley,** factory representatives, are in charge. **Jack Bellings** is associate sales manager.

Columbia Reo Motor Co., Columbia, S. C., has been chartered by the Secretary of the State with a capital stock of $25,000. Officers are **J. N. Jordan** president, treasurer and secretary, and **W. M. Sandifer** vice-president.

Fred B. Clark, of Los Angeles, has been appointed Pacific Coast representative of the **George W. Davis Motor Car Co.,** of Richmond, Ind., manufacturer of the Davis. Clark is widely known to dealers and distributors in that territory.

Greenfield Oakland Co. has been formed to take over the Oakland agency in Greenfield, Mass. **Carroll F. White** heads the new concern which will occupy the same quarters as the old **Dunbar-Lyon Co.,** with maintenance station in connection.

John R. Boyd and Mrs. Boyd were given a dinner and dance by the sales and office force of the **United Motors Corp.** of Louisville, Ky. Boyd is president of the organization which acts as distributor for the Hupmobile and Wills Sainte Claire.

James O. Laughlin has been appointed sales manager of the J. F. O'Connor Sales Co., Syracuse, N. Y., to succeed W. G. De Havens. Laughlin will have charge of Jordan and Oldsmobile retail sales in fifteen counties in this part of New York State.

Parmenter Co., Springfield, Mass., has become distributor for the Spicer and Hartford joints, Perfection Springs and Gurney ball bearings, in addition to the various lines of the **Campbell Motors Corp.,** which they handle exclusively in this territory.

Ray Battery, Philadelphia, under **W. D. Shepheard,** has territory that includes eastern Pennsylvania, south Jersey, Delaware and the eastern shore of Maryland. **H. L. Archey** has been appointed eastern sales manager and **W. W. Carter** service manager.

David J. Willoughby, sales manager of the **Columbia Motor Co.,** and **Norman I. Taylor,** sales manager for the **Albee** corporation, advertising counsel for the company, are on a business trip through the Middle West on which they will hold dealer and distributor meetings in eleven cities.

D. C. Briggs and **David A. Ahearn,** both well known in the motor trade, are recent additions to the sales force of **C. P. Rockwell, Inc.,** Nash distributor for New England. **Joseph S. Porter,** formerly with Locomobile and other big companies, has been added in a supervisory capacity.

E. L. Smith and **C. H. Bliss** have been appointed assistant sales managers of the Nash Motors Co. Smith leaves the position of district manager of a large automobile concern having headquarters in St. Louis to join the Nash organization. Bliss has been with the Nash company since its organization.

John W. Odlin, advertising manager for the Wickwire-Spencer Steel Corp, has resigned to take effect Sept. 1 to become head of the **John W. Odlin Co.,** advertising agents. The headquarters of the new concern will be in Worcester and the New England states will be covered specializing in manufacturers' advertising.

Frank H. Willard has been elected vice-president and general manager of the **Graton & Knight Mfg. Co.** by the directors. Willard has been with the concern for 30 years and was formerly vice-president and a director, but resigned from office, remaining connected with the organization, at the time of reorganization a few months ago.

Flathers Garage Co., Springfield, Mass., will occupy Aug. 1 a larger service and repair establishment, operating as an associate of the **Parmenter Co.,** wholesale parts dealers. The proprietor, **George H. Flathers,** was for some years with the Knox factory and until a few months ago was service manager for the Byrnes Motor Co., Springfield.

A. P. Kemp has been appointed president and treasurer, and **J. I. Farley** has been appointed first vice-president of the Auburn Automobile Co., Auburn, Ind. Kemp will continue in the capacity of general manager which he held before his new appointment. Farley will continue as director of sales in addition to his new duties. Kemp succeeds **Morris Eckhart.**

Clarence E. Triphagen, for the past three years manager of the Detroit branch of the Reo Motor Car Co., has been called to the factory to become identified with the sales division under R. C. Rueschaw, sales manager. Triphagen had been connected with the factory sales force formerly and before going to Detroit was manager of the Lansing factory branch.

Oregon Motors, Inc., Portland, Ore., has been formed to handle the Chandler and Cleveland in Oregon and southern Washington. This line was recently represented by the Twin States Motor Car Co. **E. O. Armstrong** is at the head of the new organization. **A. H. Knaus,** who headed the Chandler-Cleveland dealership in Portland for two years, is vice-president and sales manager.

Moreland Motor Truck Co., of Los Angeles, has opened a northwest factory branch to handle wholesale business for the entire Pacific Northwest at Portland, Ore. **C. H. Smith** will be in charge as northwest manager. At the same time a local company to be known as the **Moreland Motor Truck Co.** of Ore. was formed to handle retail sales in this territory. The company is composed of **F. H. Nash, C. E. John** and **W. M. Fried.**

Clarence P. Fisken of Racine, Wis., has been appointed general manager of the Wisconsin sales division of the Mitchell Motors Co. under the reorganization of the sales department of the factory by A. G. McMillan, general sales director, since taking charge recently. Fisken's headquarters will be at the Racine factory. He was formerly manager of the Wisconsin branch of the Burroughs Adding Machine Co., resigning to join the Mitchell sales organization some time ago. He is a director of the Racine Chamber of Commerce and engaged also in some notable civic projects.

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CHARGES MONOPOLY IN GASOLINE FIELD

Federal Commission Would Prohibit Interlocking Stock Ownership

WASHINGTON, July 22 — Asserting that a "monopolistic situation," with respect to the gasoline market, prevailed over the entire country, due to the fact that an interlocking stock ownership in the several Standard Oil companies "has perpetuated the very monopolistic control which the court sought to terminate," the Federal Trade Commission recommended in a report to Congress the enactment of legislation prohibiting "common stock ownership in corporations which have been members of a combination dissolved under the Sherman law."

Montana Prices Too High

Giving the results of an inquiry made on the complaint of the Montana State Railway Commission regarding gasoline prices, the commission reported that although the prices of high-grade crude petroleum were lower in Montana and Wyoming than in any other crude producing states, the refinery prices of gasoline and kerosene were "much higher than at midcontinent refineries."

The report says:

The unsatisfactory situation in Montana and adjacent Rocky Mountain states is evidently due to the fact that the oil trade in this region is practically monopolized by Standard Oil interests.

To-day the entire country is divided into 11 standard gasoline marketing territories in which a standard marketing company is the dominating factor and in which there is no real competition between the various standard units. This monopolistic situation is possible under the terms of the Standard Oil dissolution decree, by which the different Standard companies are, for legal purposes, supposed to be strangers to each other, but there is, as is generally known, an interlocking stock ownership in the different organizations, which has perpetuated the very monopolistic control which the court sought to terminate.

The commission is of the opinion that this situation cannot be effectually remedied by existing law and that adequate relief can only be secured through additional legislation. It recommends, therefore, that Congress pass a law prohibiting common stock ownership in corporations which have been members of a combination dissolved under the Sherman law.

Bill Will Protect Sales

SALT LAKE CITY, July 18—Automobile and insurance interests will introduce a bill into the next legislature that will have for its object the compelling of a person who purchases a car on the instalment plan and falls behind with his payment, to disclose its whereabouts on pain of arrest. Under the state law at present there are no means by which a delinquent who conceals the car may be brought to justice.

ASSOCIATION STARTS GOOD ROADS UPLIFT

MINNEAPOLIS, July 18—Leading business men have formed the Hennepin County Good Roads Association for a general uplift movement in the road conditions, an important function now that Minnesota is becoming a great tourist state for motorists. The organization is the outgrowth of the Lyndale Avenue Bridge Association, which has consummated a great arterial highway from the South.

Five business groups are behind the plan, and the directorate will contain representatives of the manufacturers', jobbers', retailers', bankers' and the automotive interests. Archie Walker, connected with the Pence automobile interests, is secretary of the association.

It is expected that eventually this will become a state-wide organization in its operations. The organization is formed to get quick results, particularly in the way of better roads to the South and within the city itself.

NASH BALANCE SHEET TELLS OF BIG BUSINESS

KENOSHA, WIS., July 24—Earnings of the Nash Motors Co. from Dec. 1 to April 30 were $2,173,000, as compared with $2,226,000 for the full fiscal year of 1921. The balance sheet of the company as of April 30, last, follows:

Assets: Real estate, plant, equipment, etc., $4,847,828; investments, $2,114,112; Liberty bonds, $1,200,802; materials and supplies $3,334,388; notes receivable, $527,896; accounts receivable, $2,129,154; cash, $8,204,122; U. S. Treasury certificates and notes, $5,857,588; prepaid expenses, $3,888; total $28,219,778.

Liabilities: Preferred stock, $4,000,000; common stock, 54,600 shares of no par value, $510,000; accounts payable, $2,710,902; reserve for Federal and other taxes, $3,285,662; other reserves, $2,808,106; surplus $14,905,108; total $28,219,778.

The surplus of $14,905,000 is equivalent to $273 a share on the 54,600 shares of common outstanding.

In the six months ending June 30 Nash Motors Co. sold more passenger cars than during the entire year of 1922. This also is the largest half year of business in the history of the Nash company. The factory still is behind on orders, and indications point to a continuance of the heavy demand throughout the summer months. Additions now are being made to the four cylinder plant in Milwaukee which, when completed, will enable the company to catch up some on orders. This new building is to be 600 feet long by 100 feet and three stories high. At the same time the Nash Six plant in Kenosha will be in a position to increase its production.

ROAD STUDY TO CUT COST OF OPERATION

Preliminary Report Out—Expect Benefits to Transportation and Highways

WASHINGTON, July 22—Preliminary results of the investigations being carried on under the auspices of the Bureau of Public Roads, the Quartermaster Corps and the Advisory Board of Highway Research of the National Research Council, studying tractive resistance on roads, has been made public by the Department of Agriculture.

The incomplete tests, says the report, show that there is a great difference in the power required of an automobile or truck in traveling over different types of surfacing, the amount being more than twice as great on some of the lower types when compared with that on higher types.

The most valuable result, thus far, it is stated, is that the tests have shown conclusively that the power required to overcome the road resistance is not proportional to the speed of the vehicle, and after a certain speed is reached increases very rapidly.

Details of the investigation, which is being pushed through the summer months, will not be made public until completed. It will cover tests with various types of motor vehicles with the load, tire, and spring equipment varied on different types of surfacing and at varying speeds. The data will include gasoline consumption, internal engine, wind and road-surface resistances.

The purpose of the investigation and tests is to enable highway engineers to determine under a given set of conditions what type of surface should be built for a given volume of traffic to result in the least total cost for roads and automotive operation. The same sort of study will be made as to expenditures for grade reduction to reduce operating costs.

The tests will give the automobile operator valuable information as to the effect of tire and spring equipment, lubrication, size of load and speed of vehicle on fuel consumption, which, it is expected, will aid him in producing cheaper transportation.

Iowa Buys Low Priced Cars

DAVENPORT, IOWA, July 24 — Growth of sales of cars around $1,000 has been the outstanding feature of sales analysis in this city just completed by a statistical company. June sales were 187 cars, reported by all agencies in the city, as against 141 sales in June, 1921, and for six months ending July 1; sales have totaled 816 cars as against 738 in the same period last year. The car selling in greatest number was bought by 81 persons, making 390 sales of this particular car by one agency in the six months marking first half of the current year.

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾-1	$1050a	3¾x5	34x5n	34x5n	W
Acason RB	1½	1950	3¾x5¼	36x3½	36x6	W
Acason H	2½	2750	4⅜x5¼	36x4k	36x8k	W
Acason L	3½	3450	4⅜x5¼	36x5k	36x10k	W
Acason M	5	4350	5 x6¼	36x6	40x12	W
Ace C	1½	2295	3¾x5⅛	34x3½k	34x5k	W
Ace A	2½	2795	4¼x5½	36x4k	36x7	W
Acme 20	1	....	3¾x5	35x5n	35x5n	W
Acme 33	1½	....	3¾x5	34x3½	34x5	W
Acme 40	2	....	3¾x5	34x3½	34x5	W
Acme 60	3	....	4⅜x5¼	36x4	36x7	W
Acme 60L	3	....	4½x5½	36x4	36x7k	W
Acme 90	4½	....	4½x5½	36x5	40x10	W
Acme 125	6¼	....	4¾x6	36x6	40x12	W
American 25	2½	3350	4 x6	34x4k	36x4dk	W
American 40	4	4275	4¼x6	36x5k	36x5dk	W
Armleder 20	1	2350	3¾x5¼	34x3½k	34x5k	W
Armleder 21	1½	2425	3¾x5¼	34x3½	34x6	W
Armleder 40	1½	2850	4⅜x5¼	34x3½	36x6	W
Armleder HW	2½	3200	4¼x5½	36x4k	36x7k	W
Armleder KW	3½	4150	4½x6	36x5	36x5d	W
Atlas MD	1	1185	3½x5	32x4½n	32x4½n	W
Atterbury 20R	1½	2475	3¾x5	34x3½	34x5	W
Atterbury 7CX	2½	3175	4½x5¼	36x4	36x4d	W
Atterbury 22C	2½	3375	4½x5¼	36x4	36x4d	W
Atterbury 7D	3½	3975	4½x5½	36x5	40x5d	W
Atterbury 22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury 8E	5	4975	4¾x6	36x5	40x6d	W
Autocar 21UF	1½-2	1950	4¾x4½t	34x4k	34x5k	D
Autocar 21UG	1½-2	2050	4¾x4½t	34x4k	34x5k	D
Autocar 27H	2	2950	4 x5½	34x5	36x7	D
Autocar 27K2	2	3075	4 x5½	34x5	36x7k	D
Autocar 26Y	5	3350	4¼x5½	34x6	36x12	D
Autocar 26-B	5	4100	4¼x5½	34x6	36x12	D
Available H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available H2	2	2775	4 x5	36x3½k	36x6k	W
Available H2½	2½	3160	4 x5	36x4k	36x8k	W
Available H3½	3½	4175	4½x5½	36x5	40x5d	W
Available H5	5	5375	5 x6	36x6	40x12	W
*Avery 1	1	....	3 x4	34x5n	34x5n	I
Beck A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	I
Beck B-30	1½	1725	3¾x5	34x5	36x6	
Beck C-40	2	1810	3¾x5	36x6	36x6	
Beck D-50	2½	2395	4½x5¼	36x7	40x8	
*Bell (Penn.)	½	1000b	3½x5	31x4n	31x4n	B
Bell M (Iowa)	1	1495	3⅝x5½	35x5	35x5n	W
Bell E (Iowa)	1½	2100	3¾x5½	34x3½	34x5	I
Bell O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Belmont A	½	725	3¾x4½	31x4	31x4	B
Belmont D	2	2575	4½x5½	34x3½k	34x6k	I
Belmont F	3	3500	4 x6	36x5k	36x5dk	I
Bessemer G	1	....	3½x5	35x5n	35x5n	I
Bessemer H-2	1½	....	3¾x5	36x3½	36x5	I
Bessemer J-2	2½	....	4½x5¼	36x4	36x4d	I
Bessemer K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem KN	1	1195	3½x5	34x4½n	35x5n	B
Bethlehem CN	2	1595	4 x6¼	34x4½k	34x6k	I
Bethlehem HN	3	2195	4 x5¼	36x4k	36x8k	I
Brinton C	1½	150.)	3¾x5	4x4	34x5	W
Brinton D	2½	2250	4½x5½	36x4	36x7	W
Brockway E	1	....	3½x5⅛	35x5n	35x5n	B
Brockway S-5	1½	....	3½x5	36x4	36x6	W
Brockway SK	1½	....	4½x5¼	36x4	36x6	W
Brockway KR	2½	....	4½x5½	36x4	36x8	W
Brockway K-5	2½	....	4½x5¼	36x4	36x8	W
Brockway RT	3½	....	4¾x6	36x5	36x10	W
Brockway R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway T-4	5	....	4½x6	36x6	40x6d	W
*Buick	....	945b	3⅝x4¾	31x4n	31x4n	B
Capitol G	1½	2975	3¾x5	35x5	38x7	W
Capitol H2	2½	3700	4¼x6	36x4	36x8	W
Capitol K2	2½	4250	4¼x6	36x6	42x9	W
Capitol M3½	3½	4425	4¼x6	36x5	36x10	W
Cass	2	....	4½x5¾	36x6	38x7	I
*Chevrolet G	¾	745	3½x4	31x4n	34x4½n	B
*Chevrolet T	1	1125	3½x5¼	33x4n	35x5n	W
Chicago C1	1½	....	4 x5	36x3½k	36x5k	W
Chicago C2	2½	....	4 x5	36x4k	36x7k	W
Chicago C3	3½	....	4¼x5½	36x5	36x10	W
Chicago D5	5	....	4½x5½	36x6	40x12	W
Clydesdale 10	¾-1½	1485	3¾x5	34x5n	34x5n	B
Clydesdale 18	1-1½	1890	3¾x5	34x5	34x5	W
Clydesdale 20	1-1½	2385	3¾x5	34x5	34x5k	W
Clydesdale 42	1½-2	2175	3¾x5	36x3½	36x6	W
Clydesdale 65X	2½-3	3250	4½x5¼	36x4	36x8	W
Clydesdale 65EX	2½-3	3150	4½x5½	36x4	36x8	W
Clydesdale 90	3½-4½	4100	4½x5½	36x5	36x10	W
Clydesdale 120	5-6	4500	4¾x6	36x6	40x12	W
Columbia H	1½	1995	4 x5	35x5	38x7n	I
Columbia G	2½	2335	4 x5½	36x4	36x7	I
Comet T	1½	1950	3¾x5	34x4	34x4	W
Commerce T	¾-1½	1150	3¾x5	31x4½n	34x4½n	B
Commerce 12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce 15	2	2150	3¾x5	35x5n	36x6n	I
Commerce 18	2½	2495	4½x5½	36x6n	40x8n	I
Commerce 25	2½	2425	4½x5½	36x4	36x7	W
Cook 51	2½	3600	4 x5½	36x6n	40x8n	W
Corbitt E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt D-22	1½	2200	3¾x5	34x3½	34x5	W
Corbitt C-22	2	2600	4¼x5½	36x3½	36x7	W
Corbitt B-22	2½	3000	4½x5½	36x4	36x7	W
Corbitt R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt A-22	3½-4	3800	4½x5½	36x5	36x10	W
Corbitt AA-22	5	$4500	4¾x6	36x6	40x6d	W
Day-Elder AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn E	1	1600	3⅝x5½	35x5n	35x5n	W
Dearborn FX	1½	2300	3¾x5½	34x4	34x5	W
Dearborn F	1½	2180	3¾x5½	34x4	34x5	W
Dearborn 48	2	2590	3¾x5⅛	34x4½n	34x7	W
Defiance G	1	1695a	3¾x5	35x5n	35x5n	B
Defiance D	1½	2095a	3¾x5	35x5n	36x6n	I
Defiance E	2	2275a	3¾x5	35x5n	38x7n	I
Denby 31	1¼	1485	3½x5	35x5n	35x5n	B
Denby 33	1½	2145	3¾x5	35x5n	38x7n	I
Denby 34	2	2395	3¾x5	36x3½	36x6	I
Denby 35	2½-3	2795	4⅛x5½	36x4	36x7	I
Denby 27	4	3895	4½x5½	36x5	36x5d	I
Denby 210	5	4295	4½x5½	36x6	40x6d	I
Dependable A	¾-1	1050	3⅝x5½	34x5n	36x6n	W
Dependable C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable D	2½	2650	4 x5½	34x5	36x6	W
Dependable E	3	2950	4¼x5½	36x4	36x7	W
Diamond T O-3	1-1¼	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T U	2-2½	2650	4 x5¼	36x4	36x7	W
Diamond T K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T S	5	4500	4¾x6	36x6	40x6d	W
*Diehl A	1	....	3½x5	34x4½	35x5	I
Diehl B	1½	....	3½x5	36x6	36x6	I
Deane	2½	4100b	4¼x5¾	36x5	36x7	C
Deane	3½	5100b	4⅝x5¾	36x5	36x5d	C
Deane	6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers	¾	730	3⅞x4½	32x4n	32x4n	B
Derris K-4	2-2½	3400	4¼x5½	36x4	36x7	W
Derris K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort 103	½	685a	3½x5	31x4n	31x4n	B
Double Drive B	3	4000	4¼x5½	6	6	W
Duplex A	2	2775	4 x5¼	35x5n	38x7n	W
Duplex E	3½	3500	4¼x5½	36x8	36x8	I
Duty 22	2	1590	3½x5	34x3½	34x5	I
Eagle 101	1½	1875	3⅝x5½	34x5	34x5	I
Eagle 100-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D. B	3	4200	4¾x5½	36x6	36x6	B
Fageol 1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol 2½	2½	3900	4¼x5¾	34x4	36x7	W
Fageol 3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol 5	5	5700	4½x6¼	36x6	40x6d	W
Fargo R	2	1700	3¾x5	34x6	36x6	I
Federal SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal TE	1½	2175	4½x5¼	36x3½	36x5	W
Federal UE	2-2½	2425	4½x5¼	36x4	36x7	W
Federal WE	3½-4	3150	4½x5½	36x5	36x5d	W
Federal X2	5-6	4500	4¾x6	36x6	40x6d	W
*Ford TT	1	430	3¾x4	30x3½n	32x4½n	W
Front Drive C	1½	2800	3⅝x5½	5	4	W
G & J** 20	1	2275	3⅝x5½	34x5n	34x5n	W
G & J** A	2-2½	3375	4x5¼	36x4	36x7	W
G & J** B	3½-4	4475	4½x5½	36x5	36x10	W
G.M.C. K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C. K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C. K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C. K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C. K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W.	1½	1850	3¾x5½	35x5	35x5	I
*Garford 15	1	1590	3⅝x5⅛	34x5n	34x5n	W
Garford 25-B	1½	1990	3¾x5½	36x3½	36x5	W
Garford 70-H	2½	2750	4¼x5½	36x4	36x8	W
Garford 77-D	4	3750	4½x6	36x5	36x5d	W
Garford 68D	5	4500	5 x6¼	36x6	40x6d	W
Garford 150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary F	1-1½	1675	3¾x5	36x3½	36x5	W
Gary I	2	2250	4 x5½	36x3½	36x6	W
Gary J	2½	2650	4¼x5½	36x4	36x8	W
Gary K	3½	3650	4½x6	36x5	40x5d	W
Gary M	5	4100	5 x6½	36x6	40x6d	W
Gersix M	1½	3100	4 x5½	36x3½	36x7	W
Gersix K	2½	3500	4½x5½	36x4	36x8	W
Gersix	3½	4500	4½x6	36x5	40x12	W
Graham Bros.	1	1265	3⅞x4½	33x4½n	34x5n	B
Graham Bros.	1½	1325	3⅞x4½	33x4½n	36x6n	B
†Gramm-Pion. 10	1	1365	3½x5	33x5n	33x5n	B
†Gramm-Pion. 15	1½	1900a	3¾x5	36x3½k	36x5k	I
†Gramm-Pion. 65	1½	2500a	3¾x5	36x3½k	36x5	W
†Gramm-Pion. 20	2	$2925a	4⅛x5¼	36x4k	36x7k	W
†Gramm-Pion. 30	3	3275a	4¼x5½	36x4k	36x4dk	W
†Gramm-Pion. 75P	3½	4225a	4½x5½	36x6n	42x9n	W
†Gramm-Pion. 40	4	3995a	4½x5½	36x5	36x5dk	W
†Gramm-Pion. 50	5-6	4895a	4¾x6	36x6	40x6dk	W
Hahn B2	1	1750	3½x5	34x5k	34x5k	W
Hahn O	1½	2150	3¾x5¼	36x3½k	36x6k	W
Hahn K	2	2550	4⅛x5½	36x7k	36x8k	W
Hahn L	3	3250	4½x5½	36x5k	36x8k	W
Hahn M	5	3850	4½x5½	36x5	36x10	W
Hahn N	6	4650	4¾x6	36x6	40x12	W
Hal-Fur E	1½	2350	4x5½	34x5n	38x7n	W
Hal-Fur B	2½	3000	4¼x5½	36x6n	36x8	W
Hal-Fur F	3½	4000	4½x5½	36x6n	40x10	W
Hall 1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall 2½	2½	3275	4⅛x5¼	36x4	36x6	W
Hall 3½	3½	4100	4½x5½	36x5	36x5d	W
Hall 5	5	5100	4½x5½	36x5	40x6d	W
Hall 7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey WOA	2	2650	4¼x5½	34x4	34x7	W
Harvey WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye K	1½	1850	3¾x5½	34x3½k	34x5k	I
Hawkeye M	2	2650	4¼x5	36x4k	36x6k	I
Hawkeye N	3½	3700	4½x6⅜	36x5k	36x10k	I
Hendrickson O	1½	2200	3⅝x5⅛	36x4n	36x5n	W
Hendrickson N	2½	2690	4¼x5⅜	36x4k	36x7k	W
Hendrickson M	3½	3000	4¼x5	36x5k	36x5dk	W
Hendrickson K	5	4000	5 x6¼	36x6	40x6	W
Huffman B	1½-2	1795	3¾x5	34x3½	34x6	W
Huffman C	1½-2	1695	3¾x5½	36x3½	36x6	I
Huffman D	2-3	2895	4½x5½	36x4	36x7	
Hurlburt A	1½	2850	4 x6½	34x4	34x5	W
Hurlburt B	2½	3750	4¼x5½	36x4	36x4d	W
Hurlburt C	3½	4590	4½x6	36x5	36x5d	W
Hurlburt D	5	5500	4½x6	36x5	40x6d	W
Indep'd't(Iowa) B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa) G	1½	2040	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.) HI	2½	2940	4¼x5¼	36x4	36x4	I
Indep'd't(Ohio) F	1½	2385	3¾x5	36x3½	36x5	W
Indep'd't(Ohio) H	2½	3085	4½x5¼	36x4	36x4d	W
Indep'd't(Ohio) K	3½	3985	4½x5½	36x5	36x5d	W
Indiana 12	1½	....	3¾x5¼	34x3½k	34x5k	W
Indiana 20	2	....	4½x5½	36x4k	36x7k	W
Indiana 25	2½	....	4¼x5½	36x4k	36x8k	W
Indiana 35	3½	....	4¾x5½	36x5k	36x5dk	W
Indiana 51	5	....	5 x6¼	36x5k	40x6dk	W
*International S	1	1250	3½x5	34x5n	34x5n	I
International 21	1	1550	3½x5¼	36x3½	36x3½	I
International 31	1½	1650	3½x5¼	36x3½	36x4	I
International 41	2	2100	3½x5¼	36x3½	36x5	I
International 61	3	2400	4¼x5	36x4	36x6	I
International 101	5	3600	4¾x5	36x5	40x10	I
Jackson 4WD	3½	3850	4½x5½	36x7	36x7	B
Jumbo 15	1½	2295	3¾x5¼	36x3½	36x5	I
Jumbo 20	2	2520	3¾x5¼	36x5n	38x7n	I
Jumbo 25	2½	2660	4½x5½	36x4	36x7	I
Jumbo 30	3	3060	4¼x5½	36x6n	42x9n	I
Jumbo 35	3½	3900	4½x6	36x5	36x10n	I
Jumbo 40	4	4400	4½x6	38x7n	44x10	I
K-Z 1	1	1750	3½x5	34x3½	34x5	W
K-Z 1½	1½	2075	3¾x5	36x4	36x6	W
K-Z 2½	2½	2550	4⅛x5¼	36x4	36x8	W
K-Z 3½	3½	3350	4½x5½	36x5	40x10	W
K-Z 5	5	3950	4½x5½	36x6	40x6d	W
Kalamazoo T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo HD	3	3350	4¾x6	36x5	36x10	W
Kalamazoo SK	4	3845	4¼x6	36x5	36x12	W
Kalamazoo OK	5	4350	4½x6	36x6	40x6d	W
*Kelly-S K-31	1½	2700	3¾x5¼	36x3½	36x6	C
*Kelly-S K-34	1½	2700	3¾x5¼	36x3½	36x6	W
*Kelly-S K-38	2½	2900	3¾x5¼	36x4	36x4d	W
*Kelly-S K-35	2½	2900	3¾x5¼	36x4	36x4d	C
*Kelly-S K-40	3½	3900	4½x6½	36x5	40x5d	C
*Kelly-S K-41	3½	3900	4½x6½	36x5	36x10	I
*Kelly-S K-42	3½	3900	4½x6½	36x5	40x5d	W
*Kelly-S K-50	5	4400	4½x6½	36x6	40x6d	C
*Kelly-S K-60	6	4600	4½x6½	36x6	40x7d	C
Keystone 40	2	2175	3¾x5⅛	34x5n	38x7n	I
Kimball AB	2	3675	4 x6	36x4	36x7	W
Kimball AC	2½	3975	4¼x6	36x4	36x8	W
Kimball AK	3	4500	4½x6	36x4	36x10	W
Kimball AE	4	5000	4¾x6	36x5	40x12	W
Kimball AF	5	5500	5 x6	36x6	40x7d	W
*Kissel Express	1	1595	3⅞x5½	34x5n	34x5n	W
Kissel Utility	1½	1975	3⅞x5½	36x3½	36x5	W
Kissel Freigter	2½	2875	4¼x5½	36x4	36x7	W
Kissel H. D.	4	3675	4¼x5½	36x5	36x5d	W
Kleiber AA	1	2200	4⅛x5¼	34x3½k	34x5k	W
Kleiber A	1½	3100	4⅛x5¼	36x3½k	36x6k	W
Kleiber BB	2	3600	4¼x5¼	36x4k	36x7k	W
Kleiber B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber C	3½	4600	4½x5½	36x5	36x5d	W
Koehler D	5	5300	5 x6½	36x6	40x12	W
Koehler M	1½	2150	3½x5	34x3½	34x5	W
Koehler MCS	2½	3275	4 x5⅛	36x4	36x7	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl.
d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. •—express truck or delivery wagon. ••—Canadian Make. trac.—tractor.

1—Gramm-Pioneer. 2—Kelly-Springfield.

Passenger car specifications on page 50

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Koehler.....F	3½	$4470	4½x5½	36x5	36x10	W
Koehler,MT. Trac	5	3275	4 x5⅛	36x4	36x7	W
Krebs.....23	¾	1260	3¾x5	34x4½	34x4½	B
Krebs.....24	1	1565	3¾x5	34x5	34x5	W
Krebs.....45	1½	2125	4½x5½	36x4	36x7	W
Krebs.....75	2½	2375	4½x5½	36x4	36x8	W
Krebs.....110	3½	2975	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1925	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2100	3¾x5	34x3½	31x5	W
Larrabee.....J	1½-2½	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4¼x5½	36x4	36x7	W
Larrabee.....K-5	2½-3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5-7	4800	4¾x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack...AB D.R.	1½	3150	4 x5	36x4	36x3½d	D
Mack...AB Chain	1½	3000	4 x5	36x4	36x3½d	C
Mack...AB Chain	2	3300	4 x5	36x4	36x4d	C
Mack....AB D.R.	2	3750	4 x5	36x4	36x4d	D
Mack....AB D.R.	2½	3850	4 x5	36x4	36x4d	D
Mack...AB Chain	2½	3400	4 x5	36x4	36x4d	C
Mack...AC Chain	3½	4950	5 x6	36x5	40x5d	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4 x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Mapleleaf.....**	1½	3000	3¾x5½	34x5n	36x6n	W
Mapleleaf...AA**	2	3600	4 x5¼	36x4	36x7	W
Mapleleaf...BB**	3	4050	4¼x5½	36x4	36x4d	W
Mapleleaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Mapleleaf...DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x5	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4¼x5½	34x4	36x7	W
Master.....DD	2½	3190	4¼x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x5d	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	5	3390	4¼x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3½x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1¼	2030	3¾x5	34x3½	36x5	W
Menominee....H	1½	2175	4 x5	36x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	36x5	36x10	W
Menominee....J-3	5	4250	4¾x6	36x6	40x12	W
Meline.....10	1½	1985	3½x5	31x5n	36x6n	I
3Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	30x3½	36x6k	W
Moreland.....EX	2	2850	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	1½-5	4600	4¾x6	36x6	40x6	W
Nash.....2018	1-1½	1535	3¾x5¼	34x3k	34x4k	I
Nash.....3018	2-2½	2150	3¾x5¼	34x4k	34x7k	I
Nash.....Quad.	2-2½	2750	4¼x5½	36x5k	36x5k	I
Nash..3018, LWB	2-2½	2200	3¾x5¼	34x4k	34x7k	I
Nash Quad. LWB	2-2½	2800	4¼x5½	36x5k	36x5k	I
Nash.....5018	2½	2250	3¾x5¼	34x4k	34x7k	I
4Nelson.....G2	1½	....	4½x5¼	36x3½	30x6	W
4Nelson.....G3	2½	....	4½x5¼	34x4	36x7	W
4Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
4Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5½	36x4k	36x7k	W
Netco H1	2 2	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3029	4½x5½	36x4k	36x7k	W
Noble.....A21	1¼	1840	3½x5¼	34x5	34x5	W
Noble.....B31	1½ 2	2480	3¾x5¼	36x4	36x7	W
Noble.....D51	2½-3	2950	4¼x5½	36x4	36x8	W
Noble.....E71	3½-5	3800	4½x6	36x5	36x10	W
Noble B30	1½	....	3¾x5¼	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4¼x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern...W	1½	2700	4¼x5¼	34x4	36x6	W
Northwestern. WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E.Spec	1½	2285	3¾x5¼	34x3½	31x5	W
Ogden.....A2	1	....	3½x5	31x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	36x3½	36x5	W
Ogden .....E	2½	....	4¼x5¼	36x4	36x8	W
Old History...W	1	1775	3¾x5	36x3½k	36x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4¼x6	34x4	36x4d	W
Old Reliable...C	3½	4250	4¼x6	36x5	36x5d	W
Old Reliable....D	5	5250	4¼x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¼x6½	36x6	40x7d	C
*Oldsmobile Econ	1	$1095	3½x5¼	35x5n	35x5n	I
Olympic.....A	2½	3200	4¼x5½	36x4	30x8	W
Oneida.....B9	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	2½	3200	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	3250	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	3400	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3850	4 x5⅛	38x7n	38x7n	B
Oshkosh.....BB	2½	4000	4 x5⅛	38x7n	38x7n	B
*Overland.....4	½	450	3½x4	30x3½n	30x3½n	B
Packard.....EC	2-3	3100	4½x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4½x5½	36x6n	40x8n	W
Packard.....ED	3½-4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige.....54-20	2½	2420	4¼x5½	34x4	34x8	W
Paige.....51-19	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot... Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot...Lincoln	2	2050	4 x5¼	34x3½	34x5	W
Patriot .Washgt'n	3	2900	4½x5½	36x4	36x7	W
Pierce-Arrow.....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow.....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow.....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3½x5	36x4	36x6	..
Pittsburgher.....	3	3800	4½x5¼	36x5k	36x8	W
Power.....F	2	3150	3¾x5¼	36x5	36x7	W
Power.....C	3½	4250	4½x5½	36x5	40x10	W
*Rainier.....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4½x5¼	34x4	34x6	W
Rainier.....R-20	2½-3	....	4½x5¼	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	36x6	40x6d	W
Ranger..TK-20-2	1½	2450	3¾x5	36x6n	38x7n	W
*Reo.....F	¾-1½	1245	3½x4½	34x4½n	34x4½n	B
Reliance.....10A	1½	2400	4 x5¼	36x3½	36x5	I
Reliance.....20B	2½	3100	4½x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3¾x5	34x3	34x4	I
Republic..10 Exp	1	1695	3¾x5	35x5n	34x5n	I
Republic.....11X	1½	1795	3¾x5	34x3½	34x6	I
Republic.....19	2½	2195	4½x5½	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rowe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rowe....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rowe....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rowe....G.P.W.	3	5250	3½x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4¼x6	36x5	36x6d	W
Rowe.....F. W.	5	5500	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	I
Samson.....15	¾	....	4-3½x4	32x4n	32x4n	B
Samson.....25	1¾	....	4-3½x5½	35x5n	35x5n	B
Sanford.....W-15	1½	2150b	3¾x5	36x3½k	36x5k	.
Sanford.....25	2½	....	4⅛x5¼	36x4	36x4d	W
Sanford.....35	3½	....	4½x5½	36x5	36x5d	W
Sanford.....50	5	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ton	3	3800	4¼x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5¼	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1¼-2½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1¼-2½	3350	4¼x5¼	34x5n	38x7n	W
Selden.....50	2½-3½	3250	4¼x5¼	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4¼x6	36x6	40x12	W
Seneca.....M	½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3¼x4½	32x4½n	32x4½n	B
*Service.....15	1¼	....	3½x5	34x4½n	35x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4¼x5½	35x5n	38x7n	W
Service.....52	3	....	4¼x5½	36x4	36x8	W
Service.....72	3½	....	4¼x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	$1950	3¾x5	34x5n	36x6n	W
Signal.....H	1½	2450	4½x5¼	34x4	36x6	W
Signal.....J	2½	2875	4½x5¼	34x4	36x8	W
Signal.....M	3½	3675	4½x5½	36x5	40x5d	W
Signal.....R	5	4400	4¾x6	36x6	40x6d	W
Southern.....10	1	2090	3¾x5	34x3½	34x4	W
Southern.....15	1½	2590	3¾x5⅛	36x6n	34x4	W
Southern.....20	2	2990	4¾x5¼	36x6n	40x8k	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4¼x5¼	36x4k	36x7k	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x10	W
Standard.....S-K	5-7	4400	4¾x6	36x6	40x12	W
*Star.....	½	610b	3½x4¼	30x3½n	30x3½n	B
Sterling.....1½	1½	2385	4 x5¼	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5¾	36x4k	36x6k	W
Sterling.....2½	2½	3290	4⅜x5¾	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6¾	36x5k	40x5dk	W
Sterling.....S-W	5	4950	5 x6¼	36x6	40x6d	W
Sterling.....S-C	5	5500	5 x6¼	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6¼	36x6	40x7d	C
*Stewart.....14	1¼	1245	3½x5½	34x4½n	34x4½n	I
Stewart.....15	1¼-1½	1445	3½x5½	35x5n	35x5n	I
Stewart.....9	1½-2	1780	3¾x5	34x3½	34x5	I
Stewart.....7	2-2½	2190	4¼x5¼	34x4	34x7	I
Stewart.....7-X	2½-3	2390	4¼x5½	34x4	34x7	I
Stewart.....10	3½-4	3190	4½x5½	36x5	36x5d	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x5d	I
*Stewart.....	1¼	1245	4-3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1240	3½x5	34x4½n	34x4½n	W
Stoughten.....A	1	1790	3¾x5¼	34x5	34x5	W
Stoughten.....B	1½	2150	3¾x5¼	36x3½	36x5	W
Stoughten.....D	2	2490	4 x5½	36x4	36x7	W
Stoughten.....F	3	3150	4¼x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4¼x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Thomart.....	1¼	1795a	4 x5¼	34x5	34x5	C
Tiffin.....GW	1½	2100	4¼x5¼	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5¼	36x4	36x3½d	W
Tiffin.....PW	3½	3600	4½x5½	36x5	40x5d	W
Tiffin.....F50	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....F60	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4¼x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000a	4½x5¼	35x5n	38x7n	W
Tower.....H	2½	2475a	4½x5¼	36x4	36x7	W
Tower.....G	3½	3475a	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3¾x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5½	34x3½k	34x4k	I
Transport.....35	2	1885	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5¼	36x4k	36x8k	I
Transport.....60	3½	2585	4¼x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Trayler.....B	1½	2390	3¾x5⅛	34x3½	34x5	W
Trayler.....C	2-2½	2850	4 x5½	36x4	36x7	W
Traylor.....D	3-3½	3300	4¼x5½	36x4	36x8k	W
Trayler.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3¼x5	34x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3¾x5¼	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5¼	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5¾	36x4k	36x7k	I
Twin City...B.W.	2	2750	4 x5½	36x6	40x8	I
Twin City...A.W.	3½	3950	4¼x6	36x5	40x5d	W
5Twin City.....B	3½	....	5½x6	36x6	36x6	I
5Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4¼x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4¼x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4¾x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4¾x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
Union.....FW	2½	3490	4 x6	36x5k	36x8k	D
Union.....HW	4	4650	4½x6	36x6	40x12	D
United.....A	1½	2445	3¾x5¼	36x3½k	34x5k	W
United.....B	2½	3150	4¼x5½	36x4k	36x7k	W
United.....C	3½	3975	4¾x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States .U	1	1875	3⅝x5½	34x5n	34x5n	B
UnitedStates,NW	1½	2225	3¾x5	36x5	36x3½	W
United States...N	1½	1975	3¾x5	36x3½k	36x5k	I
United States...R	3	3075	4 x5¼	36x4	36x4d	W
United States...S	4	3875	4½x5½	36x5	36x5d	W
United States...T	6	4850	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Veteran.....M**	1½	2699	3¾x5¼	35x5n	35x5n	W
Veteran.....P**	2	3699	4¼x5½	36x4	36x7	W
Veteran.....R**	3	4200	4¼x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	½	1050	3½x4½	31x4n	31x4n	W
Vim.....30	½	1175	3½x4½	32x4½	32x4½	W
Vim.....31	1	1975	3¾x5⅛	35x5n	35x5n	W
Vim.....22	2	3150	3¾x5½	36x4	36x6	W
Vim.....23	3	3950	4¼x5½	36x5	36x5 1	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express, truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Walker-JohnsonA	2	$2250	3¾x5	34x3½	34x6	W
Walker-JohnsonB	3	2750	4¼x5½	36x4	36x8	W
Walter.....S	5	4850	4½x6¼	36x6	40x6d	W
*Watson.....C	1	1465a	3⅝x5⅛	35x5n	35x5n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2550	4⅛x5¼	36x3½k	36x5k	W
Western....L1½	1½	2550	3¾x5	36x3½k	36x5k	W
Western....W2½	2½	3250	4⅛x5¼	36x4	36x7	W
Western....L2½	2½	3250	4½x6	36x4	36x7	W
Western....W3½	3½	4250	4½x6	36x5	40x5d	W
*White.....15	¾	2400	3¾x5⅛	34x5n	34x5n	B
White.....20	2	3250	3¾x5⅛	36x4k	36x7k	D
White.....40	3½	4200	3¾x5¾	36x5	40x5d	D
White.....45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick....E	1	1225	3¾x5	34x5n	34x5n	W
White Hick....H	1½	1375	3¾x5	36x3½	36x5	W
White Hick....K	2½	1675	4⅛x5¼	36x4	36x5	W
Wichita.....K	1	1875	3¾x5¼	36x3½	36x4k	W
Wichita.....M	2	$2400	3¾x5¼	36x3½k	36x6k	W
Wichita.....RX	3	3200	4⅜x5¾	36x4k	36x8k	W
Wichita.....O	4	3500	4½x6¼	36x5k	36x5k	W
Wilcox.....AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4¼x5	36x4k	36x3½dk	W
Wilcox.....E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox.....F	5	$4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¾x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4⅛x5¼	36x4	36x7	W
Wilson.....G	3½	3685	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin....A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin....C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin....D	3½	3000	4¾x5¾	36x6n	40x8	W
Wisconsin....E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin....F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will.....N	1½	2450	3¾x5	36x3½k	36x5k	W
Witt-Will.....P	2½	2900	4¼x5¼	36x3½k	36x7k	W
Wolverine.....J	1	2125	3½x5	34x3	34x4	I
Wolverine.....J	1½	2375	3¾x5	34x3½	34x5	I
Wolverine.....J	2	2640	3¾x5	34x4	34x7	I
Wolverine.....J	2½	3425	4¼x5¼	36x5	36x10	I
Wolverine.....L	3½	4100	4½x5½	36x5	36x10	I

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r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl.
d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	LeR.	4-3⅛x4½	Gas.	1
Allis-Chalm...	15-25	1185	4	Midw.	4-4¼x5¼	Gas.	3
Allis-Chalm...	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm.	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork...2-G	14-28	1695	4	Own	4-4¾x6	GorK	3
Allwork.....C	14-28	1395	4	Own	4-5 x6	GorK	3
ARO..1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T,...	15-30	1900	4	Clim.	4-5 x6½	G,K	4
Aultman-T,...	22-45	2800	4	Own	4-5½x8	G,K	6
Aultman-T,...	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Automot. B-3.	12-24	1250	4	Herc.	4-4 x5½	Gas.	2-3
Avery,SR.Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery..Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4½x6	G,K,D	3-4
§Avery.....	....	....	*	Own	4-4x5½	G,K,D	3
Avery.....	12-25	....	4	Own	2-6½x7	G,K,D	3-4
Avery.....	14-28	....	4	Own	4-4⅝	G,K,D	3-4
Avery.....	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7¾x8	G,K,D	8-10
Bates Mule.H	15-25	....	4	Midw	4-4½x5¼	Gas.	3
Bates Mule..F	18-25	....	*2	Midw	4-4⅛x5¼	Gas.	3
‡Bates MuleG	25-35	....	*2	Midw	4-4½x6	Gas.	..
Beeman,....G	2-4	240	4	Own	1-3½x4½	Gas.	....
Best.....	18-30	3100	*2	Own	4-4¾x6½	G,K,D	4
Best.....	60	5450	*2	Own	4-6½x8½	G,K,D	8-9
Boring.....	5-10	395	4	LeR.	4-3½x4½	G	..
Boring....1921	.....	1850	3	Wauk	4-4⅜x5¾	GorK	2
Burn-Oil, 1922	15-30	1395	4	Own	2-6¾x7	Ker.	3-4
Capital.....	15-30	1000	2	Own	4-4¾x6	Gas.	3
Case.....	12-20	1050	4	Own	4-4⅛x5	G,K,D	3
Case.....	12-20	....	....	....	4-4½x5	.....	2
Case.....	15-27	1320	4	Own	4-4½x6	GorK	3-4
Case.....	22-40	2550	4	Own	4-5½x6¾	GorK	4-5
Case.....	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar .5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Caterpillar T35	15-25	....	2	Own	4-4 x5½	Gas.	3
Centaur.....	5-2½	345	2	N Way	2-4½x4½	GorK	1
Chicago....40	40	2500	4	Own	4-4½x6	Gas.	4
Cletrac.....F	9-16	595	*2	Own	4-3¼x4¼	G,K,D	2
Cletrac.....W	12-20	1345	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom,	4-4¾x6	Gas.	3
Depue.....A	20-30	2500	4	Buda	4-4½x6	Gas.	4
Dill.....D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dill.....R.W.	20	2980	4	Midw.	4-4½x6	Gas.	3
Do-It-All....A	3-6	495	..	Own	1-4½x5	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B.....AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol.....D	9-18	1525	4	Lyc.	4-3½x5	Gas.	2
Farm Horse.B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Farquhar.....	15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar.....	18-35	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar.....	25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch...4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	$ 395	4	Own	4-4x5	G,K	2
Franklin....G	18-30	4000	*2	Clim.	4-5 x6½	G or K	3-4
Franklin....C	18-30	3350	*2	Clim.	4-5 x6½	G or K	3-4
Franklin...G2	18-30	4350	2	Clim.	4-5 x6½	G or K	3-4
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt,..A	18-36	2150	4	Wauk.	4-4¾x6¾	G or K	4
Gray.....	20	1975	3	Wauk.	4-4½x6¼	Gas.	4
Gray.....	44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. Western St	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr...20	20	765	4	Own	2-5¼x6½	K,D.	2
Hart-Parr...30	30	895	4	Own	2-6½x7	K,D.	3
‡Hart-Parr....	....	1695	4	Own	6½x7	K,D.	..
Heider.....D	9-16	870	4	Wauk	4-4¼x5¾	G,K	2
Heider.....C	12-20	995	4	Wauk	4-4½x6¾	G,K	3
Heider...Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4.	12-25	985	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4	15-30	1885	4	Midw.	4-4½x6	Gas	3
Illinois,.....C	15-30	....	4	Clim.	4-5 x6½	G,K	4
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International .	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5¼x8	G,K,D	4
J-T.....N	20-40	....	*2	Clim.	4-5x6½	G,K,D	3-4
Kinkade Garden Tractor	1½	190	1	Own	1-3 x3	Gas.	....
La Crosse....	12-24	985	2	Own	2-6 x7	G,K	3
Lauson.....S	12-25	1295	4	Midw	4-4½x5¼	Gas.	3
Lauson.....21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lauson Road	15-30	2000	4	Beav.	4-4¾x6	K	....
Leader.....B	12-18	685	4	Own	2-6 x6¼	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn.....H4J	40-	4500	*	Cont.	4-4½x5½	Gas	4
Linn.....W	60	5000	*	Wauk	4-5 x6¼	Gas	6
Little Giant,.B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant,.A	26-35	3300	4	Own	4-5½x6	K	6
Lombard.1922	35-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2⅝x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Med.D	22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD	35-70	3850	4	Own	4-7¼x9	G or K	8-9
Mohawk .1922	8-16	650	2	Light	4-3¼x4½	K or G	1-2
Moline Univ D	9-18	....	2	Own	4-3½x5	Gas.	2-3
Moline Orch..	9-18	....	2	Own	4-3½x5	Gas.	2-3
Motor Macult.	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	425	4	Own	2-3¾x4	Gas.	1
Nichols-Shep.	20-42	2650	4	Own	8 x10	G or K	3-6
Nichols Shep.	25-50	3000	4	Own	9 x12	G or K	4-7
Nilson Senior..	20-40	1975	5	Wauk	4-5 x6¼	G,K	4
Oil Pull.....K	12-20	....	4	Own	2-6 x8	K,D	3
Oil Pull.....H	16-30	....	4	Own	2-7 x8½	K,D	4
Oil Pull....G	20-40	....	4	Own	2-8 x10	K,D	5-6
Oil Pull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
Oldsmar GarK	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Peoria.....L	12-25	1600	4	Clim.	4-5 x6½	G,K	3
Pioneer.....G	18-36	1750	4	Own	4-5½x6	G,K,D	4
Pioneer.....C	40-75	3550	4	Own	4-7 x8	Gas.	10
Plowman....A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable.....	10-20	390	4	Own	2-6 x7	Ker.	2
Rex.....	12-25	1600	4	Wauk	4-4¼x5¾	G or K	3
Russell.....	12-24	1500	4	Own	4-4¼x5¾	G or K	2-3
Russell.....	15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson....M	....	445	4	Own	4-4 x5½	G,K	2
Sandusky,...J	10-20	1250	4	Own	4-4¼x5½	G,K,D	2
Sandusky...E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
Shelby.....D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby.....C	9-18	....	4	Wauk	4-3¾x5¾	G or K	2
Steady Pull..	12-24	1485	4	Own	4-4 x5	Gas.	3
Tioga.....3	18-32	....	4	Wisc.	4-4½x6	Gas.	3-4
Toro Cultivator	6	750	3	LeR	4-3½x4½	Gas.	2
ToroTractor'22	6-10	495	3	LeR	4-3½x4½	Gas.	2
Townsend.....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend.....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend.....	25-50	2500	2	Own	4-8½x10	Ker.	4-8
Traction Motor	40-50	....	4	....	8-3½x5	Gas.	4-5
Traylor....TB	6-12	500	4	LeR.	4-3⅛x4½	Gas.	1-2
Trundaar....10	25-40	3750	*2	Wauk	4-5 x6¼	G or K	4
Twin City.....	12-20	1200	4	Own	4-4¼x6	G,K	3
Twin City.....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City.....	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle Sam C20	12-20	1295	4	Weid.	4-4 x5½	G	2-3
Uncle Sam B19	20-30	1985	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam D21	20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utilitor....501	2¼-4	295	4	Own	1-3½x4½	G	1
Utilitor...501A	2⅓-4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	†995	4	Own	4-4¼x5¾	G,K	3
Waterloo ...N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore 21-22	12-25	1185	4	Wauk	4-4 x5¾	G,K	3
Whitney ....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin...E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin...F	20-40	2050	4	Wauk	4-5 x6¼	G or K	4
Wisconsin...H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba....12-20	12-20	2400	*2	Wisc.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4¼x6	G,K,D	..
Yuba....20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba.....	25-40	4750	*2	Yuba	4-5½x7	D	..
Zelle.....	12-25	....	4	Buda	4-4¼x5½	G or K	3

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. Clim.—Climax. Cont.—Continental. Dom.—Domas. Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. T.C.—Twin City. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor.

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Specifications of Current Passenger Car Models

NAME AND MODEL	Engine Make	Cylinders, Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Ace.....F	G-B	4-3½x5	114	32x4	$1295	$1295	....	....	$2295
Ace.....L	H-S	6-3½x5	117	32x4	2260	2260	....	....	3680
Ace.....C	Cont.	6-3⅝x5½	123	33x4½	2975	2975	....	....	4500
Ambassador.....R	Cont.	6-3⅝x5½	136	33x5	....	b4500	$4500	....	6500
American.....C	H-S.	6-3¼x5	127	33x4½	b1995	1850	1925	....	2695
Anderson.....Series 40	Cont.	6-3¼x4½	120	33x4	2195	1650	1795	$2450	2550
Apperson.....8-21-S	Own.	8-3½x5	130	34x4½	....	2620	2645	3625	3695
Auburn.....6-51	Cont.	6-3⅝x4½	121	32x4	1575	1575	1615	2275	2395
Auburn.....6-51	Cont.	6-3⅝x4½	121	32x4½	....	n2195	....	....	....
Bay State.....	Cont.	6-3¼x4½	121	32x4	1800	1800	....	2400	2500
Bell.....4-32	H-S.	4-3½x5	114	31x4	1095	1095	....	....	....
Bell.....6-50	H-S.	6-3½x5	124	32x4	1545	1545	....	....	....
Biddle.....B1 & B5	Buda.	4-3⅞x5½	121	32x4	2950	b2950	....	3950	3950
Brewster.....91	Own.	4-4 x5½	125	32x4½	5000	5000	....	....	7000
Buick..1922-34-35-36-37	Own.	4-3⅝x4¾	109	31x4	895	935	....	1295	1395
Buick.....1922-44-5-6-7	Own.	6-3⅜x4½	118	33x4t	1365	1395	....	1885	2165
Buick.....1922-48-9-50	Own.	6-3⅝x4½	124	34x4½	n1785v	n1785v	1585	2075	2375
Cadillac.....61	Own.	8-3½x5½	132	33x5	3100	3150	3150	d3875	4100
Case.....X	Cont.	6-3⅜x4½	122	32x4½	1750	1790	....	2550	2690
Case.....W	Cont.	6-3⅝x5½	129	34x4½	....	2200	2250	2850	3250
Chalmers.....1922	Own.	6-3¼x4½	117	32x4	1345	1395	1495	1995	2295
Chalmers.....1922	Own.	6-3¼x4½	122	32x4	....	....	1495	....	....
Chandler.....Six	Own.	6-3½x5	123	33x4	1595	1595	1695	2295	2395
Chevrolet.....490	Own.	4-3½x4	102	30x3½	525	525	....	850	875
								k720	
Chevrolet.....FB	Own.	4-3⅛x5¼	110	32x4	975	975	....	1575	1575
Cleveland.....41	Own.	6-3 x4½	112	32x4	1175	1195	....	1550	1595
Cole.....890	Nort.	8-3½x4½	127¾	33x5	2485	b2485	2485	3185	3685
Columbia.....Challenger	Rut.	6-3½x5	115	32x4	....	1195	....	1995	1995
Columbia.....DeLuxe	Cont.	6-3½x4½	115	32x4	1475	1475	....	2295	2350
Columbia.....Light Six	Cont.	6-3½x4¼	115	31x4	995	985	....	....	1395
Comet.....C-53	Cont.	6-3½x5½	125	33x4½	....	1985	2085	....	2985
Crawford.....22-6-60	Cont.	6-3½x5½	122½	32x4	3000	3000	3000	....	4500
Daniels.....D-19	Own.	8-3½x5½	132	33x5	a4350	b4350	4350	5250	6000
Davis.....71	Cont.	6-3½x4¼	114	31x4	....	1295	....	....	....
Davis.....61-67	Cont.	6-3⅝x4½	120	32x4	1595	1595	b1695	2095	2195
Dixie Flyer.....H-S-70	H-S.	4-3½x5	112	32x4	1175	1175	b1295	1545	1595
Dodge Brothers.....	Own.	4-3½x4½	114	32x4	850	880	....	1280	1440
								980h	
Durrie.....6-90	Own.	6-4 x5	132	33x5	....	b3970	3950	4985b	5750
Dort.....19-14	D-Ly.	4-3½x5	108	31x4	885	885	....	1315	1445
								1065k	1115k
Driggs.....	Own.	4-2⅝x4½	104	30x3½	1275	1275	....	....	1975
Duesenberg...Straight 8	Own.	8-2¾x5	134	33x5	6500	6500	6750	7800	7800
Du Pont.....A	Own.	4-3⅛x5½	124	32x4½	3000	3200	....	3800	4000
Durant.....A-22	Cont.	4-3½x4¼	109	31x4	n890	890	....	1365	1365
Durant.....B-22	Anst.	6-3¼x4½	123½	32x4½	1600	1650	....	2250	2400
Earl.....40	Own.	4-3⅞x5½	112	32x4	1485	1095	950u	b1395k	1795
Elcar.....K-4	Lyc.	4-3½x5	118	33x4	1095	1095	u1095	1345	....
Elcar.....7-R	Cont.	6-3¼x4½	118	33x4	1395	1395	n1395	2065	2165
Elgin.....K-1	Falls.	6-3½x4¼	118	33x4	1345	1295	b1345	2195	2195
Essex.....	Own.	4-3⅝x5	108½	32x4	....	1095	....	1195k	1895
									1295k
Ford.....T	Own.	4-3¾x4	100	30x3½	r319	s348	u285	580	645
Franklin.....9-B	Own	6-3¼x4	115	32x4	1900	1950	u1750	2750	2850
Gardner.....T-R & G	Lyc.	4-3½x5	112	32x4	895	895	....	....	1595
Grant.....	Own.	6-3½x4½	116	32x4	1385	1385	....	1895	1945
Gray.....	Own.	4-3⅝x4	100	30x3½	....	490	....	....	760
H.C.S.....Series 3	Weld.	4-3⅝x5½	120	32x4½	2400	2400	....	2850	3150
Halladay.....4	Own.	4-3½x5	115	32x4	1095	1095	....	1900	2085
Halladay.....6	Own.	6-3½x5	115	32x4	1595	1595	....	2205	2395
Handley-Knight.....	Own.	4-4½x4½	125	32x4½	....	....	2650	3450	3450
Hanson.....30	Cont.	6-3½x4¼	112	31x4	....	995	....	....	....
Hanson Six.....60	Cont.	6-3½x4½	121	32x4	1595	1595	1795	b2475	2585
Hatfield.....A-42	H-S.	4-3½x5	115	32x4	....	1315	b1315	1950	1950
Haynes.....75	Own.	6-3½x5½	132	34x4½	2395	b2395	2395	....	3395
Haynes.....55	Own.	6-3½x5	121	32x4½	1645	1595	....	2295	2595
Haynes.....48	Own.	12-2½x5	132	33x5	2895	3595	2895	....	3895
Holmes.....Series 4	Own.	6-3½x4¼	126	34x4½	....	b2500	2500	b3300	3600
Hudson.....Super 6	Own.	6-3½x5	126	34x4½	....	b1645	1695	2570	2650
									1745k
Huffman.....	Cont.	6-3⅜x4½	120	32x4	1395	1395	....	....	2295
Hupmobile.....Series R	Own.	4-3¼x5½	112	32x4	1250	1250	....	1835	1935
Jackson.....638	Cont.	6-3½x4½	121	32x4½	....	1485	b1685	2085	2985
Jewett.....Six	Own.	6-3¼x5	112	31x4	1065	1065	....	1395	1395
Jordan.....MX	Own.	6-3⅛x4¾	120	32x4	1895	1795	....	2785	2785
Kenworthy.....8-90	Own.	8-3 x5¼	130	32x4½	5000	5000	5250	6000	6000
King.....K	Own.	8-3 x5	120	32x4½	1795	1795	b1795	2400	2550
Kissel.....45	Own.	6-3⅛x5½	124	32x4½	n2385	1885	2385	b2975	3075
Kline Kar.....6-55-K	Cont.	6-3⅜x4½	121	33x4	1690	1690	1690	2750	2890
LaFayette.....	Own.	8-3¼x5¼	132	33x5	3985	b4090	4090	5500	5500
Leach.....999	Own.	6-3¾x5¼	134	32x4½	5500	5500	5500	5500	5500
Lexington.....22	Anst.	6-3¼x4½	123	32x4½	....	1745	....	....	....
Lexington.....T-22	Anst.	6-3¼x4½	128	32x4½	....	....	2285	....	3350
Lexington.....ST-22	Anst.	6-3¼x4½	122	32x4	....	2100	....	....	....
Liberty.....10-D	Own.	6-3½x5	117	32x4	1575	1395	1575n	2085	2245

NAME AND MODEL	Engine Make	Cylinders, Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Lincoln.....	Own.	8-3½x5	130	33x5	....	....	....	$3900	....
Lincoln.....	Own.	8-3½x5	136	33x5	$3800	b3800	$3800	....	$4900
Locomobile.....48	Own.	6-4½x5½	142	35x5	....	b7600	7600	10500	11000
Malbohm.....B	Own.	6-3½x4½	116	32x4	1395	1395	b1495	2165	2165
Marmon.....34	Own.	6-3¾x5½	136	32x4½	3385	b3185	3185	3985	4385
Maxwell.....	Own.	4-3½x4½	109	31x4	885	885	....	1385	1485
McFarlan.....1922	Own.	6-4½x6	140	33x5	6300	b6300	6300	7500	7500
Mercer.....Series 5	Own.	4-3¾x6¾	132	32x4½	3950	b3950	c3950	4850	5250
Merit.....	Cont.	6-3¼x4½	119	32x4	1895	1895	....	....	....
Mitchell.....F-50	Own.	6-3½x5	120	33x4	a1490	1490	b1690	2050	2275
Mitchell.....F-50	Own.	6-3½x5	127	32x4½	....	....	1690	....	....
Monroe.....1922-S-9	Own.	4-3¼x4½	115	32x3½	950	950	....	....	....
Moon.....6-40	Cont.	6-3½x4½	115	31x4	....	1295	....	....	1695
Moon.....6-50	Cont.	6-3½x4½	118	32x4	1785	1785	2285	2785	2785
Nash.....490-6-07	Own.	6-3¼x5	121	33x4	1360	1390	b1545	....	....
Nash.....692-94-95	Own.	6-3¼x5	127	34x4½	....	....	1540	2090	2390
Nash Four.....41-4	Own.	4-3½x5	112	33x4	965	985	....	1485	1645
								1295k	1350k
National.....BB	Own.	6-3½x5½	130	32x4½	a2475	b2475	2375	3725	b3250
Noma.....3C	Cont.	6-3¼x4½	128	32x4½	2000	b2100	c2200	....	3200
Noma.....1D	Bea.	6-3½x5¼	128	32x4½	3000	b3100	c3200	....	5500
Norwalk.....430-KS	Lyc.	4-3½x5	116	32x3½	....	1035	....	....	....
Oakland.....6-44	Own.	6-2¾x4¾	115	32x4	1120	1145	b1265	1685	1785
								1285k	
Ogren.....6 T De Luxe	Cont.	6-3⅝x5½	134	33x5	b3750	3750	3850	4500	4900
Oldsmobile.....43-A	Own.	4-3½x5¼	115	32x4	1145	1145	b1265	1645	1795
Oldsmobile.....46	Own.	8-2½x4¾	122	33x4½	....	b1735	1735	....	2635
Oldsmobile.....47	Own.	8-2½x4½	115	32x4	1595	1595	b1595	2145	2295
Overland.....4	Own.	4-3⅝x4	100	30x3½	550	550	...	850	895
Packard.....Single-Six	Own.	6-3½x5	126	33x4½	2485	2485	u2250	3175	3275
Packard.....Single-Six	Own.	6-3½x5	133	33x4½	....	u2350	2685	....	3525
Packard.....Twin Six	Own.	12-3 x5	136	35x5	3850	3850	3850	5240	5400
Paige.....6-44	Own.	6-3½x5	119	32x4	1465	1465	u1290	1995	2245
Paige.....6-66	Cont.	6-3½x5	131	33x4½	a2495	a2245	2105	3100	3155
Paterson.....22-6-52	Cont.	6-3⅜x4½	120	32x4½	....	1550	1585	2595	2585
Peerless.....56-S-7	Own.	8-3½x5	125	34x4½	....	b2790	2790	3500	3790
Pierce-Arrow.....	Own.	6-4 x5½	138	33x5	5250	b5250	5250	6800	7000
Pilot.....6-50	H-S.	6-3½x5	126	32x4½	2050	2000	2050	2950	3000
Premier.....6-D	Own.	6-3⅜x5½	126¾	33x5	3150	b3100	3250	4300	5100
Premocar.....6-40-A	Falls.	6-3½x4¼	117	32x4	1095	1095	...	1750	1825
R & V Knight.....R	Own.	4-3¾x5	116	32x4	....	1665	....	2285	2475
R & V Knight.....J	Own.	6-3½x4½	127	32x4½	2475	b2475	2475	3015	3105
Reo Series...B-T6 & U6	Own.	6-3⅛x5	120	33x4	1595	....	1595	2355	2425
ReVere.....C	Dues.	4-4½x6	131	32x4½	3200	3200	3200	....	4000
Rickenbacker.....A	Own.	6-3½x4¾	117	32x4	....	1485	....	1885	1985
Reamer.....6-54-E	Cont.	6-3½x5½	128	32x4½	2850	b2595	2785	3850	3850
Reamer.....4-75-E	Dues.	4-4½x6	128	32x4½	3985	b3585n	....	....	b4650
Rolls-Royce.....	Own.	6-4½x4¾	143½	33x5	....	10,900	....	....	....
Saxon.....125	Own.	4-3½x5	112	32x4	1195	1195	....	1795	1795
Sayers Six.....DP	Cont.	6-3¼x4½	118	33x4	1695	1695	....	2795	2795
Seneca.....L-2 & O-2	Lyc.	4-3½x5	108	30x3½	875	875	....	....	....
Seneca.....50 & 51	Lyc.	4-3½x5	112	31x4	1095	1095	....	....	....
Sperling.....A	Supr.	4-3½x5	114	32x4	980	980	....	1685	1985
Standard.....98	Own.	8-3½x5	127	34x4½	2150	b2500	2500	2750	3200
Stanley.....	Own.	2-4 x5	130	32x4½	2700	2700	2700	3775	3950
Stanwood Six.....	Cont.	6-3¼x4½	118	33x4	1765	1765	....	2750	....
Star.....	Cont.	4-3⅞x4¼	102	30x3½	r319	s348	u285	580	645
Stearns-Knight....SKL4	Own.	4-3¾x5½	125	34x4½	2250	2250	2450	3150	3450
Stearns-Knight.....6	Own.	6-3⅝x5	130	34x4½	2700	2700	2850	3350	3700
Stephens.....90	Own.	6-3½x4½	122	33x4½	1575	b1595	c1625	2450	2550
Stevens-Duryea.....E	Own.	6-4½x5½	138	35x5	7250	b6900	6800	u5600	b8900
Studebaker....Light Six	Own.	6-3½x4½	112	32x4	1045	1045	....	1375	1750
Studebaker...Special Six	Own.	6-3½x5	119	32x4	1425	1475	b1475	2150	2350
Studebaker.....Big Six	Own.	6-3⅞x5	126	33x4½	....	n1985	1785	2500	2700
Stutz.....	Own.	4-4½x6	130	32x4½	2950	b2990	c2990	3990	4450
Templar.....A-445	Own.	4-3⅜x5½	118	32x4	2025	2125	b2175	2785	2785
Tulsa.....E-1-2-3	H-S.	4-3½x5	117	33x4	1175	1175	....	....	....
Velie.....48	Cont.	6-3¼x4½	115	32x4	1585	1585	b1800	2485	2485
Velie.....34	Falls.	6-3½x4½	112	32x3½	1235	1235	....	1750	2085
Velie.....58	Own.	6-3½x4¼	115	32x4	1395	1395	....	2185	2185
Washington.....C	Cont.	6-3⅜x4½	120	32x4	....	1785	....	....	2285
Westcott.....C-48	Cont.	6-3½x5¼	125	32x4½	....	....	1890	....	2890
Westcott.....A-44	Cont.	6-3¼x4½	120	32x4	....	1690	n1890	....	2690
Wills Sainte Claire..A-68	Own.	8-3¼x4	121	32x4½	2475	2475	....	3275	3475
Willys-Knight.....20	Own.	4-3½x4½	118	32x4	1350	1375	....	1875	2095
Winton.....40	Own.	6-3½x5½	132	35x5	3400	n3600	3400	b4450	4560

a—3-passenger. b—4-passenger. c—6-passenger. n—Sport. h—All Metal Type. k—Soft Top Type. u—Chassis Price. r—Price without starter and demountable rims. Price with starter and demountable rims $414. s—Price without starter and demountable rims. Price with starter and demountable rims $443. t—Model 47—34x4½ Tires. V—Tire Sizes 32x4½.

Engine Make: Anst—Ansted. Bea—Beaver. Cont—Continental. Curt—Curtis. D.Ly—Dort Lycoming. G-B—Grey Beal. H-S—Herscaell-Spillman. Lyc—Lycoming. Nort—Northway. Roch—Rochester. Rut—Rutenberg. Supr—Supreme. Weid—Weidely. Wisc—Wisconsin.

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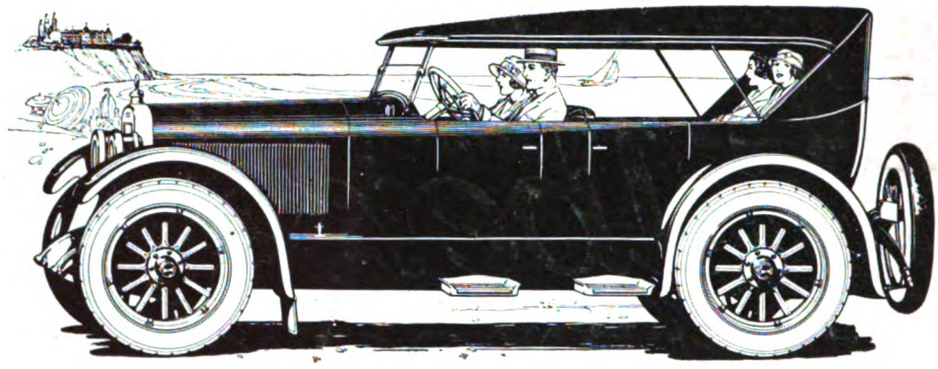
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MOTOR WORLD

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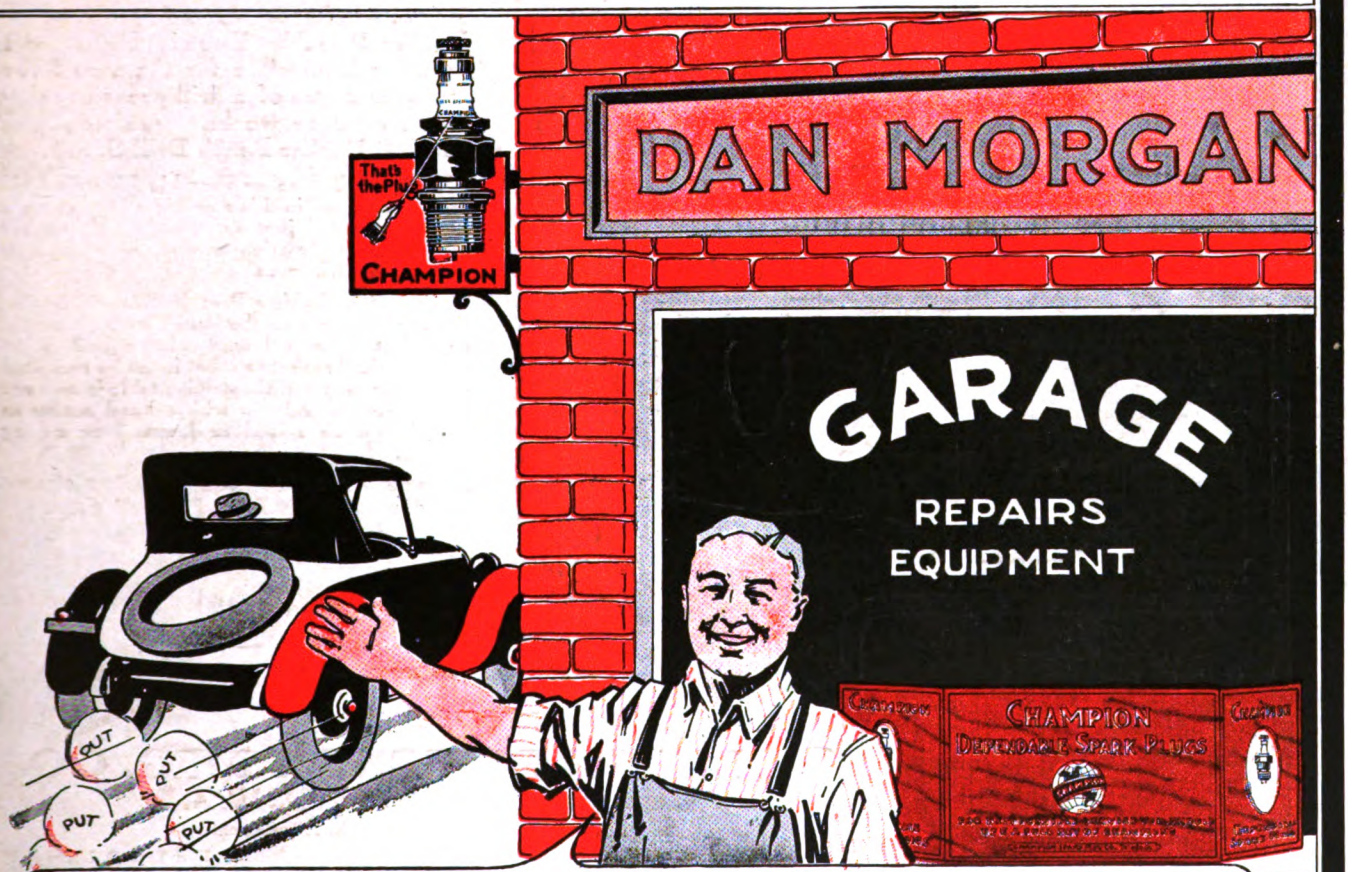
DEALERS, JOBBERS AND GARAGEMEN

Volume LXXII
Number 5

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NEW YORK, AUGUST 2, 1922

Thirty-five cents a copy
Three dollars a year

You Can Replace Anything Except the Good Will of Your Customers



Another pleased customer!
How did you obtain the good will you already have? Wasn't it through serving your customers—supplying them with dependable auto equipment? The *"Ask 'Em to Buy"* idea, coupled with CHAMPION DEPENDABLE SPARK PLUGS—the most universally used equipment—enables you to continually build good will with every automobile owner in your community. Your knowledge and experience is of great benefit to your customers. They welcome your suggestions of practical equipment that add to the pleasure of motoring and save them time and trouble.

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Champion Spark Plug Co., Toledo, Ohio

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BENCH DRILL STAND WITHOUT DRILL

$33.00

BLACK & DECKER SPECIAL HALF INCH DRILL

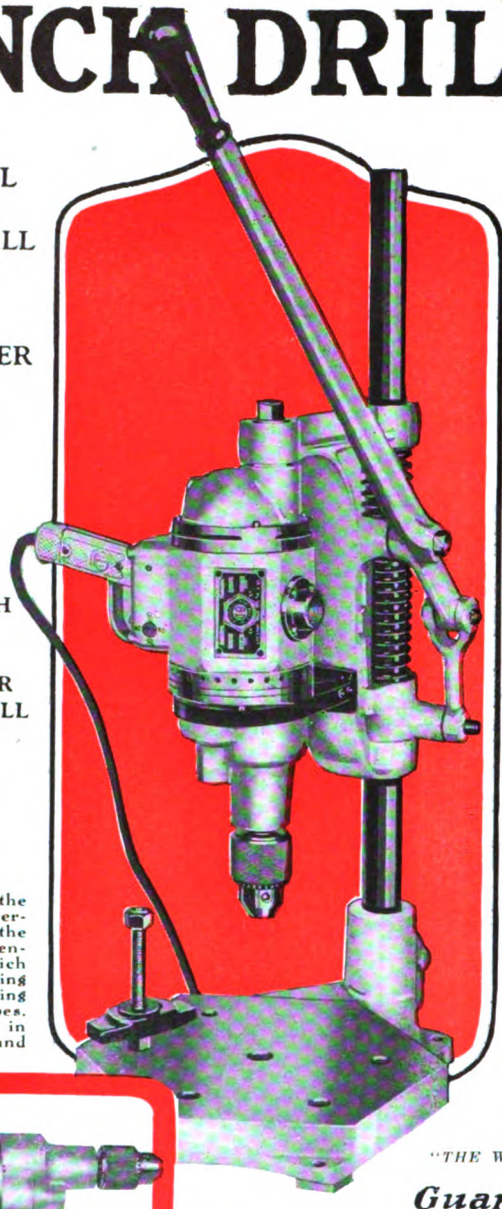
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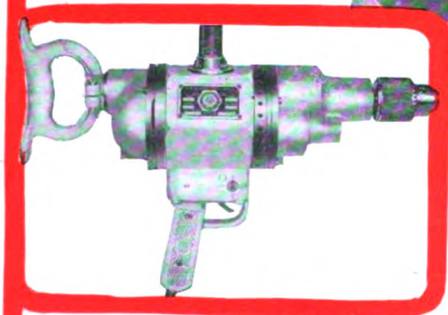
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COMPLETE AS SHOWN

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The bracket supporting the drill may be raised or lowered to suit the height of the work and may be swung entirely around the post, which is a big advantage in locating the hole and for handling large jobs and odd shapes. The bracket is secured in position by means of a hand screw.





This is the new Black & Decker Special Half Inch Drill, which has created such a sensation in the trade by reason of the fact that it combines Black & Decker quality and an exceptionally low price.

YOU can always tell a good mechanic by his tools. He never buys inferior tools because they are cheap, if he can avoid it. But if he is a good business man as well as a good mechanic he guards against unnecessary expenditure.

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MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

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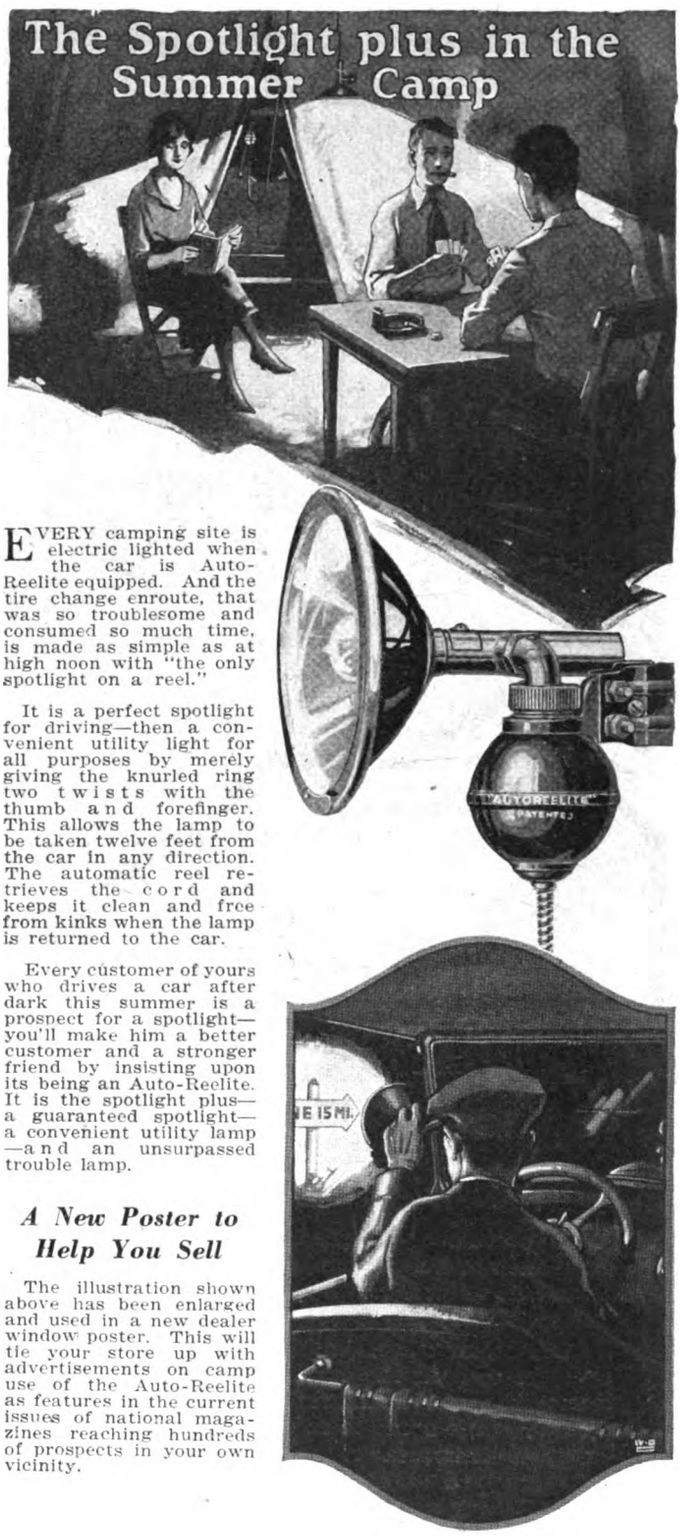
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EVERY camping site is electric lighted when the car is Auto-Reelite equipped. And the tire change enroute, that was so troublesome and consumed so much time, is made as simple as at high noon with "the only spotlight on a reel."

It is a perfect spotlight for driving—then a convenient utility light for all purposes by merely giving the knurled ring two twists with the thumb and forefinger. This allows the lamp to be taken twelve feet from the car in any direction. The automatic reel retrieves the cord and keeps it clean and free from kinks when the lamp is returned to the car.

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The illustration shown above has been enlarged and used in a new dealer window poster. This will tie your store up with advertisements on camp use of the Auto-Reelite as features in the current issues of national magazines reaching hundreds of prospects in your own vicinity.

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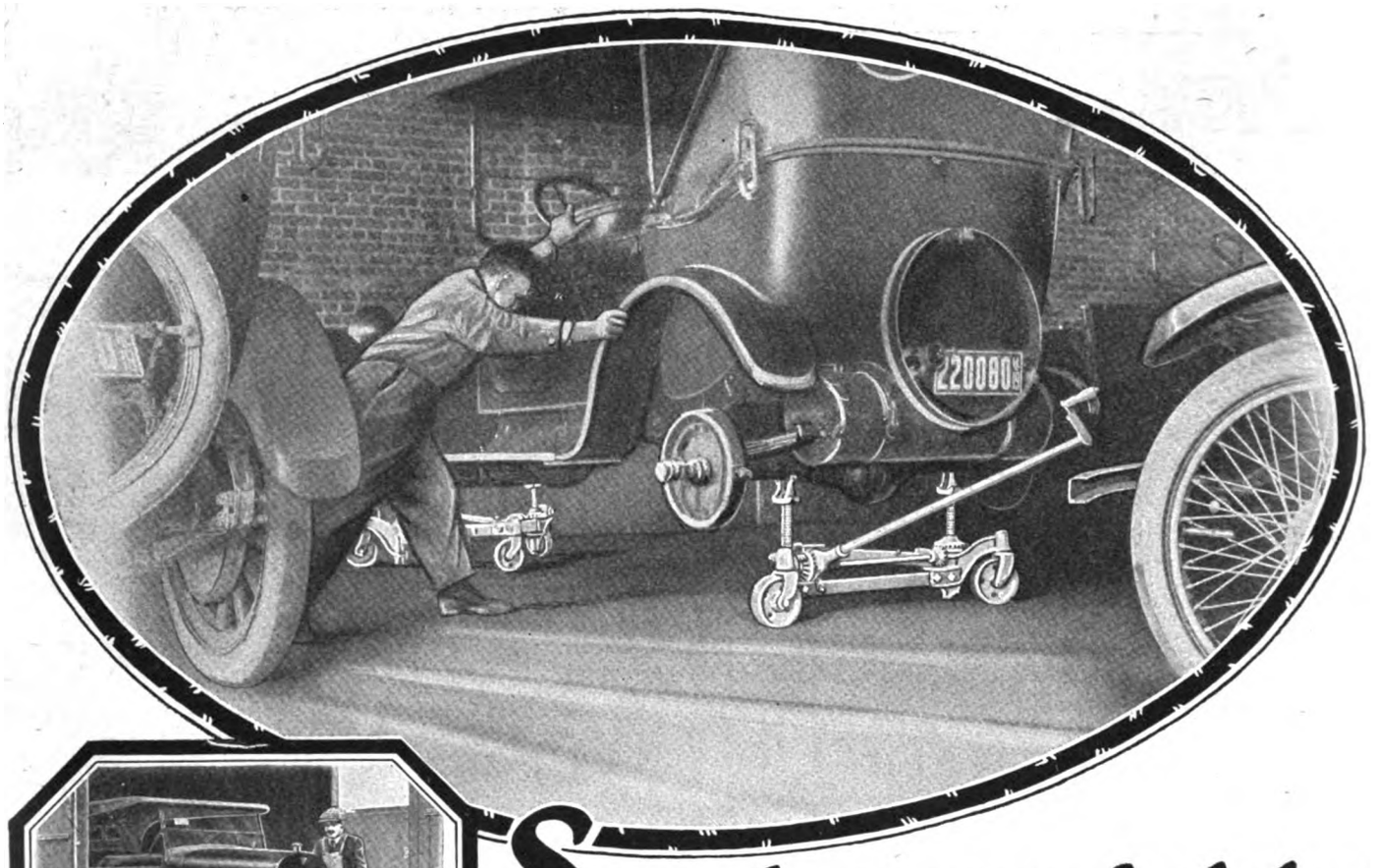
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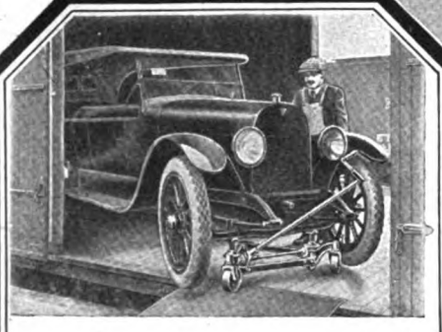
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The safety features of this Jack---the two point support, screw hoisting mechanism and broad wheel base---will appeal to your mechanics, too. They will do more and better work, because they know there's no danger of injury.



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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXII New York, U. S. A., Wednesday, August 2, 1922 No. 5

Why Not Put Up a New Gate?



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Soon They'll Be Legislating Again

And What Are YOU Going to Do About It?

The Automotive Trade Can't Accomplish Anything by Merely Fighting Legislators but Every Automotive Man Can Help Make Legislation Helpful to the Industry and Fair to the Public

By NEAL G. ADAIR

BEFORE many months have passed a majority of the forty-eight State Legislatures will be in session. Whether new laws are needed or not, the legislative machinery will begin grinding them out. That is what Legislatures meet for.

Some of the bills that get into the legislative hopper will be automobile bills. Men who get seats in State Capitols take to automobile legislation like a duck to water. This is only natural because, next to the weather and a few other things, the automobile is the subject of more conversation than anything else in the country. Some of the automobile bills to be drafted in the forthcoming sessions will be good, some bad and some just foolish. *But all of them will be of vital interest to the automotive industry.*

This makes it necessary that automotive men watch legislation. And it is imperative that not merely a few natural leaders among the manufacturers, jobbers and dealers, but all automotive tradesmen be among the watchers. This can be accomplished, to an extent, through city and sectional trade associations. It can best be thoroughly accomplished through state associations, of which every distributor, jobber, dealer and garageman can and should be a sustaining member.

But simply having an association won't get results. The association must do something about legislation—watch bills proposed, learn what is intended by them and take a hand in their passage or defeat, according to their justice or injustice.

This is more easily suggested than done, but by taking a look at the general types of legislation brought forward during the past year or two, and fairly certain to be considered for some time to come, it is possible to see the trend of legislative thought and plan action to guide it in a constructive direction.

Different Legislatures, of course, have different local problems inspiring varying forms of legislative activity but in the main it may be said that legislators all over the country are thinking along five principal lines, which cover the subjects of—

Taxation.
Restrictions on the size and weight of loads.
Rules of the road.
Compulsory insurance.
Common carrier regulation.

Let's examine these subjects, one at a time, and try to determine where the trade should stand regarding them.

Taxation of automotive vehicles is necessary and good public policy. Everybody recognizes that. The question is, how shall they be taxed and how much?

In some States it has been the habit of the automotive trade to fight any and every new tax bill. This has had the effect of antagonizing legislators and creating unfavorable public opinion for the industry. What should be done is to investigate the need for the proposed tax and, if it is needed, help its proponents levy it in a scientific manner.

There has been much opposition on the part of the trade here and there to gasoline taxes. As a matter of fact, such a tax would distribute the tax burden more evenly among motor vehicles than some forms of assessment now in vogue, but the gasoline tax as an *additional tax*, with various license fees also prevailing, may impose an unfair levy on users of cars and trucks and so make the dealer's business more difficult by increasing sales resistance.

IN any State where taxation is to be a legislative issue next winter the men in the industry might well start *now* to determine what revenues should be raised and how the process can be most equitably applied.

There is a sound basis for such an inquiry. It is generally conceded by well informed persons that highway building should be financed by the public at large and the abutting property owners and that maintenance funds should come from users of the highways, largely, of course, car and truck owners. The cost of this maintenance, including administration, together with the expense of maintaining the motor vehicle registration and traffic control, will represent about what should be raised by taxation of the vehicle owning public. If highway maintenance and administration is going to cost a State a million dollars next year and the motor vehicle licenses and kindred forms of taxation will yield a million or a little more it is obvious that an additional tax of any kind is not justified and if the facts are properly presented to the Legislature and the public it is not likely that legislative opinion will approve nor public opinion permit passage of a tax increase law. In one large State last winter the automotive interests brought about the defeat of bills levying additional

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motor vehicle taxes, including an all but prohibitive levy on trucks, by showing the legislators and the people that the revenues already available were sufficient. In some States it may be advisable to change the system of taxing motor vehicles. The trade should not blindly oppose such a change because it is a change and perhaps looks on the surface like another attempt to bleed the motorist and truck owner, but should set intelligent committees to work with the legislative and highway officials to bring about the changes in a manner equitable to everybody concerned.

IN several States bills are likely to be introduced restricting weights and sizes of vehicles and their loads. Some restriction is necessary else motor trucks will destroy highways, injuring their own and the motor car's interests as well as the public's. But there is a reasonable limit to restrictions. Some legislators have been decidedly unreasonable in their attitude toward truck loads. Others have seemed to be unreasonable because they lacked definite information to proceed along sensible lines. Justifiable truck weights vary on different types of roads and the highway authorities and motor truck builders, merchants and users of a State usually can get together to determine them. However, there is a central point of information and advice in the Motor Vehicle Conference Committee, with headquarters in New York. The committee has worked out an elaborate schedule of recommended truck weights and sizes which can be had for the asking.

Rules of the road, including speed limits and varied forms of regulation having to do with traffic control may be the subject of legislation or administrative act, or both. Rules of the road may be so restrictive and rigid as to discourage motor car and truck use and thus set up a serious factor of sales resistance. They should be so drafted as to provide for prompt and regular movement of vehicles at speeds in keeping with their capabilities and at the same time recognizing the factor of safety, for motorists and pedestrians alike. Some States have capable men, some of them with engineering ability, directing the preparation of traffic control regulations. Other States might well employ such men and the automotive trade can encourage action along this line. It goes without saying, however, that men who make, sell, service and drive motor vehicles can contribute to the adoption and enforcement of sane traffic rules and in every State and city there should be committees representing all these interests to sit in on meetings of public officials called to revise rules of the road.

The subject of compulsory liability insurance for the car and truck owner, which has been coming to the front within the past two or three years, is closely associated with traffic regulation. Highway accidents caused by motor vehicles have reached such proportions that a considerable element of the public is demanding legislation which will insure financial responsibility on the part of a driver to pay for personal or property injury resulting from his recklessness. This demand has led, in some cities, to bonding of taxicabs. In several States there is agitation for legislation to compel carrying of liability insurance or accident compensation insurance by all motor vehicle owners. Loosely applied, any of these arrangements would have the effect of penalizing the careful driver, because the carrying charges on bond or insurance would have to be high enough in all cases to meet the indemnity or insurance paid the victim of an accident in which the speed hound or the heedless driver figured.

There are men in the industry who believe that compulsory liability insurance is bound to come. But they argue that everything possible should be done in the building of additional and better highways and in more scientific control of traffic, so that the rates may be kept down by holding down the number of accidents. In any State where the subject is brought up it should have the closest attention of the automotive trade. If conditions in any locality justify the enactment of a compulsory insurance law it should be framed with the utmost care, else the expansion of the industry will be dealt a severe blow through the setting up of an arbitrary discouragement of motor vehicle use.

Common carrier legislation, affecting motor vehicles which transport persons or freight for hire, is under discussion in virtually all States. Some authorities favor putting such vehicles under State commissions regulating fares, schedules and service to the public in general, in much the same fashion as railroad and trolley service is regulated. Others oppose such supervision. Local judgment must be applied. And in such application the automotive industry, with its expert knowledge of motor transportation, should be a factor.

On all questions of legislation affecting the sale and use of motor vehicles the automotive trade can get a hearing if the men in the trade will demand it. If the trade will insist upon justice, that is, fairness alike to the vehicle owning and the non-vehicle owning public, it has at least an even chance of winning its case. The trade need not go before its Legislature as a supplicant, nor should its arguments be presented with bluster or accompanied by attempts at undue influence taking the form of pernicious lobbying. A fair, firm presentation of the case of the motor vehicle, termed by President Harding "an indispensable instrument in our political, social and industrial life," will command the influence and friendship necessary to maintaining its position at the bar of public opinion, which, despite occasional lapses, is the dictator of legislative opinion.

This is midsummer and Legislatures do not convene until late fall or early winter, but the people who have special interest in legislation, some of them special interest in legislation unfavorable to the automotive industry, are at work, like professional politicians, the year around. The automotive trade, NOW, should be taking a hand in the *selection* of legislators. And from now on it should be watchful to detect the trend of prospective legislation and active to prepare for the protection of the trade's interests when the legislative wheels begin to whirl.

WHEN the Legislatures convene associations and committees of automotive men who feel the need of expert advice and assistance on legislative matters can take encouragement in the fact that there is an agency always ready to answer legitimate calls for aid. It is the Motor Vehicle Conference Committee, supported by the American Automobile Association, the National Automobile Dealers Association, the National Automobile Chamber of Commerce, the Motor and Accessory Manufacturers Association, the Rubber Association of America and the Trailer Manufacturers Association of America. Its headquarters is at 366 Madison Avenue, New York. Its staff will work with local and State committees whenever possible and in every State it has a local conference committee.

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How Shall the Industry Pay Its Salesmen?

Gross Profits Rather Than Sales Should Be Basis of Commissions, Accountant Says—Dealer Discusses Straight Salary Plan and Condemns Used Car Gambling

TWO discussions of methods of compensating salesmen, one by an accountant and another by an automobile dealer, are presented here for the consideration of Motor World readers. Both discussions suggest practical lines of thought for men in the automotive trade.

One is by J. Pryse Goodwin, of Pryse Goodwin & Co., public accountants and management engineers of New York, who writes under the subject, "Gross Profits as a Basis of Sales Commissions."

The other is by Frank R. Tate, Dodge Brothers dealer in St. Louis, who declares the present scheme of compensating salesmen is antiquated.

The discussions are presented with the recommendation that Motor World readers will find them interesting and, in some cases, some of the ideas brought forward, may be worth adopting.

Gross Profits as a Basis of Sales Commissions

By J. Pryse Goodwin. Reprinted, with permission, from *Administration*

THE idea that the true basis for salesmen's commissions is found in sales has been long established. Perhaps no one has ever thought to challenge it. Perhaps also it is only in an epoch like the present that a hearing can be obtained for a challenge to the established order of things. Inasmuch, however, as changes in conditions call for changes in methods, the writer has the temerity to challenge sales as the true basis for salesmen's commissions.

During the period of advancing prices, prosperity was accelerated by the fear that prices would go still higher and whatever efforts were made to control public demand by increasing prices seemed only to add fuel to the fire. During the same period, however, costs of production were increasing at the same rate as selling prices or even faster, so that margins of profit did not show an increase corresponding to advances in price. In many cases the normal margin was not maintained, while in those cases where it was possible to increase the margin, the government took care, through income and excess profits taxes, that manufacturers did not get away with it all.

Nevertheless, each advance in price spelled increased earnings to one class of the industrial community, namely, salesmen employed on a commission basis, and not only did the basic unit of their commission increase, but the general fear that prices would go still higher had the effect of increasing the demand so that such sales gained both in basis of commission and also in volume of sales. Many salesmen under these abnormal conditions grew rich with perhaps less effort on their part than in normal times. There was nothing rapacious about their success nor are they to be blamed. It was merely the result of a system by which commissions were based on sales.

During the following depression, the salesman's commission per unit was reduced with each cut in price. When a buyers' strike was declared as a result of the feeling now dominating the public that prices were going still lower, not only were his commissions per unit smaller but their number was also curtailed by a reduction in volume of sales. This in turn brought with it the need of readjustment of relations both business and domestic, causing in some cases severance of relations of long standing, all of which is demoralizing not only to the victim, but to the industry and the public at large.

Refer now for a moment to the position of the employer of this same salesman during these two periods of inflation and deflation. And what do we find? During the period of inflation if he were a manufacturer, he was confronted with increased costs of labor and material and manufacturing expense, all of which cut down his margin on profit. He was

How Do You Pay Your Salesmen?

For several months there has been an animated discussion in the trade about methods of paying salesmen. There has been much complaining about straight commission compensation, which subjects this class of workers to sharp peaks and depressions in their periodical earning power. Motor World has told of the plans of some dealers who have found ways of modifying the commission plan, to their own and their salesmen's advantage. Stories of other dealers with unconventional compensation plans are in preparation.

Here are set forth the views of an experienced accountant and management engineer on the subject, with some comment on his views by a veteran automobile dealer.

What do you think of the suggestions of Goodwin and Tate?

Write to Motor World About It

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forced to look for places to effect economies that would offset these increases in cost, or else he must increase his selling price. Failing in the former he adopted the latter and then found that by so doing he had increased his selling expense, namely, salesmen's commissions. During the subsequent depression, the salesman's employer was confronted with the same problems only in the reverse direction and without that moral stimulus that comes of business activity which helped business men weather the troubles of the previous period.

At a time like the present, when everything should be done to stimulate trade, the manufacturer finds that he has to reduce his prices to move his goods and in turn cut salaries, administrative expenses, and manufacturing costs. At such a time he is in need of the closest co-operation from his selling force. Meanwhile, the salesman, paid commission on gross sales, finds that each cut in price reduces his commission per unit and, what is more discouraging, that the goods are harder to sell because the public has learned to wait in anticipation of a further cut. Both of these conditions bring him in conflict with his employer. His business efficiency and his social standing are once more disturbed.

Even in highly organized industries, traditions have a way of persisting long after the reasons for them have disappeared. A case in point is in the automobile industry where commissions for salesmen still follow the traditional method of being based on sales. However this might work in normal conditions, as things are now the automobile industry is facing a problem which makes the traditional method inhibit rather than encourage sales. This is the problem of the used car exchange which has come to be such a common feature of automobile sales.

Generally speaking, automobile salesmen are paid on a commission basis, with or without salary, the commission being based on the selling price of the car. When a trade is made, the commission is sometimes based on the amount of cash, but never on the amount of gross profit made in the deal. What is the result? Ask any automobile dealer and he will tell you that the industry is confronted with a chronic condition of large inventories of unmarketable used cars. These cars have been purchased and taken in trade through the influence of salesmen hired on a sales commission basis to sell new cars, who suffer no part of the loss of millions in trades which is annually borne by the automobile sales industry. *The capital sunk in used cars is colossal, the thought given to the problem immeasurable, and yet the problem remains just as much a problem to-day as it ever was and this, in the writer's opinion, is attributable to basing salesmen's commissions, not on gross profits, but on gross sales.*

In looking over the solutions of any problem it is well to profit by past experience and to consider briefly what methods have been applied and with what success.

Many agencies, and perhaps the more experienced, have concentrated their efforts on the purchase side of the problem and have applied their remedies at the point in their organization where the commitment is made. For example, in practically all agencies permission to make a trade must first receive the sales manager's approval. In some houses the amount of the allowance is fixed by the manager of the used car department, his department being charged with the used car at the price allowed; in other houses a bid of a second-hand dealer is obtained



The basis of a salesman's commission where a trade is made should not be the gross sale but the gross profit

and the amount of the allowance is determined by his bid. There are yet other houses, particularly those who desire to control the market for their own used models, who form a separate corporation to handle their used car business, thinking that by so doing the executives of a separate organization are able in making allowances to be more independent and conservative. There are, of course, numerous variations of these methods and many of the agencies employ the good points of several.

While all of the above plans have merit, nevertheless, the unfortunate condition still existing shows that the solution of the problem has yet to be found. Let it be conceded that the effective point of attack for the mastery of any problem, business or otherwise, is its source. Let it also be granted that a car well bought is half sold, and further that an ounce of prevention is worth a pound of cure. With these hypotheses we can proceed to analyze the conditions surrounding the making of a trade.

Despite all camouflage to the contrary, is it not the fact that used cars are practically all purchased through the new car department and that the new car salesman is really the purchasing agent who determines the price? He, however, is hired to sell new cars and is paid a salesman's salary and commission for so doing, while for his services as purchasing agent he is paid nothing at all. Right here, therefore, is a conflict of interests between salesman and employer because while trades help gross sales and the salesman's commissions, they seldom help gross and net profits, and the house immediately finds it necessary to protect itself against unprofitable trades, adopting one or more of the plans already enumerated.

A study of the subject from the psychological standpoint shows that automobile salesmen are among the most capable and energetic men in the business. Of all automobile employees, they are the highest paid and their personality usually dominates the other members of the staff. Unless, therefore, their ability and energy are scientifically directed along lines that harmonize with the interests of the house, the result is apt to be like that of placing a thoroughbred in inexperienced hands.

With his commission based on gross sales a salesman is not apt to discriminate as to where his effort is applied. If the conservative policy of the used car department stands in the way of a trade, is it not natural that the same ability and persuasive effort will be directed to selling the trade to its manager as is used on the prospect to sell the new car? The salesman is hired to sell and the surmounting of obstacles, no matter from what quarter they arise, is, as he sees it, just part of the game. Is it the salesman's duty to restrict his sales effort entirely to the customer and to exercise no persuasion upon the executive whose valuation is about to queer his trade? Is it not natural to expect that to both parties the tricks of salesmanship will be applied?

How often does it happen that the sales manager authorizes a salesman to make a trade if he can get the customer to reduce the allowance demanded, by, say, a couple of hundred dollars? Learning of this habit from previous experience and having worked on his prospect as he thinks to the limit, is it not human to suppose that the salesman will use his brain to outmanoeuvre his sales manager by adding $200 to the allowance demanded when presenting the case for preliminary approval?

From the standpoint of organization and management, the principle it is desired to emphasize here is that internal "company politics" are not just a matter of individual human nature, but will surely develop in any organization improperly planned. Such might be the unscientific nature of a contract, under which some salesmen are working to-day, that they are practically forced to adopt such methods to maintain their quota of sales and hold their positions.

It must be clear from the above examples that the incentive created by a commission based on gross sales is unbalanced, directing energy to sales even to the point of a loss. For this reason, in the writer's opinion, this method of payment is the main cause of the problem at hand. Where the salesman becomes both buyer and seller as he does

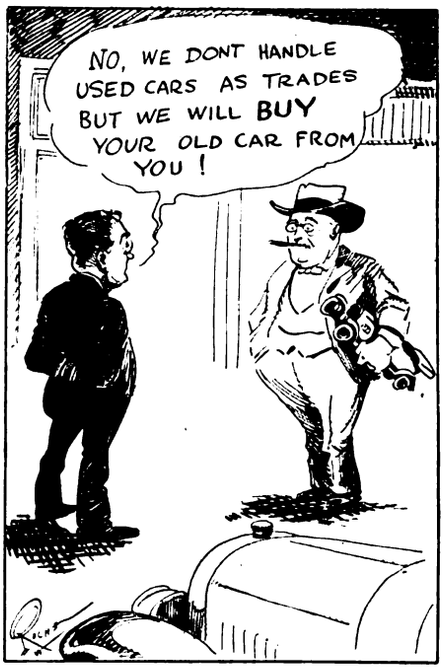
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in the case of a trade, the efficiency basis for his remuneration is surely one that measures his ability in both capacities. Naturally if he be remunerated for one service only, the other will suffer, where they conflict. It is certainly not human to expect that he be a conservative buyer when as a seller that conservatism will kill his commission.

In solving such difficulties as above outlined one must go to the root of the trouble and study out the real principles involved. In the case of our automobile salesman, the basis of his commission is on the gross sale. On the other hand, the agency's interest is not in gross sales so much as in profits. The basis of the salesman's commissions where a trade is made should therefore be not the gross sale but the gross profit, and the gross profit for the purpose of calculating his commission should be ascertained by deducting from the profit on the new car the loss on the trade plus the cost of any accessories thrown in. The calculation is simple, but how different the situation to which it leads. On this basis the salesman had no interest in overpersuading the sales manager or the manager of the used car department as to the condition of the trade; rather he has an interest in fighting every dollar of allowance and will appreciate their judgment because in the actual realized profits their relationship is that of partners.

For example, assume that under the present basis, the commission be 5 per cent on the gross sale, while 50 per cent on the net profit is the suggested plan; that the customer demands $400 and the used car department will only allow $300 which is all the trade is worth. Under the present plan this difference of $100 in allowance would cost the salesman only $5 of his commission where the agency suffers a loss of $95, giving rise to the usual friction between the new and used car departments, resulting in lost motion, lost money, and a large inventory of used cars. Under the method suggested, namely, basing the commission on the gross profit, the situation is quite different. The extra allowance would cost the salesman not $5, but $50 in commission and the agency loss would be reduced from $95 to $50. Their interests, therefore, are now identical, making it to their interest to work together. Might it not be that under this system neither would lose but that the salesman would succeed in persuading his prospect to accept the lower allowance? Further, he would also have the incentive to assist the used car department to dispose of the used car, thereby reducing the inventory.

Here is a system that is scientific in that it discriminates between a good and a poor sale. It also discriminates between good and poor salesmen. Good salesmen will earn considerably more under this system, the increase in their commissions coming out of what is now lost through excessive trade allowances. The salesman's position is also more dignified, being that of a quasi-partner rather than a mere employee and there can be no question in which relationship the best work is produced.



The time is not far distant when the survivors in the automobile business will buy used cars and not consider them as trades.

To sum up it is claimed for the method of basing commissions on gross profits rather than on gross sales that:

1. *It tends to stabilize prices.*
2. *It obviates the demoralizing of salesmen during periods of advancing prices.*
3. *It prevents a large disparity in earnings during periods of depression.*
4. *It multiplies salesmen's potentiality in proportion to the increase in rates without increasing the cost of his services,*

and that as applied to industries with exchange features:

5. *It is basically scientific in that it measures the salesman's effort both as purchasing agent and as salesman.*
6. *The full potentiality of the salesman is directed toward reduction of losses on trades.*
7. *It tends to reduce the inventory of used models.*
8. *It is more profitable to both the agency and the salesmen by welding their interests.*
9. *It places the salesman in a more dignified and at the same time more responsible position.*
10. *It promotes co-operation between the new and used model departments.*

There is no physical difficulty against basing commission on gross profits instead of on gross sales. Whatever difficulties exist are mental, and these can easily be met. Should it be desired not to disclose to salesmen what is the margin between cost and market, an arbitrary margin can be determined and if there be no such problem as that of the used car, there are always salesmen's expenses which can be deducted from the arbitrary margin of profit before arriving at the true basis for commission. By this basis, salesmen are stimulated not only to increased sales and profits, but also to reduce selling expenses, which is a factor overlooked by the old basis of commission based on gross sales.

It is the writer's belief that in any commission arrangement it is worth while to make a careful study to see if proportioning commissions to the profits will not make a more satisfactory arrangement for everyone concerned than would the traditional method of basing them on percentage of gross sales.

Present Commission Plan Is Antiquated

By Frank R. Tate, Dodge Brothers Dealer, St. Louis

THIS subject has been quite a hobby with me for the last three years, and I feel that for my personal needs I have worked out a satisfactory solution. It is still subject to some variations and modifications, which I am about to put in effect.

Mr. Goodwin's ideas, as expressed, in covering the general automobile industry, are very excellent, particularly in reference to the element of used cars, but I do not believe that dealers in some other makes of automobiles would be as successful in arriving at a satisfactory settlement by paying salaries instead of commission, as a dealer who has a Dodge Brothers franchise. My experience of the past shows conclusively that the salesman's personal effort in selling our product is of a secondary consideration. For instance, I recall recently one day one floor salesman took signed orders for 12 Dodge Brothers cars, and not one of the 12 patrons had ever been in our prospect file under his or any other salesman's name, and had he been on the customary 4 or 5 per cent commission basis his earnings would have been in excess of $700 for the day.

By a careful analysis, and a series of statistics, I find that our salesmen's efforts are very much affected by having a floor day, and almost equally as much

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by being given, or not being given, the names of prospects who call over the telephone for catalogs or information regarding our cars. It is hard to say whether the floor prospects or the telephone prospects are the greater, but so far, as nearly as I can find out, they are of about equal importance. This subject alone should have considerable bearing on the method of compensating a salesman.

Mr. Goodwin's reference to the second-hand car situation seems to entirely point to that as a necessary evil, and an admitted loss. This need not necessarily be true, but in my opinion will continue to be true just as long as dealers continue to trade in all manner and makes of automobiles, without regard for their real and true value. Whenever a dealer allows more in trade for a car other than the make which he handles than the dealer who handles that same make of car can afford to, or dare allow, he can rest assured that he is bound to suffer a loss, as it is practically a foregone conclusion that it is impossible for him to sell the used car for the same amount, or any more, than the other dealer.

No successful dealer should allow his salesmen to act as purchasing agents for him, in considering an allowance on used cars, and if the dealer is thoroughly up on his business, the allowance price made, and the disposing of the used car, should be segregated from the new car sales department entirely, thereby placing it on such a basis that it would have to stand on its own feet. Consequently the salesman's compensation should not in any way be affected by this used car purchase, and at the same time he should be put on the basis of the amount of cash involved in the transaction, by deducting the amount of the allowance on the used car.

Will Buy Used Cars in Future

I think the time is not far distant when the survivors in the retail automobile industry will buy used cars, and not consider them as a trade. In buying them they will be considered on the same basis of any other purchase of merchandise, with the idea in mind that they must be sold at a profit or they will not be considered as a safe and profitable merchandise. If traded on this basis by all dealers it would be but a short time until the alleged "used car evil" would be entirely removed from the retail business.

My idea of proper compensation for salesmen is a stipulated salary of a reasonable amount, in order to free the mind of a salesman from worry over living expenses in dull periods, and thoroughly instill in the salesman that he is an employee of the house and not a commission broker working on his own time, which breeds a feeling of the right to come and go as he pleases.

In arriving at salaries by good accounting, it is an easy matter to figure up a possible commission basis against a set salary, thereby creating a plus and minus account for comparative purposes, and if the salesman's efforts are producing enough to place his comparative plus account ahead of his stipulated salary account, he should be given gradual raises in salary up to a point of reason. One should have in mind at all times that this salary should not be built up into a fixed overhead that would be prohibitive during dull seasons and necessitate reductions in salary. For additional compensation, or effort, a certain percentage of his earnings, in excess of a reasonable comparative percentage, should be given him at the end of every six months, or at the end of a year, in the form of a bonus.

I agree thoroughly with Mr. Goodwin that the automobile industry particularly is a victim of lack of progression, inasmuch as the majority of retail automobile dealers have stuck to the old form of commission for salesmen ever since its inception, and it is now time that the subject should have some sane treatment.

Selling a Man His Job—

MAKE your employee know you and understand his job—in other words, sell him his job before putting him on the payroll, and a good many of your problems of "hired help" are licked right at the start. That is the theory of John Pennell of the Pennell Auto Co. of Fort Wayne, Ind., Ford and Lincoln dealer.

It makes no difference who or in what department, the routine of the newcomer is largely the same.

The man who is to become a grease hound in the shop gets the same picture of the Pennell Auto Co. and its executives and department head as the man who is to become a salesman, a sales manager or a publicity man. John Pennell has the vision that the automobile merchant can become no bigger than his most insignificant employee.

For example, an applicant for a job in the shop is largely treated as though he were a customer, a person who should be made familiar with the policies and practices. The foreman exhibits the equipment, tool supply and work rooms; time cards, job cards and other shop systems. The service superintendent shows the applicant through the service office and its functions, how the customer is met and handled, the jobs booked and scheduled. The bookkeeper explains the cost accounting and the profit and loss findings, methods of billing and checking and time computing; taxation costs, etc. The sales manager gives him the story of how the sales department finds and handles a prospect and how a sale is made and recorded, and how a delivery is scheduled and made.



JOHN PENNELL
Pennell Auto Co., Fort Wayne, Ind.

By the time the applicant is introduced to the "boss," John Pennell, he has a feeling that is far different from that of a man who is shunted through an ordinary cursory hiring process. Pennell has a man who has become awed by the magnitude of the plant, or a man who has become inspired by its spirit and its ideals; or a man who has become elated at the prospect of his own importance in the cogwheels of this institution. He has a man who is in one of two mental conditions—thoroughly determined to hold his job if he can get it, or, ready to withdraw his application for a job with an institution which obviously expects a man to use his brains as well as his hands.

Pennell finishes the job, much as he would finish the job of selling to a customer of the type who wants to deal with the boss.

"You have seen our establishment. You know what our equipment is and how well you can do the work with that equipment. You have heard the story of our policies. You have come to realize that we are here to serve and to please and deliver a dollar for a dollar. You know how high are our ideals and what a man must do to make himself a part of our business," says Mr. Pennell.

"Do you still want to work for this company and can you fit into the circle that we have here?"

The applicant, of course, has first passed the usual scrutiny and has been found to be of a type that the Pennell Auto Co. could use. Otherwise not so much time would have been devoted to him. But it is the routine procedure and never is deviated from. It is a fixed rule. And Pennell has found that the plan reduces his labor turnover and that his organization has a longer average service than under previous practices. The system has been in use for many months and Pennell does not expect that it will ever be abandoned.

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In What Kind of a Store Do Folks Like to Buy?

Isn't It One That's Bright, Clean and Well Arranged?—Here's How a Merchant in a Small Florida Town Is Combining Pleasing Appearance and Strong Selling

LET'S let the pictures tell this story, for hardly a word is necessary to drive home the lesson of the importance of cleanliness, neatness and good display that they contain. These are dominant success factors in the business of every automotive equipment merchant, and when combined with courtesy, quality of merchandise and service, good accounting and aggressive selling they comprise about all that there is to successful merchandising and profits.

The pictures on this and the following pages are glimpses of a store in Lakeland, Fla. Census figures for 1920 give the town a population of less than 8000, yet in this small city is to be found one of the neatest, cleanest, best arranged automotive equipment stores in the South. This store is operated by Henry W. Conibear, trading under the name of the Standard Tire and Battery Co.

Let's take a mental trip through Conibear's store. On entering, the windows attract attention through their neatness and effectiveness. They indicate the proprietor's desire to avail himself of the merchandising assistance that the manufacturers are extending. How well he uses the factory cutouts, literature and window display ideas in getting his selling appeal *through* the plate glass.

Inside, the spotless tile floor bids a welcome, and the pleasing arrangement of display cases seems to beckon politely for closer inspection and acquaintance with their contents. The general atmosphere of the store seems to give the stock a stamp of quality and dependability.

But, one is not inside the store long before he realizes that there is more than merchandise on sale here. There is service and satisfaction as important things that are delivered with the purchase of automotive items. And there is the actual selling of service. A sign, at the back of the store, one of the first objects that meets the eye entering, sells tire service.

The staggering of display cases and the arrangement of the tire racks as a screen for the service department in the rear are interesting little lessons in store arrangement. The stock is neatly shelved, which always makes a good impression, and that's not a bad arrangement for displaying fan belts along the wall, is it? Then, too, there's considerable taste used in displaying factory advertising of some of the items used. The walls are not plastered with them, like the side of a barn in circus season, but there are a few of them, and they seem to carry a strong selling message.



Appearance is a strong feature of this small town store with a big town selling plan

Conibear's business is divided into departments including tires, accessories, tire repairing and retreading, and new batteries and battery repairing, and each is expected to show a profit, and each does.

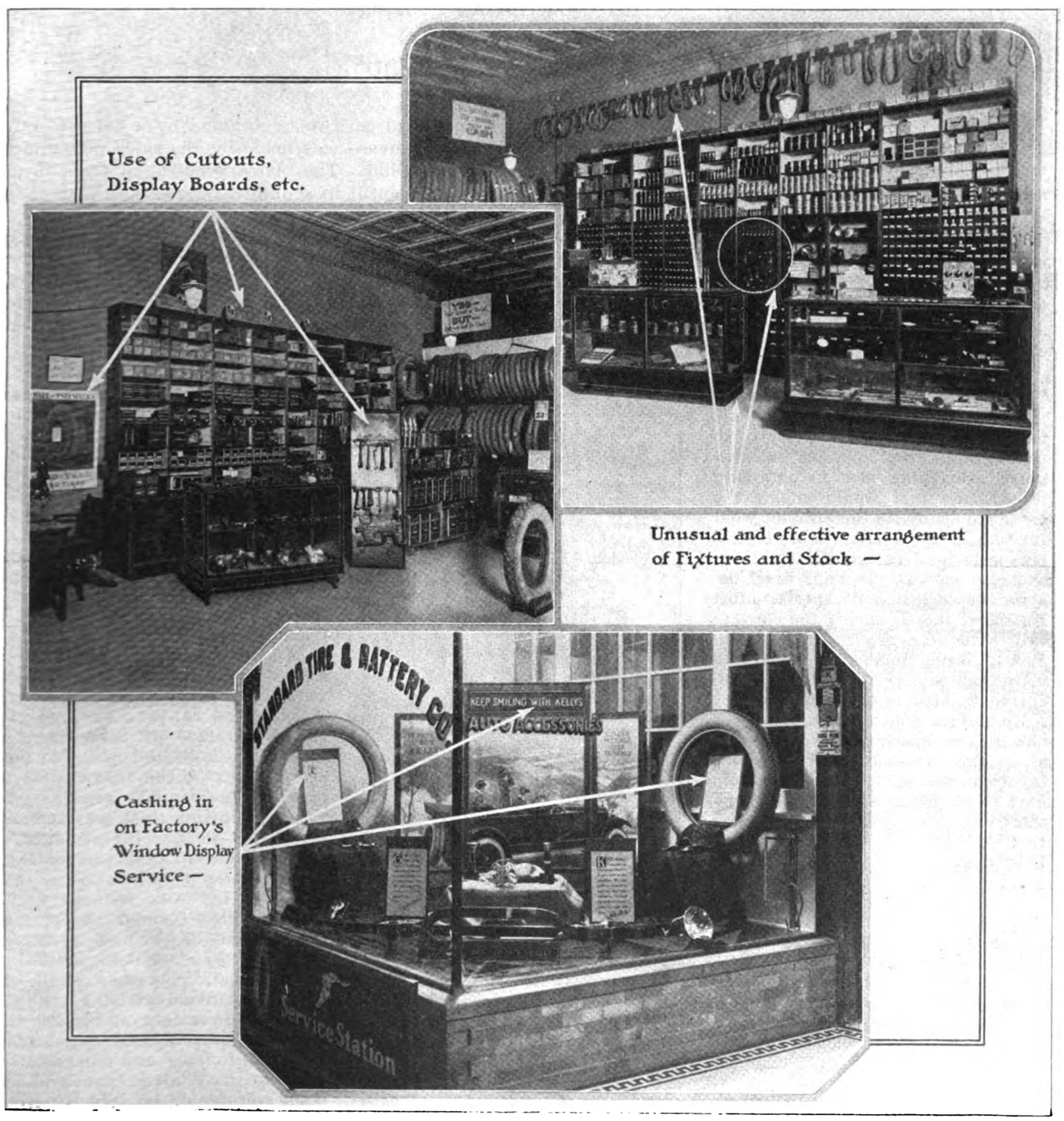
This automotive equipment merchant counts courtesy, quality, appearance and service as the four outstanding success elements in his business. He uses a letter service to a mailing list composed of customers and names from the registry list of his state and reminds customers regularly when tires and batteries should need attention. Mile sign posts on all roads leading to Lakeland tell motorists of Conibear's store and station.

It is not surprising, after viewing his store, to learn that he does a large volume of business for such a small city, and that the business is returning him a comfortable profit. A clean, well kept, well manned store is the stamp of a good merchant. People like to do business with merchants who are successful.

How does your store compare with Conibear's?

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Combining Pleasing Appearance with Strong Selling Appeal



IN the arrangement of its store and in its windows the Standard Tire and Battery Co., Lakeland, Fla., is making appearance one of the big factors in its merchandising effort. Note the use of factory supplied dealer helps in driving home the selling appeal

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Winter Canvass of Farms Yields Summer Harvest of Tractor Sales

Ohio Fordson Dealer Makes 2500 Visits in 12 Townships —Result, 900 Spring Prospects

By DONALD D. BLANCHARD

NINE hundred logical prospects for Fordson tractors and Ford cars were obtained by a farm-to-farm canvass of 12 townships of Licking County, Ohio. The canvass was made by the sales department of the A. P. Hess Automobile Co., Ford dealer in Newark, Ohio. The primary object of the canvass was to obtain tractor prospects, but information that would be helpful in selling cars was obtained at the same time.

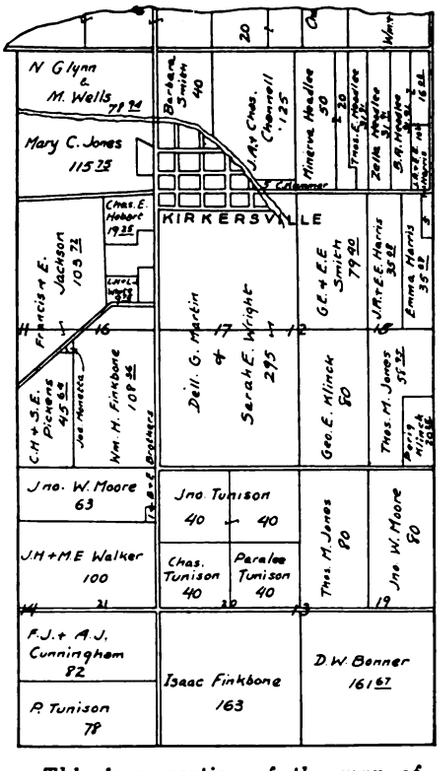
The canvass was started on Dec. 1, 1921, and continued through February. During this period, 2500 farmers were called upon and 12 townships completely covered. At the outset, the intention was to cover the entire county of 26 townships, but the press of spring business necessitated taking the men off the work with 14 townships still to cover. In these 14 townships there are about 3100 farms. These will be covered next winter and the entire county will be re-canvassed in succeeding winters as the farm-to-farm canvass will be made a permanent feature of this company's sales work.

THE canvass was undertaken primarily to determine the sale possibilities of the territory. In making calls, the salesmen subordinated everything else to obtaining information that would enable the Hess Company to determine what farmers in the territory were logical prospects for tractors or cars. However, the canvass paid for itself despite the fact that no special effort was made to sell during the canvass call. The salesmen secured a sufficiently large number of orders to more than pay for all the expense incurred in making the canvass.

Up to June 1 30 tractors and about 325 cars had been sold. Obviously all of these sales can not be traced to the canvass as many of them would have been made anyway and, furthermore, the canvass covered less than half of the county. But the Hess company can trace a sufficiently large number of them to the farm-to-farm canvass to convince them that it is a practical method of locating prospects and one that will be profitable to repeat.

As a preliminary to the canvass, maps of each township in the county were secured from the County Surveyor. These maps showed the size and location of each farm and the name of its owner.

The township was used as the unit of territory in canvassing. Each salesman was given a township to cover. He was instructed to call on every farmer, secure the information required to fill out prospect cards and correct any inaccuracies on the map. When a salesman completed the canvass of a township he was given another to cover.



This is a portion of the map of Harrison Township, Licking Co., Ohio. It gives the location, size and owner of every farm. Maps of this type were made the basis of the farm-to-farm canvass made by the Hess company

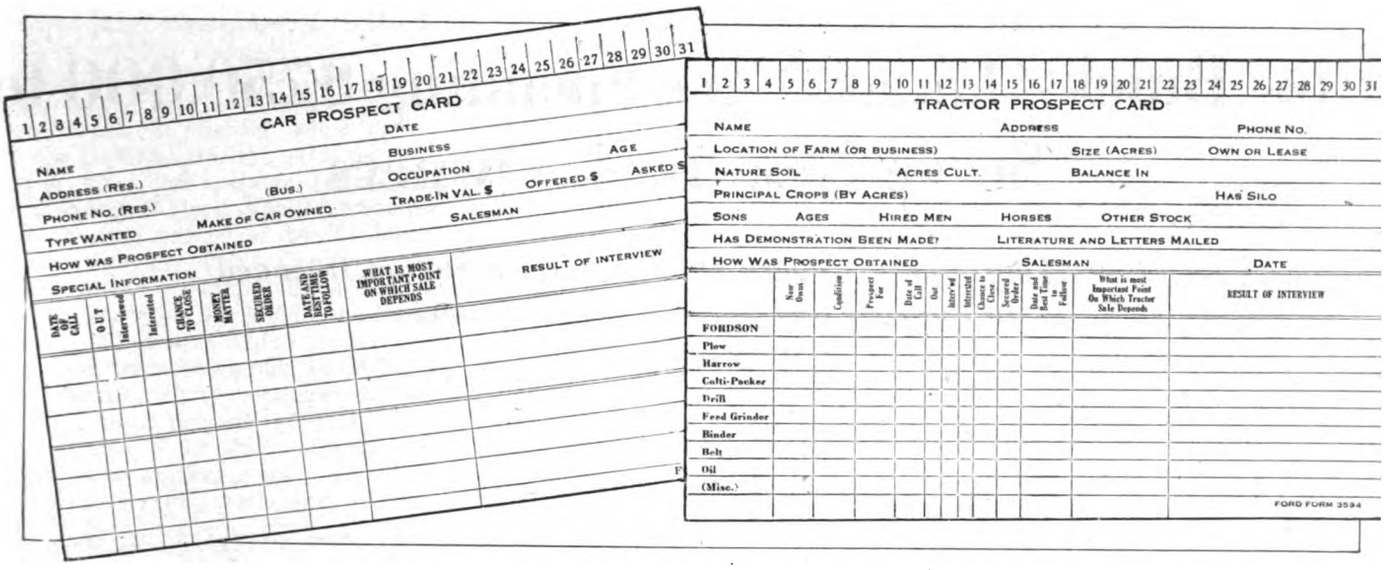
The prospect cards are standard forms furnished by the Ford Motor Co. In securing the information required to fill out the cards, the salesman endeavored to place the interview on a friendly basis. Inasmuch as the canvass was made during the winter months, the farmers were not busy and most of them seemed glad to talk to the salesmen. In a majority of cases the desired information was obtained in the course of a friendly chat.

After the canvass of the 12 townships had been completed, the cards were sorted to eliminate the undesirables. The canvass secured 2500 names and 1200 of these were retained as "indicated possible prospects"—that is, the information secured by the canvass regarding the prospects in this class was sufficient to warrant further investigation.

One follow-up call was made on each of these prospects. From these calls the list was reduced to 900 names, which formed the prospect list for the 12 townships covered. These prospects are being worked intensively both by personal calls and by direct-mail advertising.

About 30 per cent of the 900 were tractor prospects and the balance prospects for cars and trucks. Many of these have already bought and many more would have placed orders if they could have given notes that were acceptable to the Hess company. No notes were accepted in payment that extended over a pe-

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CAR PROSPECT CARD

DATE

NAME — BUSINESS — AGE

ADDRESS (RES.) (BUS.) OCCUPATION

PHONE NO. (RES.) MAKE OF CAR OWNED TRADE-IN VAL. $ OFFERED $ ASKED $

TYPE WANTED SALESMAN

HOW WAS PROSPECT OBTAINED

SPECIAL INFORMATION

DATE OF CALL	O U T	Interviewed	Interested	CHANCE TO CLOSE	MONEY MATTER	SECURED ORDER	DATE AND SETTLE TO FOLLOW	WHAT IS MOST IMPORTANT POINT ON WHICH SALE DEPENDS	RESULT OF INTERVIEW

TRACTOR PROSPECT CARD

NAME ADDRESS PHONE NO.

LOCATION OF FARM (OR BUSINESS) SIZE (ACRES) OWN OR LEASE

NATURE SOIL ACRES CULT. BALANCE IN

PRINCIPAL CROPS (BY ACRES) HAS SILO

SONS AGES HIRED MEN HORSES OTHER STOCK

HAS DEMONSTRATION BEEN MADE? LITERATURE AND LETTERS MAILED

HOW WAS PROSPECT OBTAINED SALESMAN DATE

	New Own	Condition	Present Use	Date of Call	Out	Interv'd	Interested	Chance to Close	Secured Order	Date and Item Time to Follow	What is most Important Point On Which Tractor Sale Depends	RESULT OF INTERVIEW
FORDSON												
Plow												
Harrow												
Culti-Packer												
Drill												
Feed Grinder												
Binder												
Belt												
Oil												
(Misc.)												

FORD FORM 3594

In making the farm-to-farm canvass, the salesman secured the information required to fill in the tops of these cards. This information together with personal knowledge and that obtained from other sources was used in separating the desirable from the undesirable prospects. All those retained in the first class received at least one follow-up call

riod of more than one year.

When the car or tractor is purchased with notes, the credit of the buyer is, of course, scrutinized very carefully. Tax lists secured from the County Auditor were of material assistance in checking credit information received from other sources and also in eliminating undesirable names from the prospect file. These lists are prepared by townships and are arranged alphabetically. The lists showed the amount of cash, real and personal property on which each person in the township paid taxes.

Each of the tractor prospects receives a copy of Fordson Farming each month. In addition, two sales letters have been sent out to the entire list.

In addition to the prospects secured and the sales made as a result of the canvass, the Hess company feels that it has done much to build good will. The members of the sales organization established friendly contacts with the farmers in the territory. Frequently farmers stop into the salesroom in Newark and ask for the salesman who called on them during the winter. These calls are entirely the result of friendships made during the canvass.

The work of the Hess company shows that a dealer in an agricultural community can successfully apply intensive selling methods to his territory. It shows that the house-to-house canvass idea is practical in the country, as it is in the city. The canvass produced a complete list of the prospects in the territory covered and this list was obtained at a cost that made the work profitable.

The work was done during a slack period when it would otherwise have been difficult to keep the sales force engaged in productive work. Fortunately the slack period in the automotive business comes in the winter which is coincident with the time when the farmer is least busy. He has the leisure to talk to the salesman and is glad of the opportunity

When Picking a Paper for Advertising

AN automobile advertising man connected with an aggressive daily newspaper has suggested a list of questions that dealers might ask themselves before placing their advertising in a particular newspaper or newspapers. Here are the questions:

Are you familiar with the Audit Bureau of Circulations?

Have you ever seen its reports of newspapers in your city?

Have you analyzed the decrease or increase in circulations?

How do the papers handle motor news, not publicity?

Does any paper have a weekly motor leader giving real stories about the industry, legislation, analysis to aid dealers?

How do the papers give attention to legislative hearings; do they try to cover them fully or give the side of the motorists or the industry?

Do you know how the circulations vary; are they limited solely to the city; how they go out into zones, etc?

Do you know whether your sales are in zones where some papers are stronger than others?

Have you ever studied the newspapers to note how other advertisers use them; the type of high grade advertising, and where placed?

Have you ever sought to make an analysis between daily or Sunday advertising?

Does the factory advertising appeal to you, or have you any suggestions to make?

Are you studying the manner in which your competitors are advertising, and where?

Sets Territories and Quotas for Salesmen

ONE of the local Ford dealers has divided the territory surrounding Birmingham into ten equal parts, using as his guide the roads leading into the city and the census of 1920. A salesman has been assigned to each one of these territories with a quota of twenty-five cars to sell during the last six months of the year. In this way it is expected to cut down the total number of miles traveled in seeing prospects and to increase the efficiency of the whole force.

All salesmen are allowed to sell anywhere in the city of Birmingham.

Book Lists Price of Ford Service Jobs

TO show the proper charge on each repair operation as plainly and as definitely as the Ford catalog shows the price of each part, Hamlin W. Nerney, Inc., Ford dealer in Los Angeles, has issued a booklet to its customers and prospective customers giving a price list of all labor operations. The booklet not only gives the price of the jobs, but the various operations are explained in detail in order that the customer will know just what is to be done.

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How Buick-Oakland Are Spending $750,000 to Serve New York Owners

Huge, Thoroughly Modern Double Service Station Intended to Improve and Speed Up Maintenance— A Story of the Plans

By J. HOWARD PILE

GIVE the service customer prompt, courteous attention, repair or adjust his car quickly and efficiently, work as hard for his good will after he has bought his car as when he is thinking of buying it, in short, make service a real partner of sales—this is the idea behind the building in New York of a huge service station with the most modern layout and equipment to care for the needs of Buick and Oakland owners. It will really be two service stations in one. There will be but one roof, but otherwise the big building, already in course of construction, will have all the facilities of two separate service stations, each serving its own class of owners.

It goes without saying that the equipment will be thoroughly up-to-date. Beyond that, the plans provide for waiting rooms, numerous parts windows, inspection service and special car elevators, along with other features, which will speed up attention to the customer and make his visits to the service station convenient and pleasant.

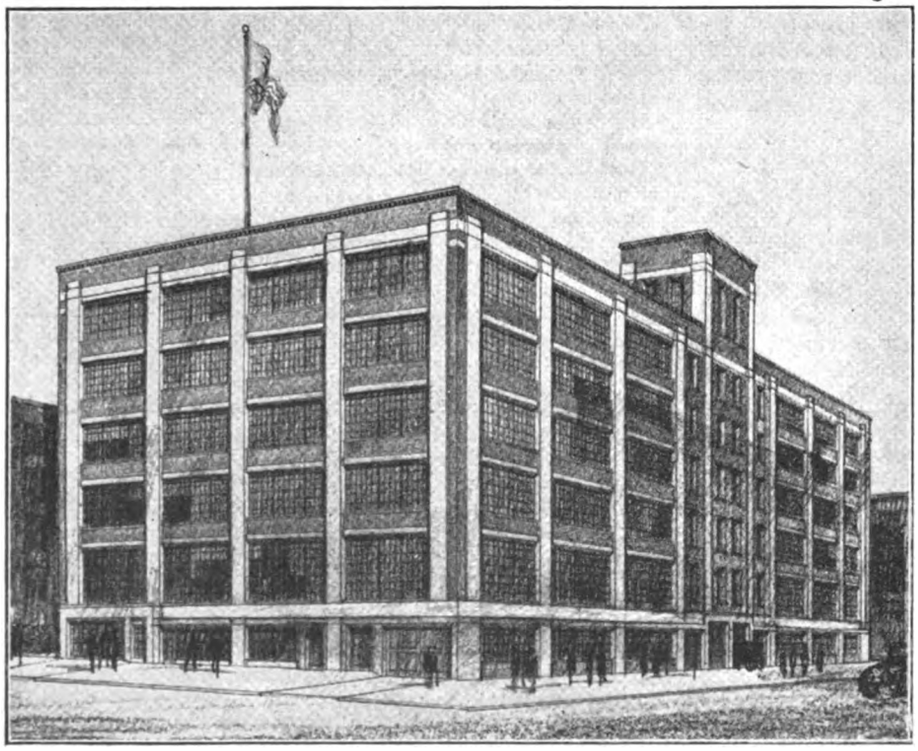
The two service stations will translate into action in New York the ambition of General Motors executives to raise service to owners of General Motors cars to a high plane—all this in keeping with the conviction of these executives that owner satisfaction is the basis of a stable, growing automobile business.

The building is located on the east side of Eleventh Avenue, occupying the block between Fifty-fifth and Fifty-sixth Streets. This gives a floor plan of 200 ft. x 100 ft. The building will be of reinforced concrete, six stories high, and the total floor space for the present will be 123,000 sq. ft. Provision is made for the future erection of another mezzanine of 3000 sq. ft., and if desired another floor can be added in the future, which would bring the total floor space to 146,000 sq. ft.

The first floor of the building is from 2 to 3 ft. below grade, and there is no basement, except on the Fifty-sixth Street side, where the boiler room, coal storage room, etc., are located. Both the first and second floors are divided by a wall, exactly in the center of the building, extending at right angles to Eleventh Avenue. Buick will occupy the first and second floor on the Fifty-sixth Street side, and Oakland the first and second floor on the Fifty-fifth Street side. The entire third and fourth floors will be devoted to Buick service and the entire fifth and sixth floors to Oakland service. Thus, the entire building is divided equally between the two organizations, and while housed under the same roof, the organizations, employees, machinery and everything else will be entirely separated.

In the center of the building, on the Eleventh Avenue side, there are four elevators, two small elevators for parts and two large elevators for cars. The large elevators are freight elevators and are entered directly from the sidewalk. The parts elevators are set back so that a truck can be backed up beyond the building line for unloading or loading at the elevator platforms.

Ramps are used on the first and second floors. Owing to a natural grade in the street, it is possible to use a ramp from and to the second floor on the Buick side. On this side of the building there



The Buick-Oakland service station will look like this

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are two large doors, one of them admitting to the ramp to the second floor, and the other admitting to the ramp to the first floor, which, as before stated, is slightly below grade. On the Oakland side the natural grade of the street does not admit of a ramp to the second floor, and two ramps, one on each corner of the building, run to the first floor. Owing to the boiler rooms occupying a portion of the space on the Buick side, the Buick service offices are located on the second floor, there being only an entrance lobby, stairway and passenger elevator in the central part of the Fifty-sixth Street side. On the Oakland side there is a waiting room, inspector's room, check-room, wash-rack, women's rest room, entrance lobby, stairway and passenger elevator, in the corresponding locations.

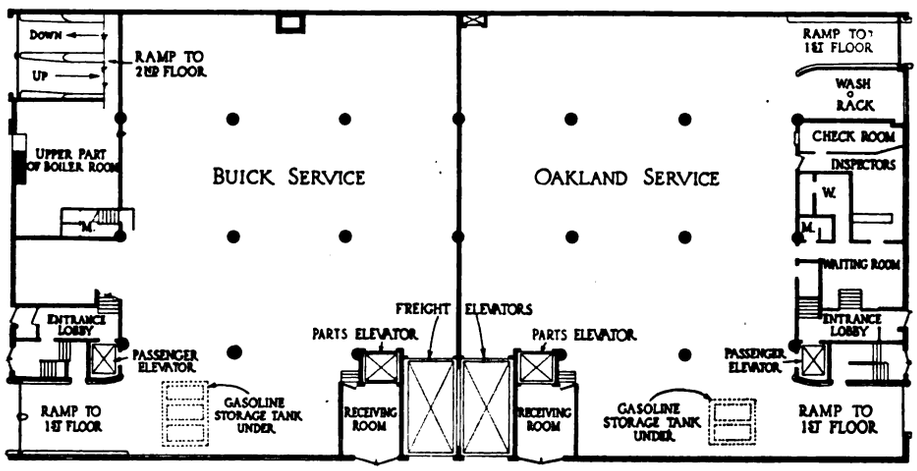
The second floor on the Oakland side has a parts office, service office, and private office, and a large lobby with parts counter, with eight windows to the parts room. It is here that Oakland customers will go to purchase parts over the counter. On the Buick side, a portion of the wall space is occupied by the ramp from the street to the second floor, and the balance is occupied by an inspection room, check room, women's room, cashier's and waiting room. Owing to the fact that a portion of the first floor on the Buick side is taken up with the boiler room, it has been necessary to give further space to Buick, and a mezzanine to the second floor has been built, containing the technical office, storage room, private office, stationery room, repair office, etc.

The third floor, which is devoted entirely to Buick repairs, has a large open bay, extending clear through from Fifty-sixth Street, nearly to Fifty-fifth Street. There are a number of smaller shops partitioned off with wire screens around the side, these being carpenter and coach, tool room, electrical department, locker, lunch and rest room, engine department, etc. The third and fifth floors are practically duplicates, both being fitted up with a large central bay, and smaller shops around the outside. Both are equipped with a system of overhead tracks and trolleys for conveying heavy parts from one portion of the floor to another. There are over 1000 ft. of trackage on each of these two floors, with numerous switches and crosses so that the overhead trolley is available at practically any point in the shop. Switches go into the engine department, machine shop, and cover practically every point in the bay.

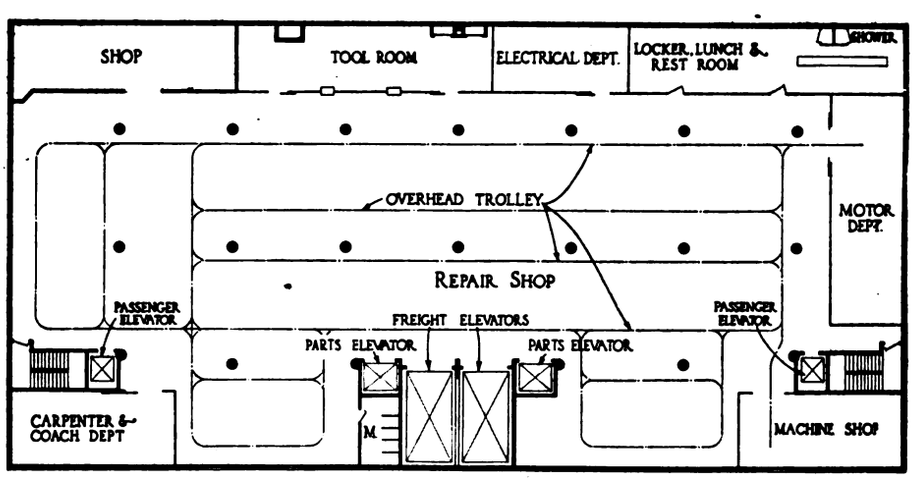
The Buick parts storage occupies the fourth floor, and at one end of the floor is the parts office and files, coat room, claims office, etc., together with a lobby and eight windows to the office and eleven windows to the parts room.

The plans call for installation of storage tanks of 550 gal. capacity buried underneath the first floor, and an oil separator pit, which is also below the first floor level. This is for the purpose of complying with local regulations regarding the separation of oil and gasoline from water before the water is allowed to enter the sewer.

In the planning of this new building, every facility is given to both the Buick and Oakland companies to quickly and economically serve their customers, and special pains have been taken in the design to prevent delays due to lack of accommodations, counter space, or anything of that sort. The first floor will be devoted to quick service by both companies and the major jobs will be performed on the upper floors.



FIRST FLOOR PLAN



THIRD & FIFTH FLOOR PLANS

The first floor plan shows the dividing wall. The second floor is divided the same way. Other floors are not divided

Designs for Camp Ground Equipment

EQUIPMENT that is serviceable and durable adds to the attractiveness of tourist camping grounds. These grounds have sprung up so rapidly that persons interested in their construction have been forced to depend largely on their own ideas. They have not been able to make use of the experiences of others. Plans and specifications for the construction of camp ground equipment have been made by the Portland Cement Association, 111 West Washington Street, Chicago. Copies of this data may be secured by application to that association. These plans and specifications cover the construction of sign and light posts, tables and benches, drinking fountains and provision for water, outdoor toilets with sanitary vaults, cook stoves, refuse and garbage burners and boxes, outdoor shower baths, and automobile washing or repairing platform.

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Mid-year Registration Figures Show 10,608,127 Cars and Trucks

Increase of 1,350,552 Since July 1, 1921, Indicates Marked Progress of Industry—New York Still Leads

CAR and truck registrations in the United States totalled 10,608,127 on July 1, 1922. This is an increase of 1,350,552 over the registration figures for July 1, 1921, and an increase of 102,467 over the figures for Jan. 1, 1922. Using July 1, 1921, population estimates as a basis, there is now one motor vehicle for every 10.16 persons in the United States.

Inasmuch as several states do not tabulate car and truck registration separate, it is impossible to state how the registrations are distributed between cars and trucks. It is estimated, however, that passenger cars constitute about 89 per cent of the total. This means 8,350,000 cars and 1,260,000 trucks.

The registration fees collected total $125,052,346, an increase of $27,390,364 over the amount collected on the same date of last year.

New York maintains its place at the top of the list with registrations of 812,138. New York also shows the largest numerical gain during the year, the increase amounting to 161,608. The largest percentage gain for the same period has been made by the District of Columbia, which jumped 48 per cent.

Registrations in six states are less this year than they were at the same time last year. These states are New Mexico, Wyoming, West Virginia, South Dakota, Utah and South Carolina.

The "saturation point" is evidently not so near as some pessimists would have us think. The largest percentage gains have been made in the states which already had the largest number of motor vehicles. New York, Ohio, California, Pennsylvania, Indiana, New Jersey—all high registration states—each show an increase of more than 15 per cent over last July. Iowa, which had the greatest number of cars per person in 1921, shows a gain of 8.2 per cent over last July. Registrations in New York, which has more cars than any other state, have increased 24.8 per cent.

The Southern states made distinct gains during the last year. The inactivity in the agricultural states is indicated by the tables of registration gains.

The general tendency on the part of the states to increase registration fees is indicated by the totals paid by motor vehicle owners. The total fees collected show an increase over last year of about 12.7 per cent. The average cost of registering a motor vehicle in 1922 is over 11 per cent more than it was in 1921.

Inasmuch as registrations for the first six months of 1922 are in excess of total registrations for 1921, all registrations made during the second half of 1922 will represent the gain over 1921.

The quick recovery and the phenomenal growth of the automotive industry following the recent depression constitutes a record of which everyone in the industry may be proud. No more conclusive proof of the essentiality of the motor vehicle could be desired.

CAR AND TRUCK REGISTRATIONS

June 30, 1922

New York	812,138
Ohio	760,000
California	722,853
Pennsylvania	716,644
Illinois	676,748
Michigan	493,246
Iowa	460,069
Texas	449,436
Indiana	425,000
Massachusetts	367,706
Wisconsin	357,968
Missouri	338,426
Minnesota	336,000
Kansas	288,742
New Jersey	287,859
Nebraska	216,902
Oklahoma	187,000
Washington	181,762
North Carolina	162,942
Virginia	150,000
Colorado	145,000
Maryland	130,631
Kentucky	129,100
Connecticut	127,773
Georgia	126,500
Tennessee	117,000
South Dakota	111,447
Oregon	108,779
Florida	105,029
West Virginia	90,250
North Dakota	88,719
Alabama	87,129
South Carolina	84,449
Louisiana	83,624
District of Columbia	78,055
Maine	77,419
Arkansas	74,947
Mississippi	63,420
Montana	55,700
Rhode Island	51,406
Idaho	47,094
New Hampshire	42,608
Utah	40,700
Vermont	37,452
Arizona	32,847
Wyoming	27,057
Delaware	21,800
New Mexico	20,207
Nevada	10,544
	10,608,127

GAINS AND LOSSES IN REGISTRATION

July 1, 1921-June 30, 1922

Gains

New York	161,608
Ohio	136,684
California	133,990
Pennsylvania	107,376
Indiana	80,110
Illinois	75,766
Massachusetts	67,679
Michigan	57,738
New Jersey	50,520
Wisconsin	42,194
Minnesota	41,295
Iowa	34,713
Missouri	32,624
Texas	31,310
Tennessee	30,390
Virginia	30,000
District of Columbia	25,671
Washington	22,183
Kentucky	21,607
Maryland	17,726
Arkansas	16,666
Florida	15,331
North Carolina	15,032
Alabama	13,053
Louisiana	12,624
Colorado	12,500
Maine	11,429
Connecticut	9,663
Georgia	7,848
Mississippi	7,306
Oregon	6,505
New Hampshire	5,517
Rhode Island	4,832
Vermont	4,694
Montana	4,200
Oklahoma	4,000
Delaware	3,000
North Dakota	2,409
Arizona	1,672
Kansas	1,351
Nebraska	993
Idaho	964
Nevada	872
	1,363,645

Losses

West Virginia	4,200
New Mexico	3,658
Wyoming	2,943
South Dakota	1,673
Utah	436
South Carolina	183
	13,093
Net gain	1,350,552

PERCENTAGE GAINS AND LOSSES IN REGISTRATION

July 1, 1921-June 30, 1922

Gains

District of Columbia	48.8
Tennessee	35.1
Arkansas	28.5
Virginia	25.0
New York	24.8
Indiana	23.2
California	22.7
Massachusetts	22.6
Ohio	21.9
New Jersey	21.3
Kentucky	20.1
Louisiana	17.8
Pennsylvania	17.6
Alabama	17.6
Maine	17.3
Florida	17.1
Delaware	15.9
Maryland	15.7
New Hampshire	14.8
Vermont	14.3
Minnesota	14.0
Washington	13.9
Wisconsin	13.4
Michigan	13.3
Mississippi	13.0
Illinois	12.6
Missouri	10.7
Rhode Island	10.4
North Carolina	10.2
Colorado	9.4
Nevada	9.0
Connecticut	8.2
Iowa	8.2
Montana	8.2
Texas	7.5
Georgia	6.6
Oregon	6.4
Arizona	5.4
North Dakota	2.8
Oklahoma	2.2
Idaho	2.1
Kansas	.47
Nebraska	.46

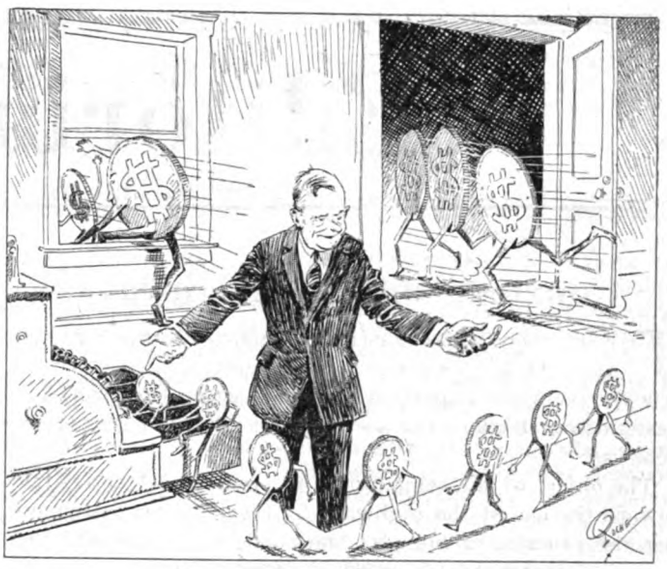
Losses:

New Mexico	15.3
Wyoming	9.8
West Virginia	4.5
South Dakota	1.5
Utah	1.1
South Carolina	.22

Average Gain for U. S. 14.8 per cent.

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A Dollar's a Dollar But—



Some Are Bigger Than Others

By NEAL G. ADAIR

FOR two weeks Cornelius J. Reilly had been riding the roads, some good, some not so good, in the Callawassa territory. He had been calling on his dealers and had found them something like the roads.

There was no one in the salesroom nor the combination office and accessory store when he drove up to the Circleville Garage. Finally he located Bailey, the proprietor, in a far corner of the shop, washing a car. Bailey waved a wet hand in welcome and went on with his job. A little later, when the garageman returned to the office and greeted his visitor, Reilly handed him a slip of paper containing a name and address.

"Chap from Upton; seemed to be interested in that roadster out there on the floor," the distributor observed.

"Hope so," said Bailey. "Roadsters don't go very strong around here. Everybody wants a family car."

"I sold him pretty well on the Sennett," Reilly continued. "Tried to keep him here until you got out of the mud, but he said he didn't want to buy to-day; guessed he'd come back next week."

"I'll drive over to see him," Bailey promised, sticking Reilly's memorandum on a pin file on his desk.

"Going over today?" the distributor asked, more suggestively than questioningly.

"Can't," Bailey replied. "Got to unload a carload of cars this afternoon."

"Where's your salesman; still have him?" Reilly asked.

"Collins? Sure."

"Why not send him over—today. That bird looked like a sure fire buyer," Reilly persisted.

"Got to use Collins to get those cars out," Bailey said. "Can't spare more than one man from the shop and it'll take three of us to swing the job."

Reilly shook his head. "Same old story," he mused. "Driving tacks with a sledgehammer."

"Huh?" Bailey grunted.

"Been bumping into the same thing all around the territory," Reilly continued. "Dealers and salesmen, fellows capable of hitting up a pretty good pace, stuck in the mud instead of hitting along on a clear highway."

"What's the idea —," Bailey began; but Reilly ignored the attempted interruption.

"Ten dollar a day men throwing the ten out the window to make three or four, washing cars or unloading them or tinkering with them."

"But you've got to wash cars and unload 'em and tinker with 'em, sometimes, haven't you?" Bailey demanded.

"Sure you have, that is, somebody in your place has, but you can't afford to do that kind of work and you can't afford to have your salesmen do it," said Reilly.

"And I can't afford to hire another man to do it," Bailey persisted.

"Let's not talk in circles," Reilly suggested. "Let me tell you some things I've seen these past two weeks, dodging in and out of the sticks.

"In one town—pretty good town, too, bigger than yours—I found our dealer and all his three salesmen down at the railroad station unloading cars. They spent nearly a whole day at the job, forgetting their prospects and neglecting their customers while they did a piece of work that the boss himself or the shop foreman, with one experienced man and a couple of laborers, could just as well have handled.

"In another place I found the salesmen were making a practice of doing free service work—minor adjustments and so forth—on cars they had sold, instead of turning them over to the shop and going about their business earning profits for the house and commissions for themselves. The dealer claimed it kept the salesmen close to their customers. I watched the process for awhile, with the owner fussing around the car while the salesman got all gummed up with grease, and I suspect the owner had about the same notion I did, that he would rather have had the job done by a regular mechanic.

"In still another place the salesman—there was just one, like your business here—had to wash his own demonstrator. Fine way for a salesman to start a day of calls on prosperous farmers and business men—and some women.

"And in half a dozen places, some larger than yours, some not so big, I found the boss out washing a car, turning his back on possible customers and fixing himself so that he wouldn't be fit to meet them when he did get back to the front of the building.

"I saw a lot of other things, too, Bailey, all along the same line—dealers working to save wages instead of to earn profits, and cutting down their own chances for more profits and their salesmen's chances for commissions by putting them on laborers' jobs."

"But you can't have an extra man sitting around half the time just to keep him handy for odd jobs," Bailey objected.

"Now you're talking," Reilly responded. "Certainly you can't. Nowadays every man around the place has got to be a producer. And the way to make every man a producer is to lay out a definite plan of work for the entire organization. Some of these places I've been telling about need another man, a combination laborer and mechanic's helper, to look after all kinds of odds and ends. Some others can't afford an extra man; all they need is to have the work planned so that one of the mechanics can drop his tools and turn to something else once in a while without having the shop tied up and urgent repair work delayed. And it can be done, because it is being done—in some of the places I have visited during these same two weeks.

"You can boil the whole thing right down to this, Bailey. There's only one way to sell cars and that is to keep everlastingly on the job, seeing people who can buy them. You can't do that when you are down at the freight house or under a car or back on the washrack. And you can't make a salesman's work profitable for you and satisfactory to him unless you give him every chance to sell."

"But in my place here —," Bailey began.

"It's your place," Reilly retorted.

"But what would you do?"

"It's your place. Think it over—and you'll do something."

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Editorial Notes

Courtesy on the Highways

THE efforts of the motor truck committee of the National Automobile Chamber of Commerce to get home to truck drivers the importance of courtesy on the highways deserve the co-operation and support of the motor truck dealers.

The object of the campaign is to create a better feeling toward the use of the highways by trucks through removing the practice of hogging the roads by trucks and the incivility sometimes observed in truck drivers.

In a pamphlet entitled "Common Sense on the Highways" the thought is being placed before those interested in trucks on the highways in these words: "Courtesy is as cheap as the air you breathe—Practice it on those with whom you come in contact on the highways. IT PAYS! When you are aware that a faster moving vehicle is trying to pass move to the right at the first opportunity. Give the passing vehicle a cheerful greeting as it goes by.

"Cheerfully sharing the road with others makes friends. Blocking the road makes an unnecessary enemy. You can't afford to make enemies—they may prove expensive."

Seeking the Motorist

MOTORISTS in the New England States have interpreted as an act of retribution the recent advertising of the Maine State Highway Commission inviting motorists to visit that state.

They see in it a warning to other states that drastic laws regulating automotive vehicles sometimes become boomerangs and that in considering legislation for the control of motor vehicle traffic and the raising of funds for state highways there must be full appreciation of the importance of the motor vehicle in the general scheme of present-day life.

Maine recently put on its statute books a law aimed primarily at motor trucks which denied trucks from other states the right to be operated on its highways, there being but a five-day grace period. Putting the law into effect brought retaliation from Massachusetts and then a conference and a controversy which is still unsettled.

Motorists in other New England States, believing that the law applied to motor cars as well, have been keeping out of Maine. As a result the tradespeople have suffered and the state, as a means of righting itself with the tradespeople and correcting the apparent misinterpretation of the law by out-of-state motorists has been using the following advertisement in some New England newspapers:

"The State of Maine does not require passenger cars from other states to be registered when coming into Maine —Maine's automobile laws are liberal and cars from other states are not required to be registered unless they remain within the state for a period exceeding 30 days. Operators from other states are not required to take out a license. The doors to the State are wide open and everybody is invited to come and enjoy the natural attractions that the State affords."

(Signed) THE MAINE STATE HIGHWAY COMMISSION.

There is no means of estimating the loss to Maine tradesmen as a result of the drastic law, but it is believed to be considerable.

Is there a warning in the fact that Maine has gone into advertising to attract motorists for other states contemplating drastic motor vehicle legislation?

What About Mechanics?

THERE is a good deal of complaining by motor car and truck owners about the quality of work done in automotive repairshops. Some of it is justified. There is a good deal of complaining, too, by repairshop operators about the lack of ability of the mechanics they are able to get. Some of this is justified. There is a countrywide shortage of thoroughly competent garage mechanics. What are we going to do about it?

The repairshop operator says he can't get the men. They simply "ain't." This doesn't imply that there is a shortage of man-power. But there is a shortage of competent man-power. New mechanics, that is, intelligent, painstaking, conscientious mechanics, are not being developed fast enough to take the places of those who go into other fields of work and to keep pace with the demands of a rapidly growing business? Again, why?

There are several reasons. One is that repairshop work is dirty work and many men refuse to enter it, others leave it for this reason. It cannot be made as clean as office work, but it can be made reasonably clean by care of floors, benches, tools, stock and other items of the shop and its equipment. And it need hardly be said that they will be kept only as clean as the proprietor wants them to be. Another objection to the mechanic's job is its long hours in many cases. The plumber, carpenter, machinist and many other classes of artisans work their eight hours, or at the most, nine or ten, then they are through. This prevails even in small towns. The garage mechanic in some shops in many small towns and some cities often is compelled to labor from early morning to late evening. There is little joy in life for him. No wonder he quits.

This is not a plea for the "downtrodden mechanic." It is simply a suggestion to the men who operate garages and service stations that the hours and conditions that go with the mechanic's job have much to do with the difficulty of getting and keeping good men. It is a suggestion that the garage business, like older and better established businesses, will have to consider the possibilities of making speed machinery and tools shorten and lighten, even more than they have, the burden of manual labor in the shop.

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What Happens When You Go to Court

An Explanation by the Legal Editor of How the Wheels of Law Turn When You Start a Suit Against Someone

UNLESS a dealer has actually been sued a number of times, or has had occasion to sue somebody else, his notions of the courts and their procedure and practice are bound to be somewhat erroneous.

Of course, it is not necessary for a dealer to be familiar with all the different court rules and methods of procedure, as that is something he pays his attorney to know. On the other hand, however, there are numerous little things which may help in a great measure toward winning your case, if at some time you find it necessary to bring someone into court, or are yourself brought in by someone else.

For all ordinary purposes we may divide the courts into Civil Courts and Criminal Courts—the first class taking care of all civil action, such as disputes arising out of contracts, sales, repair work, etc., and the second class, criminal offenses, such as speeding, driving a car without a license, etc. At this time, we are more interested in the first class of actions.

A question frequently asked by dealers is, When has one person a legal right to sue another? A person may start suit against another whenever he feels so inclined—if he has a good case, or even if he has no case at all. Unfortunately, there is no way of preventing one man from suing another just to harass and annoy him, and if the case is thrown out of court on the ground that the party bringing it has no cause of action, the only penalty he has to pay for his spitefulness or foolishness are the costs of the action. Of course, it would be hard to find a reputable attorney who would start a court action when he saw there was really no merit in his client's claim, but, as it is not difficult to find one of the other kind, it frequently happens that such actions from time to time are started.

Costs and Fees

Where a case is dismissed and costs rendered against the party bringing it, the person who has been haled into court may find that he is out of pocket a much greater sum than that which the costs amount to. The court costs do not include the attorney's fees, but are simply certain arbitrary sums allowed by statute for certain things, such as serving summons and entering judgment.

We have any number of courts in this country which take care of civil actions. These may be brought in the United States Courts, the State Courts and Municipal Courts in the various cities, according to the residence or citizenship of the parties, the amount of the claim and the subject matter of the suit.

An action is usually started by the service of a summons and complaint; the summons commanding the adverse party to appear in court on a certain day and answer the claim made against him, and the complaint setting out at length in technical language the details of the claim. The complaint is usually sworn to by the party bringing the action.

The party against whom the suit is brought then has a certain number of days, which varies according to the court in which the suit is brought, to answer the complaint. In his answer, which is also usually sworn to, he puts in his side of the case and sets out his counterclaim, if he has any. The next step with which the party is intimately concerned is the trial of the action, in which he will appear as a witness, together with such other people who are familiar with his side of the case as he may choose to bring into court, or subpoena.

In the majority of cases, the trial of a case is not so easily reached, however, as it is common practice in the courts for the parties to amend their complaint or their answer to require a Bill of Particulars, which is an itemized statement of the matters in controversy, and to make motions in court regarding this, that or the other thing, until a long period of time has elapsed.

It is impossible to state how long it will take before a case will come to trial. In some of the lower courts, like the Municipal Courts, a trial may be reached within two or three weeks, while in others, like the Supreme Court of New York, it is likely that it will be a year or more before a trial is had, owing to the fact that there are always so many cases remaining undisposed of.

The case, of course, may never come to trial, as the complaint may be dismissed before trial, at the beginning of the trial, or when all the evidence is in. Even if the case is tried and judgment rendered, it does not necessarily follow that you will get the money you are suing for, as a judgment itself is only a lien on whatever real property the debtor may have, and in order to reach the personal property, execution must be issued to the sheriff who, when he calls around to levy on the debtor's property, may be told that the property belongs to someone else. In that event, the sheriff will refuse to touch any personal property, unless you can assure him that the debtor is the actual owner of the same and agree to indemnify him against any damages which may possibly be recovered from him in case that it does turn out that the property is owned by someone else.

Most states then allow an examination, in which the debtor can be put under oath and questioned concerning all of his property, both real and personal, and if it finally appears that he has no real or personal property, his weekly wages (if he earns over some certain amount) may be levied upon and he may be made to pay a certain percentage every week until the indebtedness to you is paid.

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

New York Lien Does Not Justify Forcibly Retaking Car

IN a late New York case it was decided that the garageman's lien law of that state does not justify a forcible retaking of a car on which a lien is claimed.

"Section 184 of the Lien Law gives no right to retake a car by force," said the court. It pointed out that a lien is lost by voluntary surrender of possession, but if the car is merely temporarily surrendered the lien is not thereby invalidated.

The court also took occasion to direct attention to the fact that damages for the loss of use of a pleasure vehicle may be recovered in New York.—Rapp vs. Mabbett Motor Car Co., 194 N. Y. S. pg. 200.

Outsider May Repossess Car in Mississippi

THAT the seller of an automobile in another state may recover possession of the car in the State of Mississippi, was the ruling in the case of Harrison vs. Broadway Motor Co., which was tried recently.

Accordingly a Tennessee seller of a motor car who retained title was allowed to recover possession of the car in Mississippi, even though an innocent purchaser for value, without notice, had bought the car.—91 So. 453.

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Service Follow Up Increases Repair Jobs

Letter and Return Post Card Check Back on Shop Work and Help Keep Customers Satisfied

IN order to popularize its service department and to uncover any possible causes for dissatisfaction, Clark & Leonard, Los Angeles Ford and Fordson dealers, follow up every repair job with a letter and postcard to the owner. On the postcard the following questions are asked:

"Were you pleased with the work? If not, why? Were you waited on promptly? Did you receive courteous attention? Do you think we could improve our service to make it more efficient and satisfactory? If so, how?"

The form letter accompanying the card reads as follows:

"A short time ago you entrusted to us the responsibility of making repairs on your Ford car.

"We earnestly hope the work was satisfactory in every respect, but if not, we would consider it a great favor if you would tell us about it.

"While we shall appreciate any kind words relative to the various departments of our organization, we will also welcome a frank and honest criticism of our service as a whole.

"Will you kindly fill out the attached card and mail it to us? Thank you."

Ideas On Selling and Management

You will find them on this and the opposite page—ideas that will make dollars or save dollars for the

Car Dealer Truck Dealer
Equipment and Tire Dealer
Tractor Dealer Repairman

Some of our readers are contributors to this section of Motor World. Have you developed a plan that might help some other men? If you have, will you write it out and send it in?

From the many replies received, the company worked up an attractive form letter that is sent to all Ford owners in its territory. Facsimiles of the cards filled out by owners and carrying words of praise for the service rendered by the organization are reproduced on letter paper.

Very little needs to be added to these testimonials, and the form letter that is sent is especially brief and to the point. It reads as follows:

"These facsimiles tell their own story. We have dozens more on file for your inspection.

"May we serve *you?*"

There has been a substantial increase in the volume of repair work done by Clark & Leonard as a direct result of this follow-up system.

Artist in Mitchell Window Display



This is a picture of the model display room at the plant of the Mitchell Motor Co., Racine, Wis., which is used as a laboratory for developing display ideas for dealers. Two artists are shown making drawings of important features of the car. This idea has been tested out in the New York Mitchell salesroom, where it attracted a great deal of interest. When the salesman has finished his description of the car, the artist explains further by means of sketches various parts of the engine

How Southern Dealer Sells Used Cars

THE Standard Auto Supply Co., of Montgomery, Ala., does not use the phrase "used cars" or "rebuilt cars" in its used automobile advertising, but refers to the machines as "reconstructed cars." This firm's newspaper advertising is unique in its originality. Here is a quotation from a recent ad:

"We used to 'strut' our girls on Dexter Avenue on Sunday afternoons, but now if we can't 'catch air' with them we are simply out o' luck. Boys, don't let the other fellow drive away with your own little Lucinda, but get down here real early in the morning and pick up one of our honest-to-goodness bargains and be all tuned up and rearing to go when next Sunday comes around."

This Display Idea Always Brings Results

THE McCarty-Greene Motor Co. of Birmingham recently put on a window display, the total cost of which did not exceed $5, to which they traced directly the sale of four automobiles. A car was placed in the window, while on the plate glass were placards calling attention to certain features of the automobile. A ribbon was run from each window card to that part of the machine which it described. The motometer was attached to the motometer card, the windshield wiper to the corresponding card, etc. The display attracted unusual attention, considering its low cost and the amount of work involved.

Uses College Boys to Build Prospect List

A DEALER in Birmingham, Ala., has employed several college boys for the entire vacation period and has them out making up a list of prospective purchasers of automobiles. These boys, while looking for prospects, also solicit shop work, tire business and accessory sales. The dealer expects to build up a valuable prospect list.

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Service Properly Sold Makes More Sales

The Equipment Merchant Gives More Than Merchandise for Money—So Why Not Tell Folks About It?

THE accessory merchant's service is something that he cannot put up on the counter and display like he does a spotlight, or an electric drill. But it deserves to be sold and it is just as salable as many of the items that the customer can take in his hand and examine before buying.

Some accessory merchants have found that they can successfully sell their service and appreciably increase the sales of certain articles that involve installation and maintenance service by having a neatly lettered sign made and hung in a conspicuous place which lists the various services performed by the merchant. A sign of this kind hung over the cashier's desk, on the wall behind the counter at convenient points, and occasionally in the display window, generally is effective.

Then, there is the opportunity of selling the store's service through the advertising columns of the local newspapers, through sales letters, post cards and pamphlets, and also as a part of the selling dialogue in direct contact with customers in the store.

Even when service is given away it can be "sold" in such a way that it creates a good impression on the customer, gains his good will, and makes him want to buy again.

If service were something that could be displayed on the counter or in the window it wouldn't be so hard to sell it, but since it isn't it is necessary to use other means of directing attention to it.

No Tire

is really cheap unless it performs to your satisfaction.

When you select your next tire keep that *important fact* in mind.

Buy a

McCREARY TIRES
"Built for Longer Service"

and you will find there *is a difference* that will leave a *lasting impression.*

Call 1622 Home Comm.

ALTSHELER & CO.
Incorporated.
726-732 W. Main St.

ORIGINATORS OF FREE ROAD SERVICE

"Ready to Jump"

The Prescriptions Were Delivered

At about 10 o'clock one night a druggist called our store by telephone.

His delivery car was temporarily disabled by tire trouble, and some important prescriptions awaited delivery.

The sick tire could not be cured immediately, but Quick Tire Service did not want the sick people to lack relief.

Our salesman, with his car, acted as chauffeur for the druggist's delivery boy, and the medicine reached the patients without delay.

In the meantime, our service truck had been sent to the drug store, with our service man to work on the tire. When our salesman, having completed the deliveries, returned, the druggist's car was again ready for action.

Quick Tire Service cooperates with its customers. It maintains facilities to meet every tire emergency, and a force to whom it is always a great satisfaction to serve a little more than is expected.

Quick Tire Service, Inc.

Harrison 8840 — Note telephone number.

McGee at 27th St. — Read address again.

The large advertisement shown above is a good example of the effective "selling" of service. This was a service that was given away and yet it has been so effectively sold in the advertisement that it is bound to create a good impression on the reader. The small ad above sells the idea that satisfaction, which the dealer is ready to insure through service, is the real test of economy in purchasing tires

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A 29 Million Dollar Investment in Better Traffic Facilities

New York and New Jersey Now Building Highways Under Hudson River to Accommodate Motor Vehicles

THE much talked of saturation point threatens to manifest itself not in motor car ownership but in the inadequacy of highway facilities. National, state and municipal provisions for accommodating the increasing number of motor cars and trucks is not keeping step with the increased use of the highways.

For a time the direction of traffic streams through existing highways, the establishment of one-way thoroughfares, and similar provisions were effective. But to-day it is recognized that we must BUILD to meet the demands of motor vehicle traffic.

A notable example of directing traffic over existing highways to facilitate its movement is the designation in New York of Brooklyn Bridge, recently, as exclusively a horse-drawn vehicle highway and Manhattan Bridge as exclusively a motor vehicle highway.

The greatest example of building to meet traffic conditions is the Hudson River Vehicular Tunnel, which is being constructed now at an estimated cost of $29,000,000. What this great project actually amounts to is the building of two highways under the Hudson River connecting New York and Jersey City, thus providing a direct route for motor cars and trucks from the mainland to the heart of Manhattan Island. Although a dozen or more ferries, with large boats plying on five to fifteen minute schedules, carry an average of some 25,000 vehicles a day, there are times when many of the ferries have lines of vehicles blocks long waiting for accommodation.

It is believed that the completion of this great project will accomplish the following results:

1—Considerably shorten the time of transit across the Hudson between the State of New York and the State of New Jersey, thereby affording a continuous means of communication between the states unaffected by climatic and other possible interferences.

2—Relieve to a great extent the present traffic congestion.

3—Alleviate conditions of distress due to inability to get supplies and necessities to New York City, which conditions now exist to a dangerous degree.

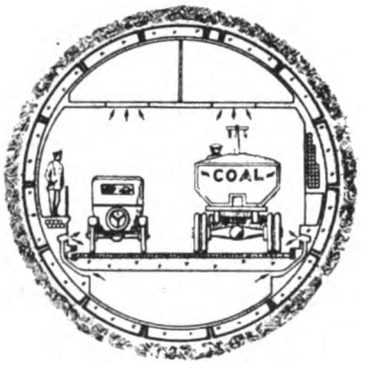
4—Increase the tax value of real property within a very considerable radius at the terminals of the tunnel.

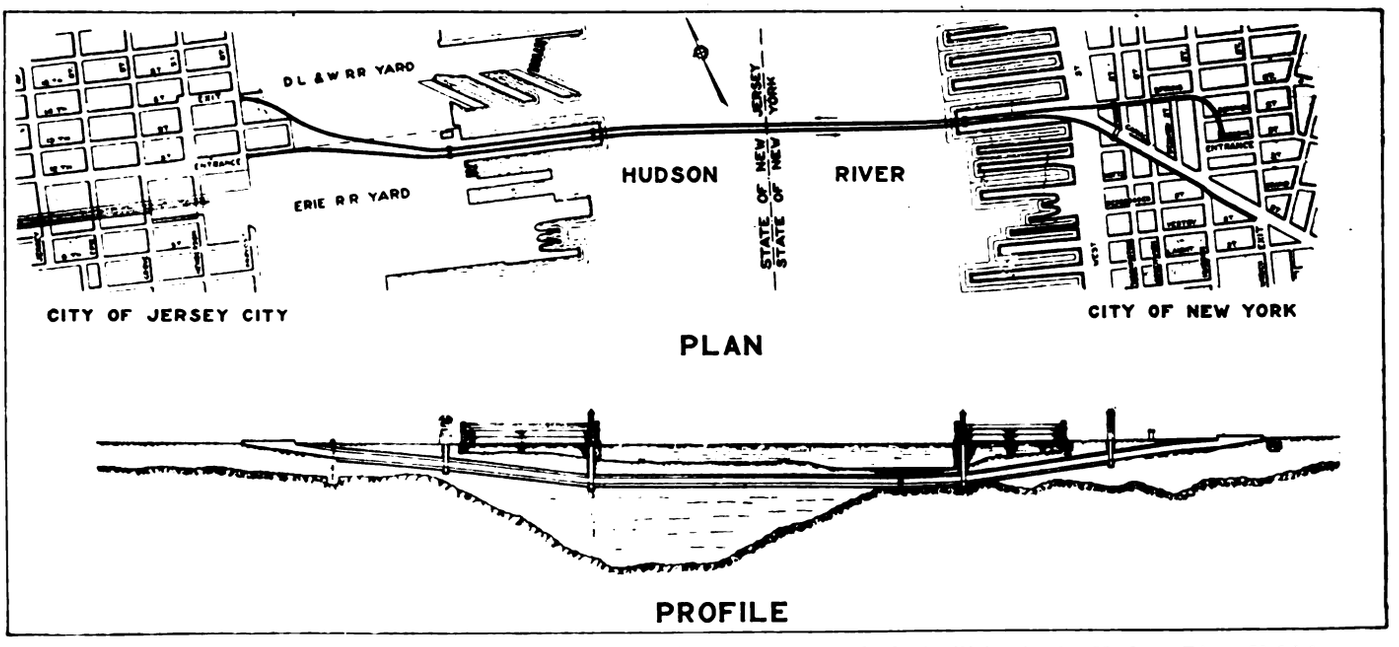
5—Pay its cost three times over in 21 years, figuring the tolls at the rate now charged by the Hudson River ferries.

6—Directly affect the cost of living to a large portion of the population of both states by reducing the cost of trucking and saving time in the transportation of commodities.

7—Increase the facilities for commerce in the port of New York and serve to a very considerable degree to eliminate difficulties existing by permitting the prompt removal of freight from the railroad yards in New Jersey without dependence on lighters and other floating equipment.

8—It would furnish a means for the uninterrupted movement of troops and





One of the greatest single enterprises in the interest of better motor vehicle facilities is the Hudson River Vehicle Tunnel, connecting New York City and Jersey City, now being constructed. When completed in 1924 this tunnel will provide two motor vehicle highways connecting Manhattan Island with the mainland with an hourly capacity of nearly 4000 vehicles. The above plans show the location and grade of the tunnel. Each bore will be constructed as shown in the small illustration above

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supplies to and from New York City in time of need.

It is to provide these advantages, in recognition of the growing demand for better highway facilities for motor vehicles of all description that the States of New York and New Jersey have undertaken this great project jointly. Each state is to pay one-half of the cost.

The Hudson River Vehicular Tunnel will consist of two tubes running parallel under the Hudson River. One will be the eastbound highway and the other the westbound. Each will provide a highway a little more than a mile and three-quarters long, more than a mile of each being under the river. Each highway will be 20 ft. wide, permitting passenger cars to pass the slower moving motor driven and horse-drawn commercial vehicles at any point along the way. The highways will have headroom of 13½ ft. The maximum up-grade will be 3.6 per cent and the maximum down-grade, 4.05 per cent.

The tunnel will have an hourly capacity of 3800 vehicles, and a yearly capacity of 15,000,000 vehicles. The estimated traffic through the tunnels when they are opened in 1925 is set at 5,610,000. This is expected to increase to 12,900,000 vehicles in 1934.

Ground was broken on Columbus Day, Oct. 12, 1920, and the first contracts for the sections under the river, the work on which is now in progress, were awarded this spring.

The building of this great vehicular tunnel by the States of New York and New Jersey is a mighty attestation of the importance of the motor driven vehicle as a transportation unit.

It is the greatest single act in recognition of the fact that we must BUILD to accommodate more motor vehicles.

The Proposed Hudson River Bridge Above Peekskill

Span, 40 Miles Above New York, to Be Built by Private Capital—State to Purchase in 30 Years



The proposed Hudson River bridge above Peekskill, 40 miles above New York City, which is to be built by private capital and become State property by purchase in 30 years. It is an important contribution to better highway communication in eastern New York State

ANOTHER contribution to better highway communication between New York and the country west of the Hudson River is the proposed Bear Mountain-Hudson River Bridge near Peekskill, some 40 miles above New York City.

The structure will cost about five million dollars. It will accommodate vehicular and foot traffic and will be approximately 55 feet wide. The western approach will be at Bear Mountain, five miles below West Point, and the eastern approach three and one-half miles above Peekskill.

The charter provides that it will be a toll bridge for 30 years. At the end of that time it will be taken over by New York state. The state also has the option of buying the bridge at any time before the 30 years elapse.

While the bridge is located some 40 miles from New York City, it is expected to have a decided effect in relieving congestion and facilitating traffic. In addition it will provide a highway from New England to upper New York State and the summering regions of the Catskills. Short haul motor traffic will be greatly facilitated.

The collection of tolls is under the supervision of the Public Service Commission. The present plans call for a charge of one dollar for a touring car and 15 cents for each passenger. Truck rates will be slightly higher according to tonnage capacity.

To estimate the amount of traffic that would use the bridge, and from that the necessary toll charge to pay for the investment and yield a yearly return, traffic census was used.

The final estimate for the Hudson River bridge, determined from the various data collected by the builders, Terry & Tench, totals half a million motor vehicles for the first year (1924) and allows a 2 per cent yearly increase.

To those who are interested in getting motor vehicles in the hands of operators and those who are interested in keeping them on the road once they are sold, the problem of highway congestion has real significance. Sales resistance cannot easily be laid to this or that cause to a specific degree, but it is evident the resistance due to overcrowded roads is increasing and will continue to do so until the problem of highway congestion is solved.

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Valve and Ignition Setting on the Lincoln

Detail Methods of Locating Trouble and Maintaining the Parts in Their Correct Adjustments

THE Ford Motor Co. is rapidly developing standardized service methods for the Lincoln car. The following methods have been developed for setting the valves and ignition:

To Check Spark Timing

The most simple and accurate method of checking timing is as follows: 1—Remove floor boards and plate over clutch housing.

2—Remove distributor head and rotor.

3—Inspect breaker points and if necessary dress them down to a smooth surface, using an oil stone, as these points cannot be filed. If an oil stone 1/16 in. thick can be procured the points can be dressed down without removing them.

4—Adjust both breakers so that a .015 feeler gage will just pass through at the widest opening when the breaker is on the highest point of cam. Both breaker points should be as near the same gap as possible.

5—Never attempt to check timing without first cleaning and adjusting breaker points as mentioned above.

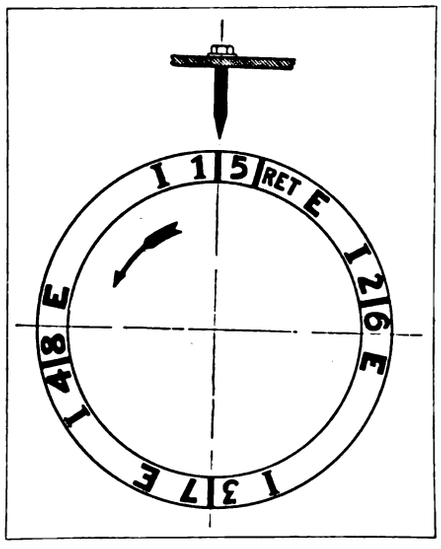


Fig. 1—Lincoln flywheel and clutch ring marking diagram

6—Open all pet cocks, and crank engine until No. 1 cylinder is on compression and piston is nearly at top center. Then look at the markings on clutch ring. Nos. 1 and 5 should be nearing pointer. Have engine cranked slowly until mark RET, which is ⅝ in. from Nos. 1 and 5, is about 2 in. from the pointer.

7—Retard spark lever all the way.

8—Place small piece of paper between left breaker points. (Left or right side is always determined from driver's seat.)

9—Turn on ignition switch and watch ammeter closely, as it will show approximately 8-10 amperes discharge.

10—Have engine cranked very slowly by tapping crank handle so that flywheel moves only a fraction of an inch at a time.

11—The instant right breaker points separate the ammeter hand will show 5-6 amperes discharge. If RET mark is within ⅛ in. of pointer the spark setting is correct.

12—If the RET mark is found to be past the pointer more than ⅛ in., the spark is late. This can be corrected by loosening screw in center of distributor cam and moving cam slightly in an anti-clockwise direction.

13—Then crank engine until No. 1 piston is on compression again and check timing again as outlined above.

14—If spark is timed too early, distributor cam should be moved slightly in clockwise direction.

15—It may be necessary to check timing two or three times before obtaining the correct setting.

16—The screw in distributor cam should not be pulled down too tightly, as it is liable to pull out of locking wedge and cam could not be moved again without considerable trouble.

Better Mechanics

Article No. 251

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.

Locating a Miss in the Lincoln Engine

1—First determine which block is not firing properly.

2—This can be easily done by disconnecting distributor low tension terminal on left side, which will allow engine to run on right block.

3—If right block is O.K., connect lift low tension terminal and disconnect terminal on right side.

4—The engine will then run only on left block.

5—The distributor low tension terminals are located on distributor near mouth of ignition conduit.

6—After determining in which block the miss occurs, short each spark plug in turn and miss can be easily located.

7—If changing spark plug does not overcome trouble, disconnect wire to plug and hold it about ⅛ in. from plug. If spark does not appear regularly, or does not show at all, it indicates a short circuit in high tension wires.

8—By holding wire still further from plug the spark can be heard jumping and the short circuit can be easily located.

9—The most likely places that this will occur is at conduit cover stud and junction of conduit and dash.

10—Care should be used when replacing conduit covers that wires are not pinched when cover is fastened down.

11—If spark and spark plugs are O.K. and cylinder still misfires, look for valves riding due to tappets set too closely or exhaust valve sticking and holding open slightly.

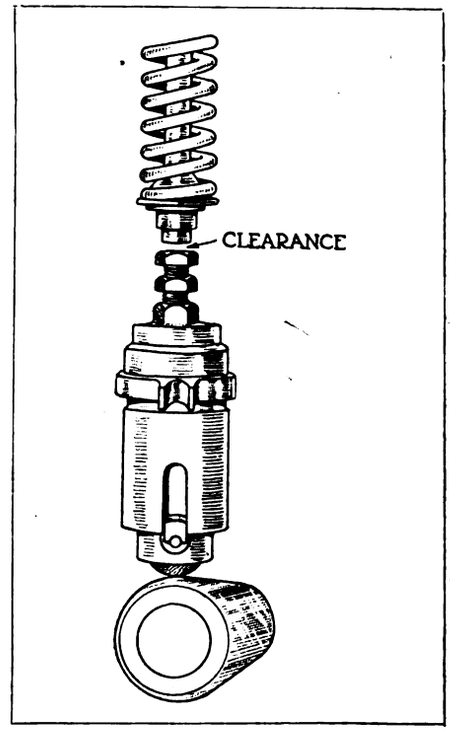


Fig. 2—The valve tappet adjustment on the Lincoln

12—An uneven hissing sound in the carbureter of a thoroughly heated engine is indicative of a sticking exhaust valve.

Adjusting Valve Clearance

The usual practice in adjusting valve clearance is to have piston on compression stroke, and set clearance with both valves closed. This should *never* be followed on the Lincoln engine.

The cams are ground with the back

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or heel or cam cut in approximately .004 in. from a perfect circle. This is to allow for a sufficiently close adjustment and still insure that the valves seat properly on the compression stroke. Fig. 2 shows the arc of the cam on which cam roller should rest when valve clearance is adjusted.

Place cam in this position as follows:

1—Hand crank engine and watch exhaust valve in No. 1 cylinder right block.

2—When nearly closed the letter "I" of 1-5 center of Fig. 2 should be nearing pointer.

3—Tap crank slightly, until letter "I" is under pointer.

4—Then set inlet valve clearance on No. 1 cylinder at .003 to .004 in., using feelers.

5—Note that letter "E" is now about 3 in. away from pointer.

6—Have engine turned slightly until letter "E" is directly under pointer, then set exhaust valve clearance at .003 to .004 in.

7—Take the rest of the cylinders in the following order, 3-5-7-2-4-6-8, and proceed as outlined above.

8—The two center and two outside valves are exhaust.

9—Always remember to watch exhaust valve until nearly closed to determine correct position for setting inlet clearance for that cylinder.

10—Bear in mind that extreme care must be exercised in making this adjustment. Noisy or riding valves and burned valve seats will result from improper setting of tappet clearance.

Some Interesting Developments of the "No Trade" Idea

IN June, 1918, in Youngstown, Ohio, The Elton Motor Co. adopted a policy of "no-trade." Someone, elsewhere, may have adopted this policy earlier. But this particular instance is used because the company distributes Cadillac automobiles. Through many months, automobile dealers in that territory debated the wisdom and the efficiency of the plan.

Companies which were selling low priced cars of around $1200 and less, steadily maintained that it was not possible to sell their products on such a basis. They maintained that the prospective buyers of high priced cars were persons having sufficient income to permit of buying the car and holding the old one until it was sold. On the other side, the owner of the low priced car, has practically all of his down-payment possibility represented in the equity in the old car which must be traded, because of the inability of such prospective buyers to have the cash for the down payment.

In Fort Wayne recently, there was a very definite movement toward a no-trade policy by all automobile merchants. The foregoing argument against the no-trade idea was advanced by the dealers in low priced cars there. One merchant there, however, met this argument with an idea that had not been expressed before.

"If the prospect is one who cannot produce the one or two hundred dollars necessary to make down payment on a low priced car, why is he a good prospect? Why do you want that kind of business?" And this dealer was one who handled a low-priced line as well as a high priced line.

In Mobile, however, is a dealer who has blasted into smithereens the argument that the dealer in low-priced cars cannot adopt a no-trade policy.

This dealer sells—and he does—a car selling for less than $600. In 1920 he was trading cars. In 1921 he adopted a no-trade policy. His business in 1921 on the no-trade plan was 126 per cent greater than it had been in 1920.

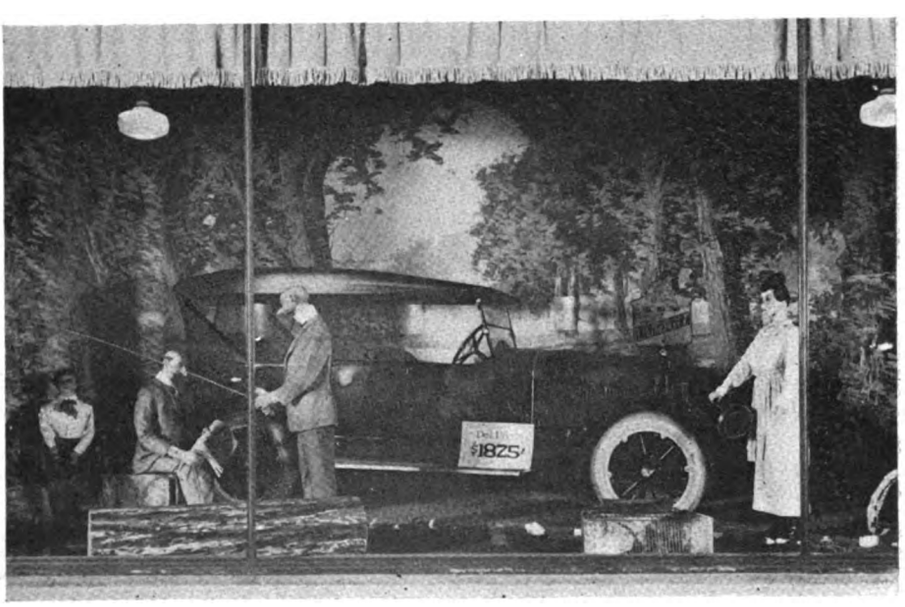
Some of the salesmen for this company have however, strenuously contended against the no-trade idea. They have said that there was business that could be gotten on a trade basis.

To test this out, the company has made an additional provision for handling this particular business. The general policy remains—no-trades. But it has provided to the used car department a small fund, of $2500. With this fund, the used car department may buy outright cars that it will accept, at its figures, whenever the owner of that car has reached the place where the new car sales is about to be completed.

This is worked out on this basis. Any owner can have his car appraised. If his car is submitted for appraisal and consideration by the used car department as a possible buy, the owner is made to understand that the appraisal price becomes an agreement, providing the owner of the car decides to buy a new car from the new car department.

And this interesting thing was found. Of the first 57 cars submitted in the first 12 hours this plan was offered, owners of nine cars who later came back to make trades, had boosted the price, as agreed on between appraiser and owner, an average of $50. These experiences, and others as interesting, have confirmed this company in its determination not to trade and not to use more than $2500 in purchasing cars from owners who otherwise could not raise money for a down payment. A significant fact is that practically all of the deals involving the purchase of the old car, if put through, would be time sales and would amount to an enormous amount of contingent liability or capital investment.

Cartoon Characters in Car Window Display



A window display that hooks up with some popular thought usually provides a mighty fine publicity feature when used in a window display. Torbert McGregor, Inc., Durant distributor in Minneapolis, attracted a lot of attention and favorable comment recently with a window that featured the "Gumps," a widely syndicated newspaper cartoon. The picture shows how features of the principal characters in the Gumps were portrayed by wax figures in a salesroom window with a Durant car. At times, in the evenings, cars were stopped four and five deep and great crowds gathered before the window, which, of course, was mighty good publicity

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Continental Model 6-Y with Chain Drive Camshaft

THE Davis, Columbia and Moon companies are producing in quantities a car generally classed as a $1,000 six, although the prices are not this exact amount. These cars were brought out at the Chicago show or about that time and are all equipped with a new type of Continental engine known as the 6-Y, particularly designed for this type of vehicle.

As would be expected from the field for which this engine is designed, that is, a light weight, economical six-cylinder car, the engine is designed from the standpoint of production ability as well as performance from moderate dimensions. With a bore and stroke of 3⅛ by 4¼ in., giving 195.6 cu. in. piston displacement, the engine peaks at 2600 r.p.m., at which point it develops slightly in excess of 50 hp. with 20.5 per cent compression volume on a car fitted with the experimental model, the speed range has been shown to be from 3 to over 60 m.p.h. on high gear.

The engine is an L-head type with the cylinders cast in a unit with the crankcase. One of the features of the cylinder casting is the layout of the water spaces, which are designed not only to provide adequate cooling, but to maintain the proper operating temperature around the combustion chamber. The cooling water surrounds each cylinder, valve seat and valve stem. The removable cylinder head is attached to the cylinder casting by twenty-one studs. Four lifting lugs are supplied to simplify the removal of the head and to prevent damage to the copper asbestos gasket.

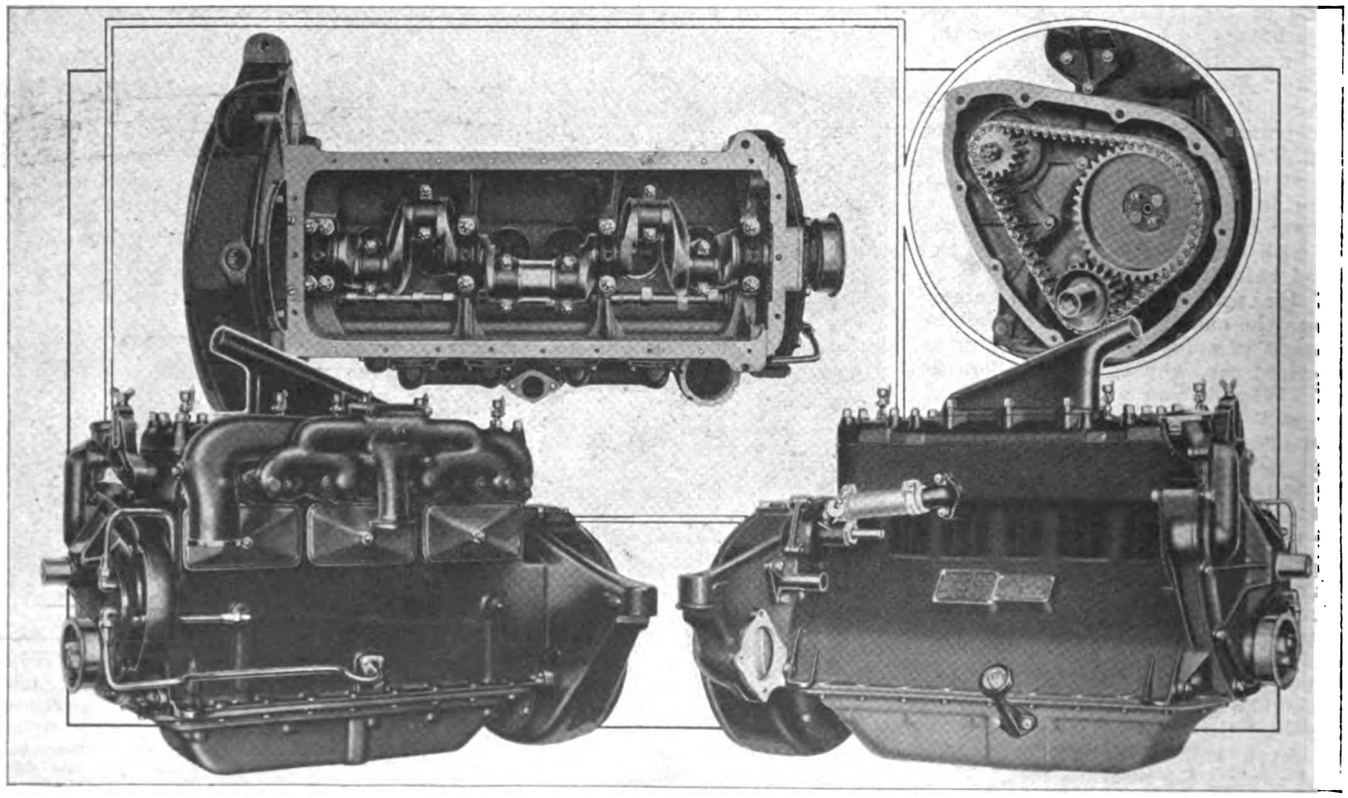
The cast iron pistons are 3⅛ in. long. They are provided with three piston rings of one-piece, diagonally split type. They are hand fitted, first to the cylinder bore and then to the grooves of the piston. The piston pin is clamped in the connecting rod, the clamp bolt passing through the connecting rod just below the piston pin, which is grooved to fit the bolt. The connecting rods are 8¼ in. long from center to center.

The camshaft and lighting generator are driven by a triangular Morse silent chain layout. An eccentric adjustment on the generator provides a take-up for the chain. The valve mechanism is particularly simple, the push rods riding directly on the cams. The push rods are fitted with an adjusting screw and locking device in the usual manner and the valve guides are removable. The guides are 3-9/16 in. long and are reamed to fit the 5/16 in. valve stem. Three cover plates are employed to protect the valve mechanism and retain the oil mist in which it operates. The push rod guides are removable and are made in three groups of four each and arranged in such a manner that they form a sub-assembly which can be removed as a unit.

Lubrication is by pressure feed with a gear type oil pump. The pump is located in the chain case. The oil is drawn through a copper tube leading from the oil reservoir to the pump, from which it is forced to the main distributing line, which has branches running to each of the four main bearings. The oil enters the drilled crankshaft at these points and is distributed under pressure to the connecting rod bearings. Other points are lubricated by the oil which is thrown from the connecting rod lower end bearing. As an added protection to each of the four camshaft bearings, a catch basin is provided from which oil flows through drilled ducts.

Cooling is by centrifugal water pump bolted to the flywheel housing and driven by an extension shaft from the electric generator. The fuel system is arranged to provide an adequate amount of heat to assist in the vaporization of present-day gasoline. The intake and exhaust manifolds are separate castings, but arranged so that the heat of the exhaust is utilized to assist in vaporization.

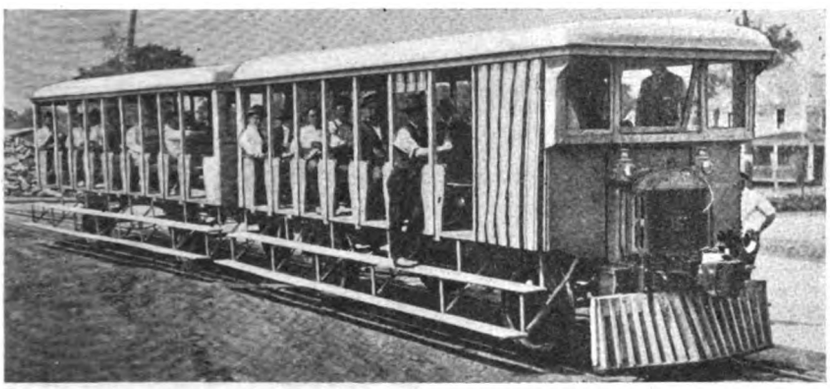
The engine is designed to be installed with a three-point suspension. The third point of support is 1½ in. in diameter by 1⅝ in. long and is integral with the chain case cover. The rear supporting arms are cast integrally with the flywheel housing. This housing is a separate unit which bolts to the crankcase. The crankcase is machined to accommodate a gearset with a No. 4 S. A. E. bolting flange. Provision is made for starting motor with a No. 1 S. A. E. flange mounting.

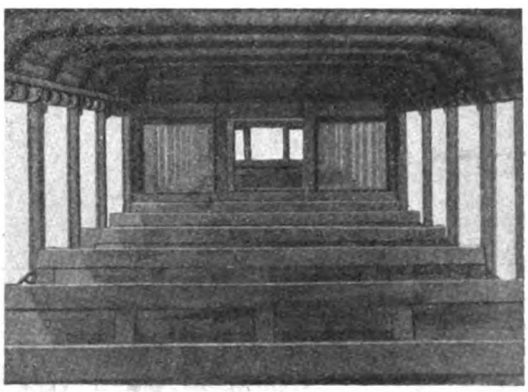


Exterior and interior views of the Continental 6-Y engine

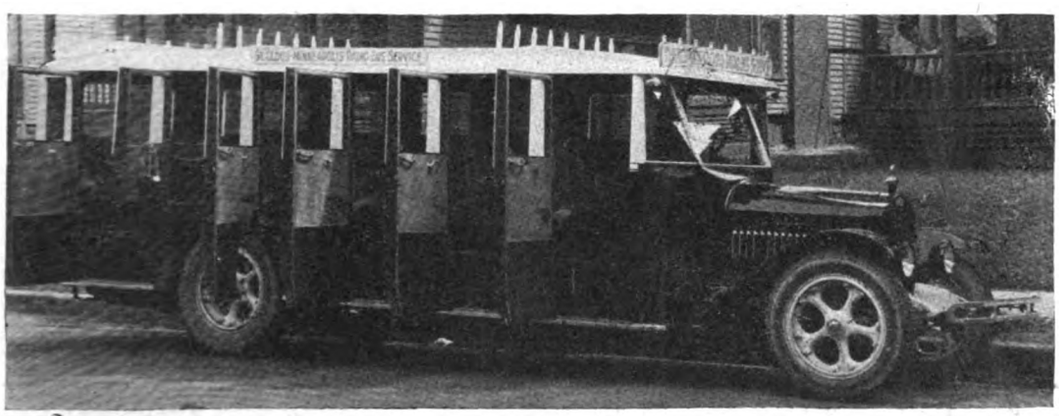
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Trucks Still Finding More Jobs to Do

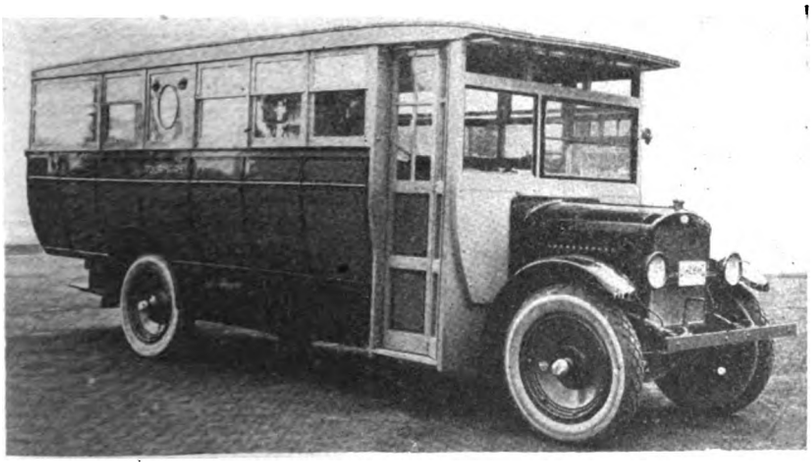


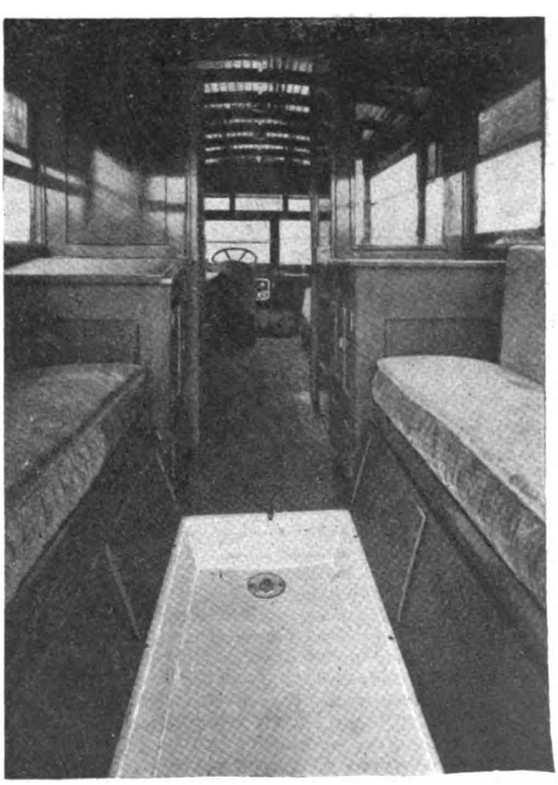


Adaptation of motor trucks to rail service has brought many interesting developments. Here is one using a pair of F. W. D. chassis. The "train" is used on trolley lines with considerable success



Interesting not only as a development of bus building, but in the manner in which radio service was supplied passengers, this White bus is in service between Minneapolis and St. Cloud. Note the heavy upholstery and the door construction





(Above) "Tourmore," probably one of the most completely equipped cars of its kind. Built to order for C. F. Rouze, of Pontiac, for cross country touring. (At right) Interior of "Tourmore" showing bath tub under floor. Seats unfold and form beds. In the middle of the car is a clothes closet on one side and a lavatory on the other. The car also carries an ice chest and a small kitchenette. The chassis is a G. M. C.

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Equipment to Sell

New Devices for the Car and Truck

Little Gas Saver

Rockford Motor Products Co., Rockford, Ill.

Price $4.25.



This is a fuel economizer which breaks up the gas particles into smaller and finer form, adding the proper amount of air to produce a combustible charge. The charge is given a rotary motion and the two tubes and the lever assist in the vaporization of the fuel.

Band Ease

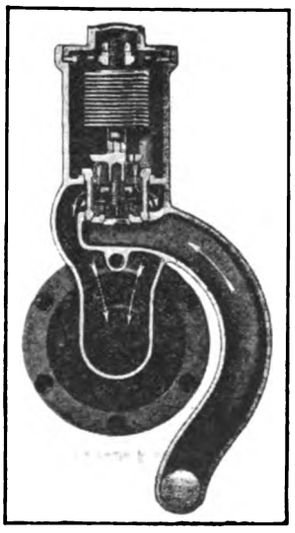
Laboratory Products Co., Detroit, Mich.

Price 75 cents per box.

A compound applied to Ford transmission bands and claimed to prevent chattering by removing the hardening or glazing of the bands.

Bishop-Babcock Thermostat

Bishop-Babcock Co., Cleveland, Ohio.

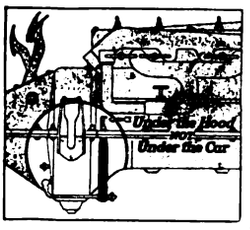


A thermostatic control for engine temperatures consisting of a housing that can be mounted directly on the pump housing of the cooling system. Inside is a bellows containing a volatile liquid that responds to the temperature change in water. When the engine is cold all the water passes around the bellows, being led by a by-pass by a discharge pipe of the radiator. When the water reaches a predetermined temperature, the liquid in the bellows becomes a vapor and in expanding closes the inlet pipes of the engine block and opens the passage from the radiator.

Dean Oil Gage for Fords

Fielding-Dean Co., Philadelphia.

Price $3.

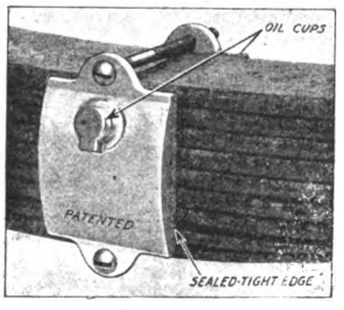


A float oil gage under the hood. The lower end of the float well is connected to the lower pet cock hole on the Ford transmission case, and the upper end of the float well is attached to the crankcase just back of the carbureter. One of the crankcase bolts is removed and the float well attached in the hole.

Jarmie's Oil Lubricator

Jarmie Mfg. Co., Inc., New Haven, Conn.

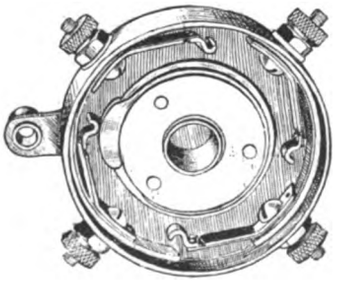
Price 45 cents to 75 cents per pair.



The lubricator consists of two metal caps attached on both sides of the spring by bolts. Each pair of lubricators has two pieces of felt ¼ in. thick with a large hole. The felt covers the edge of the lubricator acting as a gasket when the lubricator is bolted to the sides of the spring. Dust-proof oil cups are used to inject oil into the reservoir.

Leich Magnetic Timer for Fords and Fordsons

Tractor Appliance Co., New Holstein, Wis.

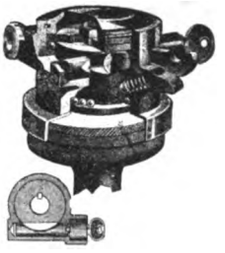


In this timer the brush or motor is magnetized and has a dual wipe contact to prevent interference of cold oil or dirt with the contact part. When the timer is in operation the magnetized rotors draw the brushes in.

Hearing Tilting Steering Wheel Lock

Hearing Tool Co., Columbus, Ohio

Price $15.

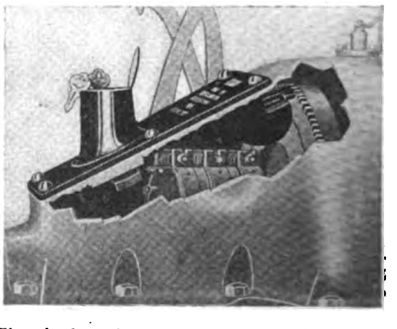


The locking device itself consists of a tumbler which is cut out on one side so that when the cut out side of the tumbler is next to the hub, the wheel will spin around without moving the wheels. When the tumbler is moved around the other way, it locks the wheel to the hub. The tumbler is operated by key. The wheel also has a tilting feature to give more room in the driving compartment. The locking mechanism is of straight hardened steel and a double ball race reduces wear. The exposed parts are nickel plated and the ends of the spokes are inset to relieve strain on screws and add to the appearance. The rim is polished natural walnut, 17 in. in diameter, corrugated, and no drilling or tapping is necessary in installing.

Remy Lock for Fords

Hercules Mfg. Co., Indianapolis, Ind.

Price $13.50.



The lock takes the place of the regular transmission cover and prevents the engine from being turned over by the electric starter or by hand or under its own power. The installation and operation do not change the design or mechanism of the car and the lock permits the car to be moved and steered by hand in case of fire or other emergency. The lock lid comes just above the floor board near the brake pedal so that the key can be operated from the driver's seat. The car is locked by giving the key a quarter turn causing the teeth of a steel forging to project into the ring gear of the fly wheel preventing the engine from being turned over. The locking operation also causes a malleable iron arm to extend under the edges of the transmission case opening thus making it impossible to remove the lock even with the screws taken out.

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Equipment for the Shop

New Machinery and Tools

Stix-on Wrench

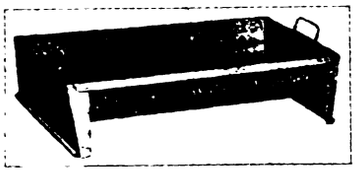
Efficiency Device Corp., 173-177 Lafayette Street, New York City.
Price 35 cents to $2.40 each.



The wrench is operated with one hand and without adjustment for any size or shape within the capacity of the wrench. Made of pressed steel, case hardened and in the following sizes: No. 1, capacity 3/16 to 11/16 in. Price 35 cents. No. 2, capacity ½ to 1¼ in. Price 60 cents. No. 3, capacity 1 to 2¼ in. Price $2.40.

Handi-Pan

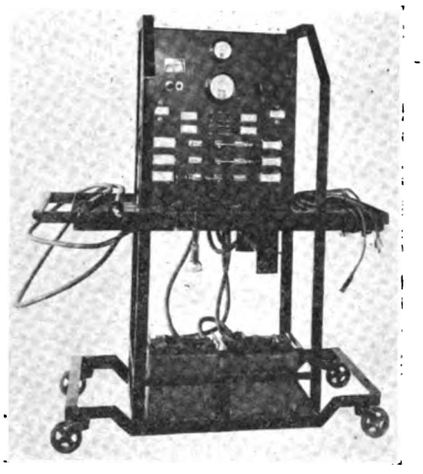
Standard Motor Parts Co., 1427 South Michigan Avenue, Chicago.
Price $2 each.



The pans are made with large handles that will admit a heavily gloved hand and are of one piece construction of heavy gage galvanized steel. The pan is 25 in. long, 15 in. wide at the top and 5½ in. deep. The capacity is 4 gal.

Heyer Portable Electric Tester

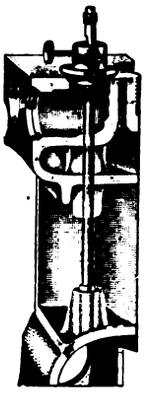
A. P. Heyer, 34 Valley Road, Montclair, N. J.
Price $200 without batteries.



The portable electric tester combines all necessary testing equipment for garage, service shop or street testing. The panel can be removed from the unit and can be purchased separately for a wall mounted test set. The meters are especially built for shop work and can be read at a considerable distance. The voltmeter has a 3 and a 30 volt scale and the ammeter a 50 and 500 ampere scale. A circuit tester is provided for tracing circuits, locating grounds, opens and shorts.

Stevens Filing Fixture for Ford Valve

Stevens & Co., 375 Broadway, New York City.
Price $2.



A jig for filing Ford valves to the proper length. After the valve length gage is inserted in the filing fixture the hardened nut is adjusted until flush with the length gage. The gage is then taken out and replaced with the valve and then the projecting end of the valve is filed down until flush with the nut. The small clamp holds the valve in position for filing. The fixture also insures a square end on the valve. The length gage separately is 75 cents; complete with the filing gage $2.50.

C. & S. Engine Cleaner

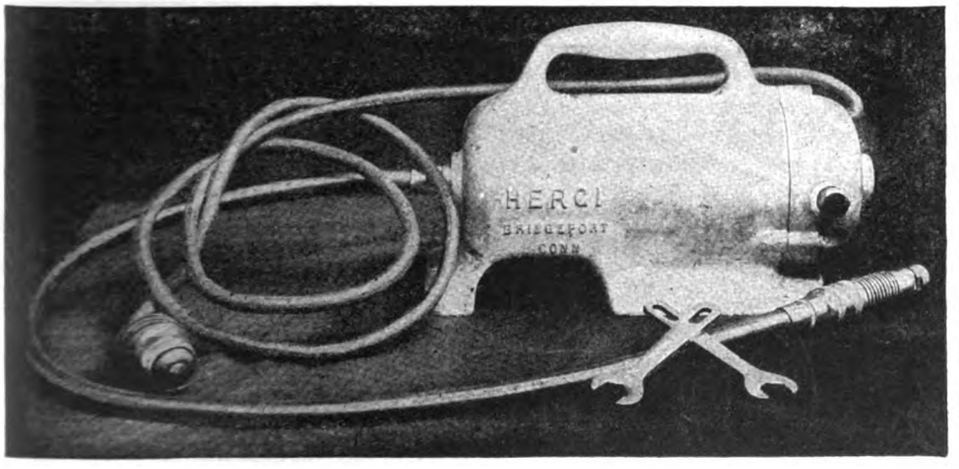
Codman & Shurtless, Inc., 535 Albany Street, Boston.
Price $2.



The cleaner has two connections, one for compressed air, and the other for kerosene or liquid cleaner. The pressure of the air draws the liquid up from a bucket or other container and throws a powerful spray to remove dirt, oil and grease.

Hergi Type H-250 Flexible Shaft Outfit

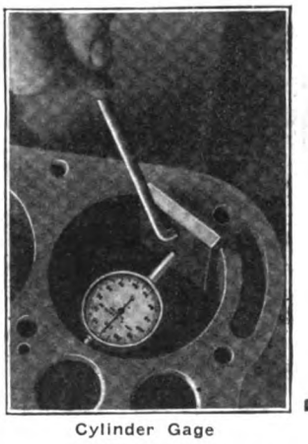
Hergi Mfg. Co., 250 Fifth Street, Bridgeport, Conn.



A motor driven flexible shaft outfit with a universal motor of approximately 1/6-hp. used on 110 AC or DC current: It is enclosed in an aluminum case having a base and handle all in one piece, enabling the workman to pick up the motor easily. The armature shaft has a ventilating fan. Each motor is supplied with 6 ft. of drop cord with attachment plug. The shaft is ¼ in. in diameter, wire-wound, 3 ft. long. The handpiece is ball bearing with ⅛ in. chuck and two wrenches for handpiece.

Atlas Mikro-Indicator Cylinder and Piston Gages

George H. Wilkins Co.,
180 North Market Street, Chicago



Cylinder Gage



Piston Gage

A description of the piston gage in Motor World issue of July 12 and of the cylinder gage in the issue of July 19 unfortunately had the illustrations switched. We are showing the two illustrations here to correct any wrong impression that may have been given to our readers.

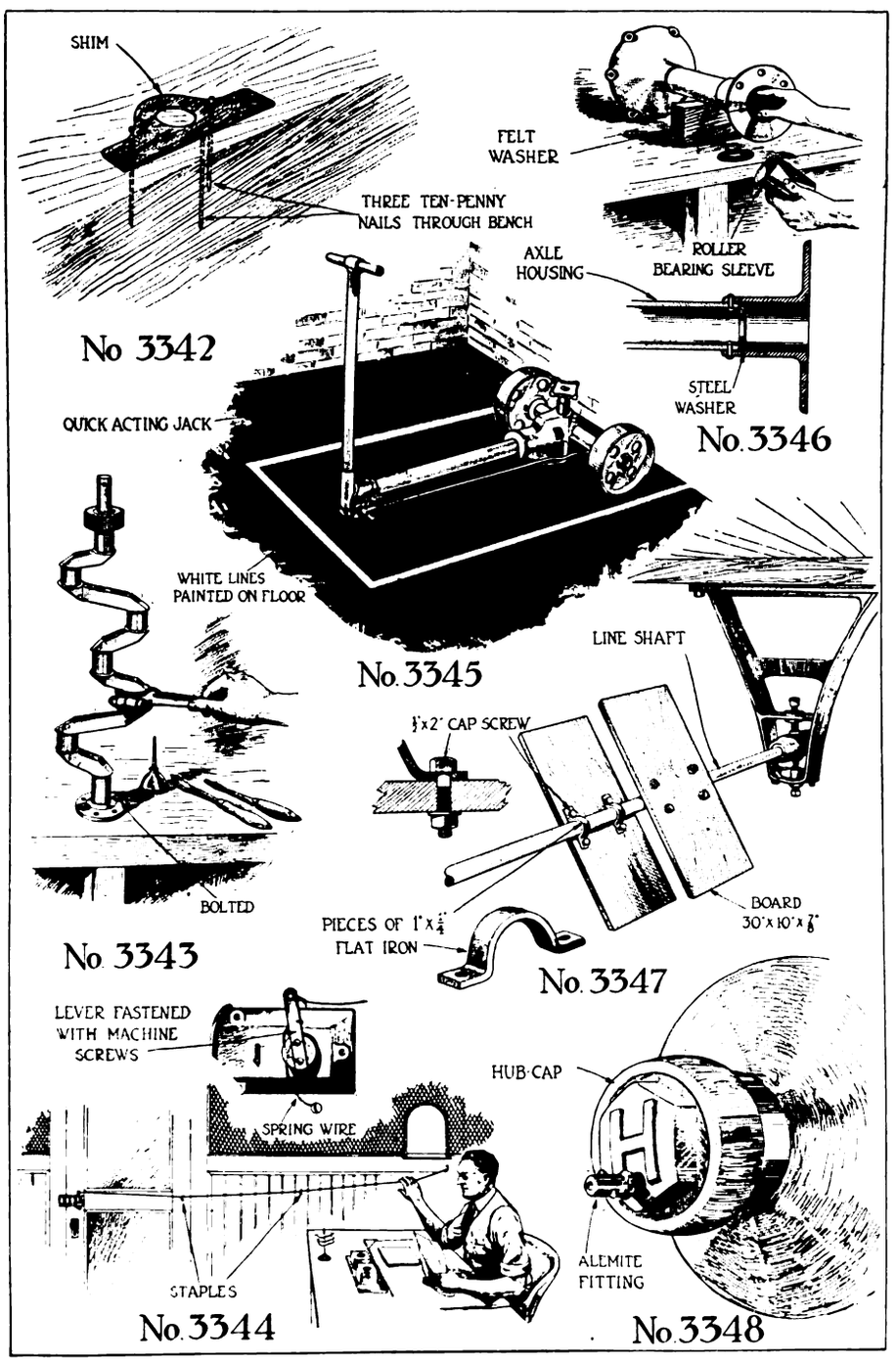
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Repairshop Shortcuts

Saving Ten Cents' Worth

"SHOP PROFITS," a booklet printed by the Automotive Equipment Association, says that saving 10 cents is the same as selling $1 worth of business if the net profit is 10 per cent. Time wasted and materials wasted soon count up to more than 10 cents. Some shortcuts on this page will help you save many times 10 cents. Look at No. 3344, for instance —stockroom doors are kept closed to prevent unauthorized taking of materials, yet often enough time is wasted in opening the door to pay for all the material that might be taken.

If you have some good ideas in your shop send them to Motor World. We will accept those that are practical and which have not been used before at $1 each.



No. 3342—Holder for Shims—Thick bearing shims are filed by driving three 10 penny nails in the flat top of the work bench. The nails can be driven in or out, according to the thickness of the shims as the nails extend through the bench.—T. F. White, Foreman, King Motor Co., Columbia, S. C.

No. 3343—Crankshaft for Fitting Bearings—A crankshaft is bolted upright on the bench for fitting connecting rod bearings. Where one make of car is handled, the shaft is left there permanently.—Don Hastings, Williams & Hastings, Detroit.

No. 3344—Spring Operated Door Catch—The latch on a tool room or stock room door can be operated from a distance by fastening a small lever to the knob with two machine screws and putting in an auxiliary spring to counteract the tension of the string. The string can be led to any convenient point.—Robert D. Peebles, Blue Ribbon Garage, Inc., Bridgeport, Conn.

No. 3345—Parking Space for Castor Jacks—To prevent castor jacks from being run over or fallen over by workmen, a particular place on the floor is assigned to the jack and this is indicated by a white line painted on the floor.

No. 3346—Retaining Grease in Ford Axle Housing—Grease is retained in the Ford axle housing by removing the outside sleeve and trimming down an axle roller bearing felt and metal washer to fit the housing. This is driven in ahead of the sleeve.—Frank B. Warren, Mansfield, Mass.

No. 3347—A Fan for the Shop—To keep the shop cool in summer, a board is attached to the shop line shaft. It revolves with the shaft and makes a current of air. If the board is large or heavy, it is balanced by splitting it and attaching one half to each side.—W. G. Gow, Studebaker Sales Co., Newark, N. J.

No. 3348—Hub Cap with Alemite Fitting—A hub cap has a hole drilled in it and an Alemite fitting soldered in or threaded if the metal is heavy enough. For greasing front wheel bearings this cap is put on in place of the regular cap. —Don Hastings, William & Hastings, Detroit.

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Along the Automotive Newsway

By Leo Roche



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INDUSTRY TURNS OUT 200,000 CARS IN JULY

Possibility of Curtailment of Steel Production Is Chief Worry Now

NEW YORK, Aug. 1—Production of passenger cars and trucks for July probably will approximate a little more than 200,000 or around 75 per cent of the record figure of 288,000 established in June. Output of some companies will be practically as large as it was last month, but others are falling somewhat behind.

The expected seasonal decline in retail sales has become apparent but it has not been sharp and is considerably less than the average for the last few years. Unless the situation is seriously complicated by the mine and rail strikes it is expected that business for the third quarter will approach 75 per cent of the second quarter. This would mean a somewhat larger output than in the third quarter of 1921, which was the best of that year.

Automotive manufacturers are not as much disturbed about their supplies of coal as they are about the effect on the steel industry of the railroad priority order of the Interstate Commerce Commission. They were forewarned of the miners' strike by their trade associations and laid in surplus supplies which are standing them in good stead. The priority order is something over which they have no control, however.

Steel Supply the Problem

If the steel mills which supply automotive manufacturers are compelled to close or curtail their production sharply because they are unable to get coal or cars, the effect upon automobile output naturally will be serious. Car and truck manufacturers have their inventories extraordinarily well balanced, and they are well covered by commitments, but if steel is not forthcoming they cannot continue indefinitely to turn out motor vehicles in large volume.

No serious complaint has come from the Detroit district of inability to obtain cars in which to ship finished products, but even if there should be a car shortage it would cause no great concern. The automotive industry has learned how to deliver its products on their own wheels under their own power, although it involves some inconvenience. It delivered nearly 80,000 vehicles in this way in March, 1920, when rail congestion was most acute.

The most disturbing factor in the present situation, therefore, is not lack of demand but the possibility that supplies of steel may be shut off.

New Kelly-Springfield Model

SPRINGFIELD, OHIO, July 31—A new model truck known as K-61 has been announced by the Kelly-Springfield Motor Truck Co. The specifications are as follows: 5-7 ton capacity, 4½x6½ motor, tires 36x6 front, 36x7 dual rear. The price of this chassis is $4,800.

U. S. FIGURES GIVE FIRST HALF'S OUTPUT

WASHINGTON, July 31—Figures compiled by the Department of Commerce from reports made there by approximately ninety passenger car manufacturers and eighty truck manufacturers show a total of 1,148,788 motor vehicles produced in the first six months of 1922. Trucks made in the first half numbered 114,058, or almost exactly 10 per cent of the total.

June production totaled 287,875, of which 261,963 were passenger cars and 25,912 were trucks.

Production figures by months follow:

1922	Passenger Cars	Trucks	Totals
January ...	81,693	9,344	91,037
February ...	109,170	13,121	122,291
March	152,959	19,651	172,610
April	197,221	22,227	219,448
May	231,724*	23,803*	255,527
June	261,963	25,912	287,875
Grand total	1,034,730	114,058	1,148,788

*Revised.

BUICK MAKES PLANS FOR RECORD PRODUCTION

DETROIT, July 28—Buick Motor Car Co. has set the biggest schedule in its history for the fiscal year beginning Aug. 1. The largest previous year the company has had was 130,000 and the total output for the fiscal year just ended was 100,000. The company is preparing to launch a vigorous sales and advertising drive that will continue throughout the year, $2,000,000 having been set aside for advertising purposes.

Small profits and large sales will be the business policy of the entire General Motors organization. It is persistently reported that the prices of the 1923 models displayed this week will be somewhat lower than in the 1922 line.

Thomart Reducing Capitalization

AKRON, OHIO, July 29—Stockholders of the Thomart Motor Co. of Akron and Kent to-day approved the company plan of reducing its capitalization by decreasing its preferred stock from $5,000,000 to $2,000,000 and its no par common from 100,000 to 70,000 shares. The decrease is made as a means of reducing taxes. Production at the Thomart plant at Kent is averaging one speed truck a day.

August Promising for Hupp

DETROIT, July 31—That July orders now are equal to June, which was the company's largest month, is the statement made by Vice-President Von Schlegel of the Hupp Motor Car Corp. August prospects also are bright, there being on hand more orders than ever have been received in any previous August.

STRIKES MAY HAMPER PRODUCTION OF CARS

Detroit Fears Shutting Off of Power Because of Coal Shortage

DETROIT, July 31—Increasing delay in the receipt of coal, steel and other materials because of the strike situation will lead to a severe curtailment of automobile production in this district unless prompt steps are taken to relieve conditions. The Detroit Edison Co., unless it can be assured of a coal supply, will in all likelihood be compelled to cut off its power from all but essential industries. This curtailment of service will not be necessary for another 10 days, but it is practically certain to come by that time as the company now is operating with not more than 45 days' coal supply.

All of the smaller Detroit automobile and truck manufacturing companies and parts and material makers buy their power from the Detroit Edison Co. Factories like Ford, Dodge, Packard, Maxwell, Cadillac, Continental Motors and Timken Axle produce their own power and will be able to run beyond this point. The absence of small but essential parts made by the smaller companies will hamper the operation of the larger concerns, however.

All companies have been delayed in getting deliveries of steel, manufactured or raw, for the past sixty days, but this situation has only now become acute. The former three day service from Pittsburgh and other steel producing points has been extended to ten days and more. The time required for the switching and placing of cars for unloading has been quadrupled.

Trucks for Transport

Embargoes on all but perishable goods in some parts of Ohio have required the use of trucks to transport materials and parts to lake ports from whence they are brought to Detroit by boat and then delivered by truck. The boat service between Detroit, Cleveland and Buffalo has been reduced to only night sailings owing to the coal shortage and there is a possibility of this being suspended entirely. In this event, factories are preparing to ship their materials the full distance by truck. Boat service to points north and west of Detroit is being maintained.

Driveaways of finished cars and trucks have not materially increased owing to the availability of freight cars for shipping and the continuance of some service by the boats.

Practically every factory in Detroit still is operating at capacity. There has been no laying off of help because of falling demand and indications are that there will be none unless it becomes impossible to operate owing to lack of materials. There are fair quantities of most supplies in stock. There is no factory, however, in position to continue manufacturing for more than thirty days should supplies cease.

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FEDERAL GAS PROBE MAY REDUCE PRICES

Senate Committee Investigating Protest of National Automobile Dealers Association

WASHINGTON, July 31—The price which motorists will have to pay for gasoline, as a result of the investigation of the alleged gasoline "trust" by the United States Senate Committee on Manufacturers, will be lower when the committee shall have finished its investigation. This is the assertion by one of the committee members, based on reports from more than 200 big oil companies which already have complied with the committee's summons to submit sworn statements of their business.

As evidence of the assertion the committee, which is now busy compiling data on hundreds of companies, cite the fact that gasoline in more than 40 cities has declined in price, whereas, in former years the natural tendency of refiners has been to increase their prices at this time of the year. Actual taking of testimony has been postponed by the committee pending final returns from oil companies throughout the nation.

Getting Data on Prices

In addition to detailed information from the oil companies, the committee is securing data from various cities showing the current price of gasoline with comparative figures of last year. These figures show that within the past six weeks, or about the time the committee began to function, the upward trend, always apparent at this time of the year, had stopped and that prices were falling in a great many locations.

A strong protest has been laid before the committee by the National Automobile Dealers Association against what they declare is wholesale "juggling" of gasoline prices. A third set of data on gasoline consumption and prices is being furnished by the Federal Trade Commission.

According to figures submitted the committee by the National Automobile Dealers, and which they declare will be substantiated by personal representatives before the committee when the open hearings start, the price of gasoline at the service stations has risen a minimum of two to a maximum of seven cents during the past year. The figures show that some cities show a sharp decrease in one month and an equally sharp increase the following month. In only one city, Dallas, Tex., the figures show, gasoline prices indicate a price based on competition.

In Dallas gasoline dropped as low as 14 cents in September, 1920, while other cities were paying from 18 to 28 cents. The competition suddenly ceased in June, 1921, gasoline went to 25 cents and now remains at that price.

Some of the most important cities in which marked increases are cited to the committee are Kansas City, from 17.7 cents a gallon in July, 1921, to 24.5 in July, 1922; Detroit, 20.9 in July, 1921, to 26.4 in July, 1922; St. Louis, from 19.7 to 25.5; New Orleans, 20.5 to 27.5; Jacksonville, 20 to 26 cents for the same period. New Orleans, in the heart of the oil country, is paying 27.5 a gallon for her gasoline, while Boston, several thousand miles away, is paying only one-half a cent more.

The "juggling of prices" is protested by the association in the "name of twelve million motorists, who consume an average of about 400 gallons a year each."

"We feel perfectly safe in promising the automotive industry that when our investigation shall have been completed the upward trend of gasoline will not only be stopped but that a considerable measure of relief will be afforded the motor vehicle using public," Senator La Follette, chairman of the special investigation committee, said.

STUDEBAKER COMMON BRINGS BIG PROFITS

DETROIT, July 31—Profits of $8,110,926 for the three months ended June 30, 1922, as against $4,575,836 in the first quarter are reported by the Studebaker Corp. After allowing for reserves, net profits were $7,086,552, against $4,059,848 in the March quarter.

This means a profit equal to $11.50 a share earned on the $60,000,000 common capital stock outstanding, after allowing for the regular preferred dividends, as against an earning equal to $6.49 a share in the first three months of this year. As the company is paying dividends at the rate of $7 a share on the common, the earnings for the six months were equal to more than two and one-half times the annual dividend requirements.

A meeting of the directors will be held next Monday and it is expected they will either increase the regular dividend on the common or declare an extra payment for the quarter.

Receiver for Acason

DETROIT, July 31—Acason Motor Co., Inc., has been placed in the hands of Val. H. Kendall as receiver pending adjudication in bankruptcy proceedings instituted by merchandise and bank creditors in Federal Court here. An appraisement of the assets of the company is now being made by the receiver. The company is declared to have a considerable number of orders on hand and accounts receivable on its books of $58,000.

Ford's Irish Plant Busy

NEW YORK, July 31—Announcement is made that the Ford Motor Co. is expanding its Cork, Ireland, plant, so as to be able to ship parts to Manchester, Bordeaux, Antwerp, Cadiz and Copenhagen branches which heretofore have been shipped from Detroit.

Durant Stopping Stock Sale

NEW YORK, July 31—Representatives of the Durant corporation have been informed that no more stock of Durant Motors, Inc., will be sold after August 5 to anyone at any price.

LAFAYETTE FACTORY GOING TO MILWAUKEE

New Plant to Be Built Near Other Nash Interests in Wisconsin Metropolis

INDIANAPOLIS, July 31—The Lafayette Motors Corp., of Indianapolis, will transfer its operations to Milwaukee, Wis., the latter part of this year, according to an announcement by Charles W. Nash, president of the company, thereby benefiting by a closer association with the Nash group of industries of Kenosha and Milwaukee, of which it is financially a unit.

Land has been acquired adjacent to the Milwaukee Nash factory and work will start immediately on a model plant for the exclusive manufacture of Lafayette cars. Mr. Nash predicts that the company will be housed and operating in the new factory by the first of the year.

"The Lafayette has been greatly handicapped for space in its present plant at Mars Hill, Ind.," says Mr. Nash, "and this handicap will become much more serious as the company's production increases, thus making necessary an increased capacity either here or elsewhere. In view of these conditions and the desirability of a closer geographical coordination of all Nash activities, it seemed logical to the directors of our company to establish the Lafayette in a new plant in Milwaukee, near the main line of the Chicago & Northwestern Railway, even at the sacrifice of the many advantages which have been found in Indianapolis.

Capacity Will Be Tripled

"The new Milwaukee plant will triple the present manufacturing capacity of the company. In its new location the Lafayette Motors Corp. will preserve its independent operating integrity and the management will remain the same. It is naturally the intention to retain the entire organization as thoroughly intact as possible.

"We are committed definitely to the policy of producing in the Lafayette a car of the highest quality, and the new plant has been laid out with the manufacturing requirements of such a car carefully in mind. While the new plant will take care of all anticipated expansion for the next few years, it will not be too large, with a consequent burden of expense."

It is rumored that tentative negotiations are already under way for the sale of the present Lafayette property at Mars Hill, a suburb of Indianapolis.

Delaware Charter for Star

WILMINGTON, DEL., July 31—A charter has been issued to Star Motors, Inc., with a capital of $100,000,000, which will be a holding company and an acceptance corporation for the various Star enterprises fathered by W. C. Durant. Star Motors will have branches in every state in the Union. The incorporators are W. C. Durant, C. P. Daly and Carroll Downes.

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HUPMOBILE ADDING TO ITS DETROIT PLANT

Additions of 500,000 Square Feet Will Be Used for Finishing Work

DETROIT, July 31—The Hupp Motor Car Corp. has undertaken new construction work which will add more than 500,000 square feet of floor space to its big plant in this city. When the new buildings are completed the main plant will have a floor space of approximately 1,575,000 sq. ft.

The five subsidiary plants of the Hupp company, which are the gear and machine works at Jackson, body building plant at Racine, Canadian plant at Windsor, Detroit Auto Specialties Co. and the Auto Body Co. at Springfield, Mass., have a combined floor space of approximately 1,180,000 sq. ft.

The new building in Detroit will include two four-story wings added to the principal unit of the present plant, a large four-story building adjacent to this unit and enlarged space for cold storage. Both the new wings will be used for finishing work exclusively.

Lee Speaking in West

PORTLAND, ORE., July 31 — Gordon Lee, head of the automotive division of the United States Department of Commerce, is on a tour of the Pacific coast visiting automobile dealers and speaking before the automobile associations, telling of the work and plans of the automotive division for the aid of the industry.

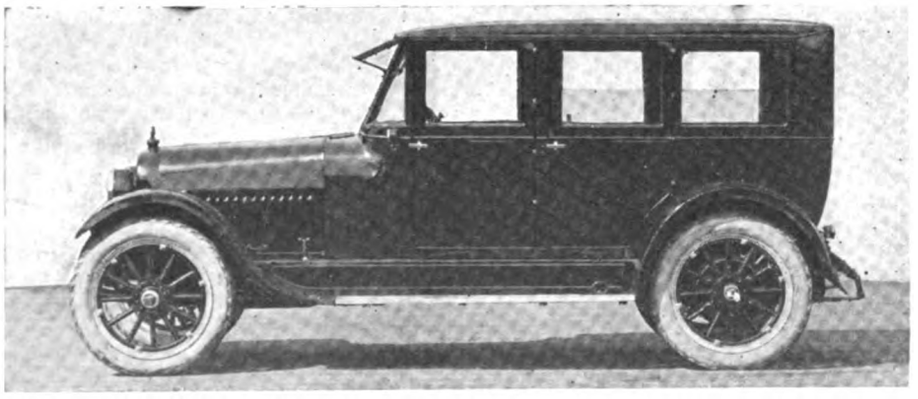
In his address before the automobile men at Olympia, Wash., Lee outlined some of the work performed by his division and by the department of commerce to aid automobile manufacturers in expanding foreign markets. While the department has not yet taken up study of problems of the industry at home, it is the hope of Hoover and others in charge, to develop the department until it will become a real aid to those engaged in the industry in this country, Lee declared.

STUDEBAKER NET SALES AMOUNT TO $73,422,862

SOUTH BEND, IND., July 31 — At their meeting to-day directors of the Studebaker Corp. declared the regular 1¾ per cent quarterly dividend on preferred stock and 4 per cent on common, payable Sept. 1 to stockholders of record at the close of business Aug. 10, 1922. The directors decided to put the common stock on a regular 10 per cent basis and to pay extra dividends as conditions permit, hence the 4 per cent declared today covers the 2½ per cent regular quarterly dividend and a 1½ per cent extra.

The total net sales of the Studebaker Corp. and subsidiary companies for the past six months ended June 30, amounted to $73,422,862.25, and the net profits derived therefrom, with other net income, after reserves for increased depreciation but before income tax reserves, amounted to $12,686,763.07.

New Hudson Sedan, $2,295



A new seven-passenger sedan with practically an all-aluminum body has been added to the line of the Hudson Motor Car Co. This new body replaces the previous sedan and incorporates a number of changes. It is 3 in. lower and of lighter weight with wider front and rear seats. The body is of Biddle & Smart manufacture. Better ventilation than on previous models is provided for by a larger cowl ventilator equipped with a deflector. The rear window glass is larger and the triangular panes of glass which form part of the windshield give the body a longer appearing effect, as well as affording the driver a greater range of vision. The upholstery on the new sedan and the floor rugs are of deep blue. The interior accessories include rear quarter shades, dome light with switch so located that it may be reached equally well from the front or rear compartment, smoking set, rear vision mirror and other similar improvements. All the doors have four hinge supports and entrance to the body has been facilitated by increasing the width of the doors. Drum type side parking lamps at the base of the windshield are also standard equipment on this body. The body panels are finished in valentine blue and the chassis parts are black. This car is priced at $2,295 f.o.b. Detroit.

ALABAMA TRADESMEN IN BUSINESS CONFAB

Discuss Contracts, Discounts and License Fees at Semi-Annual Meeting

BIRMINGHAM, ALA., July 31—At the semi-annual meeting of the Alabama Automobile Dealers' Association there were more than 100 visiting and local dealers in attendance.

The business session was held in the forenoon at the Tutwiler Hotel, when a number of short addresses were delivered by local men and visiting delegates. During the afternoon the dealers enjoyed a barbecue on Little Cahaba river, tendered by Birmingham members of the association to their out-of-town guests.

Freight rates were discussed by O. L. Bunn, manager of the Birmingham Chamber of Commerce, who declared that thousands of dollars in freight have been saved to the automobile dealers of Birmingham by the Chamber of Commerce.

Walter Brower, in an address before the meeting, advocated a standard form of sales contract for automobiles and suggested that abstracts be required for automobiles the same as for real estate. Stricter laws for the protection of automobile owners were urged by Mr. Brower.

A strong plea for a committee to investigate the present dealers' license fees, which he declared excessive, was made by Sterling Edwards, local dealer. Louis Adams of Mobile maintained that factory discounts should be given only to legitimate agents, while Joe Lyons, also of Mobile, spoke in behalf of closer unity among the dealers of the State.

The association accepted an invitation extended by the Montgomery Chamber of Commerce to hold its next convention in the capital. The next meeting will be held in January, when new officers will be named.

Thermoid Opens K. C. Branch

KANSAS CITY, MO., July 31—A branch of the Thermoid Rubber Co. has been opened in the Lathrop Building, Tenth and Grand Avenues, with H. J. Campbell in charge. Mr. Campbell formerly was the Thermoid representative in the middle west. He now assumes the title of district manager, and his branch will care for the sales in Missouri, Kansas, Nebraska, North Dakota, South Dakota, Montana, Wyoming, Colorado, Oklahoma, Arkansas, Texas and the northern portion of Louisiana. These states formerly were handled out of the Chicago office.

Parenti Sale Postponed

BUFFALO, July 29 — Judge Hazel postponed the hearing on the petition to have the sale of the Parenti plant to the Hanover company declared void until Aug. 4 at 10 a.m. The judge was starting on his vacation and did not know whether he would be back in time for the hearing or not.

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THREE G. M. LINES REDUCED IN PRICE

Buick, Oakland and Chevrolet All Feature in Latest Price Slash

DETROIT, Aug. 1—The Buick Motor Co. announces new price reductions which range from $30 to $210 on all models. The four-cylinder phaeton has been dropped from $935 to $885, while the six-cylinder phaeton list is lowered from $1,395 to $1,195.

There are two new models in the line; the four-cylinder touring sedan at $1,325 and the six-cylinder touring sedan at $1,935. The price changes are as follows:

FOUR CYLINDER

No.		Old Price	New Price
34	Roadster	$895	$865
35	Phaeton	935	885
36	Coupe	1,295	1,175
37	Sedan	....	1,395
38	Touring Sedan	(new)	1,325

SIX CYLINDER

No.		Old Price	New Price
44	Roadster	$1,365	$1,175
45	Phaeton (5 pass.)	1,395	1,195
49	Phaeton (7 pass.)	1,585	1,435
54	Sport Roadster	1,785	1,625
55	Sport Phaeton	1,785	1,675
41	Touring Sedan	(new)	1,935
47	Sedan (5 pass.)	2,165	1,985
48	Coupe	2,075	1,895
50	Sedan (7 pass.)	2,375	2,195

Chevrolet

FLINT, MICH., Aug. 1—Chevrolet Motor Co. has announced price reductions on its line of passenger and commercial models effective to-day. The following is the schedule:

PASSENGER MODELS

	Old Price	New Price
Model Superior Roadster	$525	$510
Model Superior Phaeton	525	525
Model Superior Utility Coupe	720	680
Model Superior 4-passenger Coupe	850	840
Model Superior Sedan	875	860
Model F. B. Roadster	975	865
Model F. B. Phaeton	975	885
Model F. B. Coupe	1,575	1,325
Model F. B. Sedan	1,575	1,395

COMMERCIAL MODELS

	Old Price	New Price
Model Superior Chassis	$525	$425
Model Superior Light Delivery	525	510
Model G. Truck Chassis	745	650
Model T. Truck Chassis	1,125	1,095

DETROIT, Aug. 1—The Oakland Motor Car Co. is the second of the General Motors line to announce price reductions. Cuts on all models, ranging from $100 to $2,400 are effective to-day. The company has brought its roadster and touring car to $975 and $995, respectively, thereby giving General Motors a six-cylinder car in the less than $1,000 class.

President George E. Hannum declared the new prices are predicated upon the ability of the company to sell a fixed or a given number of cars during the fiscal year. The 15,000-mile written engine guarantee will be continued.

The old and new prices follow:

Model	Old Price	New Price
Chassis	$895	$795
Roadster	1,120	975
5-pas. touring	1,145	995
4-pas. touring	1,265	1,165
2-pas. coupe	1,285	1,185
4-pas. coupe	1,685	1,445
Sedan	1,785	1,545

COLE RAISES PRICE ON TOURING MODEL

INDIANAPOLIS, July 27—Shipments are being made of the new series Cole 890, which while not radically different from the former models has many refinements and is now furnished with extra equipment that hitherto has been optional at an increased price. An improved frame with large springs and modified suspension, together with an envelope manifold and a new carburetor, are among the mechanical refinements of the car. Six wheels, with side mountings for the extras, are now standard, the buyer being allowed choice of wood, wire or disteel types. A new type Gemmer steering with wood wheel without quadrants is another detail that will engage the attention.

The body style has been refined and the external details of the job show many new ideas from the windshield to the rear curtain window that is 8 in. wider than the one on the former models. The price of the seven passenger job of the new series 890 has been increased from $2,485 to $2,685. Other prices remain as before.

Sayers Reduces Line

CINCINNATI, OHIO, July 31—A price reduction affecting the whole line of Sayers cars has been announced by the Sayers & Scoville Co. The changes are as follows:

	Old Price	New Price
Roadster	$1,695	$1,645
Phaeton	1,695	1,645
Coupe	2,795	2,645
Sedan	2,795	2,645

Gramm Changes Truck Prices

LIMA, OHIO, July 31—A complete revision of prices has been announced by the Gramm-Bernstein Motor Truck Co. affecting the whole line of Gramm-Pioneer trucks with the exception of one model. The price changes are as follows:

Model	Capacity	Old Price	New Price
10	1-ton	$1,365	$1,245
15	1½-ton	1,900	1,750
65	1½-ton	2,500	2,250
20	2-ton	2,925	2,475
30	3-ton	3,275	3,300
40	4-ton	3,995	3,850
50	5-6-ton	4,895	4,450

The model 75-P, 3½-ton, remains unchanged at $4,225.

Old Reliable Reduces

CHICAGO, July 31—The Old Reliable Motor Truck Co. has reduced the price of its model D 5-ton truck from $5,250 to $5,000.

FISK MAKES PRICE SLASH ON CASINGS

Fabrics and Cords Reduced Alike—Excise Tax Now Included in List

NEW YORK, July 31—The Fisk Tire Co., Inc., has announced a price cut. Excise tax is now included in the list price. The new prices are as follows:

	Old Price	New Price
30 x 3½ Premier Cl. Fabric	$10.85	$10.65
30 x 3½ Non-Skid Cl. Fabric	14.85	12.85
30 x 3½ Red-Top, Extra Ply Cl. Fabric	17.85	15.85
30 x 3½ Non-Skid Cl. Cord	18.85	15.85
31 x 4 S. S. Non-Skid Cord		26.45
32 x 4 S. S. Non-Skid Cord	32.75	29.15
32 x 4½ S. S. Non-Skid Cord	42.50	37.70
34 x 4½ S. S. Non-Skid Cord	44.50	39.50
33 x 5 S. S. Non-Skid Cord	52.50	46.95
35 x 5 S. S. Non-Skid Cord	55.50	49.30

MOTORCYCLE CONCERNS MAKE BIG REDUCTIONS

NEW YORK, July 31—Heavy price cuts have been announced by three leading motorcycle companies on their 1923 models which have just been introduced. The Excelsior Motor & Manufacturing Co. of Chicago have reduced prices on the Excelsior Twin and on the Henderson Deluxe, as follows:

	Old Price	New Price
Excelsior	$365	$310
Henderson	475	398

Ace and Nearacar Drop

The Ace, another four-cylinder machine, has been cut from $435 to $335. It is made by the Ace Motor Corp. of Philadelphia.

The price of the Nearacar has been brought down from $225 to $185, making this machine now equal in price to the Cleveland.

Other motorcycle price cuts are expected within the next two weeks. The other leading twin-cylinder jobs will probably be priced somewhere in the neighborhood of the Excelsior, when new models are announced.

Harley-Davidson Lowered

NEW YORK, Aug. 1—Harley-Davidson Motor Co. has announced a price cut on its 1923 models. Prices are as follows:

Model	Old Price	New Price
23-F	$335	$285
23-J	365	305
23-FD	360	310
23-JD	390	330

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OREGON BIG FACTOR IN MOTOR INDUSTRY

Statistics Show Capital Investment of $56,882,678 and $85,000,000 Payroll

PORTLAND, ORE., July 31 — The automobile industry of Oregon, exclusive of the large companies distributing gasoline and oil, represents a capital investment of $56,882,678, while the annual business is in excess of $85,000,000. The total annual payroll is over $1,000,000 and the number of men employed throughout the year on the average is greater than the number employed by the railroad companies in Oregon.

Such are some of the salient facts contained in a report issued by Ralph J. Staehli, secretary of the Automobile Dealers Association of Portland, to the association. Mr. Staehli sent a questionnaire to every automobile dealer, accessory man, garage man, tire man, service man and equipment man, both wholesale and retail, in the state.

Portland Center of Industry

Of the total investment in the industry in Oregon of over $50,000,000, over three-fourths, or $39,344,308.50 is in land and buildings used by the industry. Value of equipment totals $4,079,774.57, and stocks aggregate $13,458,595.83. The weekly payroll is given as $118,615.50, while the annual payroll amounts to $11,490,239.50. Business per year is figured at $85,600,000, and the number of employees as 5858. The city of Portland alone represents about two-thirds of the industry, taking the above figures all the way through, according to the report, which gives separate figures for this city.

The above figures, it is stated, do not include oil and service stations, automobile stage and bus lines, for-hire cars, private garages and fleet service stations, or dealer and garage owned service and utility cars and trucks. or does it include value of highways, highway employees of road work of any kind.

The significant feature of Mr. Staehli's report is the fact that when a man in Oregon spends $1,000 for a new automobile he has that purchase backed up by a $1,000 share in the service and maintenance end of the automobile business. In other words, for every dollar's worth of automobile in the state there is another dollar invested to keep that machine in operation.

In comparing the automobile with the railroad it would be perfectly proper to figure in the cost of the highway system, which has been built and is being paid for from the automobile license and gasoline tax money, and if this were added there would be another $100,000,000 in capital investment and many thousands in yearly expenditures, while the number of employees would be greatly increased.

While it was impossible to get accurate figures on the number of people carried per year by the automobile in Oregon or the number of tons of freight moved by motor trucks, it has been estimated from careful data, the report says, that 4,500,000 tons of freight are moved by trucks, while from six to ten times as many people are carried throughout the year by automobile as by the railroads, including interurban lines.

No factor of recent years has contributed more to the welfare and advancement of Oregon, the report states, and the increase in value of real estate and other property as well as the economy made possible in all lines of activity by the automobile and truck over previous methods would represent an item of many more millions of dollars to be traced directly and solely to the motor vehicle.

RETAIL PRICE FIXING COMPLAINT DISMISSED

WASHINGTON, July 29—Formal complaint against seven automobile accessory and tire manufacturing companies was dismissed to-day by the Federal Trade Commission, all of them charged with violations in respect to the resale price maintenance laws. The cases were dismissed by the Government, without prejudice to its case, pending the final decision of the Beechnut Packing Case, which was selected and advanced by the Federal Trade Commission as a test case.

The cases involve the right of a manufacturer to fix the resale price of manufactured goods. Pending the final adjudication by the United States Supreme Court the commission has announced that no further complaints against manufacturers who manufacture a commodity and fix the retail prices will be made.

The seven companies against which the Government dropped its prosecution are as follows:

Kryptok Sales Co., New York City, lens manufacturer; Curtis & Co. Manufacturing Co. and Curtis Pneumatic Machinery Co., St. Louis, Mo., accessories; Goodyear Tire & Rubber Co., Akron, Ohio; Klaxon Co., Newark, N. J., automobile horns; J. H. Haney & Co., Hastings, Neb., tire pumps; Marshall Oil Co., trading as Tungsten Mfg. Co., Marshalltown, Iowa, spark plugs, and The Denver and J. E. Hunt & Co., Baltimore, automobile belt manufacturers.

Improved Streets Help Sales

NEW ORLEANS, LA., July 31—Dealers in automobiles and trucks in New Orleans are again segregating their lists of prospects for a drive on citizens who live or do business on streets included in the paving programme, which starts in the immediate future with $1,353,380 raised by the sale of municipal paving certificates. This sum represents what the city government will spend on intersections and drainage pipes, which is a fraction of the actual expenditure. Working mainly through the local newspaper that carries the greater share of the motor car advertising, the dealers hammered for months to get the paving program started. Practically all the expenditure will be for asphalt streets.

ENGINEERS STUDYING TRUCK SAFETY PLANS

Would Give States Formula to Be Used in Examining Commercial Vehicles

DETROIT, July 31—Members of the truck division of the Standards Committee of the Society of Automotive Engineers are examining the possibilities of a safety formula for trucks. Discussion at its last meeting developed the opinion that in order to meet the requirements of the motor vehicle departments of the various states it would be necessary to include in the formula suitable static factors of safety on the axles and steering gear as well as a retardation test.

This activity is a result of a letter to B. B. Bachman, president of the S. A. E., from A. L. McMurtry, of the Motor Vehicle Department of Connecticut, asking for immediate help on a formula which would enable the state authorities to use definite requirements as a basis on passing on the safety of trucks seeking licenses. The measure is particularly necessary in view of trucks assembled from units of doubtful or ancient origin.

A sub-committee has been appointed with instructions to take the matter under immediate advisement.

Some discussion also has been had regarding the new small wheel and large diameter tire size, which brought to light the fact that truck manufacturers are somewhat dubious as to the matter of clearance under the brake drum and overhung bearings with these wheels.

BIG TRUCK MERGER DECLARED OPERATIVE

NEW YORK, July 28—The merger of the Selden Truck Corp. and the Atlas Truck Corp. has been declared operative, and the Industrial Motors Corp., which is to take over the two companies, has been organized under the laws of the State of Delaware with an authorized capital stock of 1,000,000 shares of no par value.

John J. Watson, Jr., president of the new company, said that no new financing would be necessary. The balance sheet of the combined company will show assets of $2 to each dollar of liabilities, Watson said, adding that the Atlas company had virtually no liabilities and the Selden company only about $1,000,000.

Numerous companies have made application to be included in the combination, but these will not receive consideration until the organization of the parent company has been completed.

Illinois Enforcing Tag Law

CHICAGO, July 31 — A warning to garage owners to comply with the Illinois State law requiring registration of serial and license numbers of all automobiles left in their charge was issued by Judge Prindiville who assessed a fine of $100 and costs against a Chicago garage proprietor who had neglected to comply with the regulation.

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SOUTH AFRICA BUYS MORE MOTOR TRUCKS

Cities Convinced That Modern Methods Pay—Farmers Cling to Wagons

JOHANNESBURG, June 21 (*By Mail*)—All truck agents are endeavoring to push motor transport which in the past has had a hard battle to fight. Farmers are still sold to their wagons, but the users of transport in the towns have at last realized that modern methods will pay them.

It has been proved that a motor truck costs less to operate than two or three six-mule wagons in spite of the fact that gasoline is about $1 a gallon and oil $2.50 a gallon. Renewed interest in motor trucks has been aroused, although steam has by no means lost its following. The electric is not in favor at present. It lost ground in Johannesburg when the Post Office gave up its fleet of electric collecting vans and purchased Chevrolet and Ford commercials.

Cape Town still has a large number of electrics in operation, but the motor and steam trucks are gaining fast. The latest development in the truck field in South Africa is the arrival of the representative of Thornycroft, Ltd., an English company. The representative came from India, where he had been engaged in putting Thornycroft trucks on the market, with marked success, according to all reports.

British Models Coming

Up to the present no Thornycroft models have arrived here, but it is understood that a comprehensive range is now on the water. The Leyland Co., British builders of motor and steam trucks and motor buses, are directly represented in Cape Town, but have only an agent in Johannesburg. However, a number of its steam and gasoline trucks have been placed in service on the Rand and in the country districts of the Transvaal.

The latest car arrival is the Hudson coach. The first of these models was sent direct to Johannesburg, where it is now on view. A few days ago the 1922 Cadillac arrived and was the recipient of a great deal of praise from the trade and motorists. Two arrived and one was sold the next day. The other has also been sold and more are now on their way.

The market for cars is slowly improving in spite of the severe setbacks experienced earlier in the year. New cars are to be seen on the streets of Johannesburg and, according to all reports, there has been a resumption of buying in the country districts. Natal has the reputation of being the best for car sales per population just at present. Transvaal is second, the Cape Colony third, and the Orange Free State last. In Bloemfontein, the capital of the Orange Free State, the motor dealers have combined to advertise cars in the local newspapers, and are unitedly pointing out to townspeople and farmers the advantage of "Buying a car."

Tire prices have been considerably revised of late. Michelin price cuts have been followed by Goodrich, Goodyear, United States, Fisk and Dunlop. The tire companies have now linked up with the South African Motor Traders Association, a merger that has long been the aim of this society.

NIGHT SALES SCHOOL FOR ATLANTA CONCERN

ATLANTA, GA., Aug. 1—The Atlanta branch of the Willys-Overland Co. is preparing to inaugurate a night school for an intensive training course in automobile salesmanship. This training is to be given without cost or obligation to young men who pass certain tests, the school to be conducted at the company's branch here under capable instructors who are themselves automobile salesmen of some years' success. Those completing the course successfully are to be offered positions with the company's sales force.

NEW R. & L. TAXICABS NOW IN PRODUCTION

CHICOPEE FALLS, MASS., July 31—A gasoline-engined taxicab to be known as the R & L cab is now being produced by Rauch & Lang, Inc., well-known as manufacturers of electric vehicles. At the present time 12 of these cabs are going through the factory and plans have been made to manufacture 250 of these vehicles at the rate of 50 a month beginning in September. Two body styles are offered—one a limousine at $2,350 and the other a limousine-landaulet at $2,475. The bodies are built by Rauch & Lang and are ruggedly constructed, as they have been specially designed for taxicab service.

The new cab is assembled of standard parts. The engine is a four-cylinder Buda with cylinder dimensions of 3¾ x 5⅛ in. Other standard units used are Brown-Lipe clutch and gearset, Standard Parts axles, Robert Bosch magneto, and Gray & Davis lighting generator. The wheelbase is 112 in. Disk wheels and 32 x 4 in. non-skid cord tires are standard equipment.

The cabs will be sold through selling agents, which are being appointed in half a dozen of the larger cities. These agents will act entirely independently of the sales organizations handling the electric vehicles manufactured by this company.

Liberty Announces Coupe Price

DETROIT, MICH., July 31—The Liberty Motor Car Co. has announced the price of its new business man's coupe at $1,695. This car was described in our issue of July 19, 1922.

CONTINENTAL EXPECTS BIG AUGUST OUTPUT

Will Increase Production of Passenger Car Engines 20 Per Cent Over July

DETROIT, July 31—Continental Motors Corp. will increase its production of passenger car engines in August by 20 per cent over the total in July. This increase, while more marked in its light six model than in others, nevertheless represents an increase in production in all passenger car models. Business in the truck field is fluctuating, the company reports.

Many of its passenger car companies are making commitments on a ninety-day basis at this time, whereas the truck buyers are holding their orders to a much closer schedule owing to the uncertainties in this field. By reason of the longer commitments the company is enabled to make more prompt deliveries in the car field than in the truck.

Production of the engine for Durant's Star car is steadily mounting and will reach 1000 daily in the near future.

GOLF TITLE WON BY NEW YORK DEALERS

NEW YORK, July 31—Dealers representing New York, Brooklyn, Washington, Baltimore, Newark and Philadelphia have just completed play in the Intercity Automobile Trade Golf League for the 1922 championship. New York was returned the winner with 159½ points; Washington was second with 141½, Newark third with 123, Baltimore fourth with 99, Philadelphia fifth with 85½ and Brooklyn sixth with 79½. It was a team competition, with eight men to a team, the play being on five different courses throughout the season.

The windup was at the Wykagyl Country Club, New Rochelle, and the luck of the draw brought the two leaders, New York and Washington, together. Before the final play started, Washington led by three and one-half points and it was not until the afternoon round that New York gained the lead, which it held to the finish.

Wills Reports Record Sales

DETROIT, July 31—Sales of Wills Ste Claire cars in the first six months of 1922 exceeded the sales for all of 1921, according to a statement by C. H. Wills, president of the producing company. A larger production than ever is being planned for August, September and the fall months, Wills says. Plants recently acquired by the Wills company are being equipped for production and will employ about 400 additional men. The company is now doing its own painting of phaetons and roadsters. To provide additional facilities for this work a building with 104,000 feet of floor space will be erected at the south end of the present plant.

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DELIVERIES WORRY DEALERS IN BOSTON

Strike Possibilities Cause Them to Plan for Drive-aways This Summer

BOSTON, July 31—Some of the Boston dealers are beginning to worry about shipments due to the strike and also to the possible curtailment of orders because factories may not get fuel and materials to continue at the high production peak.

Those who represent cars made at Detroit are now checking up on the drive-away plans which they had perfected a few years ago and which managed to bring cars here when they were wanted and the railroads were not taking them. They figure that for the present the boats to Buffalo will be a big help landing cars at that city, and with smooth roads to Boston this time of the year the job will not be so difficult. One of the big distributors has been bringing cars here that way for some time.

Mississippi River Route Considered

Another distributor is figuring on getting his cars to the Mississippi river, then shipping to New Orleans and from there to Boston by water. The steamers which make the run between southern ports and the Atlantic seaboard cannot navigate the Mississippi river very far. The possibility of getting the Shipping Board to put on a steamer to carry cars from New Orleans north has been discussed.

Other dealers are figuring on getting cars through Canada on the Grand Trunk runs via Chicago and Detroit through to Portland, Me., which is an easy run to Boston. Many cars came that way in the past and some come now through Canada. Also they can be switched at Montreal via Boston and Maine direct to Boston. The Canadian Pacific, too, can take shipments for New England points. By routing them in carload lots if they come through Canada, those for subdealers could be dropped off in various parts of New England.

Wilmot Will Manage Show

MINNEAPOLIS, July 31—The Minnesota State Fair annual automobile show, Sept. 2-9, will be larger than ever, due to extensions and changes in the grandstand building, which always houses the annual exhibit of passenger cars and accessories, costing $40,000. Walter Wilmot, assistant secretary of the Minneapolis Automobile Trade Association, will be manager again.

Gain in A. E. S. A. Membership

DETROIT, July 31—Backed by the efforts of the manufacturers of starting, lighting and ignition equipment, who have pointed out to their service representatives the value of membership in the Automotive Electric Service Association, the membership in that organization has grown from 62 at the annual meeting Jan. 31 to approximately 230 on July 1. The midsummer meeting of the governors of the association will be held in Detroit Aug. 11 at which time recommendations will be made for the consideration of the manufacturers at their summer meeting at Old Orchard, Me., Aug. 31.

MINNESOTA TO TRY ROTATING GARAGE

ROCHESTER, MINN., July 31—A novelty in garage construction is to be tried out here, one of the rotating type, which is being constructed in this city by Rupert Swinnerton of Minneapolis. It will care for 200 cars and will consist of three rows of stalls, built in a circle, with the inner and outer rows stationary. The middle section rotates and is used to move the cars so they can be placed in their respective stalls in the stationary sections. Swinnerton claims that this style of construction will permit of faster and easier handling of cars than anything else heretofore tried.

WARNS OLD LOCOMOBILE CO. SHARES VALUELESS

NEW YORK, July 31.—The present Locomobile Co. of America will be superseded by a new corporation to be known as the Locomobile Co., which has been incorporated at Albany with a capital of 600,000 shares of no par value. This company will be headed by W. C. Durant. In view of this step, warning has been given by Durant that the shares of the old Locomobile Co. which are being traded in on the curb market are valueless. Practically all stock of the new corporation will be owned by Durant Motors, Inc.

Details of the terms under which Durant has taken over the assets of Locomobile have not been disclosed, but it is understood he reached an agreement with approximately 90 per cent of both the bank and merchandise creditors under which they accepted a certain percentage of their claims in cash in full settlement. Practically nothing will be left for the stockholders of the old company. The Durant proposition was accepted by the Federal Court, by the receivers and by the creditors.

Old Officers Retained

Colonel E. D. Havens has been elected vice-president and general manager. Havens was one of the receivers of the old Locomobile company and guided its affairs through the recent financial difficulties. Durant has appointed D. G. Roos as production manager, and E. A. Travis, who has been in charge of the Locomobile New York branch, has been appointed general sales manager of the new organization.

CONTROL OF STUTZ RESTS ON AUCTION

Director's Report Shows Company in Flourishing Condition on June 30

NEW YORK, July 29—Despite the assertion of Francis G. Caffey, receiver for Allan A. Ryan, that he will appeal to the Federal Court to enjoin the sale at auction of the Stutz stock owned by the bankrupt financier, it is figured on Wall Street that the auction will take place according to schedule next Wednesday.

This belief is strengthened by the action of other banking institutions which have joined with the Guaranty Trust Co. in announcing their intention to auction off their Stutz collateral next week. The Chase Security Corp. with 1600 shares, the Chase National Bank with 7800 and the Lawyers Title and Trust Co. with 4500 all say that they will put this stock into the auction along with the 111,614 shares held by the Guaranty Trust Co., which it holds for its own account and for account as trustee. In all this totals 125,514 shares, which more than constitutes control of the Stutz company. Put on the block by the same auctioneer, it is figured that there will be a combination effected to gain control of this thriving Indianapolis concern. Who it will be is only conjecture at the present time. One rumor is that Thomas Fortune Ryan, father of Allan, will seek to gain this control in an effort to aid his son in a sensational comeback.

Directors of the Stutz company, who met in New York Thursday, say that they are not taking any steps to form a syndicate to take over this control. They state that they are satisfied to continue their work at the factory and leave it to others to fight for control.

Financial Statement Issued

As proving their contention as to the stability of the Stutz company, they have issued a financial statement as of June 30, 1922, which shows total fixed assets of $4,400,089 as compared with $4,387,-114 on Dec. 31, 1921, and total assets of $6,455,809 as against $6,553,809 on the first of the year. On the liability side of the ledger the figures read $25,530 as against $302,482 on Dec. 31, with a surplus of $4,473,351 and a reserve of $555,-927 for depreciation. On Dec. 31 this surplus was $4,777,704, and the reserve $473,623. Cash on hand June 30 amounted to $148,468 as against $63,163 on Dec. 31. Accounts receivable totaled $256,148 as against $175,222, and the inventory was $1,507,450 as against $1,890,608.

In the way of liabilities $1,000,000 is charged against the capital stock; notes payable, $150,000; accounts payable, $243,062; accrued accounts, $33,467; reserve for depreciation, $555,927; surplus, $4,473,351.

Following the directors' meeting W. M. Thompson was re-elected president and George F. Lewis, secretary, while Alvin Untermyer and W. H. Coverdale resigned as directors.

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POWER SCHOOL FOR FARMERS IN OREGON

Ford, Standard Oil and Others Send Out Caravan to Tour State

PORTLAND, ORE., July 31 — Thousands of farmers of Oregon are being taught the benefits and economies of power farming as the result of the industrial and farming caravan which is now touring the state under the general leadership of the Oregon branch of the Ford Motor Co. and the Standard Oil Co.

A dozen firms have joined in the big caravan, which will be on the road all summer and will visit every section of the state, and power farming equipment, including tractors, trucks and all kinds of equipment for them is being demonstrated.

The caravan was planned under the direction of W. H. Goodwin, manager of the Oregon branch of the Ford Motor Co. and is similar to the caravan run in Washington last summer, only on a larger scale.

The caravan is traveling entirely on its own power, 40 trucks, trailers and tractors being required to carry the men and equipment. Arrangements for carrying the men and the large amount of machinery and farm equipment being demonstrated are as complete as those which govern a circus and the way in which the caravan is traveling from one place to another reminds one of the circuses of old. In the present parade through Oregon, however, everything is motor driven and the prancing steeds are noticeable by their absence.

Associated in the enterprise are the Ford Motor Co., featuring Ford trucks and tractors; the Standard Oil Co. of California; the Oliver Chilled Plow Works and allied manufacturers with a complete line of farm implements distributed by the Oliver concern in the Northwest; the Ersted Machinery Manufacturing Co., showing the Ersted tractor hoist; the Lee line of contractor's dump bodies, distributed by the Parsons-Gordan Co. of Portland; Hercules commercial truck bodies, distributed by the Francis Motor Car Co. of Portland; Talbor & Casey of Portland, with a line of Trailmobiles and a number of tractor equipment specialties; the Delco lighting equipment and other products of the Modern Appliance Co.

Disteel Starts Patent Suit

DETROIT, July 31 — The Detroit Pressed Steel Co., which manufactures Disteel wheels, has brought suit in Federal District Court at Chicago against the Forsythe Bros. Co. of Henry, Ill., alleging infringement of patents Nos. 1,255,928 and 1,208,927, issued to Alden L. Putnam. The plaintiff states that the suit has been begun without malice and with no intention whatever of hampering the wheel industry in general. The Detroit Pressed Steel Co. contends that its patents are basic in the field of single disk steel wheels.

TO GIVE LIFE STORY OF GALLON OF GAS

SPOKANE, WASH., July 31—Spokane's largest automobile show of the year will be held during the week of the Spokane Interstate Fair, Sept. 4 to 9. Arrangements completed recently by Art Shea, in charge of the fair grounds automobile building, provide for the display of twenty-three of the latest models of motor cars. More than 15,000 square feet of floor space will be used in addition to the special tent to be erected near the automobile building.

A special feature in the automobile building will be the model Standard Oil miniature city. This city will show the handling of a gallon of gasoline from the time it leaves the refinery until it is placed in the consumer's car at a filling station.

STRIKE MENACE STIRS UP BOSTON PROSPECTS

BOSTON, July 31—Boston car and truck distributors have noticed in the past few days that the strike has started people making inquiries about the possibilities of getting motor vehicles quickly if necessary.

Business men have been inquiring about trucks. Some of the newspaper people want to be prepared to send out their own deliveries in case the railroad situation necessitates. Other firms, which in war times used trucks exclusively, but later went back to the railroads with their shipments, are again turning their eyes to trucks. Truck salesmen are taking advantage of this and sending out letters to business firms advising them what they should do to be prepared for emergencies.

Coats Denies Stewart Rumor

CHICAGO, July 31—George A. Coats, head of the Coats Steam Car Co., denies a report from Columbus, Ohio, that this corporation has been taken over by the Stewart Motor Car Co. The Coats Steam Car Co. is a selling organization controlled by Coats to market steam passenger cars, trucks, buses and a special light delivery wagon. The Stewart company is a manufacturing concern which has been licensed to produce, under the Coats design, a car which will sell at $1085. It is one of a group of manufacturing companies which are expected to make the various Coats products.

Cathcart Leaves Packard

DETROIT, July 29—Thomas Cathcart has resigned as head of the advertising staff at the Packard Motor Car Co. to become manager of the Promotional Department of the Crowell Publishing Co., New York. No successor to Cathcart has been named by Packard officials.

JULY IN MILWAUKEE SATISFIES DEALERS

Gains Are from 25 to 300 Per Cent Over Same Month Last Year

MILWAUKEE, WIS., July 31—Retail sales of passenger cars in July, so far as records obtainable to-day tell the story, make a remarkably good showing in comparison with figures for the same month in previous years. There are few dealers who cannot show a gain ranging from 25 to 300 per cent over the sales in July last year, and for more than 50 per cent of the dealers in Milwaukee in business five years or longer the month ending to-day represents the best and most active sales period in their existence.

Generally speaking, July business was only slightly below June or May, when as a matter of fact most dealers had expected a rather sharp drop, especially in comparison with May, for the reason that the experience of dealers here almost invariably indicated a sudden rush beginning about the middle of April and extending into early June, which could hardly be hoped to sustain itself for an indefinite period. Therefore, the July showing is considered highly favorable.

August prospects are regarded as good, especially in view of the stimulation that wholesale as well as retail trade usually receives from the annual Wisconsin State Fair, at Milwaukee, Aug. 28 to Sept. 2. This event this year is looked upon to furnish the index of rural passenger car buying. So far this has been relatively much slower than the average, although better than in 1920 or 1921.

Motor truck demand is increasing slowly. Undoubtedly, it has been helped by the railroad strike, not perhaps so much from immediate effect, but the methods and means being employed in anticipation of more serious developments. This refers more to the movement of freight than of passengers, although with respect to the latter truck orders are now being booked in steadily increasing numbers.

Pence Plans Dealers' Trip

MINNEAPOLIS, July 31—To enable the automobile dealers to take in the last day of the roundup at Bozeman, Mont., the Buick special train of the Pence Automobile Co. is to leave over the Northern Pacific road earlier than announced heretofore. The train will leave Minneapolis with dealers from Wisconsin, South Dakota and Minnesota at 11.45 p.m., Aug. 3, picking up the North Dakota members of the tour at Fargo. The train will reach Bozeman the morning of Aug. 5, which is the last day of the rodeo and the entire day will be spent there. One of the events will be the award by the Pence company of the finest saddle that can be bought to the winner of the broncho busting contest on that day.

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ASSOCIATION ACTIVITIES

Portland Lays Foundations

PORTLAND, ORE., July 28—Formation of the Multnomah County Trades Association was completed in Portland by the election of directors for the association by the Portland Automotive Trades Association and the Automobile Dealers Association of Portland.

Under the plan each of the two bodies will be independent and self-governing units in the larger association. A constitution was recently drawn up and adopted.

Other separate associations will be eligible to join on the same basis. The purpose of the body will be to work for the good of the automobile industry as a whole, with each of the separate units being left full jurisdiction over their particular fields..

The association is to be the foundation of a state-wide body to be known as the Oregon Automotive Trades Association, which will be launched within a few weeks, it is stated. This body is to be patterned after the California and Washington state associations.

Directors who were elected to the Multnomah County association by the dealer and the trades bodies of Portland are as follows: For the Automobile Dealers Association—Jack Crittenden, A. B. Manley and C. L. Boss; for the Automotive Trades Association—Fred Dundee, C. H. McGirr, A. E. Foss, R. D. O'Brien and Edward Burke.

Idaho Holds Convention

HAILEY, IDAHO, July 29—Indorsement of a state law requiring bonding of garages and repair shops and maintenance stations, and the licensing of motor vehicle mechanics, was indorsed by the fifth annual convention of the Idaho Automotive Trade Association. Lynn M. Shaw, assistant general manager of the National Automobile Dealers Association, made the principal address. Uniform dealer licenses, on a flat rate; a state law permitting garages to sell denatured alcohol (now prevented by the state drug statute); a mechanics lien law; placing of commercial trucking and passenger carrying under the public utilities commission, with private licenses, funds to go to highway maintenance; enforcement of the Idaho law requiring dealers from other states to take out an Idaho license; encouragement of automobile racing were subjects reported on by various committees and indorsed by the convention as part of its legislative program. Bills covering these subjects will be introduced in the legislature this year.

Officers were elected as follows: President, Edw. S. Johnson, Twin Falls; vice-presidents, Dad Clay, Pocatello, and W. E. Ash, Boise; secretary - treasurer - manager, Guy Flenner; Assistant, Ed. Bliss, Boise.

Picnic Proves Big Success

TERRE HAUTE, July 28—Members of the Terre Haute Automotive Trade Association held a picnic and barbecue at which visiting dealers from six adjacent counties were the guests of the local dealers. Five hundred dealers, salesmen and executives of the Terre Haute association and their guests held a motor parade which had 100 cars in line.

At the picnic grounds there were sports of all sorts The barbecue was served free to all present, the association footing the bill. D. C. Burnette, secretary of the state association, said that the next board of directors' meeting would probably consider the holding of the convention at Terre Haute. The Terre Haute automotive organization has about one hundred members and for several months has had a paid secretary in the person of J. H. Garrity. This organization enlists all the automotive establishments of the city. There are group meetings, and a large number of the members are also members of the Indiana Automotive Trade Association.

Chicago Summer Meetings

CHICAGO, July 29—The monthly meetings of the Chicago Automobile Trade Association this summer are being held at golf clubs. The first one was at the Ridgemoor club with Thomas J. Hay, president of the association, as host. The business meeting was held during luncheon, following which golf was played until dinner time.

Dallas Battery Men Organize

DALLAS, TEXAS, July 31—The Dallas Battery Men's Association has just been organized. The purpose of the organization is for developing a closer co-operation between the battery dealers and service stations in the city and a uniform service at all stations. J. H. Meyers, general manager of the Ray Battery Sales Co., is the president, and William Tobian, manager of the Gould Battery Co., is secretary-treasurer. Rodger Tennant of Tennant Bros. is vice-president. With the organization of the battery men the automotive lines in Dallas are all organized. The new association will shortly start a campaign to educate the automobile owners in the necessity of caring for batteries and show why automobile batteries should not be tampered with by inexperienced workmen.

Cincinnati Holds Picnic

CINCINNATI, July 27—The Cincinnati Automotive Trades Association held its second annual basket picnic at Silverton, a suburb of Cincinnati. A procession of automobiles containing the dealers and preceded by a band, paraded through the city to the resort, where a dinner was served and various amusement features were staged. The committee on arrangements consisted of William Pister, H. C. Heisey, H. P. Kelly, Tom Shugrue, Fred Schlichtie, J. W. Harris, H. M. Sines and A. S. Herbert.

Syracuse Has Outing

SYRACUSE, July 29—Automotive salesmen of Syracuse were guests of the Automotive Service Association in the third annual outing at South Bay. The guests trounced their hosts in the feature event, baseball, but were "cut short" in the beefsteak dinner which followed.

Sports enjoyed in the outing included: Novelty pie eating contest, team broad jump, hurdle races, three-legged races, tub races, swimming and running obstacle races and the baseball game.

Promoters of the field day were: C. Fred West, president; C. G. Hanna, F. R. Bailey, H. W. McClellan, E. W. Lawton, Munro Gere, F. J. O'Neil, Charles Abel, Ross L. King, Wallace M. Williams, B. S. Arnold, A. R. Kren, Harvey H. Bebb and Philip Morse.

Georgia Dealers Will Advertise

ATLANTA, GA., July 31—Since the announcement recently that the Georgia Automotive Dealers' Association would conduct a State-wide advertising campaign in the newspapers throughout Georgia, approximately half of the dealer members have subscribed to the campaign with the result that the project is now an assured fact, according to Percy Megahee, secretary.

The first advertisement is in preparation and will occupy almost a full page in space in nearly all of the Sunday newspapers throughout Georgia the early part of August. In this first ad the association will set forth its creed, and its keynote will be "An affiliation of better dealers, the public's guarantee of reliable dealing." The creed of the association embraces the three important points: "To be true to our industry; To be true to our customers; To be true to ourselves."

It is probable that before the first advertisement is published another meeting of the members will be held in Atlanta to lay final plans for the carrying on of the campaign throughout the whole year.

Battery Dealers Organize

CINCINNATI, July 29 — Battery dealers and distributors of Cincinnati, meeting to discuss conditions in their branch of the industry, formed a temporary organization with **Peter L. Duffey** as chairman and **Fred L. Gage**, secretary.

REEKE, OF MILWAUKEE, TO GO TO CLEVELAND

MILWAUKEE, WIS., July 31—Alfred Reeke, president of the Reeke-Nash Co. and Reeke-Lafayette Co., Milwaukee, and for twenty years identified with the wholesale and retail distribution of the Rambler, Jeffery and Nash cars in succession, has been awarded a direct Nash distributing franchise with territory covering a large part of Ohio and with headquarters in Cleveland, effective Sept. 1.

As already reported, the Reeke-Nash Co. of Milwaukee has relinquished the retail selling territory of Milwaukee county to the Nash Sales Co., Wisconsin Division, which heretofore has handled distributing business exclusively for the past five years out of Milwaukee.

Mr. Reeke is a native of Milwaukee and went into the automotive trade through the bicycle school. He was agent for the Yale bicycle in 1898-1902, when he joined with Orlando F. Weber in handling the Pope-Toledo and the Pope-Hartford. Then he became associated with the Milwaukee branch of the Thomas B. Jeffery Co., Kenosha, manufacturing the Rambler, later becoming general manager. When the Rambler was renamed the Jeffery, Mr. Reeke remained Wisconsin distributor and Milwaukee dealer, and after Charles W. Nash took over the Jeffery interests, formed the Reeke-Nash Co., so that he has a record of more than eighteen years as distributor and dealer in one factory's products.

Wilson Adds to Body Plant

DETROIT, July 31—C. R. Wilson Body Co. will complete by Sept. 1 a six-story addition to its present plant which will give it about 300,000 more feet of manufacturing space. The building will be a complete unit in itself, the three lower floors being devoted to body building and the three upper floors to the painting, upholstery and finishing departments.

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CHANGES IN THE TRADE

Motor Car Co., Baltimore, has been appointed sole distributor for the Stearns.

Earl-Nattan Co., Baltimore, has been made the Baltimore distributor of the Earl line.

Charles H. Yetman is manager of a new service station in Baltimore for International trucks.

Brant & Hurst, Oak Park, Ill., have been appointed Wills Sainte Claire dealers in that territory.

C. A. Bence, New Britain, Conn., has taken on the Lexington in that territory. He formerly had the Buick.

Franklin Motor Car Co., Baltimore, will build an addition to the present service station at a cost of about $30,000.

Broadway Motor Service Co., Chicago, has taken the Chicago agency for the Itala car. **M. De Tullio** is manager of the company.

A. S. Austin Motor Co., Kansas City, announced recently that it had taken over the agency here for the Ruggles motor truck.

Bert L. Gilbert, well known in Cincinnati automobile circles, is now sales manager of **Hartig & Co.**, local Marmon distributor.

W. G. Harris, manager of the Hartford, Conn., branch of the **York Motors Corp.**, has resigned. The branch is now in charge of **P. C. Nelson.**

Wabash Motor Sales Co., St. Paul, has been named distributor for the Moon factory in southern Minnesota, western Wisconsin and the Twin Cities.

Percy Ford, racing driver, is back on the Chicago automobile row as a salesman for the **Marmon Chicago Co.**, of which **C. E. Gambill** is president.

B. F. Goodrich Rubber Co., Cincinnati branch is now located in its new building. **Wilson C. Dold**, manager of the district, has offices in the new building.

Harry W. Anderson has resigned as general sales manager of the **Duesenberg Automobile & Motors Co., Inc.**, of Indianapolis. He has made no plans for the future.

Robert J. Haas, formerly with the used car department of the Citizens' Motor Car Co., Cincinnati, is now with the **E. S. Gahagan Co.**, Cincinnati Studebaker dealers.

J. E. Carter, well known in the Chicago automotive industry, has been appointed general manager of the **Roamer Motor Car Co.** of Illinois. He succeeds **Robert H. Lanzing.**

Wm. M. Maxwell Co., Milwaukee, has been appointed Wisconsin distributer of the Stutz. Offices have been opened at 306 First Wisconsin National Bank Building, Milwaukee.

George Hunt, formerly sales manager of the **Detroit Steel Products Co.**, has been appointed district manager for **Rayfield** carbureters in Detroit. Offices have been opened in the David Whitney Building.

Templar Motor Car Co. of Cleveland has made the Boston agency a regular factory branch, and it has been placed in charge of **Frank H. Walley.** From now on all New England activities will be directed from Boston.

Petersen Motors Co., Baltimore, Jordan and Locomobile distributor, has announced the appointment of the Jordan Sales Co. as branch dealers in Jordan cars. **G. A. Forstburg** of Chester, Pa., recently formed the **new company.**

Piedmont Motor Co. of Lynchburg, Va., has selected Walla Walla, Wash., as the distributing center for the states of Washington, Oregon and Idaho. **J. A. Carson**, formerly with the Tierney Toner Co., will be the distributing agent.

H. C. Trent, recently assistant manager of the New York branch of Willys-Overland, Inc., has been appointed secretary-treasurer of the **Colt-Stewart Co.**, distributors of the Maxwell-Chalmers line in New York City and surrounding territory.

Nebraska Moon Motor Co. has been organized at Lincoln, Neb., for state distribution of the Moon. The members of the new company are: J. L. Kennard, G. C. King of University Place, Neb., and W. C. Schaus, formerly a Utah distributor of the Chandler and Cleveland.

Robt. A. Cook, former head of the **Cook Automobile Co.**, has formed the Capital Automobile Co. and will distribute Studebaker cars in Arkansas. The company is being operated by **O. A. Cook** and **Elwood Young** and distributes the Chalmers and Maxwell cars.

Congress Garage Co., Minneapolis, incorporated at $50,000 to distribute Case cars in Minnesota, has opened a new garage for sales and service. **Oscar M. Nelson** is president and **Steve Hanson** is service manager. **L. O. Simensen**, from the factory, will be representative.

F. E. Truax of Chicago has been appointed sales manager of the Milwaukee branch of the Buick Motor Co., to fill the vacancy caused by the resignation of M. W. Libhart, who has joined the Nash Sales Co., Milwaukee, as manager of retail service and sales. The Milwaukee branch handles the Wisconsin and Upper Michigan territory.

Overseas Traders, Inc., Minneapolis, has opened offices to carry on an import and export trade. The secretary and manager is **F. Gunnerson**, who has been in a similar business in Scandinavia for ten years. Among other things the company will export automobiles, trucks, tractors and concrete mixers. **H. E. Almquist** is president and **J. Richard Olson** treasurer.

Oakland Motor Co., has established a factory branch at Kansas City to replace the dealer organization. **A. P. Ten Brook** remains general branch manager. **H. A. Brewer**, associated with the company four years, is manager of the service department. **E. G. O'Reilly**, with the organization five years, is superintendent of the shops. **M. H. Schandler**, has been promoted to shop foreman.

Nash Sales Co., Milwaukee unit, wholesale distributer of the Nash in all of Wisconsin and upper Michigan, has taken over retail distribution in Milwaukee territory from Reeke-Nash Co. **Alfred Reeke** and his associates have withdrawn to distribute the LaFayette, which they have bene representing as the Reeke-LaFayette Co. **Rudolph Hokanson** is general manager of the Nash Sales Co.

Glen Harkrader, formerly sales manager of the No-Leak-O Piston Ring Co., has been appointed territorial representative for the **Indiana Piston Ring Co.** of Hagerstown, Ind., in the territory west of the Mississippi and in Minnesota, Wisconsin and Illinois. Harkrader will be assisted by his brother, **Wallace Harkrader**, formerly territorial representative of the No-Leak-O Piston Ring Co., in Illinois and Indiana.

M. W. Libhart, for five years manager of sales of the Milwaukee branch of the Buick Motor Co., has resigned to become manager of retail sales and service of the Nash Sales Co., Wisconsin Division, Milwaukee, which takes over the retail Nash business in Milwaukee county in addition to continuing to handle the wholesale business in Wisconsin and upper Michigan. Mr. Libhart has been associated with Buick for about nine years.

Chippewa Valley Auto Co., Chippewa Falls, Wis., one of the earliest automotive concerns in northwestern Wisconsin, having been opened in 1908, is starting work on the construction of one of the largest and finest garages and service buildings in the state, to be located at Grane Avenue and Bay street. It is to be ready Jan. 1. The investment in buildings and equipment will be about $75,000. Frederick A. Bigler is president and general manager.

David Grody, president of the Syracuse Automobile Dealers Association, has sold his interest in the Syracuse Motor Car Co. to his partner, **Simon J. Silverman**, and will take over the control of the **Berkshire Motor Car Co.** of Albany. Silverman has been elected president to succeed Grody. **Jesse Silverman**, formerly general manager of the company, has been named secretary and treasurer. The company will continue to handle the Maxwell and Chalmers.

Republic Motor Truck Co., Kansas City factory branch has been established. **J. A. Keating**, formerly vice-president of the P. J. Downs Motor Co., is branch manager. **Lester Morgan**, recently with the local distributing company is retail sales manager. The entire sales department is in charge of **John Smith**, who has been associated with the Master Truck Co. of Wichita, Kan. **R. C. Marshall** is manager of the used-car department. Marshall was with Hocker & Elberg for a number of years and more recently with the Simons-Wiles Buick Co.

Ralph R. Curl, formerly manager of the automotive department of the Johns-Manville Co. and **D. E. Holmes** of the D. E. Holmes Distributing Co. have formed a new organization to operate in Cincinnati, known as the **Holmes & Curl Co.** Besides local distribution, sale and servicing of the Johns-Manville speedometer, the new company will distribute various other accessories. Curl served as secretary of the Cincinnati Automotive Trades Association for three years, and was elected president for 1922. Holmes is a member of the board of directors of the association, this being his third year as a member of the finance committee.

Receiver for Ohio Concern

COLUMBUS, OHIO, July 31—Upon the application of W. A. Breisacher, president and treasurer of the United Auto Stores Co., Judge Kinkead has named Oliver H. Perry as receiver. The company has been conducting retail stores in Zanesville, Cambridge, Delaware and Sidney. Stocks on hand are appraised at $20,000.

Organize Piston Ring Company

DETROIT, July 28—Pelton Piston Ring Co. has been formed in Detroit by E. H. Belknap, Carl H. Pelton, former secretary of the Maxwell-Chalmers companies, and Charles E. Pelton, whose former connections include Timken-Detroit Axle Co. and other plants. The organization is to produce a ring designed to stop oil pumping and hold full compression.

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Calendar of Trade Events

CONVENTIONS

Toledo .....September
Annual Convention of the Ohio Automotive Trades Association.

Buffalo .....Sept. 13-14-15
Annual Fall Convention of the Motor and Accessory Manufacturers Association. Lafayette Hotel.

Chicago .....Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

SHOWS

Watsonville, Cal.....Aug. 12-15
Automobile Show under the Auspices of the Watsonville Motor Car Dealers Association, J. S. Martin, manager.

Toronto, Ont.....Aug. 26-Sept. 1
National Automobile Show held in conjunction with the Canadian National Exhibition.

Columbus.....Aug. 28-Sept. 2
Ohio State Fair.

Minneapolis, Minn.....Sept. 2-9
Minnesota State Fair.

Hartford, Conn.....Sept. 4-9
Connecticut Fair Grounds.

Wilmington, Del.....Sept. 4-9
Delaware State Fair.

Spokane.....Sept. 4-9
Annual Automobile Show held in connection with the Spokane Interstate Fair, B. J. Garnet, manager.

Indianapolis.....Sept. 4-9
Automobile and Accessory Show in conjunction with the Indiana State Fair, Automobile Show Building under the auspices of the Indianapolis Automobile Trade Association, J. B. Orman, manager.

Syracuse, N. Y.....Sept. 11-16
New York State Fair.

Memphis, Tenn.....Sept. 23-30
Annual Automobile Show held under auspices of the Memphis Automobile Dealers Association, Tri-State Fair Grounds.

New York.....Sept. 23-30
Closed Car Show, under Auspices of Automobile Merchants Association, Grand Central Palace.

Washington, D. C.....Oct. 21-28
Annual Closed Car Salon held under auspices of the Washington Automobile Trade Association, Convention Hall.

Chicago .....Nov. 13-18
Annual Show of Automotive Equipment Association.

New York.....Dec. 3-9
Eighteenth Annual Automobile Salon, National Automobile Chamber of Commerce, Commodore Hotel.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

Chicago .....Jan. 27-Feb. 3
Annual Automobile Salon, National Automobile Chamber of Commerce.

SELF HELP GARAGE COMES TO KENOSHA

KENOSHA, WIS., July 28—"The Help Yourself Garage" is coming to Kenosha. It will be 64 x 126 feet in size and have a storage capacity for 60 automobiles. The building will be of all-steel construction and fireproof.

"This is going to be a unique garage," declared Dr. George L. Ross, the prospective owner. "It will have no repairshop, but it will be open at all times as a repairshop. The owner of an automobile will be invited to bring his car to the garage and do his own tinkering. We will provide for his free use tools and other accessories, but we will not employ any workmen. We are going to sell lubricating oil. Under our plan a man can drive into this garage, drain his own oil and put new oil in the car at the wholesale price."

Buffalo Chosen for Convention

NEW YORK, July 28—The annual fall convention of the Motor and Accessory Manufacturers Association, at which credit and other conditions will be discussed, will be held at the Lafayette Hotel, Buffalo, Sept. 13, 14 and 15.

PIERCE-ARROW PRICE SLASH GAINS ORDERS

BUFFALO, July 29—Orders resulting from the price reduction announced on July 15 by the Pierce-Arrow Motor Car Co. have put the entire plant upon a full-time basis.

"Immediately after our prices were reduced our distributors throughout the United States began sending us telegrams informing us that it would result in a pronounced increase in volume of business," said Myron E. Forbes, vice-president and general manager of the company.

The New Car and Truck Description Index

Giving the date and page number on which they appeared

CARS

Ace .....Jan. 11, 1922-26
Anderson (Refinements).....Jan. 11, 1922-27
Auburn (sport model).....Jan. 11, 1922-22
Auburn Sedan .....June 7, 1922-39
Bay State.....Jan. 11, 1922-27
Buick Special 6-54 (Roadster).Jan. 4, 1922-21
Buick (Special Delivery Car).Mar. 29, 1922-31
Buick (Special Six-55 Sport).May 17, 1922-22
Buick (Details) .....July 26, 1922-14
Cadillac (Victoria) .....July 26, 1922-24
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Chandler .....Jan. 11, 1922-12
Chandler (Metropolitan Sedan).....June 7, 1922-38
Chevrolet 490 Sedan.....Jan. 4, 1922-41
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Cole (Coupe-Brougham).....Feb. 22, 1922-40
Cole (Two-passenger Coupe).Apr. 12, 1922-40
Columbia Light Six.....Feb. 1, 1922-11
Columbia (Six Shooter).....Jan. 11, 1922-23
Davis Model 71 (Phaeton)..June 28, 1922-29
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Dodge Bros. (Business Coupe).....June 7, 1922-33
Dort 1922 .....Jan. 11, 1922-18
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Earl (Cabriole) .....July 26, 1922-17
Elcar (Refined bodies).....Jan. 11, 1922-26
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Essex (Engine changes).....Jan. 11, 1922-27
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Essex (Cabriolet).....Apr. 19, 1922-40
Fox .....Jan. 11, 1922-20
Franklin 4.....Jan. 18, 1922-10, 18
Franklin Six (New Coupe)...Jan. 11, 1922-25
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Gardiner (Coupe and Sedan).July 26, 1922-24
Gearless (Steam).....Jan. 11, 1922-26
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Hanson, Light Six.....Jan. 11, 1922-27
Hatfield Model 42 (New body).Jan. 11, 1922-27
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Lexington Series U.....Jan. 11, 1922-22
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Lexington (Supreme 7-pass. Phaeton) .....May 3, 1922-41
Liberty Coupe.....July 19, 1922-26
Liberty (New body).....Jan. 11, 1922-16
Liberty (Special Roadster)...Apr. 19, 1922-39
Locomobile (Detailed changes)Jan. 11, 1922-26
Mack (New Bus Body).....June 21-1922-42
Marmon (4 pass. Speedster).Mar. 15, 1922-19
Maxwell (New fuel feed).....Jan. 11, 1922-27
Mercer (Increased equipment).....Jan. 11, 1922-25
Merit .....Feb. 1, 1922-33
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Mitchell (De Luxe Sport Model)....Mar. 29, 1922-31
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Moon 6-40 (details).....Feb. 8, 1922-31
Moon 6-40 (Chassis).....June 28, 1922-28
Nash Carriole.....Feb. 1, 1922-12
Nash Four and Six.....Jan. 11, 1922-16
National (Newport bodies)...Jan. 11, 1922-23
Neracar .....Jan. 18, 1922-42
Noma (Sedan).....Jan. 11, 1922-24
Oakland (2-pass. Coupe)....June 28, 1922-28
Oakland 6-44.....Jan. 11, 1922-14
Oldsmobile Light Eight.....July 19, 1922-26
Oldsmobile Model 47 (Phaeton) .....Mar. 15, 1922-37
Oldsmobile (New Body) .....July 26, 1922-17
Ogren .....Jan. 11, 1922-26
Packard (New single six).....May 3, 1922-22
Paterson .....Jan. 11, 1922-23
Pierce-Arrow (Changes).....Jan. 11, 1922-27
Pilot (Sport Model).....Jan. 11, 1922-23
Premier 6D.....Jan. 4, 1922-34
Premier Model 6D.....Jan. 11, 1922-24
Rauch & Lang.....Jan. 11, 1922-24
Reo Taxicab.....Jan. 4, 1922-35
Rickenbacker .....Jan. 4, 1922-32
Rotary Six.....Jan. 11, 1922-26
Seneca (Phaeton and Roadster)...June 28, 1922-29
Star (Details).....June 28, 1922-28
Star .....Mar. 15, 1922-14
Standard (Sterling model)...Jan. 11, 1922-26
Stearns (Frame changes)....Jan. 11, 1922-25
Stearns-Knight Six.....July 12, 1922-29
Studebaker (1922 changes)...Jan. 11, 1922-21
Studebaker (Six Six Speedster .....May. 24, 1922-42
Stutz (Left side drive).....Jan. 11, 1922-26
Stutz (1922 model).....Apr. 5, 1922-32
Sun .....Jan. 11, 1922-26
Vauxhall .....Jan. 18, 1922-12
Velie Model 58.....Jan. 11, 1922-18
Westcott (Changes).....Jan. 11, 1922-27
Wills Sainte Claire (Sedan and Town Car).....Mar. 8, 1922-36

TRUCKS

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Commerce (Bus).....Mar. 8, 1922-19
Duplex (Bus).....Feb. 22, 1922-36
F W D (3-ton Roadbuilder)..Mar. 8, 1922-41
Federal Express Chassis.....July 19, 1922-26
G. M. C. (Bus).....Mar. 8, 1922-30
Mack .....June 21, 1922-42
Milburn Electric (1 and 1½-ton).....Mar. 8, 1922-31
Overland .....Apr. 19, 1922-41
Schacht (2, 3, 4 and 5-ton)....Feb. 8, 1922-31
Steinmetz (¾-ton electric)...Feb. 22, 1922-30
Stewart Utility Wagon.....July 12, 1922-30
Transport (1, 1½, 2, 3, 3½ and 5-ton).May 17, 1922-22
United States (1¼ ton).....Mar. 8, 1922-37
Walker-Johnson (2-ton elec.) Feb. 15, 1922-31
White (Bus).....Feb. 22, 1922-36

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason.....A	¾-1	$1650a	3½x5	34x5n	34x5n	W
Acason.....RB	1½	1950	3¾x5½	36x3½	36x6	W
Acason.....H	2½	2750	4½x5¾	36x4k	36x8k	W
Acason.....L	3½	3450	4¾x5¾	36x5k	36x10k	W
Acason.....M	5	4350	5 x6¼	36x6	40x12	W
Ace.....C	1½	2295	3¾x5½	34x3½k	34x5k	W
Ace.....A	2½	2795	4¼x5½	36x4k	36x7	W
Acme.....29	1	....	3½x5	35x5n	35x5n	W
Acme.....30	1½	....	3¾x5	34x3½	34x5	W
Acme.....49	2	....	3¾x5	34x3½	34x5	W
Acme.....60	3	....	4½x5¼	36x4	36x7	W
Acme.....60L	3	....	4½x5½	36x4	36x7k	W
Acme.....90	4½	....	4½x5½	36x5	40x10	W
Acme.....125	6¼	....	4¾x6	36x6	40x12	W
American.....25	2½	3350	4 x6	36x4k	36x4dk	W
American.....40	4	4275	4½x6	36x5k	36x5dk	W
Armleder.....2	1	....	3¾x5¼	34x3½k	34x6k	W
Armleder.....21	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder....40-B	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder....40-C	1½	....	4½x5¼	34x3½k	34x6k	W
Armleder..HW-B	2½	....	4¼x5½	36x4k	38x7k	W
Armleder..HW-C	2½	....	4½x5¼	36x4k	36x7k	W
Armleder..KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder..KW-C	3½	....	4½x5½	36x5k	36x5dk	W
Atlas.....MD	1	1135	3½x5	32x4½n	32x4½n	W
Atterbury....20R	1½	2475	4¼x5	34x3½	34x5	W
Atterbury....7CX	2½	3175	4½x5¼	36x4	36x4d	W
Atterbury....22C	2½	3375	4½x5¾	36x4	36x4d	W
Atterbury....7D	3½	3975	4½x5½	36x5	40x5d	W
Atterbury....22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury.....8E	5	4975	4¼x6	36x5	40x6d	W
Autocar.....21UF	1½-2	1950	4¼x4½	31x1k	31x5k	D
Autocar.....21UG	1½-2	2050	4¾x4½	31x1k	31x5k	D
Autocar.....27H	2	2950	4 x5½	34x5	36x7	D
Autocar.....27K2	2	3075	4 x5½	34x5	36x7k	D
Autocar.....26Y	5	3950	4¼x5½	34x6	36x12	D
Autocar.....26-B	5	4100	4¼x5½	34x6	36x12	D
Available...H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available.....H2	2	2775	4 x5	36x3½k	36x6k	W
Available...H2½	2½	3160	4 x5	36x4k	36x8k	W
Available...H3½	3½	4175	4½x5½	36x5	40x5d	W
Available.....H5	5	5375	5 x6	36x6	40x12	W
*Avery.....	1	....	3 x4	34x5n	34x5n	I
Beck.....A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	I
Beck.....B-30	1½	1725	3¾x5	34x5	36x6	
Beck.....C-40	2	1810	3¾x5	36x6	36x6	
Beck.....D-50	2½	2395	4½x5¼	38x7	40x8	
*Bell.....(Penn.)	½	1000b	3½x5	31x4n	31x4n	B
Bell.....M (Iowa)	1	1495	3½x5½	35x5	35x5n	W
Bell.....E (Iowa)	1½	2100	3¾x5¼	34x3½	31x5	I
Bell.....O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Belmont.....A	½	725	3¼x4¼	31x4	31x4	B
Belmont.....D	2	2575	4¼x5½	34x3½k	34x6k	I
Belmont.....F	3	3500	4 x6	36x5k	36x5dk	I
Bessemer.....G	1	....	3½x5	35x5n	35x5n	I
Bessemer.....H-2	1½	....	3¾x5	36x3½	36x5	I
Bessemer.....J-2	2½	....	4½x5¼	36x4	36x4d	I
Bessemer.....K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem.....KN	1	1195	3½x5	34x4½n	35x5n	B
Bethlehem.....CN	2	1595	4 x6¼	34x4½k	34x6k	I
Bethlehem.....HN	3	2195	4 x5¼	36x4k	36x8k	I
Brinton.....C	1½	1500	3¾x5	34x4	34x5	W
Brinton.....D	2½	2250	4½x5¼	36x4	36x7	W
Brockway.....E	1	....	3¼x5⅛	35x5n	35x5n	B
Brockway.....S-S	1½	....	3¾x5	36x4	36x6	W
Brockway.....SK	1½	....	4½x5¼	36x4	36x6	W
Brockway.....KR	2½	....	4½x5½	36x4	36x8	W
Brockway.....K-5	2½	....	4½x5¼	36x4	36x8	W
Brockway.....RT	3½	....	4¾x6	36x5	36x10	W
Brockway.....R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway.....T-4	5	....	4¾x6	36x6	40x6d	W
*Buick.....	½	915b	3½x4¾	31x4n	31x4n	B
Capitol.....G	1½	2975	3¾x5	35x5	38x7	W
Capitol.....H2	2½	3700	4¼x6	36x4	36x8	W
Capitol.....K2	2½	4250	4¼x6	36x6	42x9	W
Capitol.....M3	3½	4125	4¼x6	36x5	36x10	W
Case.....	2	....	4¼x5¾	36x6	38x7	I
*Chevrolet.....G	¾	745	3½x4	31x1n	31x4½n	B
*Chevrolet.....T	1	1125	3½x5½	33x4n	35x5n	W
Chicago.....C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago.....C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago.....C3½	3½	....	4½x5½	36x5	36x10	W
Chicago.....D5	5	....	4½x5½	36x6	40x12	W
Clydesdale.....10	¾-1½	1485	3¾x5	34x5n	34x5n	B
Clydesdale.....18	¾-1½	1890	3¾x5	34x5	34x5	W
Clydesdale.....20	1-1½	2385	3¾x5	34x5	34x5k	W
Clydesdale.....42	1½-2	2175	3¾x5	36x3½	36x6	W
Clydesdale..65X	2½-3	3250	4½x5¼	36x4	36x8	W
Clydesdale..65EX	2½-3	3150	4½x5½	36x4	36x8	W
Clydesdale.....90	3½-4½	4100	4½x5½	36x5	36x10	W
Clydesdale....120	5-6	4500	4¾x6	36x6	40x12	W
Columbia.....H	1½	1995	4 x5	35x5	38x7n	I
Columbia.....G	2½	2335	4 x5¼	36x4	36x7	I
Comet.....T	1½	1950	3¾x5	34x4	34x4	W
Commerce.....T	¾-1½	1450	3¾x5	34x2½n	34x4½n	B
Commerce.....12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce.....16	2	2150	3¾x5	35x5n	36x6n	I
Commerce.....18	2½	2495	4¼x5½	36x6n	40x8n	I
Commerce.....25	2½	2425	4½x5½	36x4	36x7	W
Cook.....51	2½	3600	4 x5½	36x6n	40x8n	W
Corbitt.....E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt.....D-22	1½	$2200	3¾x5	34x3½	34x5	W
Corbitt.....C-22	2	2600	4½x5¼	36x3½	36x7	W
Corbitt.....B-22	2½	3000	4½x5¼	36x4	36x7	W
Corbitt.....R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt.....A-22	3½-4	3800	4½x5½	36x5	36x10	W
Corbitt.....AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder.....AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder.....B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder.....D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder.....C	2½	2750	4¾x5½	36x4	36x7	W
Day-Elder.....F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder.....E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn.....E	1	1600	3½x5½	35x5n	35x5n	W
Dearborn.....FX	1½	2300	3¾x5⅛	34x4	34x5	W
Dearborn.....F	1½	2180	3¾x5⅛	34x4	34x5	W
Dearborn.....48	2	2590	3¾x5⅛	34x4½n	31x7	W
Defiance.....G	1	1095a	3¾x5	35x5n	35x5n	B
Defiance.....D	1½	2095a	3¾x5	35x5n	36x6n	I
Defiance.....E	2	2275a	3¾x5	35x5n	38x7n	I
Denby.....31	1½	1485	3½x5	35x5n	35x5n	B
Denby.....33	1½	2145	3¾x5	35x5n	38x7n	I
Denby.....34	2	2395	3¾x5	36x3½	36x6	I
Denby.....35	2½-3	2795	4⅛x5¼	36x4	36x7	I
Denby.....27	4	3895	4½x5½	36x5	36x5d	I
Denby.....21D	5	4295	4½x5½	36x6	40x6d	I
Dependable.....A	¾-1	1050	3⅝x5⅛	34x5n	36x6n	W
Dependable.....C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable.....L	2½	2650	4 x5½	34x5	36x6	W
Dependable.....E	3	2950	4¼x5½	36x4	36x7	W
Diamond T.....O-3	1-1½	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T.....T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T.....U	2-2½	2650	4 x5¼	36x4	36x7	W
Diamond T.....K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T.....LL	5	4325	4½x5½	36x6	40x6d	W
Diamond T.....S	5	4500	4¾x6	36x6	40x6d	W
*Diehl.....A	1	....	3½x5	34x4½	35x5	I
Diehl.....B	1½	....	3½x5	36x6	36x6	I
Deane.....	2½	4100b	4¼x5¾	36x5	36x7	C
Deane.....	3½	5100b	4⅝x5¾	36x5	36x5d	C
Deane.....	6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers.	¾	730	3⅞x4½	32x4n	32x4n	B
Derris.....K-4	2-2½	3400	4¼x5½	36x4	36x7	W
Derris.....K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort.....103	½	685a	3½x5	31x4n	31x4n	B
Double Drive...B	3	4000	4¼x5½	6	6	W
Duplex.....A	2	2775	4 x5¼	35x5n	38x7n	W
Duplex.....E	3½	3500	4¼x5½	36x8	36x8	I
Duty.....22	2	1590	3½x5	34x3½	34x5	I
Eagle.....101	1½	1875	3⅝x5½	34x5	34x5	I
Eagle.....100-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D.....B	3	4200	4¾x5½	36x6	36x6	B
Fageol.....1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol.....2½	2½	3900	4¼x5¾	34x4	36x7	W
Fageol.....3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol.....5	5	5700	4½x6¼	36x6	40x6d	W
Fargo.....R	2	1700	3¾x5	30x4	30x6	I
*Federal.....	1½	1375	3¾x5	—x5n	—x5n	
Federal.....SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal.....TE	1½	2175	4½x5¼	36x3½	36x5	W
Federal.....UE	2-2½	2425	4½x5¼	30x4	36x7	W
Federal.....WE	3½-4	3150	4½x5½	30x5	36x5d	W
Federal.....X2	5-6	4500	4¾x6	30x6	40x6d	W
*Ford.....TT	1	430	3¾x4	30x3½n	32x4½n	W
Front Drive....C	1½	2800	3¾x5½	5	4	W
G & J**.....20	1	2275	3⅝x5⅛	34x5n	34x5n	W
G & J**.....A	2-2½	3375	4x5¼	36x4	36x7	W
G & J**.....B	3½-4	4475	4½x5½	36x5	36x10	W
G.M.C.....K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C.....K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C.....K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C.....K41-T	2	2150	4x5½	36x4	36x8	W
G.M.C.....K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C.....K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C.....K71-T	3½	3700	4½x6	36x5	40x12	W
G.M.C.....K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C.....K101-T	5	4050	4½x6	36x5	40x14	W
G.M.C.....K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W.....	1½	1850	3¾x5½	35x5	35x5	I
*Garford.....15	1	1590	3½x5½	34x5n	34x5n	W
Garford.....25-B	1½	1990	3¾x5½	36x3½	36x5	W
Garford.....70-H	2½	2750	4½x5½	36x4	36x8	W
Garford.....77-D	4	3750	4½x6	36x5	36x5d	W
Garford.....68D	5	4500	5 x6½	36x6	40x6d	W
Garford.....150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary.....F	1-1½	1675	3¾x5	36x3½	36x5	W
Gary.....I	2	2250	4 x5½	36x3½	36x6	W
Gary.....J	2½	2650	4½x5½	36x4	36x8	W
Gary.....K	3½	3650	4½x6	36x5	40x5d	W
Gary.....M	5	4100	5 x6½	36x6	40x6d	W
Gersix.....M	1½	3100	4 x5½	36x3½	36x7	W
Gersix.....K	2½	$3500	4½x5½	36x4	36x8	W
Gersix.....	3½	4500	4½x6	36x5	40x12	W
Graham Bros....	1	1265	3½x4½	33x4½n	34x5n	B
Graham Bros....	1½	1325	3¾x4½	33x4½n	36x6n	B
†Gramm-Pion. .10	1	1245	3½x5	33x5n	33x5n	B
†Gramm-Pion. .15	1½	1750a	3¾x5	36x3½k	36x5k	I
†Gramm-Pion. .65	1¾	2250a	3¾x5	30x3½k	36x5	W
†Gramm-Pion. .20	2	2475a	4¼x5¼	36x4k	36x7k	W
†Gramm-Pion. .30	3	3300a	4¼x5½	36x4k	36x4dk	W
†Gramm-Pion.75P	3½	4225a	4½x5½	36x6n	42x9n	W
†Gramm-Pion. .40	4	3350a	4½x5½	30x5	36x5dk	W
†Gramm-Pion. .50	5-6	4450a	4¾x6	36x6	40x6dk	W
Hahn.....B2	1	1750	3½x5	34x5k	34x5k	W
Hahn.....O	1½	2150	3¾x5¼	36x3½k	36x6k	W
Hahn.....K	2	2550	4½x5½	36x7k	36x8k	W
Hahn.....L	3	3250	4½x5½	36x5k	36x8k	W
Hahn.....M	5	3850	4½x5½	36x5	36x10	W
Hahn.....N	6	4650	4¾x6	36x6	40x12	W
Hal-Fur.....E	1½	2350	4x5½	34x5n	38x7n	W
Hal-Fur.....B	2½	3000	4¼x5½	36x6n	36x8	W
Hal-Fur.....F	3½	4000	4½x5½	36x6n	40x10	W
Hall.....1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall.....2½	2½	3275	4¼x5½	36x4	36x6	W
Hall.....3½	3½	4100	4½x5½	36x5	36x5d	W
Hall.....5	5	5100	4½x5½	36x5	40x6d	W
Hall.....7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey.....WOA	2	2650	4½x5½	34x4	34x7	W
Harvey.....WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey.....WHA	3½	3050	4½x6	36x5	36x5d	W
Hawkeye.....K	1½	1850	3¾x5½	34x3½k	34x5k	I
Hawkeye.....M	2	2650	4¼x5	36x4k	36x6k	I
Hawkeye.....N	3½	3700	4¼x6⅜	36x5k	36x10k	I
Hendrickson...O	1½	2200	3¾x5⅛	36x4n	36x5n	W
Hendrickson...N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson...M	3½	3000	4¼x5	36x5k	36x5dk	W
Hendrickson...K	5	4000	5 x6¼	36x6	40x6	W
Huffman.....B	1½-2	1795	3¾x5	34x3½	34x6	W
Huffman.....C	1½-2	1695	3¾x5½	36x3½	36x6	I
Huffman.....D	2-3	2895	4¼x5½	36x4	36x7	
Hurlburt.....A	1½	2850	4 x5½	34x4	34x5	W
Hurlburt.....B	2½	3750	4½x6½	36x4	36x4d	W
Hurlburt.....C	3½	4590	4½x6	36x5	36x5d	W
Hurlburt.....D	5	5500	4½x6	36x5	40x6d	W
Indep'd't(Iowa).B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa).G	1½	2040	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.) .H1	2½	2040	4½x5¼	36x4	36x7	I
Indep'd't(Ohio).F	1½	2385	3¾x5	36x3½	36x5	W
Indep'd't(Ohio) H	2½	3085	4¼x5¼	36x4	36x4d	W
Indep'd't(Ohio) K	3½	3985	4½x5½	36x5	36x5d	W
Indiana.....12	1½-2	....	3¾x5¼	34x3½k	34x5k	W
Indiana.....20	2	....	4½x5½	36x4k	36x7k	W
Indiana.....25	2½-3	....	4½x5½	36x4k	36x8k	W
Indiana.....35	3½-4	....	4¾x5½	36x5k	36x5dk	W
Indiana.....51	5-7	....	5 x6¼	36x5k	40x6dk	W
*International...S	1	1250	3½x5	34x5n	34x5n	I
International...21	1	1650	3½x5¼	36x3½	36x3½	I
International...31	1½	1650	3½x5¼	36x3½	36x4	I
International...41	2	2100	3½x5¼	36x3½	36x5	I
International...61	3	2400	4¼x5	36x4	36x6	I
International..101	5	3600	4¼x5	36x5	40x10	I
Jackson....4WD	3½	3850	4½x5½	36x7	36x7	B
Jumbo.....15	1½	2295	3¾x5¼	36x3½	36x5	I
Jumbo.....20	2	2520	3¾x5¼	35x5n	38x7n	I
Jumbo.....25	2½	2660	4½x5½	30x4	36x7	I
Jumbo.....30	3	3060	4¼x5½	36x6n	42x9n	I
Jumbo.....35	3½	3900	4½x6	36x5	36x10n	I
Jumbo.....40	4	4400	4½x6	38x7n	44x10	I
K-Z.....1	1	1750	3½x5	34x3½	34x5	W
K-Z.....1½	1½	2075	3¾x5	36x4	36x6	W
K-Z.....2½	2½	2550	4½x5¼	36x4	36x8	W
K-Z.....3½	3½	3350	4½x5½	36x5	40x10	W
K-Z.....5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo.....T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo....G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo....LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo....NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo....HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo....SK	4	3845	4½x6	36x5	36x12	W
Kalamazoo....OK	5	4350	4½x6	36x6	40x6d	W
²Kelly-S....K-31	1½	2700	3¾x5¼	36x3½	36x6	C
²Kelly-S....K-34	1½	2700	3¾x5¼	36x3½	36x6	W
²Kelly-S....K-38	2½	2900	3¾x5¼	36x4	36x4d	W
²Kelly-S....K-35	2½	2900	3¾x5¼	36x4	36x4d	C
²Kelly-S....K-40	3½	3900	4½x6½	36x5	40x5d	C
²Kelly-S....K-41	3½	3900	4½x6½	36x5	36x10	I
²Kelly-S....K-42	3½	3900	4¾x6½	36x5	40x5d	W
²Kelly-S....K-50	5	4400	4½x6½	36x6	40x6d	C
²Kelly-S....K-60	6	4600	4½x6½	36x6	40x7d	C
²Kelly-S....K-61	5-7	4800	4½x6½	36x6	36x7d	I
Keystone.....40	2	2175	3¾x5⅛	34x5n	38x7n	I
Kimball.....AB	2	3075	4 x6	36x4	36x7	W
Kimball.....AC	2½	3975	4½x6	36x4	36x8	W
Kimball.....AK	3	4500	4½x6	36x4	36x10	W
Kimball.....AE	4	5000	4¾x6	36x5	40x12	W
Kimball.....AF	5	5500	5 x6	36x6	40x7d	W
*Kissel...Express	1	1585	3⅞x5½	34x5n	34x5n	W
Kissel.....Utility	1½	1975	3⅞x5½	36x3½	36x5	W
Kissel...Freighter	2½	2875	4¼x5½	36x4	36x7	W
Kissel.....H. D.	4	3675	4¼x5½	36x5	36x5d	W
Kleiber.....AA	1	2200	4½x5¼	34x3½k	34x5k	W
Kleiber.....A	1½	3100	4½x5¼	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

1—Gramm-Pioneer. 2—Kelly-Springfield.

Passenger Car Table on Page 52

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5½	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Keohler.....D	1½	2150	3½x5	34x3½	34x5	W
Keohler.....M	2½	3175	4 x5½	36x4	36x7	W
Keohler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Keohler.....F	3½	4170	4½x5½	36x5	36x10	W
Keohler,MT. Trac	5	3275	4 x5½	36x4	36x7	W
Krebs.....23	¾	1260	3¾x5	34x4½	34x4½	B
Krebs.....24	1	1535	3¾x5	34x5	34x5	W
Krebs.....45	1½	2125	4½x5½	36x4	36x7	W
Krebs.....75	2½	2375	4½x5½	36x4	36x8	W
Krebs.....110	3½	2975	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1025	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2400	3½x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½-3½	3150	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5-7	4800	4½x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4½x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	10x7	40x14	I
Mack...AB D.R.	1½	3450	4 x5	36x4	36x3½d	D
Mack...AB Chain	1½	3000	4 x5	36x4	36x3½d	C
Mack...AB Chain	2	3300	4 x5	36x4	36x4d	C
Mack...AB D.R.	2	3750	4 x5	36x4	36x4d	D
Mack...AB D.R	2½	3850	4 x5	36x4	36x4d	D
Mack...AB Chain	2½	3100	4 x5	36x4	36x4d	C
Mack...AC Chain	3½	4950	5 x6	36x5	40x5d	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac...AB	5	3400	4 x5	36x4	36x4d	C
Mack Trac...AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac...AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac...AC	13	5750	5 x6	36x6	40x12	C
Mack Trac...AC	15	6000	5 x6	36x7	40x7d	C
*Mapleleaf.....**	1½	3000	3¾x5½	34x5n	36x6n	W
Mapleleaf...AA**	2	3600	4 x5	36x4	36x7	W
Mapleleaf...BB**	3	4050	4½x5½	36x4	36x4d	W
Mapleleaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Mapleleaf...DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2200	4½x5½	34x3½	34x5	D
Master.....JD	1½	2500	4½x5½	34x3½	34x5	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2800	4½x5½	34x4	36x7	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6●	36x5	40x5d	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4½x6½	36x6	40x6d	W
Master.....F	5	5000	4½x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	912	3¾x4½	32x3n	32x1n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1½	2000	3½x5	34x3½	36x5	W
Menominee...H	1½	2175	4 x5	36x3½	36x5	W
Menominee...D	2-2½	2875	4 x6	36x4	36x8	W
Menominee...G	3½	3800	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4½x6	36x6	40x12	W
Moline.....10	1½	1985	3½x5	34x5n	36x6n	I
*Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-5	4600	4½x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3½x5½	34x3k	34x1k	I
Nash.....3018	2-2½	2150	3½x5½	34x1k	34x7k	I
Nash.....Quad	2-2½	2750	4½x5½	36x5k	36x5k	I
Nash..3018, LWB	2-2½	2200	3½x5½	34x4k	34x7k	I
Nash..Quad. LWB	2-2½	2800	4½x5½	36x5k	36x5k	I
Nash.....5018	2½	2250	3½x5½	34x4k	34x7k	I
*Nelson.....G2	1½	....	4½x5½	36x3½	36x6	W
*Nelson.....G3	2½	....	4½x5½	36x4	36x7	W
*Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
*Nelson.....G5	5	....	4½x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5½	36x4k	36x7k	W
Netco.....H1	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3099	4½x5½	36x4k	36x7k	W
Noble.....A21	1½	1840	3½x5½	34x5	34x5	W
Noble.....B31	1½-2	2480	3½x5½	36x4	36x7	W
Noble.....D51	2½-3	2950	4½x5½	36x4	36x8	W
Noble.....E71	3½-5	3800	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3½x5½	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4½x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4½x5½	34x4	36x6	W
Northwestern..WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E.Spec	1½	2285	3½x5½	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3½x5	36x3½	36x5	W
Ogden.....E	2½	....	4½x5½	36x4	36x8	W
Old Hickory...W	1	1775	3¾x5	36x3½k	36x4k	W
Old Reliable....A	1½	$2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4¼x6	34x4	36x4d	W
Old Reliable....C	3½	4250	4¼x6	36x5	36x5d	W
Old Reliable....D	5	5250	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6½	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5¼	35x5n	35x5n	I
Olympic.....A	2½	3200	4¼x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	2½	3700	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	3250	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	3400	3½x6	36x6n	36x6n	B
Oshkosh.....B	2½	3850	4 x5½	38x7n	38x7n	B
Oshkosh.....BB	2½	4000	4 x5½	38x7n	38x7n	B
*Overland.....4	½	450	3½x4	30x3½n	30x3½n	B
Packard.....EC	2-3	3100	4½x5½	30x4	36x7	W
Packard.....EX	2-2½	3100	4½x5½	30x6n	40x8n	W
Packard.....ED	3½-4½	4100	4½x5½	30x5	36x5d	W
Packard.....EF	5-7½	4500	5 x5½	30x6	40x6d	W
Paige.....52-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige.....54-20	2½	2420	4¼x5½	34x4	34x8	W
Paige.....51-18	3½	3145	4½x5½	30x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot... Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot... Lincoln	2	2050	4 x5¼	34x3½	34x5	W
Patriot .Washgt'n	3	2900	4½x5½	30x4	36x7	W
Pierce-Arrow....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3½x5	30x4	30x6	
Pittsburgher.....	3	3800	4½x5½	30x5k	30x8	W
Power.....F	2	3150	3½x5¼	36x5	36x7	W
Power.....C	3½	4250	4¼x5½	36x5	40x10	W
Premecar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier.....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4½x5¼	34x4	34x6	W
Rainier.....R-20	2½-3	....	4½x5¼	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	36x6	40x6d	W
Ranger..TK-28-2	1½	2450	3¾x5	30x6n	38x7n	W
*Reo.....F	¾-1½	1245	4½x4½	34x4½n	34x4½n	B
Reliance.....10A	1½	2400	4 x5¼	36x3½	36x5	I
Reliance.....20B	2½	3100	4½x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3¾x5	34x3	34x4	I
Republic..10 Exp	1	1605	3¾x5	34x5n	34x5n	I
Republic.....11X	1½	1795	3¾x5	34x4	34x6	I
Republic.....19	2½	2195	4½x5½	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rowe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rowe....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rowe....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rowe....G.P.W.	3	5250	3½x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4½x6	36x5	36x6d	W
Rowe.....F. W.	5	5500	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4-3½x1	32x4n	32x4n	B
Samson.....25	1¼	....	4-3½x5½	35x5n	35x5n	B
Sanford....W-15	1½-2	2150b	3¾x5	36x3½k	36x5k	..
Sanford.....25	2½-3½	....	4½x5¼	36x4	36x4d	W
Sanford.....35	3½-5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5-7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ton	3	3800	4¼x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5½	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	30x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½-2½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½-2½	3350	4½x5½	34x5n	38x7n	W
Selden.....50	2½-3½	3250	4½x5½	30x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4¾x6	36x6	40x12	W
Seneca.....M	1½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3½x4½	32x4½n	32x4½n	B
*Service.....15	1½	....	3¾x5	34x4½n	35x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4½x5½	35x5n	38x7n	W
Service.....52	3	....	4½x5½	30x4	36x8	W
Service.....72	3½	....	4½x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	$1950	3¾x5	34x5n	36x6n	W
Signal.....H	1½	2450	4½x5½	34x4	36x6	W
Signal.....J	2½	2875	4½x5½	34x4	36x8	W
Signal.....M	3½	3675	4½x5½	36x5	40x5d	W
Signal.....R	5	4400	4¾x6	36x6	40x6d	W
Southern.....10	1	2090	3¾x5	34x3½	34x4	W
Southern.....15	1½	2590	3¾x5½	36x6n	34x4	W
Southern.....20	2	2990	4¼x5½	30x6n	40x8k	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5¼	36x4k	36x7k	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x10	W
Standard.....5-K	5-7	4400	4¾x6	36x6	40x12	W
*Star.....	½	610b	3½x4¼	30x3½n	30x3½n	B
Sterling.....1½	1½	2885	4 x5¼	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5¾	36x4k	36x6k	W
Sterling.....2½	2½	3290	4¼x5¾	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6¼	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6¼	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6¼	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6¼	36x6	40x7d	C
*Stewart.....14	1½	1245	3¾x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3¾x5½	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3¾x5	34x3½	34x5	I
Stewart.....7	2-2½	2190	4¼x5½	34x4	34x7	I
Stewart.....7-X	2½-3	2390	4¼x5½	34x4	34x7	I
Stewart.....10	3½-4	3190	4½x5½	36x5	36x5d	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x5d	I
*Stewart.....	1½	1245	4-3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1240	3½x5	34x4½n	34x4½n	W
Stoughton.....A	1	1790	3¾x5¼	34x5	34x5	W
Stoughton.....B	1½	2150	3¾x5¼	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....F	3	3150	4½x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4½x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Themart.....	1¼	1795a	4 x5¼	34x5	34x5	C
Tiffin.....GW	1½	2100	4¼x5¼	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5¼	36x4	36x3½d	W
Tiffin.....PW	3½	3600	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4¼x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000a	4 x5¼	35x5n	38x7n	W
Tower.....H	2½	2475a	4¼x5¼	36x4	36x7	W
Tower.....G	3½	3475a	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3¾x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1405	3¾x5½	34x3½k	34x4k	I
Transport.....35	2	1835	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5½	36x4k	36x8k	I
Transport.....60	3½	2585	4¼x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Trayler.....B	1½	2300	3¾x5½	34x3½	34x5	W
Trayler.....C	2-2½	2850	4 x5½	36x4	36x7	W
Trayler.....D	3-3½	2300	4¼x5½	30x4	36x8k	W
Trayler.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3¾x5	34x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3¾x5½	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5½	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5¾	36x4k	36x7k	I
Twin City...B.W.	2	2750	4 x5½	36x6	40x8	I
Twin City...AW.	3½	3950	4¼x6	36x5	40x5d	W
5Twin City.....B	3½	....	5½x6	36x6	36x6	I
5Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4¼x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4¼x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4¼x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4¼x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
Union.....FW	2½	3190	4 x6	36x5k	36x8k	D
Union.....HW	4	4650	4½x6	36x6	40x12	D
United.....A	1½	2145	3¾x5¼	36x3½k	34x5k	W
United.....B	2½	3150	4¼x5½	36x4k	36x7k	W
United.....C	3½	3975	4¼x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States .U	1	1875	3½x5½	34x5n	34x5n	B
UnitedStates,NW	1½	2225	3¾x5	36x5	36x3½	W
United States...N	1½	1975	3¾x5	36x3½k	36x5k	I
United States...R	3	3075	4 x5¼	36x4	36x4d	W
United States...S	4	3875	4½x5½	36x5	36x5d	W
United States...T	6	4850	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Veteran.....M**	1½	2609	3¾x5½	35x5n	35x5n	W
Veteran.....P**	2	3699	4¼x5½	36x4	36x7	W
Veteran.....R**	3	4200	4½x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	½	1050	3½x4½	31x4n	31x4n	W
Vim.....30	½	1175	3½x4½	32x4½	32x4½	W
Vim.....31	1	1975	3½x5½	35x5n	35x5n	W
Vim.....22	2	3150	3¾x5½	36x4	36x6	W
Vim.....23	3	3950	4¼x5½	36x5	36x5d	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express, truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Walker-JohnsenA	2	$2250	3¾x5	34x3½	34x6	W
Walker-JohnsenB	3	2750	4¼x5½	36x4	36x8	W
Walter.....M	2½	3850	4½x5¾	36x4	36x8	D
Walter.....S	5	4850	4½x6½	36x6	40x6d	W
*Watson.....C	1	1465a	3⅝x5½	35x5n	35x5n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2550	4⅛x5¼	36x3½k	36x5k	W
Western....L1½	1½	2550	3¼x5	36x3½k	36x5k	W
Western....W2½	2½	3250	4⅛x5¼	36x4	36x7	W
Western....L2½	2½	3250	4¼x6	36x4	36x7	W
Western....W3½	3½	4250	4½x6	36x5	40x5d	W
*White.....15	¾	2100	3¼x5½	34x5n	34x5n	B
White.....20	2	3250	3¾x5½	36x4k	36x7k	D
White.....40	3½	4200	3¾x5¾	36x5	40x5d	D
White.....45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick....E	1	1225	3¾x5	34x5n	34x5n	W
White Hick....H	1½	1375	3¾x5	36x3½	36x5	W
White Hick....K	2½	1675	4⅛x5¼	36x4	36x5	W
Wichita.....K	2	$1875	3¾x5¼	36x3½	36x4k	W
Wichita.....M	1	2400	3¾x5¼	36x3½k	36x6k	W
Wichita.....RX	3	3200	4⅜x5¾	36x4k	36x8k	W
Wichita.....O	4	3500	4½x6½	36x5k	36x5k	W
Wilcox.....AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4¼x5	36x4k	36x3½dk	W
Wilcox.....E	3½	3950	1½x6	36x5k	36x5dk	W
Wilcox.....F	5	$4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¾x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4⅛x5¼	36x4	36x7	W
Wilson.....G	3½	3685	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wiscensin.....A	1	1750	3¾x5	34x5n	34x5n	W,B
Wiscensin.....B	1½	2100	3¾x5	35x5	36x6	W
Wiscensin.....C	2½	2700	4 x5¾	36x6n	36x7	W
Wiscensin.....D	3½	3000	4⅜x5¾	36x6n	40x8	W
Wiscensin.....E	5	3500	4½x6¼	36x6	36x10	W
Wiscensin.....F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will.....N	1½	2450	3¾x5	36x3½k	36x5k	W
Witt-Will.....P	2½	2900	4½x5¼	36x3½k	36x7k	W
Wolverine.....J	1	2125	3½x5	34x3	34x4	I
Wolverine.....J	1½	2375	3¾x5	34x3½	34x5	I
Wolverine.....J	2	2610	3¾x5	34x4	34x7	I
Wolverine.....J	2½	3125	4⅛x5¼	36x5	36x10	I
Wolverine.....L	3½	4100	4½x5½	36x5	36x10	I

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	LeR.	4-3⅛x4½	Gas.	1
Allis-Chalm...	15-25	1185	4	Midw.	4-4½x5¼	Gas.	3
Allis-Chalm...	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm..	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork...2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork....C	14-28	1395	4	Own	4-5 x6	GorK	3
ARO..1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T....	15-30	1900	4	Clim.	4-5 x6½	G,K	4
Aultman-T....	22-45	2800	4	Own	4-5½x8	G,K	6
Aultman-T....	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Automot. B-3.	12-24	1250	4	Herc.	4-4 x5½	Gas.	2-3
Avery,SR.Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery .Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-30	....	4	Own	4-4½x6	G,K,D	3-4
§Avery.....	....	....	*	Own	4-4x5½	G,K,D	3
Avery.....	12-25	....	4	Own	2-6½x7	G,K,D	3-4
Avery.....	14-28	....	4	Own	4-4½	G,K,D	3-4
Avery.....	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7½x8	G,K,D	8-10
Bates Made..H	18-25	....	4	Midw	4-4½x5¼	Gas.	3
Bates Made..F	18-25	....	*2	Midw	4-4½x5¼	Gas.	3
‡Bates Made-G	25-35	....	*2	Midw	4-4½x6	Gas.	..
Beeman.....G	2-4	240	4	Own	1-3½x4½	Gas.	....
Best.....	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best.....	60	....	*2	Own	4-6½x8½	G,K,D	8-9
Boring.....	5-10	395	4	LeR.	4-3½x4½	G	..
Boring...1921	....	1850	3	Wauk	4-4⅜x5¾	GorK	2
Burn-Oil, 1922	15-30	1395	4	Own	2-6¾x7	Ker.	3-4
Capital.....	15-30	1000	2	Own	4-4¼x6	Gas.	3
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	3
Case.....	12-20	....	....	....	4-4½x5	....	2
Case.....	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case.....	22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case.....	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T3S	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar .ST	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur.....	5-2½	345	2	N Way	2-4½x4½	GorK	1
Chicago.....40	40	2500	4	Own	4-4½x6	Gas.	4
Clutrac.....F	9-16	595	*2	Own	4-3¼x4¼	G,K,D	2
Clutrac.....W	12-20	1345	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Depue.....A	20-30	2500	4	Buda	4-4½x6	Gas.	4
Dill.....D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dil.....R.W.	20	2980	4	Midw.	4-4½x6	Gas.	3
Do-It-All....A	3-6	495	..	Own	1-4½x5	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B.....AA	12-20	1095	4	Own	4-4½x5	G,K,D	3
Fageol.....D	9-18	1525	4	Lyc.	4-3½x5	Gas.	2
Farm Horse..B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Farquhar.....	15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar.....	18-35	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar.....	25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch..4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Ferdson.....	-18	$ 395	4	Own	4-4x5	G,K	2
Franklin....G	18-30	4000	*2	Clim.	4-5 x6½	G or K	3-4
Franklin....C	18-30	3350	*2	Clim.	4-5 x6½	G or K	3 4
Franklin...G2	18-30	4350	2	Clim.	4-5 x6½	G or K	3-4
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt,..A	18-30	2150	4	Wauk	4-4¾x6¾	G or K	4
Gray.....	20-36	1975	3	Wauk.	4-4½x3¼	Gas.	4
Gray.....	22-44	2165	3	Wauk.	4-5 x6½	Gas.	4-5
Gt. Western St	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr..20	20	765	4	Own	2-5¼x6½	K,D.	2
Hart-Parr..30	30	895	4	Own	2-6½x7	K,D.	3
‡Hart-Parr.....	....	1695	4	Own	6½x7	K.D.	..
Heider.....D	9-16	850	4	Wauk	4-4¼x5½	G,K	2
Heider.....C	12-20	995	4	Wauk	4-4¼x6¾	G,K	3
Heider....Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4.	12-25	985	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4	15-30	1885	4	Midw.	4-4½x6	Gas	3
Illinois,.....C	15-30	....	4	Clim.	4-5 x6½	G,K	4
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International .	8-16	†670	4	Own	4-4½x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5½x8	G,K,D	4
J-T.....N	25-40	3000	*2	Clim.	4-5x6½	G,K,D	3-4
¶Kinkade....	1½	190	1	Own	1-3 x3	Gas.	....
La Crosse.....	12-24	985	2	Own	2-6 x7	G,K	3
Lausen.....5	12-25	1295	4	Midw.	4-4½x5½	Gas.	3
Lausen.....21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lauson Road	15-30	2000	4	Beav.	4-4¾x6	K	....
Leader.....B	12-18	685	4	Own	2-6 x6½	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn.....H4J	40-	4500	*	Cont.	4-4½x5½	Gas	4
Linn.....W	60	5000	*	Wauk	4-5 x6¼	Gas	6
Little Giant,.B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant,.A	26-35	3300	4	Own	4-5½x6	K	6
Lombard..1922	85-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard..1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2⅝x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Mod.D	22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD	35-70	3850	4	Own	4-7½x9	G or K	8-9
Mohawk .1922	8-16	650	2	Light	4-3½x4½	K or G	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch..	9-18	....	2	Own	4-3½x5	Gas.	2-3
Motor Macult,	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	425	4	Own	2-3¾x4	Gas.	1
Nichols-Shep.	20-42	2650	4	Own	8 x10	G or K	3-6
Nichols Shep.	25-50	3000	4	Own	9 x12	G or K	4-7
Nilson Senior..	20-40	1975	5	Wauk	4-5 x6¼	G,K	4
Oil Pull.....K	12-20	....	4	Own	2-6 x8	K,D	3
Oil Pull.....H	16-30	....	4	Own	2-7 x8½	K,D	4
Oil Pull....G	20-40	....	4	Own	2-8 x10	K,D	5-6
Oil Pull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
Oldsmar GarK	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Peoria.....L	12-25	1600	4	Clim.	4-5 x6½	G,K	3
Pioneer.....G	18-36	1750	4	Own	4-5½x6	G,K,D	4
Pioneer.....C	40-75	3550	4	Own	4-7 x8	Gas.	10
Plowman....A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable.....	10-20	390	4	Own	2-6 x7	Ker.	2
Rex.....	12-25	1600	4	Wauk	4-4¼x5¾	G or K	3
Russell.....	12-21	1500	4	Own	4-4¼x5¾	G or K	2-3
Russell.....	15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson....M	....	445	4	Own	4-4 x5½	G,K	2
Sandusky,...J	10-20	1250	4	Own	4-4¼x5¼	G,K,D	2
Sandusky...E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
Shelby.....D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby.....C	9-18	....	4	Wauk	4-3⅝x5¼	G or K	2
Steady Pull..	12-21	1485	4	Own	4-4 x5	Gas.	3
Tioga.....3	18-32	....	4	Wisc.	4-4½x6	Gas.	3-4
Toro Cultivator	6	750	3	LeR.	4-3½x4½	Gas.	2
Toro Tractor'22	6-10	495	3	LeR.	4-3½x4¾	Gas.	2
Townsend.....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend.....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend.....	25-50	2500	2	Own	4-8½x10	Ker.	4-8
Traction Motor	40-50	....	4	....	8-3¼x5	Gas.	4-5
Trayler....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar....10	25-40	3750	*2	Wauk	4-5 x6¼	G or K	4
Twin City.....	12-20	1200	4	Own	4-4¼x6	G,K	3
Twin City.....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City.....	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle Sam C20	12-20	1095	4	Weid.	4-4 x5½	G	2-3
Uncle Sam B19	20-30	1985	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam D21	20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utiliter....501	2½-4	295	4	Own	1-3½x4½	G	1
Utiliter....501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	....	4	Own	4-4¼x5¾	G,K	3
Waterloo....N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore 21-22	12-25	1185	4	Wauk	4-4 x5¾	G,K	3
Whitney....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin...E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin...F	20-40	2050	4	Wauk	4-5 x6¼	G or K	4
Wisconsin...H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba....12-20	12-20	2400	*2	Wisc.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4½x6	G,K,D	..
Yuba....23-35	20-35	3900	*2	Wisc.	4-5½x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5½x7	G,K,D	..
‡Yuba.....	25-40	4750	*2	Yuba	4-5½x7	D	..
Zelle.....	12-25	....	4	Buda	4-4¼x5½	G or K	3

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. Clim.—Climax. Cont.—Continental. Dom.—Domas. Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. T.C.—Twin City. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor. ¶Garden Tractor.

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Specifications of Current Passenger Car Models

NAME AND MODEL	Engine Make	Cylinders, Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Ace.....F	G-B..	4-3½x5	114	32x4	$1295	$1295	....	....	$2295
Ace.....L	H-S..	6-3¼x5	117	32x4	2260	2260	....	....	3680
Ace.....C	Cont..	6-3⅝x5¼	123	33x4½	2975	2975	....	....	4500
Ambassador.....R	Cont..	6-3⅝x5¼	136	33x5	....	b4500	$4500	....	6500
American.....C	H-S..	6-3¼x5	127	33x4½	b1995	1850	1925	....	2095
Anderson.....Series 40	Cont..	6-3¼x4½	120	33x4	2195	1650	1795	$2150	2550
Apperson.....8-21-S	Own..	8-3¼x5	130	34x4½	....	2620	2645	3625	3695
Auburn.....6-51	Cont..	6-3⅜x4½	121	32x4	1575	1575	1615	2275	2395
Auburn.....6-51	Cont..	6-3⅜x4½	121	32x4½	....	n2195	....	....	....
Bay State.....	Cont..	6-3¼x4½	121	32x4	1800	1800	....	2400	2500
Bell.....4-32	H-S..	4-3½x5	114	31x4	1095	1095	....	....	....
Bell.....6-50	H-S..	6-3¼x5	124	32x4	1545	1545	....	....	....
Biddle.....B1 & B5	Buda..	4-3¾x5½	121	32x4	2950	b2950	....	3950	3950
Brewster.....91	Own..	4-4 x5½	125	32x4½	5000	5000	....	....	7000
Buick..1922-31-35-35-37	Own..	4-3⅜x4¾	109	31x4	895	935	....	1295	1395
Buick.....1922-41-5-6-7	Own..	6-3⅜x4½	118	33x4t	1365	1395	....	1885	2165
Buick.....1922-48-9-50	Own..	6-3⅜x4½	124	34x4½	n1785v	n1785v	1585	2075	2375
Cadillac.....61	Own..	8-3½x5½	132	33x5	3100	3150	3150	b3875	4100
Case.....X	Cont..	6-3⅝x4½	122	32x4½	1750	1700	....	2550	2600
Case.....W	Cont..	6-3⅝x5¼	129	34x4½	....	2200	2250	2850	3250
Chalmers.....1922	Own..	6-3¼x4½	117	32x4	1345	1395	1495	1995	2295
Chalmers.....1922	Own..	6-3¼x4½	122	32x4	....	....	1495	....	....
Chandler.....Six	Own..	6-3½x5	123	33x4	1595	1595	1695	2295	2395
Chevrolet.....490	Own..	4-3½x4	102	30x3½	525	525	....	850 k720	875
Chevrolet.....FB	Own..	4-3½x5¼	110	32x4	975	975	....	1575	1575
Cleveland.....41	Own..	6-3 x4½	112	32x4	1175	1195	....	1550	1595
Cole.....890	Nort..	8-3½x4½	127¼	33x5	2485	b2485	2485	3185	3685
Columbia....Challenger	Rut..	6-3½x5	115	32x4	....	1195	....	1995	1995
Columbia.....DeLuxe	Cont..	6-3¼x4½	115	32x4	1475	1475	....	2295	2350
Columbia.....Light Six	Cont..	6-3½x4¾	115	31x4	995	985	....	....	1395
Comet.....C-53	Cont..	6-3½x5¼	125	33x4½	....	1985	2085	....	2985
Crawford.....22-6-60	Cont..	6-3⅝x5¼	122½	32x4	3000	3000	3000	....	4500
Crawford-Dagmar..6-60	Cont..	6-3⅝x5¼	135	33x5	....	n3500	....	....	....
Daniels.....D-19	Own..	8-3½x5½	132	33x5	a4350	b4350	4350	5250	6000
Davis.....71	Cont..	6-3⅝x4¾	114	31x4	....	1295	....	....	....
Davis.....61-67	Cont..	6-3⅝x4½	120	32x4	1595	1595	b1695	2095	2195
Dixie Flyer.....H-S-70	H-S..	4-3½x5	112	32x4	1175	1175	b1295	1545	1595
Dodge Brothers.....	Own..	4-3⅞x4½	114	32x4	850	880	....	1280 980h	1410
Dorris.....6-80	Own..	6-4 x5	132	33x5	....	b3970	3950	4985b	5750
Dort.....19-14	D-Ly..	4-3½x5	108	31x4	885	885	....	1315 1065k	1445 1115k
Driggs.....	Own..	4-2⅝x4½	104	30x3½	1275	1275	....	....	1975
Duesenberg...Straight 8	Own..	8-2⅞x5	134	33x5	6500	6500	6750	7800	7800
Du Pont.....A	Own..	4-3⅛x5½	124	32x4½	3000	3200	....	3800	4000
Durant.....A-22	Cont..	4-3⅜x4½	109	31x4	n890	890	....	1365	1365
Durant.....B-22	Anst..	6-3½x4½	123½	32x4½	1600	1650	....	2250	2400
Earl.....40	Own..	4-3⅞x5¼	112	32x4	1485	1095	950u	b1395	1795
Elcar.....K-4	Lyc..	4-3½x5	118	33x4	1095	1095	n1095	1345	....
Elcar.....7-R	Cont..	6-3¼x4½	118	33x4	1395	1395	n1395	2065	2165
Elgin.....K-1	Falls..	6-3½x4¼	118	33x4	1345	1295	b1345	2195	2195
Essex.....	Own..	4-3⅜x5	108½	32x4	....	1095	....	1195k	1895 1295k
Ford.....T	Own..	4-3¾x4	100	30x3½	r319	s348	u285	580	645
Franklin.....9-B	Own..	6-3¼x4	115	32x4	1900	1950	u1750	2750	2850
Gardner.....T-R & G	Lyc..	4-3½x5	112	32x4	805	895	....	1095k	1595
Grant.....	Own..	6-3½x4½	116	32x4	1385	1385	....	1895	1945
Gray.....	Own..	4-3⅝x4	100	30x3½	....	490	....	....	760
H.C.S.....Series 3	Weid..	4-3⅝x5½	120	32x4½	2400	2400	....	2850	3150
Halladay.....4	Own..	4-3½x5	115	32x4	1095	1095	....	1990	2085
Halladay.....6	Own..	6-3½x5	115	32x4	1595	1595	....	2295	2395
Handley-Knight.....	Own..	4-4½x4½	125	32x4½	....	....	2650	3450	3450
Hanson.....30	Cont..	6-3½x4¾	114	31x4	....	995	....	....	....
Hanson Six.....60	Cont..	6-3⅜x4½	121	32x4	1595	1595	1795	b2475	2585
Hatfield.....A-42	H-S..	4-3½x5	115	32x4	....	1345	b1315	1950	1950
Haynes.....75	Own..	6-3½x5⅞	132	34x4½	2395	b2395	2395	....	3395
Haynes.....55	Own..	6-3½x5	121	32x4½	1645	1595	....	2295	2595
Haynes.....48	Own..	12-2¾x5	132	33x5	2895	3595	2895	....	3895
Holmes.....Series 4	Own..	6-3½x4¼	126	34x4½	....	b2500	2500	b3300	3600
Hudson.....Super 6	Own..	6-3½x5	126	34x4½	....	b1645	1695	2570	2650 1745k
Huffman.....	Cont..	6-3⅜x4½	120	32x4	1395	1395	....	....	2295
Hupmobile.....Series R	Own..	4-3¼x5½	112	32x4	1250	1250	....	1835	1935
Jackson.....638	Cont..	6-3¼x4¾	121	32x4½	....	....	1485	b1685	2985	2985
Jewett.....Six	Own..	6-3¼x5	112	31x4	1055	1065	....	1395	1395
Jordan.....MX	Own..	6-3⅞x4¾	120	32x4	1895	1795	....	2785	2785
Kenworthy.....8-90	Own..	8-3 x5¼	130	32x4½	5000	5000	5250	6000	6000
King.....K	Own..	8-3 x5	120	32x4½	1795	1795	b1795	2400	2550
Kissel.....45	Own..	6-3⅞x5½	124	32x4½	n2385	1885	2385	b2975	3075
Kline Kar.....6-55-K	Cont..	6-3⅜x4½	121	33x4	1690	1690	1690	2750	2890
LaFayette.....	Own..	8-3¼x5¼	132	33x5	3985	b4090	4090	5500	5500
Leach.....999	Own..	6-3¾x5½	134	32x4½	5500	5500	5500	5500	5500
Lexington.....22	Anst..	6-3¼x4½	123	32x4½	....	1745	....	....	....
Lexington.....T-22	Anst..	6-3¼x4½	128	32x4½	....	....	2285	....	3350
Lexington.....ST-22	Anst..	6-3¼x4½	122	32x4	....	2100	....	....	....
Liberty.....10-D	Own..	6-3½x5	117	32x4	1575	1395	1575n	2085 1695k	2245
Lincoln.....	Own..	8-3⅝x5	130	33x5	....	....	....	$3900	....
Lincoln.....	Own..	8-3⅝x5	136	33x5	$3800	b3800	$3800	....	$4900
Locomobile.....48	Own..	6-4½x5½	142	35x5	....	b7600	7600	10500	11000
Maibohm.....B	Own..	6-3½x4½	116	32x4	1395	1395	b1495	2165	2165
Marmon.....34	Own..	6-3¾x5⅛	136	32x4½	3385	b3185	3185	3985	4385
Maxwell.....	Own..	4-3⅝x4½	109	31x4	885	885	....	1385	1485
McFarlan.....1922	Own..	6-4½x6	140	33x5	6300	b6300	6300	7500	7500
Mercer.....Series 5	Own..	4-3¾x6¾	132	32x4½	3950	b3950	c3950	4850	5250
Merit.....	Cont..	6-3¼x4½	119	32x4	1895	1895	....	....	....
Mitchell.....F-50	Own..	6-3½x5	120	33x4	a1490	1490	b1690	2050	2275
Mitchell.....F-50	Own..	6-3½x5	127	32x4½	....	....	1690	....	....
Monroe.....1922-S-9	Own..	4-3¼x4½	115	32x3½	950	950	....	....	....
Moon.....6-40	Cont..	6-3½x4¼	115	31x4	....	1295	....	....	1695
Moon.....6-58	Cont..	6-3⅝x4½	128	32x4	1785	1785	2285	2785	2785
Nash.....691-96-97	Own..	6-3¼x5	121	33x4	1360	1390	b1545	....	....
Nash.....692-94-95	Own..	6-3¼x5	127	34x4½	....	....	1540	2090	2390
Nash Four.....41-4	Own..	4-3⅝x5	112	33x4	965	985	....	1485 1295k	1645 1350k
National.....BB	Own..	6-3½x5¼	130	32x4½	a2475	b2475	2375	3725	b3250
Noma.....3C	Cont..	6-3¼x4½	128	32x4½	2000	b2100	c2200	....	3200
Noma.....1D	Bea..	6-3½x5¼	128	32x4½	3000	b3100	c3200	....	5500
Norwalk.....430-KS	Lyc..	4-3½x5	110	32x3½	....	1035	....	....	....
Oakland.....6-44	Own..	6-2¾x4¾	115	32x4	1120	1145	b1265	1685 1285k	1785
Ogren.....6 T De Luxe	Cont..	6-3⅝x5¼	134	33x5	b3750	3750	3850	4500	4800
Oldsmobile.....43-A	Own..	4-3⅛x5¼	115	32x4	1145	1145	b1265	1645	1795
Oldsmobile.....46	Own..	8-2⅞x4¾	122	33x4½	....	b1735	1735	....	2635
Oldsmobile.....47	Own..	8-2⅞x4½	115	32x4	1595	1595	b1595	2145	2295
Overland.....4	Own..	4-3⅜x4	100	30x3½	550	550	....	850	895
Packard.....Single-Six	Own..	6-3⅜x5	126	33x4½	2485	2485	u2250	3175	3275
Packard.....Single-Six	Own..	6-3⅜x5	133	33x4½	....	u2350	2685	....	3525
Packard.....Twin Six	Own..	12-3 x5	136	35x5	3850	3850	3850	5240	5400
Paige.....6-44	Own..	6-3¼x5	119	32x4	1465	1465	u1290	1995	2245
Paige.....6-66	Cont..	6-3¾x5	131	33x4½	a2495	n2245	2195	3100	3155
Paterson.....22-6-52	Cont..	6-3⅝x4½	120	32x4½	....	1550	1585	2595	2595
Peerless.....56-S-7	Own..	8-3¼x5	125	34x4½	....	b2790	2790	3500	3790
Pierce-Arrow.....	Own..	6-4 x5½	138	33x5	5250	b5250	5250	6800	7000
Pilot.....6-50	H-S..	6-3¼x5	126	32x4½	2050	2000	2050	2950	3000
Premier.....6-D	Own..	6-3⅜x5½	126¾	33x5	3150	b3100	3250	4300	5100
Premocar.....6-40-A	Falls..	6-3½x4¼	117	32x4	1095	1095	...	1750	1825
R & V Knight.....R	Own..	4-3¾x5	116	32x4	....	1665	....	2385	2475
R & V Knight.....J	Own..	6-3½x4½	127	32x4½	2475	b2475	2475	3015	3105
Reo Series.....T6 & U6	Own..	6-3⅛x5	120	33x4	1595	....	1595	2355	2435
ReVere.....C	Dues..	4-4¼x6	131	32x4½	3200	3200	3200	....	4000
Rickenbacker.....A	Own..	6-3½x4¾	117	32x4	....	1485	....	1885	1985
Roamer.....6-54-E	Cont..	6-3½x5¼	128	32x4½	2850	b2585	2785	3850	3850
Roamer.....4-75-E	Dues..	4-4¼x6	128	32x4½	3985	b3585	b3750n	....	b4650
Rolls-Royce.....	Own..	6-4½x4¾	143½	33x5	....	10,900	....	....	....
Saxon.....125	Own..	4-3½x5	112	32x4	1195	1195	....	1795	1795
Sayers Six.....DP	Cont..	6-3¼x4½	118	33x4	1695	1695	....	2795	2795
Seneca.....L-2 & O-2	Lyc..	4-3½x5	108	30x3½	875	875	....	....	....
Seneca.....50 & 51	Lyc..	4-3½x5	112	31x4	1095	1095	....	....	....
Sperling.....A	Supr..	4-3⅜x5	114	32x4	980	980	....	1685	1685
Standard.....98	Own..	8-3¼x5	127	34x4½	2150	b2500	2500	2750	3200
Stanley.....	Own..	2-4 x5	130	32x4½	2700	2700	2700	3775	3950
Stanwood Six.....	Cont..	6-3¼x4½	118	33x4	1765	1765	....	2750	....
Star.....	Cont..	4-3½x4¼	102	30x3½	r319	s348	u285	580	645
Stearns-Knight....SKL4	Own..	4-3¾x5⅝	125	34x4½	2250	2250	2450	3150	3450
Stearns-Knight.....6	Own..	6-3⅝x5	130	34x4½	2700	2700	2850	3350	3700
Stephens.....90	Own..	6-3¼x4½	122	33x4½	1575	b1595	c1625	2450	2550
Stevens-Duryea.....E	Own..	6-4½x5½	138	35x5	7250	b6900	6800	u5600	b8900
Studebaker....Light Six	Own..	6-3½x4½	112	32x4	1045	1045	....	1375	1750
Studebaker...Special Six	Own..	6-3½x5	119	32x4	1425	1475	b1475	2150	2350
Studebaker.....Big Six	Own..	6-3⅞x5	126	33x4½	....	n1985	1785	2500	2700
Stutz.....	Own..	4-4¾x6	130	32x4½	2950	b2990	c2990	3990	4450
Templar.....A-445	Own..	4-3⅜x5½	118	32x4	2025	2125	b2175	2785	2785
Tulsa.....E-1-2-3	H-S..	4-3½x5	117	33x4	1175	1175	....	....	....
Velie.....48	Cont..	6-3¼x4½	115	32x4	1585	1585	b1800	2485	2485
Velie.....34	Falls..	6-3½x4½	112	32x3½	1235	1235	....	1750	2085
Velie.....58	Own..	6-3½x4¼	115	32x4	1395	1395	....	2185	2185
Washington.....C	Cont..	6-3⅜x4½	120	32x4	....	1785	....	....	2285
Westcott.....C-48	Cont..	6-3½x5¼	125	32x4½	....	....	1890	....	2890
Westcott.....A-44	Cont..	6-3¼x4½	120	32x4	....	1690	n1890	....	2690
Wills Sainte Claire..A-68	Own..	8-3¼x4	121	32x4½	2475	2475	....	3275	3475
Willys-Knight.....20	Own..	4-3⅝x4½	118	32x4	1350	1375	....	1875	2095
Winton.....40	Own..	6-3¾x5½	132	35x5	3400	n3600	3400	b4450	4550

a—3-passenger. b—4-passenger. c—6-passenger. n—Sport. h—All Metal Type. k—Soft Top Type. u—Chassis Price. r—Price without starter and demountable rims. Price with starter and demountable rims $414, s—Price without starter and demountable rims. Price with starter and demountable rims $443. t—Model 47—34x4½ Tires. V—Tire Sizes 32x4½.

Engine Make: Anst—Ansted. Bea—Beaver. Cont—Continental. Curt—Curtis. D.Ly—Dort Lycoming. G-B—Grey Beal. H-S—Herscoell-Spillman. Lyc—Lycoming. Nort—Northway. Roch—Rochester. Rut—Rutenberg. Supr—Supreme. Weid—Weidely. Wisc—Wisconsin.

The following price changes have been announced since the above table was compiled: Oakland 6-44, 2 passenger, $975, 5 passenger, $995, sport, $1,165, 4 passenger coupe, $1,445, 2 passenger coupe, $1,185, sedan, $1,545, Sayers Six, 2 passenger, $1,645, 5 passenger, $1,645, coupe, $2,645, sedan, $2,645

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AUTOMOTIVE
ASBESTOS PRODUCTS

Jobbers, dealers, service men find in this reliable line, asbestos products of *proven* merit and *known* quality. Being the *largest* makers of asbestos textiles in America, we are naturally in position to exercise the skill, experience and knowledge so necessary to the design and manufacture of asbestos products for automotive use.

GARCO
ASBESTOS
BRAKE LINING

is recognized throughout the industry for its enduring strength, additional asbestos and close weave.

Our Automotive Line Includes

Brake Lining,
Transmission Lining for Fords,
Cone Clutch and Disc Clutch Facings,
"RINGPAK" for Ford Piston Rings,
Asbestos Spark Plug Yarn,
Garco Gasket Roll,
Valbestine Valve Stem Packing,
Sheet Packings for Gaskets,
Asbestos Wick and Rope.

GENERAL ASBESTOS & RUBBER COMPANY

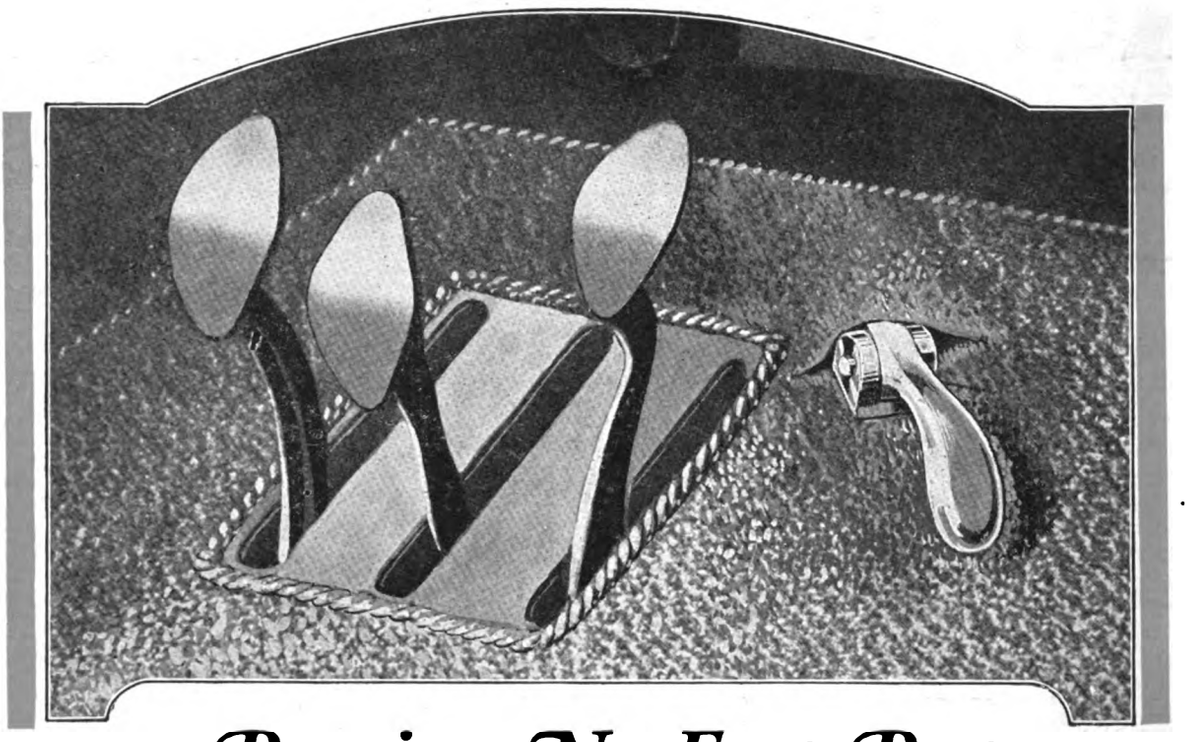
Main Offices and Factories: CHARLESTON, S. C.

BRANCHES:

New York, 296 Broadway — Pittsburgh, 311 Water St. — Chicago, 14 North Franklin St.



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Requires No Foot Rest

The above view of the Williams Accelerator appeared in this publication during the early part of this year, and showed the comfortable operation of the pedal. The Williams Accelerator requires no foot rest or other attachments in order to give perfect acceleration.

The exclusive feature of the Williams Accelerator, which eliminates the need of a foot rest, is a control running from the accelerator pedal to the carburetor. By sliding through a flexible brass cable, this control provides a uniform friction which allows the gas to be fed smoothly and evenly. The pedal is of pure aluminum—now being adopted by the best car manufacturers because of its strength, lightness and neat appearance.

When you sell the Williams Accelerator you do not have to explain the necessity for a great many extra attachments. When you install it, you have only three easy connections to make. These are only two of the reasons why it will pay you to show your customers the Williams Accelerator.

DEALERS: Order through your jobber. Ask him for the new Williams Accelerator display card, or get your cards from us.

WILLIAMS BROS. AIRCRAFT CORPORATION
SAN FRANCISCO

RETAIL PRICE $3.00 AND WORTH IT

WILLIAMS ACCELERATOR
for FORD CARS

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MOTOR WORLD

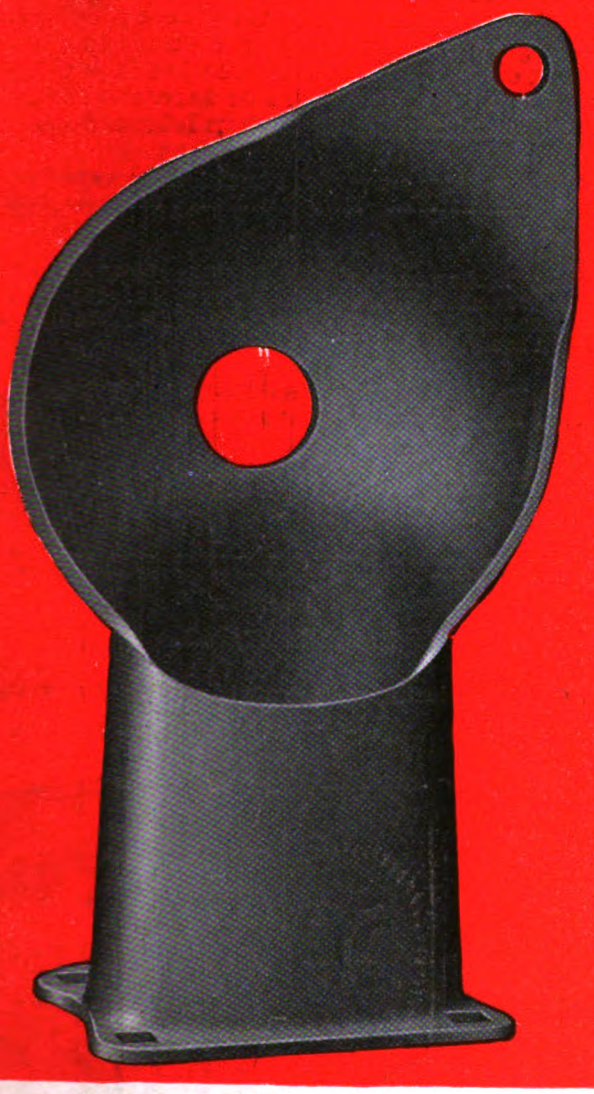
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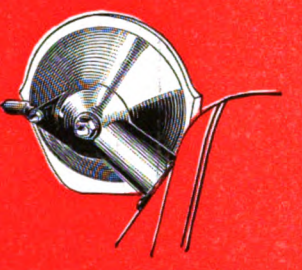
DEALERS, JOBBERS AND GARAGEMEN

Volume LXXII
Number 6

PUBLISHED WEEKLY AT 239 WEST 39th STREET
NEW YORK, AUGUST 9, 1922

Thirty-five cents a copy
Three dollars a year





This massive, handsome lamp mounting, *stamped by Gier*, is reducing costs and simplifying assembly for one of the very largest motor car makers.

MOTOR WHEEL CORPORATION, Lansing, Mich.

Motor Wheel PRODUCTS

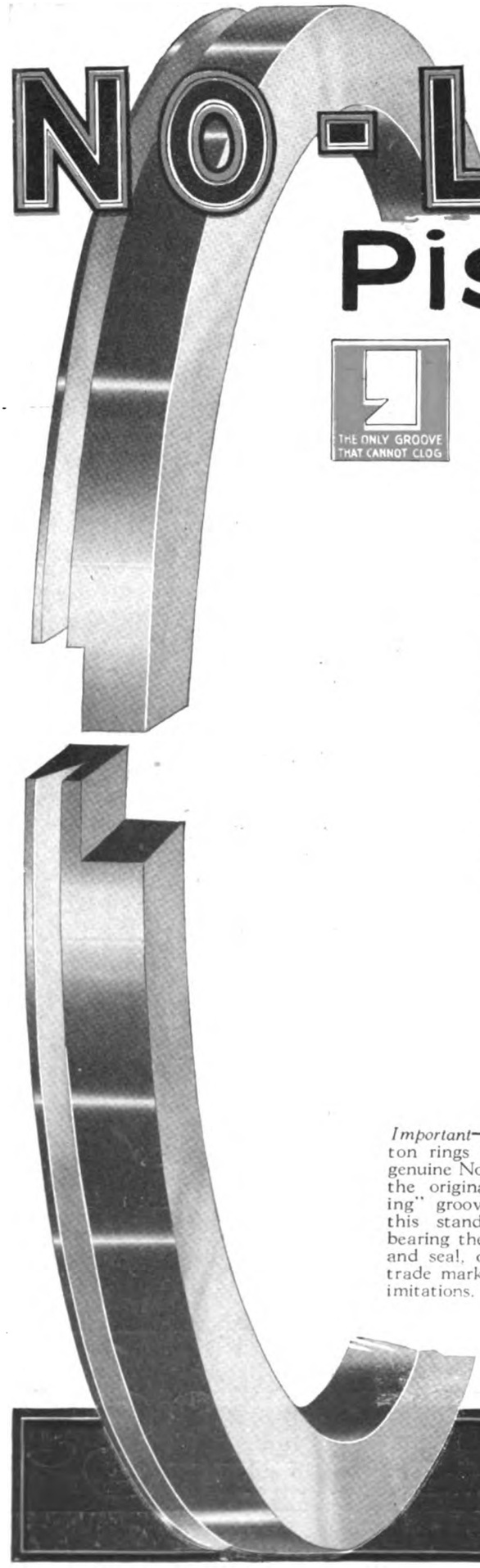
Gier Stampings

— a Motor Wheel Product

Entered as second-class matter Jan. 2, 1903, at the post office at New York, N. Y., under Act of March 3, 1879.

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NO-LEAK-O Piston Rings



THE ONLY GROOVE THAT CANNOT CLOG

Make Satisfied Customers

Today thousands of car owners are insisting upon the piston ring with the specially cut groove—the "oilSEALing" groove—found only in No-Leak-O because they have learned that this groove absolutely prevents oil "pumping" gives perfect *oil control and compression in each individual ring*, and stops "unburnt" gas or kerosene from working down into the crank case to weaken lubrication.

No-Leak-O Piston Rings are made in one piece—easy to install—quick seating—of finest material—fully guaranteed and individually tested for accuracy.

For replacement jobs you need a dependable ring designed and made especially to give satisfaction on replacement jobs. No-Leak-O started as a replacement ring; they are still the *leading* replacement ring; they make good on every job.

Over 200 reliable jobbers now carry No-Leak-O Piston Rings in all standard sizes and *over* sizes. Prompt service *always*.

Write for free booklet, "Know the Facts About Grooved Piston Rings." Also let us tell you about our liberal dealer proposition. It will pay you to act quickly.

NO-LEAK-O PISTON RING COMPANY

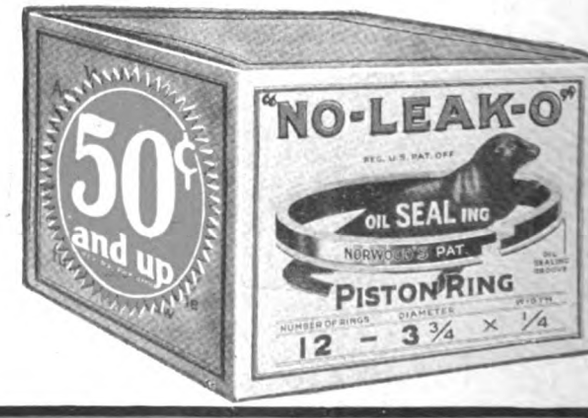
Dept. T-41

BALTIMORE, MD.

One price during eight years of continued success

One design—for all cars—50c and up

Important—In buying piston rings insist on the genuine No-Leak-O with the original "oilSEALing" groove, packed in this standard package bearing the famous ring and seal, our registered trade mark. Beware of imitations.



WON'T LEAK
because they're sealed with Oil

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MOTOR WORLD
DEALERS, JOBBERS AND GARAGEMEN

Reg. U. S. Pat. Off.
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PUBLISHED EVERY WEDNESDAY BY

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This Counter Display
Will "Ask 'Em To Buy"

Write for it now. But better still—ask for two—one for your counter and one for your window. You can't run around and show customers everything that you sell—but this display will tell every one of your customers that you sell Shaler 5 Minute Vulcanizers, and Shaler Patch-&-Heat Units. It's the best "Sales Stimulator" that you ever saw—a "Magnet" that will draw new customers into your store if you will merely put it in your window. It brings 'em in to buy.

SHALER

5 Minute Vulcanizer Is Nationally Advertised

The Counter Display will connect your store with our advertising, and remind your customers of Shaler advertisements which they have read in their favorite publications, at home. There is a big demand for Shaler Vulcanizers and Shaler Patches. Over 20,000,000 Shaler Patches were sold last year, and the demand is steadily increasing.

It's FREE—On Request

This counter Display is but one of many Shaler Helps which we send to Shaler Dealers on request. The Shaler 5 Minute Vulcanizer is one of the most profitable items that you sell, because every sale is but the first of a chain of sales of Shaler Patch-&-Heat Units for use with the Vulcanizer. Have you received our new Posters and Window Displays? If not—just ask us for them.

TEAR OFF THIS COUPON

and mail it NOW—for Free Counter Display and Sales Helps

DEALER'S COUPON

C. A. SHALER CO., 435 Fourth St., Waupun, Wis.

Please send ☐ Counter Display and Sales Helps.

Name .....

Street .....

City ..... *State* .....

Jobber's Name .....

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In Brooklyn—

"We are very optimistic over the outlook for business this year and now that the public trend is growing more and more toward the Oldsmobile, both in the 4 and the 8 cylinder models, we feel that we will steadily forge ahead of our competitors in our respective class. We know we are above competition when it comes to real actual performance and cost of upkeep and we wish to say that we are sure that this will be one of the best years that we have ever had."

OLDSMOBILE COMPANY OF BROOKLYN, INC.
F. C. STOWERS,
General Manager

Brooklyn, you know, is where a great part of New York City *lives!*

Competition among motor car dealers there is unusually keen.

Here, too—the Brooklyn Oldsmobile dealer reports a decided trend upon the part of New York's *super-critical* motor car buyers toward the Oldsmobile!

Like all Oldsmobile dealers—the Oldsmobile Company of Brooklyn is making money; it is growing; it is thoroughly satisfied with its franchise.

If Oldsmobiles are in big demand in Brooklyn—they will be even more sought in communities where competition is less keen.

Your territory may still be open. Naturally, however, the better territories are rapidly being taken by alert dealers.

The Oldsmobile franchise is eminently worth-while! Prompt action may get it for you. Wire or phone us, or write by special delivery, for an appointment and complete information concerning your territory.

OLDS MOTOR WORKS, LANSING, MICHIGAN
Division of General Motors Corporation



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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXII New York, U. S. A., Wednesday, August 9, 1922 No. 6

Real Smart Dressers Are Getting Into These Outfits Now



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An especially dressed salesroom helps present the closed car in an early fall exhibit. It's a good time to plan a special presentation now

It's Time to Plan Promotion to Boost Fall Sales

The Small Town Dealer as Well as the Big City Man Can Stir Up Autumn Interest in His Product Whether It's a Car, Truck or Tractor

How the Car Dealer Can Stimulate Fall Sales

Exhibit at the county or state fair. Even a tent exhibit will attract prospects.

Hold a Harvest Week, or Fall Festival, in his salesroom, with special advertising and decorations.

Join with other dealers in holding a Closed Car Show.

Join with other dealers in holding a Closed Car Week.

How the Truck Dealer Can Stimulate Fall Sales

Exhibit at the county or state fair. Demonstrating hauling uses of special equipment, such as hoists, power machines, etc., can be made a feature of the exhibit.

Join with other dealers in a tour of towns and farming country. The tour should have educational and demonstration features.

How the Tractor Dealer Can Stimulate Fall Sales

Exhibit at the county or state fair. This is a big bet for the tractor and power farming equipment dealer. He can show, and if there is sufficient space, demonstrate drawbar and belt uses of the tractor, and he will have a selected audience of logical prospects.

Stage a demonstration tour of the territory, with tractors mounted on trucks for exhibit purposes and with stops to show them in operation.

Join other dealers in a fall power farming demonstration.

IT'S time to get ready for the big fall selling effort.

Almost before we realize it Labor Day will have passed, the vacation period will have ended and fall and winter business will be gathering momentum. Whether the automotive dealer will cash in fully on the opportunities of fall merchandising will depend, to a large extent, on how well he plans NOW to get the business in the next few months.

The race well begun is half won. And, today is not one moment too soon to begin to plan for next fall's business.

For the motor car dealer who is prepared the fall brings many opportunities. For the city dealer these opportunities lie in the effectiveness with which he reaches the public through his newspaper advertising, sales letters and salesroom display. For the dealer in the rural districts the county and state fairs offer particular opportunities for attracting the attention and interest of prospective purchasers.

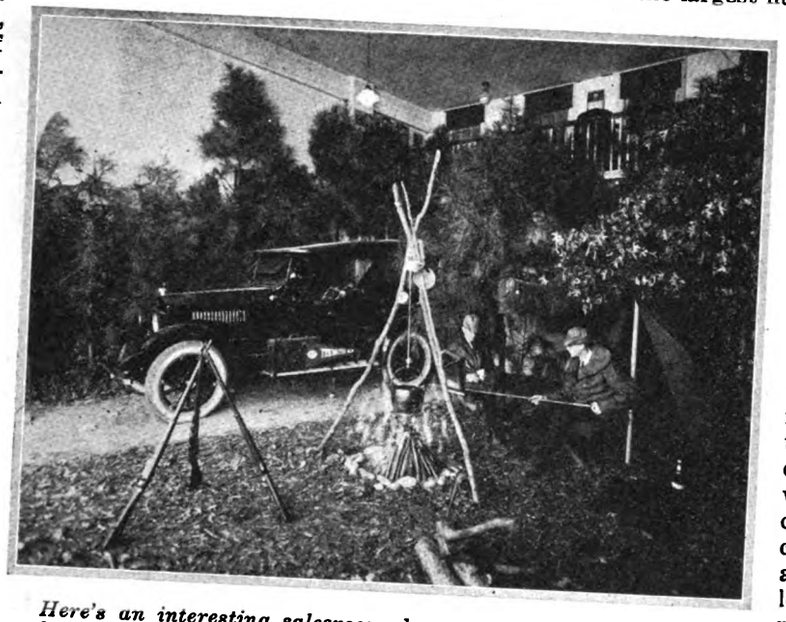
The important thing for the dealer who has decided now to prepare for a fall selling campaign is that it be laid out with due consideration for local conditions and the possibilities of success that are to result from his efforts.

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How the Car Dealer Can Stimulate Fall Sales

IN the planning of all selling campaigns it is good business to anticipate the amount of sales that are to be expected and budget expenses month by month in appropriating the money for the effort. Obviously it is going to cost something to go after business and the dealer wants to be sure that the results to be obtained are going to yield a fair profit.

The next step is a meeting of the salesmen at which a thorough organization is effected for the fall campaign. The third consideration is the appearance of the salesroom. Perhaps this means repainting, new decorations, new furniture—but something should be done to freshen up the place and make it more attractive. Then, there is the laying out of the direct mail campaign, the preparation of the mailing lists, the drafting of special fall advertising copy and the provision of a means of intensifying the follow up system which may have been allowed to lag during the summer months. These are things that the dealer may profitably consider now whether he is located in a city or rural selling territory.



Here's an interesting salesroom decorative scheme that might be used during a "Fall Festival." This was used during a special effort by the Perry Motor Co., Velie, of Norfolk, Va. The figures are floor salesmen

A good fall activity for the city motor car dealer is a special week early in the fall which may be known as "Harvest Week," "Fall Festival," "Fall Style Show," or some similar affair. In any of these special weeks the value of the activity lies in the effectiveness with which it secures favorable publicity for the dealer and his product. The week should be planned far enough ahead to give time for proper advertising in the newspapers and the issuance of invitations to owners and prospects, etc. Appropriate decorations may be used to get the salesroom and the display windows in harmony with the idea. Facilities should be provided for the registration of all guests and the recording for future attention of those who are likely to develop into prospects at some later time.

Closed car shows and closed car weeks have proved effective in stimulating fall business in the past. They were particularly successful in many cities last fall. The closed car week or show idea in cities where there are no active dealer associations usually develops as follows:

1—A prominent dealer, with the aid of a few others, invites the dealers to a luncheon at which idea is suggested.

2—An appropriation is decided upon which is secured by levying on the dealers for $50 to $100 apiece according to the cost of the function planned.

3—The date for the week or show is set, usually running from Saturday to Saturday.

4—Forms of promotion are decided. Those that have been found most successful include: Co-operative advertising in local newspapers; a parade of the latest closed models; signs in windows announcing closed car week; general price lists giving prices of all cars for distribution during the event; individual advertising in which the firm's participation in the closed car event is stressed.

Another form of sales stimulation that has worked out finely for an individual dealer is the owner contest. The idea behind this is to enlist the assistance of owners in getting prospects. Such a campaign is usually opened with an announcement in the newspapers that owners of a certain make of cars will learn something of interest by communicating with the dealer. This is to establish contact with owners not in the dealers' files. To those who respond, as well as all other owners known, letters are sent offering prizes for the largest number of prospects handed in that result in sales.

In addition to these awards a check for $10 was sent immediately to the person who sent in a prospect that was closed. This plan was responsible for 700 new prospects that found their way into the files of this Seattle dealer in the first month of the contest.

County and state fairs offer particularly fine opportunities for the automotive dealer, especially for those who serve the rural communities. In most county and state fairs a special space is allotted to automotive merchants, but a display at the fair, even if under a canvas top, is good publicity and usually pays for itself many times over. There are instances, also, where dealers were able to sell used cars at fairs.

Russel P. Taber, Inc., Hartford dealer, used the state fair to good advantage to sell used cars last year. An interesting phase of his promotion work in connection with his exhibit at the fair was the issuance of "summons" which were sent through the mails and handed to motorists and others on the highways and at the fair. The "summons" had all the outside appearance of a legal paper. Inside it read: "You are hereby summoned to appear at any time this week at Taber's great used car sale now being held at the Connecticut Fair at Charter Oak Park. We are disposing of our entire stock of used cars at prices far below the market. We will trade your present car. Come before the best ones are gone."

How the Truck Dealer Can Stimulate Fall Sales

THIS fall promises particularly bright prospects for the motor truck dealer. In the farming areas particularly, with the liquidation of crops, there is going to be purchasing power that has been at a low ebb for many months. The railroad situation at present promises a widening of the use of motor trucks in freight and

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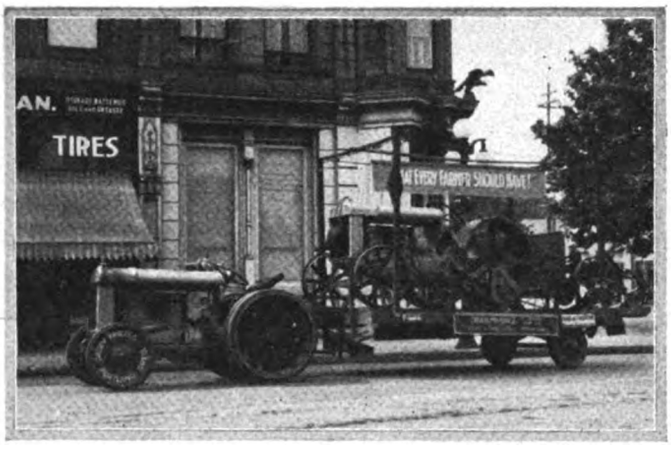
crop transportation and, in addition to these developments, there are the continually increasing demands for motor truck transportation in the contracting field. Another factor that is expected to contribute to the upward trend of truck sales is the improvement of general business and the loosening of the purse strings of large corporations for appropriations to replace much of the present rundown motor truck equipment.

With the farmer back in the market for trucks this fall there is promise of considerable success in the properly conducted motor truck tour. However, to be successful the tour should be strong in educational and demonstration features. In some localities motor truck dealers already are planning to spend several weeks this fall in the farming districts demonstrating trucks in hauling crops and in performing other services on the farm. An important thing to be considered in connection with a motor truck tour is the securing of proper advance publicity. This usually can be done most effectively through the co-operation of sub-dealers in the smaller communities.

Exhibits at county and state fairs should also prove profitable this fall. However, in arranging such exhibits the motor truck dealer will want to do more than show trucks. He will want to demonstrate them in practical haulage jobs.

The alert truck dealer is planning now to make a vocational selling effort this fall, concentrating particularly on businesses that will need motor truck transportation during the fall and winter months. While concentration on such businesses as coal, department store, etc., is important, it is also worth while to give attention to businesses that will develop heavier demands for truck transportation as a result of the upward trend of those particular businesses in the rehabilitation of general business. It will pay the motor truck dealer to watch closely the trend of business in his particular territory and bear down particularly on those that are prosperous.

One source of business that the motor truck dealer will do well to cultivate this fall is the county and municipal bodies charged with the duty of keeping the highways open for traffic this winter. The snow removal idea is growing rapidly in all parts of the country and many thousands of dollars are going to be spent early this fall for equipment. Early September is not too soon to begin the selling effort in this direction. The dealer also will want to prepare early in the fall to keep his service station busy by soliciting winter overhaul, winter cab installation and similar jobs.



Demonstrations and educational efforts are going to sell more tractors this fall, and the enterprising dealers are planning their fall appeal now

How the Tractor Dealer Can Stimulate Fall Sales

THE late summer and fall present some opportunities for selling tractors and power farming machinery. The farmer needs power during this period to harvest his crops, to do his fall plowing, to do his threshing and ensilage cutting, and, during the winter months he'll find the belt power of the tractor useful. Sales during the fall will, of course, not be as great as during the spring months, but the opportunities for selling tractors during the next few months are sufficiently plentiful to warrant the dealer's going after them.

Demonstrations are one means that the dealer can adopt to tell large numbers of people in his territory about the tractor and machinery he sells. The county fair or the state exposition attracts large numbers of farmers. They come to see the exhibits. Dealers should have displays at these fairs so that their products will receive attention. If the fair rules permit, the display should show the tractor doing both drawbar and belt work. Demonstration tours will also secure favorable attention provided they are properly advertised. Tractors and machinery can be loaded on trucks and carried from one demonstration ground to another. Farmers in the territory surrounding the demonstration point should receive notice of it through newspaper and mail advertising. Co-operative demonstrations put on by groups of dealers are well worth while.

Satisfied owners are often able to provide names of likely tractor buyers. Dealers should call on their owners to get this information. At the same time they can inspect their tractors to see that they are in proper condition for fall and winter work, and also solicit winter overhaul business for their shops.

At the present time everything indicates that this year's crop will be most satisfactory and that the market for it will be favorable. As a result the finances of the farmers are likely to be much improved. He is almost certain to be in much better position to buy than he has for some time past.

Service Dealer Idea Growing in Truck Selling Field

THE Republic Truck Sales Corp. is meeting with considerable success in the application of the service dealer idea.

Several months ago the company sold the idea to its dealer organization. It consisted of a closely woven dealer representation through the appointment of Republic service dealers in every town embraced within the respective territories of the Republic's distributors and factory branches. In putting the idea into effect, it was found easy to locate in practically every city and town at least one garage proprietor of the desirable type and sell this man the Republic service dealer franchise. In selling it to the garagemen it was pointed out that it contained the following advantages:

1—Cash commissions on prospects developed by the service dealer.

2—Extra profits accruing through being exclusive service representative in his vicinity.

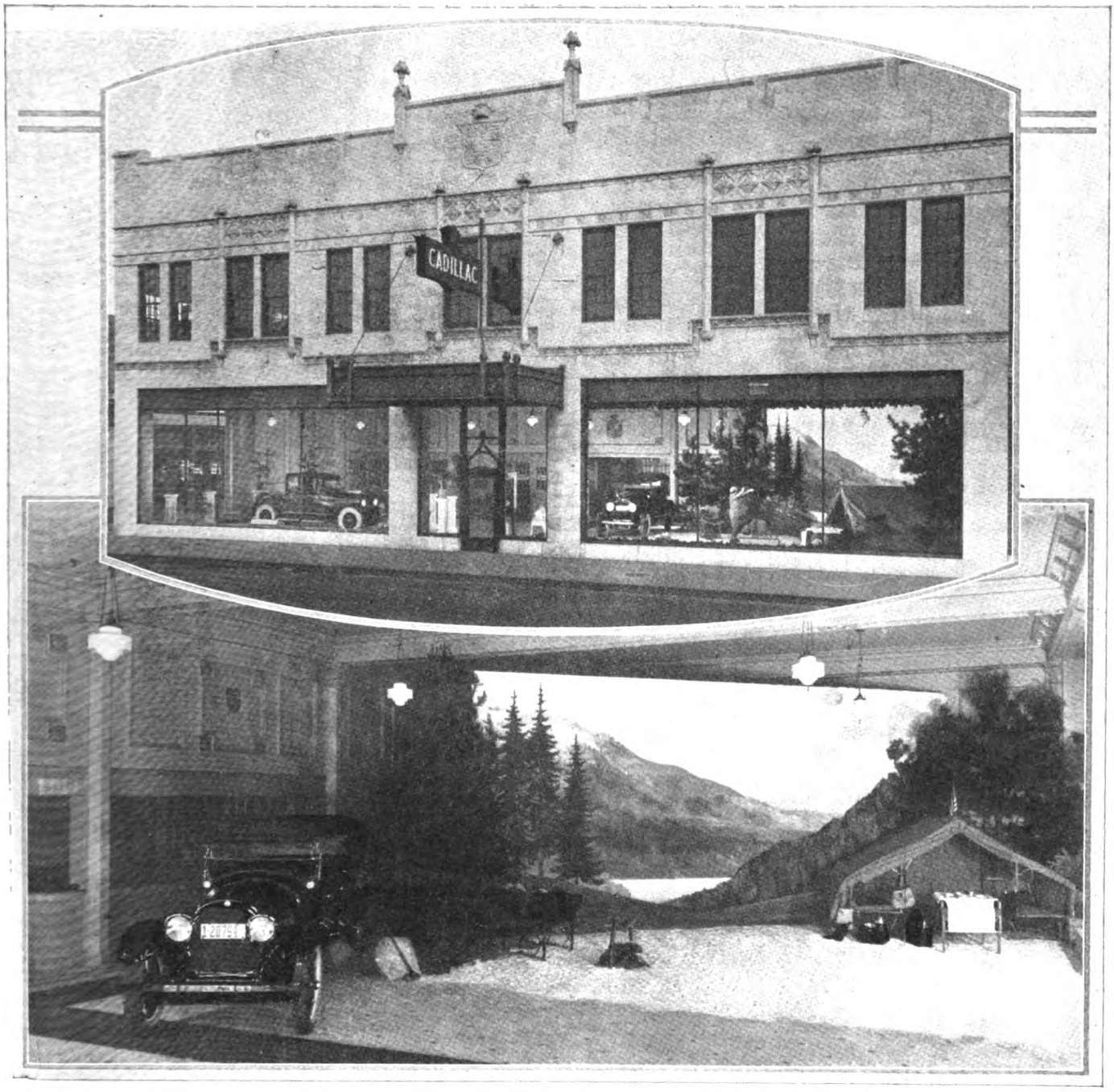
3—Opportunity to buy parts from his distributor at prices that afforded a satisfactory profit.

4—The valuable asset of being connected with a reputable and widely known organization.

Numerous sales have been made by these service dealers to prospects who otherwise would never have come to life. They have proved a valuable outlet, not only for new trucks but for the traded-in vehicles.

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Making Display a Thing of Beauty



AN elaborate and attractive piece of automobile window and floor decorating was shown in Des Moines recently by the Kruidenier-Cadillac Co.

The entire salesroom was given over to the display, made by a national decorator. One side of the room represented a Florida veranda scene, while the other was a camp scene in the Rocky Mountains. It was the latter part of the picture on which the stress was laid and which attracted the most attention. However, the catch line, "One step from the Florida veranda to a camp in the Rockies," was a good one.

A large painting of the Rockies with a full length pine tree at each end formed the background, in front of which was a large expanse of white sand. Here was set up a complete camping outfit, and it was complete. During the night hours employees, appropriately dressed, represented campers and a boy scout fried eggs and pancakes.

To bring out the local atmosphere four fans were placed behind the pine trees to make the branches move and pine incense was burned.

At night a series of reflectors, covered with red celluloid, were trained on the scene, and a number of people who had camped in the Rockies remarked that it gave a striking resemblance to a sunset in the Rockies.

Previous to the opening of the display 1000 printed invitations were mailed and newspaper advertising invited the public. The rooms were kept open until 10 each night.

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Small Daily Ads Build Business for Kansas City Tire Dealer

With Others Selling Just as Good Product and Service This Dealer Made His Name Well Known—and It Produced a New Customer a Day

HOW would you like to add one new customer a day? And keep up that addition, day after day, week after week?

You'd pay real money to do that.

Then suppose that while you were adding these new customers, you were finding that your old customers were a lot more friendly, that they seemed more firmly attached to you, and that they were taking the trouble to refer their friends to you? Either of these results would be worth considerable effort, and considerable money, too.

VAUGHN & SEESTED, owners of The Tire Shop, 3117 Main Street, Kansas City, are getting both of these results by the one method, the method of newspaper advertising. And they are not spending a lot of money or effort in the procedure, either.

These young fellows have a tire shop in a good location, on one of the best thoroughfares for motor traffic. They had built up a nice business, giving real service. They had tried advertising a little, now and then; and they had decided that advertising was not the way to increase business. It didn't pay. They couldn't see the results. People flitted from one tire shop to another without good reason, or for personal reasons, or because the shop selected was most convenient.

Advertising wouldn't pay, they believed, because of this condition. Practically every tire shop handling the tire this firm handled was giving real service, could be depended upon. They couldn't get business by offering better service because their service was no better than that rendered by many other tire companies. They knew they could give perfect satisfaction—but they were equally sure that a lot of other tire companies could give and were giving perfect satisfaction also.

They *might* advertise cut prices—but it was a cinch they weren't going to try to build business that way!

No use to advertise, therefore. Better save the money and spend some time making more personal acquaintances and finding business.

Then a new thought came to them.

They analyzed all the above elements of the situation and discovered this idea:

People were, it was true, pretty sure to get good service from almost any shop handling these tires.

Therefore—

1.—*People would be as ready to patronize them as any other company handling these tires.*

2—*People were not definitely settled, as a rule, on any tire company, even if settled as to tires.*

3—*People would go to the shop whose name was most firmly fixed in their minds, since other elements were fairly equal—that is, all those people who were not tied to one company by personal reasons, or from unusual appreciation of service.*

Evidently, therefore, there was a chance to secure a nice list of new customers. The problem was merely to make the firm's name well known to many people—to fix this name in their minds.

The Service Car an Advertisement



Everything bends toward making the name of The Tire Shop, Kansas City, well known to the public. The service car, painted white and lettered in black helps put across the name with the implication that good service can be relied upon

The *name* was the thing they had to put over. They didn't have to sell "service," because that had already been sold by the careful policy of the tire company in the selection of tire representatives and co-operation with them. They didn't have to sell the *tire*, for that was well fixed in the minds of a large part of the tire-using public, by the manufacturer's advertising. Incidentally, Vaughn & Seested were absolutely sold on the tire themselves—they were without any hint of doubt themselves that the tire was right; advertising probably having aided them in the attainment of this confidence, as well as experience.

Starting with the new-found conclusion that there was an open opportunity to build business by making their firm name widely known, they began to figure on advertising again.

Remember, they had found advertising unprofitable before. They had tried it, with occasional advertisements. Since that, advertising had failed, and since their new study of the subject indicated that advertising could pay, evidently the error was in their advertising and not in the idea.

The problem then was not "Shall we advertise?" but "How shall we advertise?"

The process of their study is worth following. It shows constructive thought on the subject of advertising.

Sporadic advertising, as they had done it, was not the thing for them. An advertisement once or twice a week, even if large space were used, would merely remind the people of their name; it would not hammer the name home. Sporadic or intermittent advertising paid for some people—but it was noted that those advertisers were not "selling" a name, they were selling a specific product, usually they were offering a particular thing in that one advertisement which would not be offered in later advertisements.

This firm wanted to keep offering the same thing, acquainting with this one thing, the only thing the firm was aiming to sell them—*its name*

Therefore, persistent, constant, daily advertising was decided upon. And they had to be sensible about it. They

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were not going to splurge, they were going to aim at keeping up this advertising indefinitely. It was to be a regular expense, just like rent. So it had to bear its proportion to their volume, counting as volume a fair expectancy of its returns.

Two inches single column was the space decided upon for the trial period of three months. They were sure to advertise that long, to give the plan a fair trial. And this space would tell their story—get their name across.

Here's an inside tip on the advantage of small space regularly used, for their purpose:

It gets good position.

Two inches, on a regular contract, is a mighty handy piece of advertising for the makeup man in the newspaper office. It can be slipped into many a nook in the front part of the paper. The occasional advertisement has to go wherever there is room, any place. The regular advertisement is held constantly in mind, as that which will fit into a space in good position. Being contract, it always gets in fairly good position, and in fact has almost always been on the second page of the newspaper.

The copy is all prepared from the assumption that a large clientele is already sold on the tire itself and on service on that tire, wherever secured. The tire name is therefore conspicuous; the play is to people who want to locate a shop giving good service on that tire. The tire name, both in straight type and in the tire company's well-known emblem, was the prominent feature of each display.

Copy was changed occasionally; but there was no effort to get up novel, or striking, or "interesting" reading matter. The firm is just hammering its name and address and telephone number. Sometimes the telephone number is stressed somewhat; sometimes the location is put in larger type.

Results:

"We didn't notice any result whatever for ten days or two weeks," said F. A. Seested. "But we were trying hard to find out from every customer why he came. And finally the new customers began to answer our guarded questions, by saying that they saw our advertisements.

"Now, we know definitely that at least half a dozen new customers a week are coming to us directly as a result of that newspaper advertising. There may be many more. Then, too, many of these new customers might have come to us anyway, because of our location and the reference of friends. Maybe it is easier for them to give credit to the advertisement than to mention the friend.

"Anyway, it shows that the advertisement has been read.

"And regular customers are mentioning the advertising, too. They seem to think more of us, because we are advertisers. It undoubtedly adds to our prestige, to be represented in the advertising columns of the paper *every* day. Perhaps we could fairly credit the advertisement with holding some of our regular trade, which after all has no very special reason for staying with us.

"We have kept an absolutely open mind as to this advertising for the first three months. Now we are making up our minds as to whether it pays or not. There is no question about it. *The advertising pays.*"

These Ads Produce a New Tire Customer a Day



Here are a few samples of the daily small ads that have successfully built tire business for The Tire Shop, Kansas City. They are the actual size used by this firm. With other dealers successfully competing in the product and in service The Tire Shop decided to drive home its name through small daily ads—and it is paying handsomely in building new business and holding old friends.

How Cadillac Dealer Preserves Owner Contact

EDWARD LEWIS, INC., Cadillac dealer in Great Neck, L. I., through some member of its organization, makes personal contact with every owner in its territory at least once every three weeks. Usually the contact is made in the service department. But if a car does not make its appearance within the three week period and no salesman has talked to the owner during that period, a salesman makes a friendly call on the owner.

Every three weeks the service department furnishes a complete list of all repair orders made out during the period. This list goes to the sales department, which checks it against the owner list. Any owners whose names do not appear on the list are turned over to the salesman for follow-up.

The object of maintaining this contact is two-fold. The first object is to keep in touch with owners so that any dissatisfaction they may feel can be eliminated. The second object is to obtain from owners the names of any of their acquaintances who might possibly be interested in the purchase of a car.

Seventy-five per cent of the names in the prospect files of this dealer are obtained in this way. On the average, 10 such follow-up visits produce three live prospects. Furthermore the close contact maintained with owners by this dealer assists him in providing a steady volume of work for his shop throughout the year.

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Sales Promotion Bus Line Pays This Dealer Double Profits

How an Enterprising Truck Dealer Filled Two Southern Cities with the Truck He Is Selling by Making It a Public Utility

A RECENT census gave the number of buses operating out of Norfolk, Va., as 243. These are divided unevenly among 150 owners. But the most interesting thing is that many of the buses seen on the streets in and around Norfolk are of one make—the Reo. Leads from independent bus operators point to the local Reo dealer, trading as R. G. Edgerton Co., and covering the Norfolk, Suffolk and Roanoke territory, as *the source from which the district is being flooded with Reos.*

Edgerton has been selling Reos since 1907. Last November, after having attended a big sales meeting in New York, at which some good bus sales plans were discussed, Edgerton launched as a *sales promotion plan* the first bus line in Norfolk and Suffolk to run on schedule. It "took" well with the public from the start, although some of the vehicles were converted standard express bodies with opposed seats placed lengthwise, and a few touring cars also were used at the outset. Gradually, as the line prospered, these vehicles were withdrawn and Reo chassis with special McKay bodies were substituted.

To-day, Edgerton has six buses in operation, two of these being classed as reserve buses.

EDGERTON'S bus line, which is incorporated and run as a separate business from the dealership is known as the Edgerton-Reo Bus Line, *the name Reo, of course, being retained for sales promotion purposes.* As Norfolk is the main center of trade, there is a great influx of traffic from Suffolk, which is the servicing and management point for the fleet, and also from the other stations on the line, to Norfolk.

As a public utility corporation the Edgerton-Reo Bus Line is a decided success, is self-supporting and making money. As a sales promotion factor it is of no less value, *as it has filled Norfolk, Suffolk and surrounding territory with Reo buses and has greatly promoted Reo truck sales generally, according to statements of the company.*

For instance: Six other bus lines since last November have purchased their entire equipment from the Reo dealer. Immediate competitors in the bus transportation business are purchasing Reos increasingly, one line having bought three Reos at a comparatively recent date and another, owning two, having just ordered a third. The Reo dealer has seventeen and one-half per cent of all commercial vehicles, including buses, registered with the police department in Norfolk and the city government owns no less than twenty-three Reo jobs. It is indisputable that Norfolk is a "bus town" and the impression the observer gets is that it is a Reo "bus town."

"We regard it as an especially good advertisement," said Lacy L. Redd, sales manager in Norfolk for R. G. Edgerton & Co., "that this sort of bus service puts the vehicles to the very severest kind of a test."

As a further publicity stunt, Edgerton has had made brass plates, three inches wide and twenty-four inches long, with large black lettering announcing the vehicle's mileage after it has run 20,000 miles. One of these plates is placed in the back of the bus on the inside for passengers to note and another is placed on the outside rear of the vehicle for those in the street and in other vehicles to read. A sign will say, for instance, "This Reo Has Run 100,000 Miles."

"Close watch is kept on the speedometer of each vehicle and every time it registers more than 20,000 miles, the brass plate is changed. Incidentally, we keep the owner's speedometer in repair as long as the vehicle is in commission."

This dealer goes after the bus prospect by personal call and follow-up letter. An expert salesman is detailed to concentrate on bus business. He makes a practice of talking with all the independent bus owners at the end of their routes, at least once a week. The bus men congregate at small stores that abound at the various terminals of bus routes and these are especially good places at which to interview them on their needs.

Vocational solicitation is done by personal call and follow-up with carefully written letters, which are multigraphed, the name and address being typed in.

Following personal calls, the first letter sent out is usually one telling the prospect that the company appreciates fully the courtesy shown in granting the salesman the interview. This is intended to cement good will. Every prospect receives some kind

Building Business with Buses

IN Norfolk, Va., a bus line is being successfully used as a sales promotion factor by a Reo dealer.

The bus line, in itself, is a profitable venture because it is efficiently managed and maintained by a dealer's service department. But, its big contribution to the success of the dealer operating it is in its demonstration of his product and its advertising of his business.

The bus line is called the Edgerton-Reo Bus Line. Edgerton is the name of the dealer and Reo the automobile he sells. In addition to this publicity the dealer impresses people by the efficiency of his bus service, and by signs on the buses which tell how many miles it has traveled.

A street railway strike provided the impetus which sent this dealer into the bus business — but the value of the bus business as a sales promotion factor continues it as a successful venture.

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of a communication, if it is only an envelope insert, at least once a month. Every salesman detailed to bus work must see his prospect at least every two weeks, in order to retain his "rights" to that particular prospect. If the salesman defaults, the prospect is placed on the list of the next salesman in order.

Each salesman carries a pad upon which to make reports on all new prospects. When handed in, these slips are placed with reports of "follow backs" in the file. This information is also drawn off and placed on a special "yellow list" for the sales manager to review. The duplicates placed in the file tell when the prospect is to be seen again.

The prospect cards are made out in quadruplicate and a different color is used for each card in the set. The original, which is white, goes in the alphabetical file; the duplicate, which is yellow, goes in the date file; the triplicate, which is blue, is filed separately for the sales manager and the quadruplicate, which is pink, goes to the salesman, who makes out an extra white sheet to go back eventually with his pink slips for filing. The drawers in which the original and the duplicate—or white and yellow cards—are filed, are kept intact, but the file drawers for the blue and pink cards are, of course, changed from time to time as prospects are sold, or considered "dead."

An additional form is the Monthly Recapitulation of salesmen's report cards, for comparison. From this the sales manager is able to tell whether the salesman is progressing, or falling back and just whether he has been calling punctually on all his prospects. There is also a price book, fitting the pocket, bound in leather and of loose leaf type, which is sold to dealers, dealer's salesmen and everyone interested in the sales department. For retail dealers, the sheets in this book are numbered. The book supplied to the officers of the company and those holding executive positions contains net costs. The book, generally, contains much information pertaining to Reo trucks and cars; photographs of the different types of bodies; rated capacity, specifications, etc., taken from Motor World data.

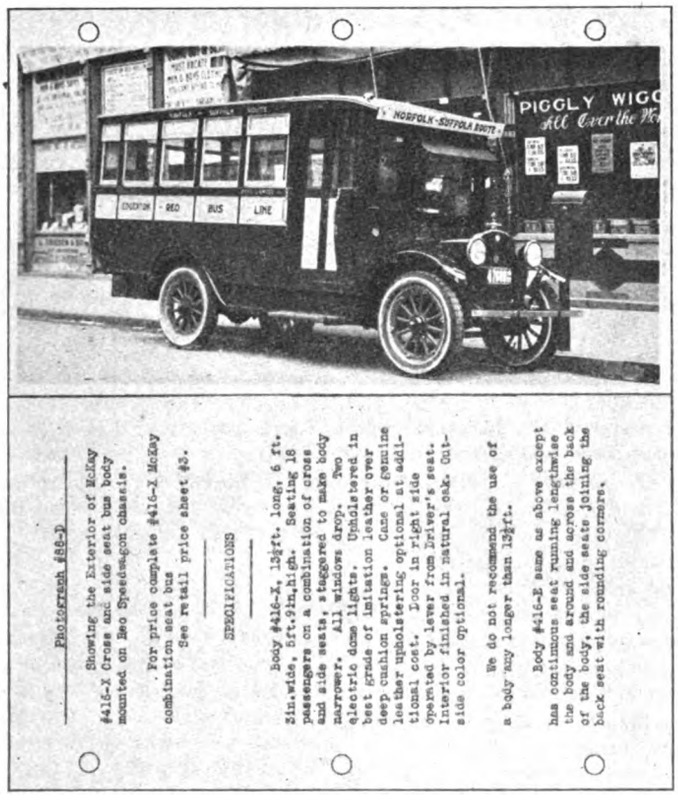
On the back of each photograph, numbered in series, are typed the designation of the bus style, reference to retail price sheet by number and the specifications, with remarks. The book also contains order blanks.

Accommodation in the way of parts and service is a strong point with Edgerton. In Norfolk the stock of parts, carefully arranged in order in labeled and numbered bins, tying up with a Rand visible system and a special book, is kept at a value of about $28,000, with $20,000 worth in Suffolk and $25,000 worth in Portsmouth. There is a special arrangement with regard to supplying parts in Roanoke. The Norfolk parts department includes two frames, always in readiness; thirteen assembled cylinder blocks; and plenty of available "rush" service parts and mechanisms, among which are so-called "drop service" motors, which are installed for a flat rental charge of $15 to serve till the supplanted motor is repaired and installed.

The Norfolk end also has a used bus parts department, where these items are sold at half-price. This is kept distinct from the new bus parts section.

The main service station in Suffolk is equipped with all the necessary heavy and light machinery and tools for bus repair and adjustment. Every bus is oiled, greased, tightened and generally inspected daily before it starts out. Only careful and courteous drivers are employed. With all these precautions and the benefit to the dealer from sales promotion the bus line may be considered a model of its kind in that section as a public utility.

Using the Bus Line for Sales Promotion



This is one of the ways in which the R. G. Edgerton Co., Norfolk Reo dealer, uses his bus line in sales promotion. Pictures of buses in actual service with complete specifications typewritten on the back are provided salesmen for use in selling bus operators and in other vocational selling efforts

The company advertises its schedule in the daily papers in its operating territory and small card schedules are placed for distribution in each bus, in a receptacle especially made for them. These schedules provide an opportunity for advertising the Reo commercial vehicles on the back which might be used advantageously if the company decides to do so. Although small, they provide sufficient space to print a short, striking notice calling attention to the fact that the dependable schedule maintained is due to the dependability of the product and the service station which operates the buses, and which is prepared to extend its service to businesses of all kinds needing transportation of this type.

The operation of the bus line offers many other opportunities to demonstrate and advertise Reo commercial cars and trucks which may be advantageously used. The very fact that Reos are delivering satisfactory service under the rigorous demands of bus work would supply a theme upon which very effective advertising copy with a distinctly local appeal might be written.

While the occurrence of a trolley strike in Norfolk provided the impetus for the beginning of this bus line and contributed considerably to the favorable circumstances under which it was started—there are many communities which present opportunities for a profitable bus line if properly managed and the idea should contain particularly good possibilities for dealers.

Although actual entrance into the bus business is not to be regarded as practicable by a large number of dealers, this story contains ideas that might be worked out satisfactorily for both bus owner and dealer where a combination is effected in which the dealer gives special service on the buses in payment for the privilege of using the bus line to advertise and sell his product.

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Low Prices Are Big Factor in Tractor Sales

They Are in Line With Farm Crop Prices Now and the Door Is Open for Dealers to Talk Better Farming

By E. A. WHITE

TRACTOR prices are down! In many instances lower than they have ever been, which brings them in line with the general price level of farm products. The same goes for the equipment necessary to make the tractor useful on the farm. These facts have a most important bearing on the sale of tractors and other power farming equipment, for the farmer is a shrewd price buyer and low prices always interest him. In this connection it can be pointed out that there are thorough students of power farming development who believe that the prices prevailing two years ago, while entirely in line with the price level of all commodities and lower than those for many commodities, furnished the largest single sales resistance to the moving of a large volume of tractors.

If this diagnosis is correct the dealer should be able to move tractors to-day, for in some cases, especially the 2- and 3-plow sizes which are the most popular with the farm trade, prices have been reduced by half during the past 18 months. A study of the tractor prices of 17 well-known machines shows that the prices of July 1, 1922, are just two-thirds of what these machines sold for on Jan. 1, 1921. This group included sizes ranging from the 2-plow up to the 30-60. Taking the twelve 2- and 3-plow machines from this list it was found that the prices on these two popular sizes averaged only 60 per cent of the prices quoted 18 months ago. The important point is that tractor prices are down. This opens the sales door as nothing else can.

From the standpoint of farm sales especially this reduction in the prices of tractors has a far-reaching effect. The farmer is interested in keeping his investment in machinery and power equipment as low as is consistent with efficient operation and he finds it necessary to reduce operating costs wherever possible. In most cases the purchase of a tractor and other power farming equipment will mean that the farmers' investment for operating equipment will be increased, not a large amount but somewhat. It is the problem of the dealer to convince his prospect that this increase in working capital will be a sound investment. Far too often the farmer looks at the total sum as an expense when in reality it is an investment and should be so considered.

WHILE the American farmer uses more machinery per man than any other farmer in the world, his investment in operating equipment has been relatively small. According to the 1920 census reports, the average value of implements and machinery was $557 per farm, or $3.76 per acre. As would be expected there was considerable variation in this item for various sections of the country. In Iowa it is $1,449 per farm, or $9.25 per acre, and in Texas $354 per farm, or $1.50 per acre. Undoubtedly the farmer gives the census taker a low valuation on this equipment but in this connection it must be remembered that the 1920 census was taken when prices were near if not at the peak. Perhaps it would require an investment of $7 per acre to replace the equipment on farms with new equipment at the present prices.

In addition to machinery, the farmer requires power generators, which are now chiefly horses and mules. The average farm value of horses and mules for Jan. 1, 1920 was $400 per farm, or $2.70 per acre, and there has been little change in this price level since that time. For Iowa these figures are $645 per farm, or $4.10 per acre, and for Texas $446, or $1.70 per acre. Thus the average farm investment in machinery and power equipment, according to census values, ranges from $13.35 in Iowa to $3.20 in Texas. To purchase entirely new equipment would of course increase these figures and individual farms will vary from these values.

NOW the dealer's problem is to show the farmer how he can sell part of the present equipment, increase his investment slightly and farm to better advantage. True, the farmer does not always look at the problem in just this way but it suggests to the dealer a constructive method of attack. In this respect the reductions in the prices of power farming equipment furnish the basis for a telling appeal. As an example of what this price reduction means, consider the case of a 200-acre farm where a power farming outfit costing $1,000 at present price levels is purchased. If three horses are sold for $400 the increase in investment is $600, or $3 per acre. Before recent price reduction this same equipment would have cost approximately $1,600. The horses would have sold for no more, leaving an increase in investment of $1,200, or $6 per acre. On this basis it is evident that these price reductions have removed stubborn sales resistance.

This change in the price situation has also made a deep inroad on another important phase of the tractor problem, cost of operation. One of the largest items in the expense of operation has been the combined charge for interest and depreciation. Taking the charges for depreciation, interest, repairs, fuel and oil into consideration, various reports place the charges for depreciation and interest at from 30 to 60 per cent of the total. The following figures compiled from reports issued by the United States Department of Agriculture and Iowa State College are typical and show the percentage of the total to be charged to each item listed:

Item	Dept of Agriculture	Iowa State College
Depreciation	34.4	43.2
Interest	10.7	9.96
Repairs	15.7	9.9
Fuel	29.8	26.3
Oil	9.4	11.0

According to the government figures the charges for

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depreciation and interest constitute 45.1 per cent of the costs listed above, while the Iowa figures for these items are 52.8 per cent of the total. Thus it can be found that a reduction of 40 per cent in the cost of tractors means a reduction in the neighborhood of 20 per cent in the operating costs, exclusive of man labor. Explaining this point is talking in language which the prospect will understand, for he is interested in keeping the cost of operation at as low a figure as possible.

There is also a psychological advantage which price reduction places at the command of the dealer. Tractor prices did not rise to relatively as high a level as the prices of farm products, therefore the reductions have brought the present price levels entirely in line with the average of farm products. The tractor dealer can go to the farmer and say that the price of what he has to sell is down on a level with the price of what the farmer has to sell. This removes mental reservations and places the prospect in a frame of mind where he is willing to consider the tractor on its merits. Certainly he can no longer hide behind the claim that tractor prices are out of line.

That the fundamental advantage of the present level of tractor prices is being realized by dealers and farmers is shown in the gain which tractor sales have shown during the past five months. Present prices are moving tractors and the extent of this movement seems to be in direct proportion to the efforts put forth by dealers to uncover the prospects in their territories. The situation affords an opportunity for the dealer to put the tractor over in a big way.

How One Salesman Handled a Prospect Who "Knew It All"

A Story of the Taming of a Tough Prospect and the Sale of a Car

ALTHOUGH the sale that sticks in my memory as by far the hardest I ever made happened several years ago, perhaps the way I finally landed this toughest prospect will give somebody an idea.

This incident was in Louisville, Ky., where I had tried for several weeks to sell one of that city's aristocracy a Thomas Flier car. It took fifteen calls to come to any definite understanding. The first fourteen he had the bulge on me, as he did practically all the talking and immediately downed any suggestion I ventured to make.

The thing he always did was to ridicule our car, the company's methods of doing business and the institution that represented it there. He made it a point to impress upon me that the entire future of the automobile business depended upon whether or not he bought a car, and particularly a Thomas.

The afternoon that I did what landed the order, I broke into the midst of his conversation with, "You have done more talking than any man I have ever called on, and you have said less than anyone I ever talked to in my life. Now, I'm going to do the talking for the next fifteen minutes."

Here is a small part of what I then said:

"Regardless of what you think of the Thomas car, the organization that makes it, and the salesman to whom you are now talking, I want to tell you, sir, that you make the best paint in the world. No house is complete without your paint on it. Anybody is a fool to use any other kind of paint. You are the fairest business man in the world. You never made a mistake in your life. In fact, if there is any such thing now or to ever be as a 100 per cent perfect man, and a 100 per cent perfect business, you are that man and your business is that business.

"At the coming municipal election I am going to put your name on the ticket for mayor, and at the next state election I am going to see that you are made governor of Kentucky. I am also going to request that the engineers at the Thomas factory and the members of the S. A. E. have you preside at their next meeting as chairman of the board of directors. Then when I go out to sell the Thomas car I will not have any obstacles to overcome, because this car will be 100 per cent perfect. But there is one thing that still puzzles me. How in the world did you ever get into the paint business when you are such a mechanical genius? Now I am going to tell you good-by, and I wish you all the luck in the world, for you have certainly made a man out of me, and you have done more for the future of the automobile industry than any one thing that can ever happen."

He phoned in, and I was fired. But while I was in the office next day settling up accounts, he walked in, talked about the weather and other topics about ten minutes, and then said he was ready to buy a Thomas car. He declared that he had intended to buy the first time I called on him, but that he didn't because I did not have enough nerve to stop him when he tried to tell me all about something he didn't know anything about.

Since that time, whenever a man knocks the business with which I am associated I make it a point to turn around and boost his business 100 per cent more than he has knocked mine. If the fellow has a drop of red blood in him, he will realize his mistake in condemning something he doesn't know anything about, and this method will make him realize his mistake quicker than any other way I have discovered.—T. R. Miller, sales manager, H. H. Heiser Co., Denver, distributor Peerless and Velie cars and Oneida trucks.

There's Selling Power in the Properly Displayed Parts Board

EXPERIENCE in use of board displaying parts of motor cars is already revealing useful suggestions.

Parts boards for promotion of car sales are usually exhibited in street windows to attract attention and enlist interest in the particular car. After a few weeks or months of such exhibit (length of period depending on number of persons likely to see) the board is moved inside, usually on the sales floor. Here prospects have opportunity to see it, and here salesmen show the board to the prospects in process of their selling.

Parts boards in garages, used for promotion of parts sales, cannot always be exhibited in windows, since many garages have inadequate street window space. Where choice must be made between display of parts or display of accessories, the accessories have the advantage; though sometimes a parts board may be displayed in windows occasionally, for short periods. In garages the parts board has its greatest value in the parts room, or in the office, where customers may easily have access to it.

When parts boards are to be used by garages or service departments as stimulants to service business, their place is in the office or service departments rather than in windows. But even when used for such specific purpose, they are often displayed in windows for short periods as attention-attractors, and as means of arousing interest in service. Boards showing worn and new parts should be given street window display frequently; an especially satisfactory disposition being the exhibition in a window accessible by customers, so that the board at the same time serves as general publicity as a working board for the help of customers of service.

Newly built garages nowadays usually have ample window space for display. Quite as usually these windows are not used for display. There are, therefore, broad opportunities for increasing publicity by diversity of display of accessories in the many windows. The tire window, the accessory window and the parts window may be prepared simultaneously, or these subjects may alternate.

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Editorial Notes

The Price Reductions

THE industry is viewing with much interest the price flurry of the past week in popular makes of medium priced cars.

When the downward revision began with Buick, Chevrolet and Oakland in the General Motors group and spread to Studebaker, Nash and Chandler and Cleveland, people asked: "Is it another price war—will it create uncertainty and retard sales as it did nearly two years ago?"

Most of the cars figuring in the present price reductions were among the leaders in production for the first half of 1922. It is known that the large production attained has afforded these makers the opportunity to increase production efficiency, and some of the companies have found means of materially lowering production costs.

To give the public the benefit of the increase in operating efficiency is sound merchandising, and no dire results should be expected if the dealers SELL THE PRICE REDUCTIONS AS THE PASSING ON TO THE CONSUMER OF THE BENEFITS OF PRODUCTION ECONOMY.

This gives the price reductions a very different aspect from the one in the fall of 1920 when the public got the impression, and not without some justification, perhaps, that prices were being forced down by public clamor and that the downward trend could be expected to continue so long as buyers held off.

Prior to the recent reductions there was every reason to believe that the public was satisfied with present price levels. And so, if the public is taken into confidence to the extent of telling it why voluntary reductions can be made at this time there should be nothing in the situation to shake public confidence.

So long as price reductions are the result of lowered production costs there can be nothing to fear.

The great danger would be in a price war—in the slashing of prices to force sales at the expense of a competitor—without a sound, economic basis for such reductions.

10,608,127

THERE is something awesome in the contemplation of that figure.

It is the midyear registration of motor vehicles in the United States on July 1, 1922. It represents an increase in one year of 1,350,552 in the motor vehicles in active use. It means that there is approximately one motor vehicle for each 10 persons in the country.

To the man who participates in the distribution of a commodity that has so thoroughly established itself in the social fabric of his time there must be an appreciation of the importance of the rôle for which he has been chosen. But the realization of his importance cannot come healthfully without a kindred realization of responsibility.

In contemplating the remarkable absorption of motor vehicles, may not the dealer ask himself if he is doing everything that he can do to help the product he sells to continue to deserve popular confidence?

May he not ask himself: Have I grasped the significance of this amazing growth of personal transportation, and has it brought home to me a realization of the fact that to fit the motor car even more firmly and universally into the commercial and social life of my time is the soundest and best merchandising that I can practice?

And, may he not profitably ask himself: Am I doing all that I can, profitably, to insure through service the satisfactory performance of this commodity?

The motor vehicle has made wonderful strides in the past few years in meshing itself into the progress of mankind. The future of the motor vehicle industry lies in the widening of the motor vehicle's sphere of usefulness.

Who can observe the entrance of the motor vehicle into the railroad scheme of transportation, into the highway transport business, on the road loaded with merchandise—taking the store to the customer—and think about saturation point and kindred bugaboos?

The future is rich in opportunity, as the present is fruitful, and 10,608,127 is only a milestone at which we may profitably pause a moment, get a fresh vision of the fair road ahead, and then push on to greater achievements.

THE Washington Automotive Trade Association, at its recent State convention, urged the Legislature to make 35 instead of 30 miles the speed limit on rural highways. This is a perfectly legitimate dealer association activity—a move in the direction of removing unnecessary restrictions from highway traffic—and the fact that it was inaugurated at a meeting attended by the Governor and other State officials as well wishers of the automotive trade gives it an auspicious start. Dealer associations everywhere ought to be urging constructive legislative action, not merely protesting against destructive legislation after it is introduced or passed.

IT seems pretty much agreed that the harvest is going to bring the farmer back into the market. Past observances indicate that he may be in the market but "Gol darned if he'll buy until he knows what he's buying and who he's buying of." All of which suggests that now's a good time to get him acquainted with yourself and your products.

THE dealer who thought he drowned his used car problem in lake of new car demand will probably hear it meowing at his door again just when the new car demand begins to weaken.

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Garageman, Not Owner, Liable for Negligence

Pennsylvania Court Rules in Case Where Employee Delivered Car to Owner

THE Supreme Court of Pennsylvania in a recent case held that the owner of a motor car is not responsible for the negligence of an employee of a garage where he stores his car, but the garageman is liable for injuries caused by the negligence of the employee when there is an agreement between the owner and garageman that the car is to be delivered to the owner's home and called for and taken back to the garage.—Griesmer vs. Netter, 117 A. pg. 205.

Offer to Return Is Important in Suit on Misrepresentation

The Supreme Court of Michigan recently pointed out in a case which came before it on appeal that in an action by the buyer of an automobile to recover the amount he had paid, on the ground that the car was not a new one, as it was represented to be, it was incumbent upon the buyer to prove that he had offered to return the automobile to the seller within a reasonable time in substantially as good condition as when it was delivered to him, before he could recover.

The buyer, a real estate dealer in Detroit, visited the automobile show in that city in January, 1918. He there saw an Abbott touring car, specially painted, in the exhibit of the dealer, who was distributor of that make of car, then manufactured in Cleveland. Buyer concluded to purchase the car, if he could turn in an old Studebaker car he had as a part of the purchase price. He claimed his attention was called to some spots of mud on the bottom of the car and that he said to Mr. Stuber, with whom he was negotiating, "That is not a second hand car, is it?" and Mr. Stuber answered:

"Why, no; don't think for a minute that we should put in a second hand car when we could sell one that is new." "It is dirty on account of it having been driven from Cleveland to Detroit, and we were late and didn't have time to wash it up good. That is the way the mud is under there now."

Buyer testified that he "relied upon his statement that it was a new car." The deal was consummated, the dealer accepting plaintiff's car at a valuation of $650, buyer making an additional down payment of $100 and executing ten notes, payable monthly, for the balance of the purchase price of $1,695. These notes were turned over to the Metropolitan Security Company of Cleveland, with the chattel mortgage on the car securing them. The buyer paid four of them, when he discovered, as he claims, that the car he had got had been theretofore used. After satisfying himself of this fact, he went to Mr. Stuber's office and told him:

"I have an old car, and I don't want your old car. I paid the price for a new car, and I would rather have my money back. I don't want to pay that money for an old car. Stuber said: 'What are you talking about? I sold you a new car, and this is a new car.' I said, 'You stand on what you said?' and he said, 'Absolutely.'"

Leo N. Orton, who accompanied buyer, testified as to what was then said:

"Mr. Kawecki said: 'You sold me a second hand car. I did not pay you money for a second hand car. I don't want that car. I want the money back, and the car is in my garage and you can get it.' And Mr. Stuber wanted to laugh, and he said: 'I sold you a new car and not a second hand one. I know nothing about it, about the foolish talk you are talking about.' And Mr. Kawecki was excited and walked out, and we were there only about five or six minutes."

Mr. Stuber testified as to this conversation:

"I don't recollect in detail the conversation had with him on that occasion. My recollection is that he came into the office and claimed that he had discovered he had a car that had been used. I don't remember, and I don't believe he ever made a demand. He just made a statement or claim and walked right out again. I don't think he was in more than a minute or so."

And further:

"Q. Do you deny that he said that he did not want the car—he wanted you to take the car back and you could have the car? A. No.

"Q. And he wanted his money back? A. No, I will not deny it."

The buyer soon after began suit to recover the amount paid by him and the value of his old car, and had verdict and judgment for $1,401.88. After suit was begun, the car in question was taken and disposed of by the security company under its chattel mortgage. The dealer insisted that the car sold to buyer was a new car. This issue was fairly presented to the jury, who found with buyer.

The Court said, speaking of the buyer:

"If he would rescind the contract, he must return or tender back the goods to the seller at the place of delivery, unless on making the offer so to do he is relieved of the obligation by refusal to receive them if tendered. An offer to return, where it is refused, answers the same purpose as an actual return, provided the property is retained for the benefit of the seller whenever he may choose to receive it."—Kawecki vs. Stuber-Stone Co., 187 Northwestern Reporter, 272.

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

Jury Must Decide in This Case

WHETHER a chauffeur was acting under the scope of his authority in driving an automobile out of work hours to test it as directed by his employer, who was absent, if at the same time he took some of his friends on a visit at their request, was decided by the Supreme Court of Wisconsin to be a question which a jury should decide, in a case recently brought against an employer for damages for personal injuries claimed to have been sustained because of the negligence of the chauffeur.

The jury having found in favor of the injured party against the employer, the finding was therefore sustained on appeal.—Parker vs. Forcier, 188 N. W. pg. 193.

Cannot Repossess Under Pennsylvania Lien

Editor Motor World: As a matter of information we wish to know whether the garageman has any hold on a car for a repair bill after the car has left the garage.

Thanking you in advance for this information, we are—A Reader, Phoenixville, Pa.

Answer.—No, not in your state. His so-called common law lien depends on keeping possession of the property, and he loses it when he lets the car go.

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A Flat Rate Schedule for Oakland Cars

Factory Develops Forty-Three Operations Based on Time Studies, Together with List of Material Needed for Each Operation

A SCHEDULE containing forty-three flat rate operations has been developed by the Oakland Motor Car Co. for the models 34 B, C and D, and furnished to its dealers. The schedule gives the time in which the operations should be performed, and in addition gives the detailed mechanical procedure necessary in order to complete the work in the limits given. In addition to this there is a list of the materials and parts needed for each operation.

The time specified in each operation is based on actual time studies of the work as performed by a mechanic of average ability, and with the ordinary socket wrenches and tools found in most all repair shops. Most mechanics will perform the work in less time than noted, while some may take longer. To get the charge to the customer, multiply the time given by the hourly rate for labor. Add to this the total amount for parts and materials to get the total charge to the customer.

1—Tighten engine anchor bolts and install new ones where needed 0.8

1—Raise hood.
2—Remove left rear engine anchor bolt.
3—Replace left rear engine anchor bolt.
4—Remove right rear engine anchor bolt.
5—Replace right rear engine anchor bolt.
6—Remove front engine anchor bolts (2).
7—Replace front engine anchor bolts (2).
Material—Rear engine anchor bolts and nuts; front engine anchor bolts and nuts.

2—Replace old cylinder block with new 48.0

1—Drain radiator.
2—Drain oil from crankcase.
3—Remove hood.
4—Remove radiator splash guard by removing two front spring shackle bolts and two center splash guard screws.
5—Remove radiator support nuts.
6—Remove cylinder head cover.
7—Disconnect cylinder head water outlet.
8—Disconnect water inlet hose.
9—Remove radiator.
10—Disconnect spark and throttle control rods from rocker shaft
11—Remove spark control rocker shaft bracket.
12—Remove two engine anchor bolts front.
13—Remove head lamp tie rod.
14—Remove fan belt.
15—Remove water pump body and fan.
16—Disconnect spark plug cables and remove spark plugs.
17—Disconnect high and low tension wires from distributor, coil and starting motor.
18—Remove distributor set screw and remove distributor.
19—Disconnect gasoline pipe from carburetor.
20—Disconnect intake manifold to vacuum tank pipe from manifold.
21—Disconnect carburetor heat tube elbow from exhaust manifold.
22—Disconnect carburetor spring from manifold.
23—Disconnect foot accelerator rod.
24—Disconnect hand throttle control rod.
25—Remove carburetor stove from manifold.
26—Take off two carburetor to manifold stud nuts and remove carburetor.
27—Unscrew manifold to exhaust pipe screw.
28—Remove engine side pans, right and left.
29—Remove floor boards.
30—Disconnect clutch release bearing lubricator tube from toe board.
31—Remove toe board.
32—Disconnect universal joint front.
33—Remove hand brake lever.
34—Disconnect speedometer cable.
35—Disconnect clutch pedal come back spring from transmission case and remove pedals.
36—Take out four transmission to bell housing screws and take off gearset.
37—Remove clutch release bearing lubricator tube from clutch release bearing.
38—Remove three mud pan to bell housing screws.
39—Remove five bell housing to crankcase screws and remove bell housing.
40—Remove two engine anchor bolts rear.
41—Lift engine out of frame and place on bench or engine stand.
42—Remove front and rear rocker arm brackets and shaft assembly, six bolts.
43—Remove ten cylinder head to cylinder block screws and take off cylinder head.
44—Remove valve lifter brackets, front and rear—nine bolts.

This is the tenth flat rate schedule published in Motor World. The previous schedules covered Paige, Overland Four, Studebaker, Dodge, Dort, Buick, Chandler, Hupmobile and Marmon.

45—Take out two generator bolts and remove generator.
46—Remove starting motor lock bolt and remove starting motor.
47—Remove camshaft front bearing lock screw.
48—Remove fan drive pulley.
49—Remove 13 front gear cover cap screws and take off gear cover.
50—Remove camshaft.
51—Turn motor bottom side up.
52—Remove 22 oil pan to crank case screws and oil pan.
53—Remove oil pump and oil feed pipe assembly from main bearings.
54—Remove six connecting rod bearing caps, pull pistons from cylinder and replace bearing caps.
55—Remove four motor support to motor frame support bolts and take off motor support.
56—Remove main bearing caps.
57—Lift crank shaft and flywheel from crankcase.
58—Replace main bearing caps.
59—Clean crank shaft and flywheel, starting motor, generator, front gear cover, valve lifter bracket, rocker arm brackets, water pump, fan pulley, oil pump distributor, engine rear support, engine side pans, bell housing, gearcase and small parts.
60—Inspect clutch, if necessary disassemble from flywheel and renew any parts needed.
61—Clean new cylinder block.
62—Fit new pistons to cylinder bores and mark with number for assembly.
63—Remove connecting rod clamp bolt, nut and cotter pin.
64—Remove piston pin and connecting rod from pistons.
65—Measure each piston pin with micrometer.
66—Adjust reamer to piston pin measurement.
67—Ream piston.
68—Fit piston pin to piston.
69—Assemble connecting rod to piston, taking care to have rod and piston numbers correspond.
70—Assemble connecting rod clamp bolts, nuts and cotter pins.
71—Align pistons and connecting rods with lining bar or an aligning gage.
72—Assemble two-piece piston rings in center and lower ring groove of six pistons.
73—Assemble one plain piston ring in upper ring groove.
74—Oil piston and compress piston rings with sleeve.
75—Assemble camshaft in motor.
76—Replace camshaft front bearing lock screw.
77—Scrape and fit main bearings and caps.
78—Adjust main bearings and tighten caps.
79—Adjust connecting rod bearings.
80—Replace pistons in cylinders and assemble connecting rod bearings to crank shaft.
81—Assemble motor support to motor.
82—Assemble oil feed pipe assembly to main bearing and replace oil pump.
83—Assemble oil relief pipe.
84—Assemble oil regulator ball spring adjusting screw.
85—Assemble oil pan and 22 oil pan to crankcase screws.
86—Turn motor right side up.
87—Replace generator and 2 generator bolts.
88—Assemble front gear cover with 13 cap screws.
89—Assemble fan pulley to end of camshaft.
90—Assemble starting motor and starting motor lock bolt.
91—Assemble valve lifter brackets, front and rear.
92—Remove 12 "U" washers, valve spring cup and valve springs from cylinder head.
93—Remove cotter pins from valve stems.
94—Clean carbon from valves and cylinder head.
95—Grind 12 valves. Wipe clean after grinding and replace.
96—Replace valve stem cotter pins.
97—Replace valve springs, valve spring cups and U washers.
98—Replace cylinder block to cylinder, head dowel pins and cylinder head gasket.
99—Replace cylinder head and fasten down 10 cylinder head to cylinder block screws.
100—Replace front and rear rocker arm shafts and brackets.
101—Stamp number on crankcase.
102—Replace motor in chassis.
103—Start two front engine anchor bolts.
104—Start two rear engine anchor bolts.
105—Tighten all engine anchor bolts.
106—Assemble clutch release bearing lubricator tube to clutch release bearing.
107—Assemble bell housing and start five bell housing to crankcase screws, line bell housing with dowel

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pins and tighten five cap screws.
108—Replace gearset and tighten gearset to bell housing screws.
109—Assemble pedals and pedal auxiliary bracket.
110—Assemble adjusting link and come back spring.
111—Assemble universal joint.
112—Connect speedometer cable.
113—Connect lubricator tube to toe board.
114—Assemble toe board.
115—Assemble hand brake lever.
116—Replace mud pan and three mud pan to bell housing screws.
117—Replace floor board.
118—Replace distributor and fasten with distributor locking screw.
119—Pour small amount of lubricating oil in each cylinder.
120—Replace spark plugs.
121—Connect up low and high tension wires to coil, distributor spark plugs and starting motor.
122—Tighten manifold to exhaust pipe screws.
123—Replace carburetor and tighten two stud nuts carburetor to manifold.
124—Connect gas feed pipe from vacuum tank to carburetor and oil pressure tube to crankcase.
125—Connect carburetor stove to manifold.
126—Connect foot accelerator rod.
127—Connect hand throttle control rod.
128—Connect carburetor spring to manifold.
129—Connect heat tube elbow, carburetor to manifold.
130—Connect carburetor choker rod.
131—Replace three water pump studs and assemble water pump.
132—Replace and fasten engine side pan.
133—Replace fan belt and adjust if necessary.
134—Assemble spark rocker shaft bracket.
135—Connect spark throttle control rods to rocker shaft.
136—Replace radiator and fasten two radiator support bolts.
137—Assemble radiator splash guard to frame with two splash guard screws.
138—Assemble two front spring shackle bolt nuts and cotter pins.
139—Replace cylinder head water outlet.
140—Connect water inlet hose connection.
141—Assemble head lamp tie rod.
142—Fill radiator.
143—Put oil in crankcase to level.
144—Put one quart of oil to every five gallons of gasoline in gas tank while limbering engine up.
145—Start engine by towing.
146—Allow engine to wear in, running without a load.
147—Make any adjustment needed to valve clearance, or carburetor.
148—Give road test.
Material: Cylinder and bearing cap assembly, gear cover gasket, oil pan gasket.

5—Install new crankshaft gear after gearcase is off 0.5

1—Remove starting crank nut.
2—Remove crankshaft gear using gear puller.
3—Assemble new crankshaft gear.
4—Assemble starting crank nut.
Material: Crankshaft gear.

6—Install new crankshaft gear 3.0

1—Drain radiator.
2—Remove hood.
3—Remove radiator splash guard by removing two front spring shackle bolt nuts, 2 center splash guard screws.
4—Remove radiator support nuts.
5—Remove cylinder head cover.
6—Disconnect cylinder head water outlet.
7—Disconnect water inlet hose.
8—Remove radiator.
9—Disconnect spark and throttle control rods from rocker shaft.
10—Remove spark control rocker shaft and bracket.
11—Remove two front end side pan nuts and front end side pan stove bolts.
12—Remove starting crank bracket, bolts and nuts.
13—Remove fan belt and fan pulley.
14—Place support under front end of motor.
15—Remove front gear cover, 13 bolts.
16—Remove starting crank nut.
17—Remove crankshaft gear with gear puller.
18—Assemble new crankshaft gear.
19—Assemble starting crank nut.
20—Assemble front gear cover, 13 cap screws.
21—Remove support from under front end of motor.
22—Bolt on starting crank bracket with two bolts.
23—Fasten side pans by two front end side pan nuts and two front end side pan stove bolts.
24—Assemble fan pulley to end of camshaft with Woodruff Key, nut and nut retainer.
25—Assemble fan belt and adjust if necessary.
26—Assemble spark rocker shaft bracket.
27—Connect spark throttle control rods to rocker shaft.
28—Replace radiator and fasten two radiator support bolts.
29—Assemble radiator splash guard to frame with two guard screws.
30—Assemble two front spring shackle bolt nuts and cotter pins.
31—Replace cylinder head water outlet.
32—Fasten water inlet hose connection.
33—Fill radiator.
34—Replace hood.
35—Start engine.
Material: Crankshaft gear.

7—Replace all timing gears and camshaft bearing front 5.0

1—Drain radiator.
2—Remove hood.
3—Remove radiator splash guard by removing two front spring shackle bolts and two center splash guard screws.
4—Remove radiator support nuts.
5—Remove cylinder head cover.
6—Disconnect cylinder head water outlet.
7—Disconnect water inlet hose.
8—Remove radiator.
9—Disconnect spark and throttle control rods from rocker shaft.
10—Remove spark control rocker shaft bracket.
11—Remove two front end side pan nuts and front end side pan stove bolts.
12—Remove starting crank bracket nuts and bolts.
13—Remove fan belt and fan pulley.
14—Disconnect spark plug wires.
15—Remove distributor lock screw and remove distributor.
16—Disconnect high and low tension wires from coil.
17—Disconnect low tension wires from coil and circuit breaker.
18—Remove two generator bolts and generator.
19—Remove rocker arm brackets, front and rear.
20—Remove valve lifter brackets, front and rear, nine bolts.
21—Remove camshaft front bearing lockscrew.
22—Place support under front end of motor.
23—Remove front gear cover 13 cap screws.
24—Remove camshaft.
25—Remove camshaft gear in arbor press.
26—Remove Woodruff Key and cam bearing.
27—Assemble new camshaft bearing.
28—Assemble camshaft gear, press on in arbor press.
Note. The camshaft bearing should be a free turning fit after gear is pressed on to shaft.
29—Change oil retainer from oil to new gear.
30—Remove starting crank nut.
31—Remove crankshaft gear with gear puller.
32—Assemble new crankshaft gear.
33—Assemble starting crank nut.
34—Install camshaft and align same in position.
35—Drill camshaft front bearing lock screw hold, using hand drill.
36—Install lock screw.
37—Assemble front and rear valve lifter brackets to motor.
38—Remove generator, using gear puller.
39—Assemble new generator gear.
40—Assemble generator and two generator bolts to motor.
41—Assemble front gear cover 13 cap screws.
42—Remove support from under front end of motor.
43—Bolt on starting crank bracket with two bolts, two nuts.
44—Fasten engine side pan by two front end pan nuts and two front end side pan stove bolts.
45—Assemble fan pulley to end of camshaft with Woodruff Key, nut and nut retainer.
46—Assemble fan belt, adjust if necessary.
47—Assemble spark rocker shaft bracket.
48—Connect spark and throttle control rods to rocker shaft levers.
49—Assemble distributor to motor and lock with lock screw.
50—Connect distributor control rod to rocker shaft lever.
51—Connect ignition wires and new tension wires to breaker, coil and circuit breaker.
52—Replace radiator and fasten with two radiator support nuts.
53—Assemble radiator splash guard to frame with two splash screws.
54—Assemble front spring shackle bolt nuts and cotter pins.
55—Replace rocker arm brackets and shaft assemblies.
56—Replace cylinder head water outlet.
57—Connect water inlet hose.
58—Time ignition and replace distributor head.
59—Fill radiator.
60—Replace hood.
61—Start engine.
Material: Camshaft gear, crankshaft gear, generator gear, front cam shaft bearing, gear cover gasket.

8—Install new generator gear 1.0

1—Raise hood.
2—Disconnect ignition coil from generator.
3—Disconnect generator wires.
4—Remove two generator bolts and generator.
5—Remove cotter pin, nut and generator gear, using gear puller.
6—Assemble new generator gear.
7—Assemble generator to motor, two bolts.
8—Replace ignition coil and connect generator wiring.
9—Start motor.
Material: Generator gear.

9—Replace camshaft and camshaft bearing front and camshaft gear 4.0

1—Drain radiator.
2—Remove hood.
3—Remove radiator splash guard by removing two front spring shackle bolts and two center splash guard screws.
4—Remove radiator support nuts.
5—Remove cylinder head cover.
6—Disconnect cylinder head water outlet.
7—Disconnect water inlet hose.
8—Remove radiator.
9—Disconnect spark and throttle control rods from spark control rocker shaft, and disconnect control rod from distributor.
10—Remove spark control rocker shaft bracket.
11—Remove two front end side pan nuts and front end side pan stove bolts.
12—Remove starting crank bracket, two bolts.
13—Remove fan drive pulley.
14—Disconnect spark plug wires.
15—Disconnect high and low tension wires from coil.
16—Remove distributor set screw and remove distributor.
17—Disconnect low tension combination switch wires from coil and circuit breaker.
18—Remove two generator bolts and generator.
19—Remove rocker arm brackets, front and rear.
20—Remove valve lifter brackets, front and rear, nine bolts.
21—Remove camshaft front bearing lock screw.
22—Place support under front end of motor.
23—Remove timing gear cover, 13 bolts
24—Remove camshaft.
25—Remove cam gear from camshaft with arbor press.
26—Remove Woodruff Key and cam bearing.
27—Fit and assemble new cam bearing.
28—Assemble cam shaft gear to camshaft.
Note: The camshaft bearing should be a free turning fit after gear is pressed on the shaft.
29—Change oil retainer from old to new gear.
30—Install camshaft and align same in position.
31—Drill camshaft bearing lock screw hole, under hand drill.
32—Install lock screw.
33—Replace valve lifter brackets.

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34—Assemble generator and two generator bolts to motor.
35—Assemble gear cover, 13 cap screws.
36—Remove support from under front end of motor.
37—Bolt on starting crank bracket with two bolts.
38—Fasten engine side pans by two front end side pan nuts and two front end side pan stove bolts.
39—Assemble fan pulley to end of camshaft with Woodruff Key, nut and lockwasher.
40—Assemble fan belt and adjust if necessary.
41—Assemble spark rocker shaft bracket.
42—Connect spark and throttle control rods to rocker shaft levers.
43—Assemble distributor to motor and lock with lock screw.
44—Connect distributor control rods to distributor.
45—Connect ignition wires and low tension wires to breaker, coil and generator circuit breaker.
46—Replace radiator and fasten with two radiator support nuts.
47—Fasten radiator splash guard to frame with two splash guard screws.
48—Replace front spring shackle bolt nuts.
49—Replace rocker arm bracket and shaft assemblies.
50—Replace cylinder block water outlet.
51—Replace water inlet hose.
52—Time ignition and replace distributor head.
53—Fill radiator.
54—Adjust valve clearance.
55—Start engine.
56—Replace Hood.
Material: Camshaft, camshaft bearing front, oil, gear cover gasket, camshaft gear.

10—Adjust all main and connecting rod bearings 6.0

1—Drain oil from motor.
2—Raise hood and remove 5 engine side pan stud nuts.
3—Remove 22 oil pan to crankcase screws and oil pan.
4—Remove oil pump and oil pipe assembly from main bearings.
5—Remove six connecting rod bearings.
6—Adjust center main bearings.
7—Adjust rear main bearings.
8—Adjust front main bearings.
9—Adjust six connecting rod bearings.
10—Assemble oil pump and oil pipe assembly to motor.
11—Wash out oil pan and oil pump screen.
12—Inspect oil pan gasket and renew if necessary.
13—Assemble five engine side pan stud nuts.
14—Replace oil pan and 22 oil pan to crankcase screws.
15—Fill out reservoir to level.
16—Start engine and adjust valves if needed.
17—Adjust carburetor if needed.
18—Lower hood.
Material: Oil, oil pan gasket.

11—Replace one connecting rod 2.0

1—Drain oil from motor.
2—Raise hood and remove five engine side pan stud nuts.
3—Remove 22 oil pan to crank case screws and oil pan.
4—Remove oil pump and oil pipe assembly from main bearings.
5—Remove connecting rod bearing cap.
6—Remove piston and connecting rod from piston.
7—Remove piston pin clamping bolt and nut.
8—Remove piston pin and connecting rod from piston.
9—Assemble new connecting rod to piston and tighten clamp bolt and nut and pin with cotter key.
10—Oil piston and compress rings with sleeve.
11—Insert piston in cylinder and remove sleeve.
12—Remove connecting rod cap.
13—Draw rod to crankshaft and assembly cap.
14—Adjust bearing.
15—Tighten bearing cap holding nuts and secure with cotter keys.
16—Wash out oil pan and oil pump screen.
17—Assemble oil pan and secure by 22 oil pan to crank case screws.
18—Lower car to floor.
19—Assemble engine side pan holding nuts.
20—Fill oil reservoir to level.
21—Start engine.
For each additional rod replaced add.....0.3
Material: Connecting rod, oil, oil pan gasket.

14—Install complete set new pistons, new piston pins and new piston rings, and adjust all main bearings 9.0

1—Drain oil from motor.
2—Raise hood and remove five engine side pan stud nuts.
3—Remove 22 oil pan to crankcase screws and oil pan.
4—Remove oil pump and oil pipe assembly from main bearings.
5—Remove six pistons from cylinder, replace connecting rod bearing caps, mark connecting rod if not marked for replacement to cylinders from which taken.
6—Adjust center main bearing.
7—Adjust rear main bearing.
8—Adjust front main bearing.
9—Remove piston pin clamping bolt and nut.
10—Remove piston pin and connecting rod from piston.
11—Fit six new pistons in cylinders and mark same for each cylinder, fit to .003 clearance using feeler ribbon of .0025 in thickness.
12—Fit piston pins in new pistons.
13—Assemble connecting rod and piston pin to piston, taking care that both piston and rod have right cylinder number.
14—Clean piston and ring groove.
15—Measure depths of center and lower ring grooves. If not within the limits 9/64 to 5/32 turn to these dimensions.
16—Assemble two two-piece piston rings in center and lower ring grooves.
17—Assemble plain ring in upper groove, 6 pistons.
18—Oil piston and compress rings with sleeve.
19—Put pistons in cylinder and remove sleeve.
20—Adjust connecting rod bearing.
21—Assemble oil pump and oil pipe assembly to engine.
22—Wash out oil pan and oil pump screen.
23—Inspect oil pan gasket and renew if necessary.
24—Replace oil pan and 22 oil pan to crankcase screws.
25—Assemble five engine side pan stud nuts.
26—Fill oil reservoirs to level.
27—Start engine and adjust valves.
28—Adjust carburetor.
29—Lower hood.
Material: Pistons, plain rings, two piece rings, oil pan gasket, piston pin, oil.

15—Install new two piece piston rings 4.2

1—Drain oil from motor.
2—Raise hood and remove five engine side pan stud nuts.
3—Remove 22 oil pan to crankcase screws and oil pan.
4—Remove connecting rod bearing cap.
5—Remove piston from cylinder.
6—Replace bearing caps, mark rod if not marked for replacement into the cylinder from which removed.
7—Remove three piston rings from piston.
8—Clean piston and ring grooves.
9—Measure depths of center and lower ring grooves. If not within the limits 9/64 to 5/32 turn to these dimensions.
10—Assemble two two-piece piston rings in center and lower ring grooves.
11—Assemble one plain piston ring in upper ring groove.
12—Oil piston and compress piston rings with sleeve.
13—Place piston in cylinder and remove sleeve.
14—Adjust connecting rod bearing (duplicate operations 4 to 15 for installing new rings on each of the other pistons).
15—Wash oil pan and oil pump screen.
16—Inspect oil pan gasket and renew if necessary.
17—Assemble oil pan and 22 oil pan to crankcase screws to motor.
18—Replace five engine side pan stud nuts.
19—Fill oil reservoir to level.
20—Lower hood.
For removing oil pan, replacing new rings on one piston and replacing oil pan allow....1.8
and for each additional piston to be equipped with new rings allow 0.5
Material: Piston rings (standard), two piece piston rings, oil pan gasket, oil.

16—Install six new pistons with new rings and new piston pins... 7.0

1—Drain oil from motor.
2—Raise hood and remove five engine side pan stud nuts.
3—Remove 22 oil pan to crankcase screws and oil pan.
4—Remove connecting rod bearing cap.
5—Remove connecting rod and piston ring from cylinder.
6—Replace connecting rod caps, mark rod if not marked for replacement in cylinder from which taken.
7—Remove piston pin clamping bolt and nut.
8—Remove piston pin and connecting rod from piston.
9—Fit new piston in cylinder, with .003 clearance, using feeler ribbon of .0025 in.
10—Fit piston pin in piston.
11—Assemble connecting rod and piston pin to piston.
12—Assemble piston pin clamping bolt, nut and cotter pin to connecting rod.
13—Clean piston and ring grooves.
14—Measure depths of center and lower ring grooves. If not within the limits 9/64 to 5/32 turn to these dimensions.
15—Assemble two two-piece rings in center and lower ring grooves.
16—Assemble one plain piston ring in upper ring groove.
17—Oil piston and compress rings with sleeve.
18—Put piston in cylinder and remove sleeve.
19—Assemble connecting rod bearing cap to crankshaft with nuts and cotter pins. Adjust same. Duplicate operations 4 to 20 in removing and replacing the other pistons with rings.
20—Wash oil and oil pump screen.
21—Inspect oil pan gasket and renew if necessary.
22—Assemble oil pan and 22 oil pan to crankcase screws.
23—Replace five engine side pan stud nuts.
24—Fill oil reservoir to level.
25—Lower hood.
For removing oil pan, replacing one new piston with rings and replacing oil pan, allow.....2.0
and for each additional piston with rings necessary to replace allow 1.0
which will make a total, for complete set of pistons—with new rings, of.....7.0
Material: Pistons, piston rings, two piece rings, oil pan gasket, piston pins, oil.

17—Fit six new pistons with pins separate from motor..... 1.0

1—Measure piston pin with Micrometer.
2—Adjust reamer.
3—Ream piston.
4—Fit piston pin.
Repeat operations 1-4 inclusive for each of six pistons.
Material: Pistons standard 2.810-2.811. piston pins.

(To be continued)

Big Overland Half Year

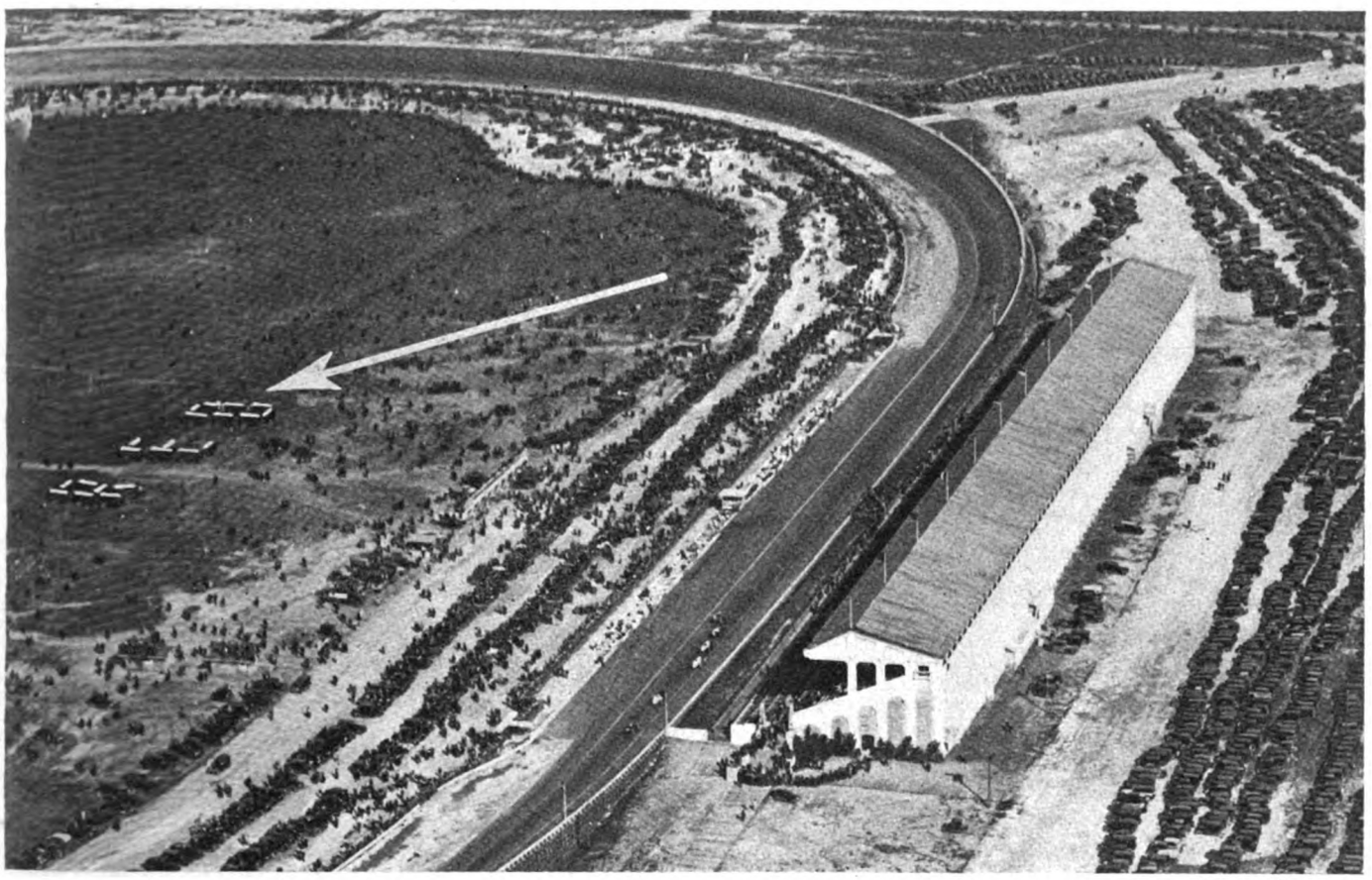
TOLEDO, Aug. 7—Total shipments of Overland and Willys-Knight cars for the first six months of 1922 lacked only 113 cars of being equal to the entire shipments for the entire year of 1921.

Production for this same period reached a total of 1,137,000 cars, an increase of 75 per cent over the first six months of 1921, and of this total June produced 288,000, 61 per cent more than June, 1921.

Overland has now reached a production of 700 cars a day.

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Dealer Publicity That Gave Folks Something to Talk About



Reos in Novel Advertising Stunt at Los Angeles Speedway

A novel and effective advertising stunt was staged by the Reo Motor Car Co. of Los Angeles at a race meet at the speedway. Speedway rules prohibit any form of advertising, but this was so unique that it got by without objection. Twenty-one Reo speed wagons with tops painted white were parked in the center of the enclosure in such formation that they spelled the word REO. Approximately 50,000 persons were impressed by this advertising

Introducing a New Model

WHEN F. A. Williams Motor Sales Co., Dodge Bros. dealer in Springfield, Mass., received his first new business coupe, recently brought out by that company, the event was fittingly celebrated by a parade, which was led by a coach nearly 100 years old. The coach which, at the time it was made, was an important unit of transportation for both business and pleasure, was presented to F. A. Williams, Jr., president of the company, by The Abbott Downing Co., of Concord, with which Mr. Williams' uncle has been connected for more than 50 years. The picture shows the Springfield dealer's parade, headed by the old coach

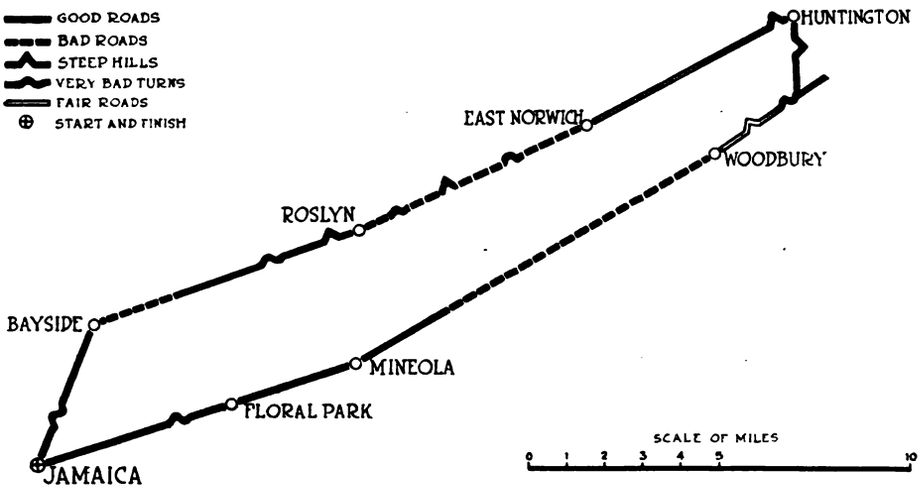


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Franklin Dealer Gives 56 Mile Demonstrations

Long Route Trip Proves an Exceptionally Fine Advertising Activity—Letters Sell the Demonstration

THE "long" demonstration, which is being pushed so vigorously by the Franklin factory has been adopted by the Long Island Franklin Co., Jamaica, L. I., as a means of advertising this make of car. This company has laid out a standard demonstration route 56 miles long. The route embraces good and bad roads, level stretches and steep hills. It is selected with the idea of providing a thorough demonstration of the capabilities of the Franklin car under all sorts of conditions.



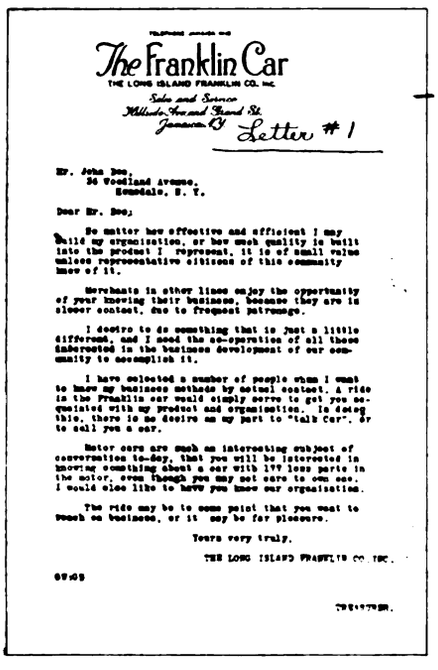
This is a diagram of the fifty-six mile demonstration course used by the Long Island Franklin Co., Franklin dealer in Jamaica, L. I. The course combines every road condition that the ordinary motorist would be expected to encounter. The long demonstration, in addition to impressing the prospect, usually enthuses him to such an extent that he tells others, thus extending the influence of the demonstration

A person does not have to be a prospect for the immediate purchase of a car in order to take this demonstration trip. The company regards these trips as educational and is glad of the opportunity to make these demonstrations. Many people are not at all familiar with the performance of an air-cooled car. This company wants this class of people to have first hand information on what the Franklin can do so that if the air cooled cars come up for discussion they will be able to tell about the enjoyable trip they had in it.

A series of three letters is used to get people to take this demonstration. Each of these letters is individually typed, the stenographer doing the work in her spare time.

During the demonstration the salesman does no selling. He is there to answer questions, and he limits himself to that one job. If anybody wants to travel another route than the one laid out by the company, the change is of course made.

This company does not find this method of advertising expensive, as the salesmen usually arrange to do it when they will not be busy doing other work. It has proved to be an unusually effective method of advertising, as it has placed first-hand information regarding air cooled cars in the hands of many owners of water cooled cars, and in many cases has undoubtedly eliminated unfounded prejudice.


The Franklin Car
THE LONG ISLAND FRANKLIN CO. INC.
Sales and Service
Hillside Ave and Grand St.
Jamaica, L.I.
Letter #1

Mr. John Doe,
56 Woodland Avenue,
Rosedale, N. Y.

Dear Mr. Doe;

No matter how effective and efficient I may build my organization, or how much quality is built into the product I represent, it is of small value unless representative citizens of this community know of it.

Merchants in other lines enjoy the opportunity of your knowing their business, because they are in closer contact, due to frequent patronage.

I desire to do something that is just a little different, and I need the co-operation of all those interested in the business development of our community to accomplish it.

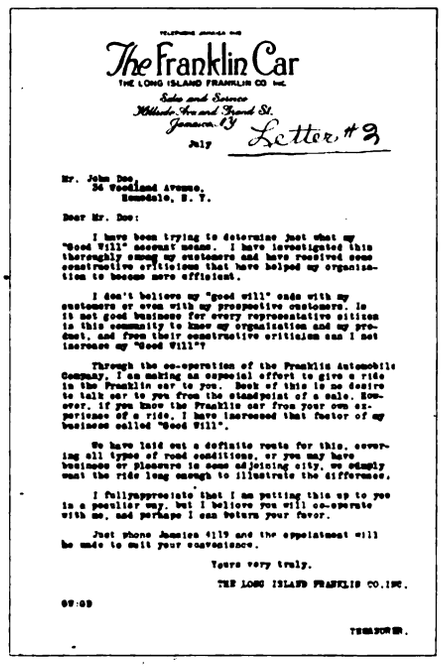
I have selected a number of people whom I want to know my business methods by actual contact. A ride in the Franklin car would simply serve to get you acquainted with my product and organization. In doing this, there is no desire on my part to "talk Car", or to sell you a car.

Motor cars are much an interesting subject of conversation to-day, that you will be interested in knowing something about a car with 179 less parts in the motor, even though you may not care to own one. I would also like to have you know our organization.

The ride may be to some point that you want to reach on business, or it may be for pleasure.

Yours very truly,

THE LONG ISLAND FRANKLIN CO. INC.


The Franklin Car
THE LONG ISLAND FRANKLIN CO. INC.
Sales and Service
Hillside Ave and Grand St.
Jamaica, L.I.
July
Letter #2

Mr. John Doe,
56 Woodland Avenue,
Rosedale, N. Y.

Dear Mr. Doe:

I have been trying to determine just what my "Good Will" amount means. I have investigated this thoroughly among my customers and have received some constructive criticisms that have helped my organization to become more efficient.

I don't believe my "good will" ends with my customers or even with my prospective customers. Is it not good business for every representative citizen in this community to know my organization and my product, and from their constructive criticism can I not increase my "Good Will"?

Through the co-operation of the Franklin Automobile Company, I am making an especial effort to give a ride in the Franklin car to you. Back of this is no desire to talk car to you from the standpoint of a sale. However, if you know the Franklin car from your own experience of a ride, I have increased that factor of my business called "Good Will".

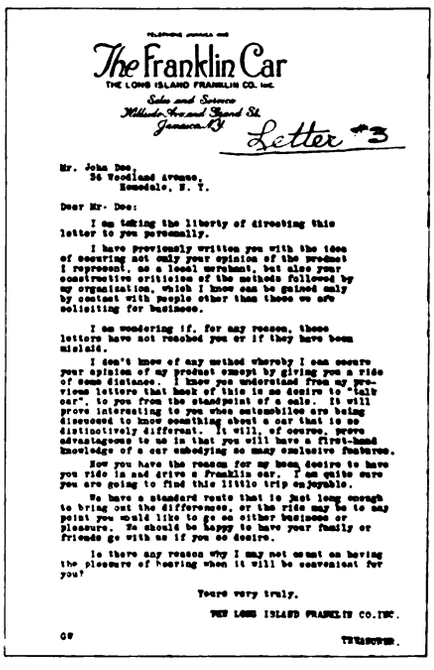
We have laid out a definite route for this, covering all types of road conditions, or you may have business or pleasure in some adjoining city, we simply want the ride long enough to illustrate the difference.

I fully appreciate that I am putting this up to you in a peculiar way, but I believe you will co-operate with me, and perhaps I can return your favor.

Just phone Jamaica 4119 and the appointment will be made to suit your convenience.

Yours very truly,

THE LONG ISLAND FRANKLIN CO. INC.


The Franklin Car
THE LONG ISLAND FRANKLIN CO. INC.
Sales and Service
Hillside Ave and Grand St.
Jamaica, L.I.
Letter #3

Mr. John Doe,
56 Woodland Avenue,
Rosedale, N. Y.

Dear Mr. Doe:

I am taking the liberty of directing this letter to you personally.

I have previously written you with the idea of securing not only your opinion of the product I represent, as a local merchant, but also your constructive criticism of the methods followed by my organization, which I know can be gained only by contact with people other than those we are soliciting for business.

I am wondering if, for any reason, these letters have not reached you or if they have been mislaid.

I don't know of any method whereby I can secure your opinion of my product except by giving you a ride of some distance. I know you understand from my previous letters that back of this is no desire to "talk car", to you from the standpoint of a sale. It will prove interesting to you when automobiles are being discussed to know something about a car that is so distinctively different. It will, of course, prove advantageous to me in that you will have a first-hand knowledge of a car embodying so many exclusive features.

Now you have the reason for my keen desire to have you ride in and drive a Franklin car. I am quite sure you are going to find this little trip enjoyable.

We have a standard route that is just long enough to bring out the differences, or the ride may be to any point you would like to go on either business or pleasure. We should be happy to have your family or friends go with us if you so desire.

Is there any reason why I may not count on having the pleasure of hearing when it will be convenient for you?

Yours very truly,

THE LONG ISLAND FRANKLIN CO. INC.

A series of three letters is used in "selling" people the fifty-six mile demonstration given by the Long Island Franklin Co.

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Writing Ads for the Small Town Paper

How a Garageman Built a $5,000 a Month Accessory Business with Weekly "Talks to the Public"

IF you were a garageman selling accessories in a town of less than 1000 population, *would five thousand dollars a month in sales be about the figure to aim at?*

Careless about ciphers, you'll probably say.

But Buck & Griggs, operating the Sperry Garage & Supply Co. at Sperry, Okla., consider this figure just a starter.

"Oh, the only garage and accessory store in the town," you may say.

Not at all.

There are two other accessory establishments, a third filling station and a hardware store handling accessories—making four competitors for the Buck & Griggs place, and in this town of 800 people, not in a congested or thickly settled farming country, and distant from any large towns.

There's one very positive reason for the steady increase of profitable business—yea two, which may be mentioned. *The company advertises with original, spicy, appealing copy; and it has the goods to deliver.*

"We keep our place as clean as we can, give the best service possible and keep everlastingly 'Askin' 'Em to Buy'," says A. L. Buck, one of the proprietors.

The advertisements in that town's little newspaper give the key, however, to their success. Every week the people of that community get a fresh, interesting message on motor car accessories and parts that makes 'em want to buy them from the Sperry Garage.

The advertising is a key to their success for two reasons. First, it shows what kind of fellows they are who run the place, the kind anybody would like to do business with. And, second, it puts across the atmosphere of the place, so that the readers are pretty sure to feel inclined to go there.

And here's a bit of psychology for the benefit of garagemen and accessory dealers in small towns, where newspapers haven't an oversupply of interesting reading matter: *The advertisements tell a story.* Obviously most of the readers of the newspaper are going to read the entire advertisement; they will sit back in their chairs and let the message sink in. Maybe the same kind of copy would not answer for a big metropolitan paper. But for the small town paper it seems exactly the type that will educate the public.

A. L. Buck, who writes the copy for the Sperry garage space, may have a little more facility in using language than a good many other garagemen. But let them take this tip:

The straightforward suggestions of the practical garageman, exactly the language he would use to a customer, are the suggestions that will do fine in an advertisement.

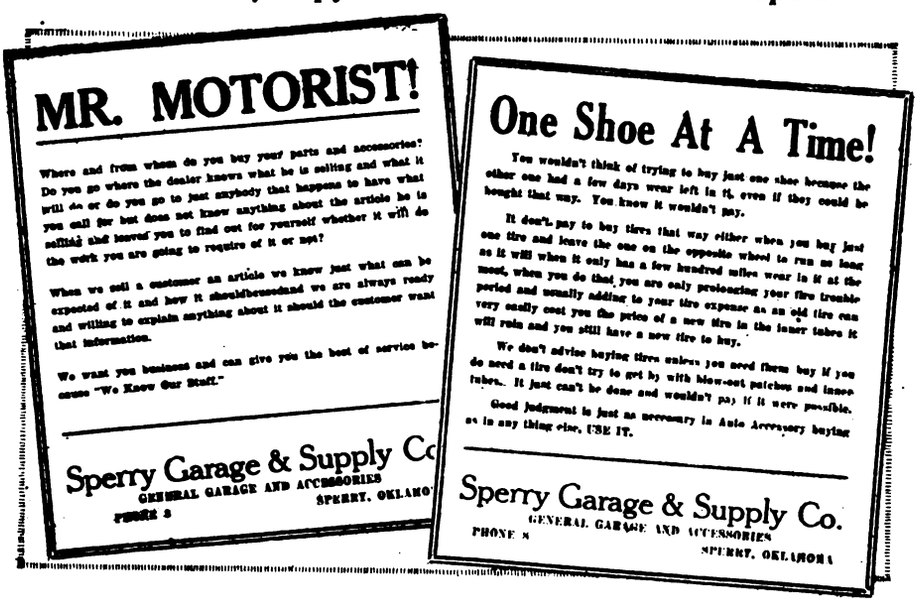
The language that will *not* get sympathetic attention in the small-town paper is the language of the factory, the language of the national publication, of the big-city dealer.

The local public likes to hear the garageman talk in his advertising just as he talks on the floor of the garage. That's the sort of talk that makes sales, and it fits into the local newspaper display space.

Writing of advertising is the telling of a story in language that the public will understand and appreciate. The small-town public appreciates the personal touch, and the garageman can get big value out of his space if he talks to his people in type just as he does by word of mouth.

That kind of advertising has paid Buck & Griggs. They take the time every week to prepare fresh copy. And the cost is almost negligible compared with the returns.

This Kind of Copy Sells Well in Small Town Papers



MR. MOTORIST!

Where and from whom do you buy your parts and accessories? Do you go where the dealer knows what he is selling and what it will do or do you go to just anybody that happens to have what you call for but does not know anything about the article he is selling and leaves you to find out for yourself whether it will do the work you are going to require of it or not?

When we sell a customer an article we know just what can be expected of it and how it should be used and we are always ready and willing to explain anything about it should the customer want that information.

We want you business and can give you the best of service because "We Know Our Stuff."

Sperry Garage & Supply Co

GENERAL GARAGE AND ACCESSORIES

SPERRY, OKLAHO

One Shoe At A Time!

You wouldn't think of trying to buy just one shoe because the other one had a few days wear left in it, even if they could be bought that way. You know it wouldn't pay.

It don't pay to buy tires that way either when you buy just one tire and leave the one on the opposite wheel to run as long as it will when it only has a few hundred miles wear in it at the most, when you do that you are only prolonging your tire trouble period and usually adding to your tire expense as an old tire can very easily cost you the price of a new tire in the inner tubes it will ruin and you still have a new tire to buy.

We don't advise buying tires unless you need them but if you do need a tire don't try to get by with blow-out patches and inner tubes. It just can't be done and wouldn't pay if it were possible.

Good judgment is just as necessary in Auto Accessory buying as in any thing else, USE IT.

Sperry Garage & Supply Co.

GENERAL GARAGE AND ACCESSORIES

PHONE 8

SPERRY, OKLAHOMA

Talking in his advertising just as he would to a customer on the garage floor is the secret of large accessory sales in the Sperry Garage & Supply Co. garage of which A. L. Buck is proprietor in the small town of Sperry, Okla. Here are a couple of samples of his advertising in the little home town paper

Ideas On Selling and Management

You will find them on this and the opposite page—ideas that will make dollars or save dollars for the

Car Dealer Truck Dealer
Equipment and Tire Dealer
Tractor Dealer Repairman

Some of our readers are contributors to this section of Motor World. Have you developed a plan that might help some other men? If you have, will you write it out and send it in?

Paint Tour Map on Window

A STRIKING way to do something different on your show windows which will attract a lot of attention and focus comment on your garage is by drawing an outline map of a week-end tour in white paint on your show window. Above the map paint these words: "Take This Week-End Tour in Your Whizzer Car." Beneath the map the complete mileage should be noted and on the map the mileage between points should be noted. A stunt of this kind would be so unique that you could easily get the local newspapers to run a story of it and you could have a photo of your window taken with a lot of people standing in front looking at it and run the photo in your advertising for the purpose of showing how alert and progressive you are.

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Removing the Carbon and Grinding the Valves

Various Methods Used in Repairshops—Causes of Carbon and Some Hints for Removing These Causes

REMOVING carbon and grinding valves is one of the most frequent operations performed by the repairshop and is usually done in connection with a tune up of the engine. The step by step operations in removing the carbon and grinding the valves vary considerably on different engines and it is not possible to attempt covering all makes with one schedule.

There are three possible ways of removing carbon. The usual method is to scrape it out. The oxygen process is being largely used also. Other methods consist of using preparations which are said to soften or dissolve the carbon.

Whichever method of removing the carbon is adopted, it is essential that it be entirely removed because small quantities of carbon remaining will serve to more quickly accumulate more carbon. A smooth metal surface resists to a certain extent the formation of carbon and it has only recently been found that polishing the metal will still further retard the formation of carbon. Several manufacturers of 1922 cars are regularly polishing piston heads and the surfaces of the combustion chamber.

Carbon forms more quickly and in greater quantities on cooler surfaces than on the hotter surfaces. The inlet valves are usually heavily incrusted while the exhaust valves are comparatively free from carbon. The reason for this is that the inlet valves are kept cool by the incoming mixture while the exhaust valves get no chance to cool off excepting by their contact with the water or air cooled seat. Engines that run cool collect carbon faster than those which consistently run at a higher temperature.

Indications of carbon in any car are loss in power and a sharp knocking when climbing hills on high gear. While it is not possible to translate engine knocks into the English language, this particular knock, which is known as a carbon knock, can be more clearly described as a "clink," in its earlier stages, getting heavier as the accumulations get heavier.

Carbon has very much the same constituency as brick. It is composed of road dirt with petroleum products as a binder, the whole being baked into a solid mass just like the process used in making bricks. The road dirt comes from the dust of the roads which is drawn in through the carbureter and not burned when the mixture explodes. Subsequently it is picked up by the oil on the cylinders and in the combustion chamber and baked onto the walls, piston head, etc. When using the oxygen method of carbon removal, practically all this road dirt will be found left in the cylinder after the burning is completed. Of course, some of it is blown out by the force of the gas and flame but some powder will remain. If it were not for the oil on the surfaces and the presence of some liquid gasoline at times it is possible that this road dirt would be blown out through the exhaust valve.

Better Mechanics

ARTICLE No. 252

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.

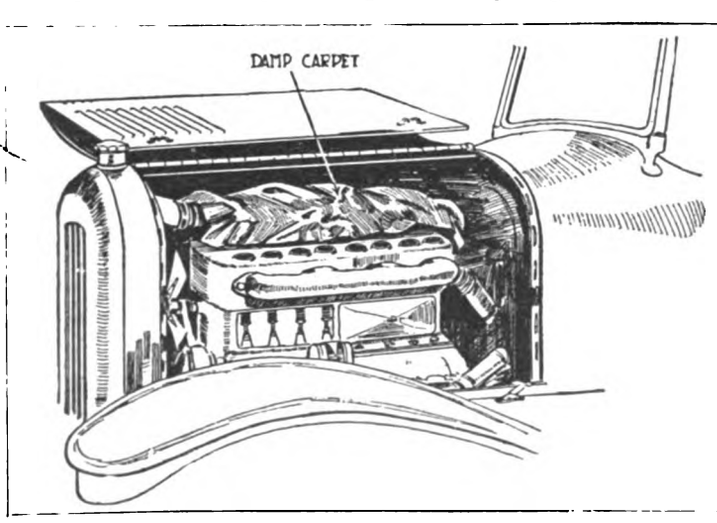


Fig. 1 — A piece of damp carpet is placed over the top of the engine to protect the wiring

The Oxygen Method

Some manufacturers and service men do not recommend the use of oxygen for removing carbon on account of the high heat developed and the possibility of warping valves, burning cylinder walls, etc. On the other hand, the process is used with success by many shops and with apparently no ill effects. It probably does no more harm to parts of the engine than the disassembling of the parts that are necessary for scraping the carbon out. The following method has been found to be satisfactory:

1. Turn off the gasoline at the tank.
2. Drain out the carbureter. Try to operate the engine. If there is fuel enough to start it, let the engine run until it stops from lack of gasoline. The turning off of the gas and running the carbureter are very important because many fires are started from neglect of these points. During the burning process there is a shower of white hot sparks which will ignite gasoline. For this reason it is also well to see that there is no gasoline, kerosene or other inflammable material in the engine pan.
3. Remove the spark plugs for cleaning and to prevent injury due to the heat.
4. Remove the valve caps if there are any.
5. Crank the engine over by hand until cylinder No. 1 comes to top dead center with both valves closed. It is necessary to have the intake valve closed to prevent the flame getting into the intake manifold and it is also necessary to have the piston at top dead center in order to cover up the mirror-like surface of the cylinder wall. It is best practice to have both valves closed.
6. The shower of sparks that comes out of the spark plug hole while the carbon is burning is liable to damage the insulation on the ignition wires. It is therefore advisable to put a damp piece of carpet over the wiring and anything else that might be damaged. The carpet should not be wet enough to drip water on the wires. Just damp enough so that it will not take fire.
7. Drop a lighted match in cylinder No. 1.
8. Turn on the oxygen at the tank and insert the tip of the torch into the cylinder. The gas pressure on the gage should register from 15 to 20 lb. when the torch is in operation.
9. The carbon will start to burn immediately. Follow the burning carbon with the point of the torch working it all over

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the inside of the combustion chamber. Practically all the carbon can be removed in this way. When no more carbon will burn, turn off the gas and remove the torch.

10. Use a flexible scraping tool as shown in Fig. 2 to scrape and roughen up any remaining carbon.

11. Again drop a lighted match in the cylinder and burn the remainder of the carbon out in the same way.

This scraping and secondary burning is not ordinarily done, but it takes very little additional time and assures the removal of all the carbon.

It has been said that it is impossible to obtain a clean job by oxygen burning, but this is generally due to improper methods of operation. There is a tendency for the flame to burn away the carbon in spots with the result that after a while there are a number of islands of carbon in an otherwise clean cylinder and the flame will not jump from one to the other. This condition can be remedied by wetting the inside of the cylinder with kerosene or lubricating oil so that there will be a film of fuel to connect the different spots or islands of carbon. In some cases it may be necessary to repeat this operation.

12. Repeat the process in each of the other cylinders, bringing each piston to the top of its stroke before burning the carbon.

13. Before starting the engine put a little lubricating oil in each cylinder around the cylinder wall to prevent scoring of the cylinders before the circulation of oil gets into action. The heat of the burning carbon dries up the original oil.

Scraping Methods

When carbon is to be removed by the scraping method, the ease with which the operation is performed depends on the design of the engine. On the removable head type it is only necessary to remove the cylinder head bolts and such other apparatus as is in the way and everything is exposed. The carbon is removed with any one of a number of different shaped carbon scrapers. A putty knife will be found very convenient.

Before starting any scraping be sure that all bolt holes, water passage holes and other places that should be kept clean are filled with little wads of waste or rag. Carbon getting into the holes on cars like the Ford make it highly probable that the bolt will bottom against the carbon and twist off before the head is drawn down.

Some shops have endeavored to shortcut the carbon scraping process with machines, and a useful device is a wire brush for use with a portable electric drill. This will work all right for soft or average carbon but there will be some places that it will not touch. This is also true of the ordinary scraper and often it is necessary to get a sharp edge tool like a cold chisel to loosen obstinate pieces.

If the valves are to be ground, it is customary to remove them before beginning the scraping of carbon and in this case wads of waste should be tucked in the valve openings. Otherwise small pieces will drop into the intake passages and later when the engine is started. they will lodge on the valve seat, holding the valve open. In some cases it has been necessary to take the head off again to clean off the seats. The exhaust passages do not make so much difference as the particles are blown out anyway, but they may lodge in some of the small holes in the muffler plates if the muffler is of the perforated sheet type. So it is best to protect both sets of passages.

Where the engine is of the solid head type the removal of carbon offers more difficulty. To do a really good job the cylinder block must be taken off and the scraping done from the inside. The pistons and connecting rods need not be

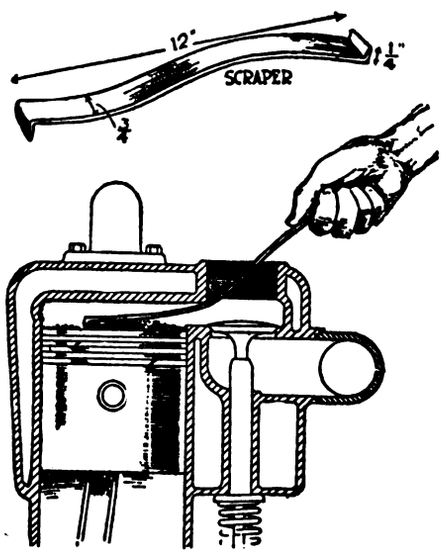


Fig 2—Using a scraper to loosen the remainder of the carbon. This enables the torch to burn off the rest of the carbon on the second application

disturbed as the carbon can be cleaned from the piston tops without any difficulty. It is practically impossible to scrape carbon through a valve plug hole even with flexible scrapers. A small patch of carbon remaining will give almost as much trouble as if the rest had not been touched.

The Causes of Carbon

Every engine in its normal running accumulates carbon in the combustion chamber. It is absolutely impossible under present designs and operations to do away with the formation of carbon. However, with all conditions as nearly perfect as possible an engine should go through an entire season without any necessity for carbon removal or valve grinding. Careless adjustment and improper care are usually responsible for the rapid carbon forming engines that we run into sometimes. Here are some of the causes and suggested remedies.

Mixture too rich.—Improper carbureter adjustment. If the carbureter is of the adjustable needle valve type, the needle can be closed until the correct mixture is obtained. If of the fixed jet type a smaller jet should be installed. Other carbureters have an adjustment on the air valve which affects the quantity of fuel used. Indications of too rich a mixture are a black smoky exhaust, poor pulling power and a tendency to overheat.

Too much oil.—Too much oil on the cylinder walls is the most usual cause of a quick carbonizing engine. This may be caused by leaky rings, rings that do not fit the ring grooves properly, scored cylinder walls, worn cylinders, carrying the oil level too high or loose bearing fits on engines with pressure lubrication systems.

Leaky rings can be remedied by fitting new ones provided the cylinders are in fair shape and the piston ring grooves are true. Sometimes it is possible to true up the ring grooves and install oversize piston rings.

Scored cylinder walls cannot be fixed without regrinding or reboring or filling the score in with a special solder. Where the cylinders are reground or rebored it is also necessary to fit new pistons and rings of a larger diameter to take up for the metal that was removed from the cylinder walls. It is hardly possible to lap out a score unless it is a very slight one. Scores are most often caused by piston pins getting loose in the pistons and working out endways. This condition should, of course, be fixed in reassembling. Another cause of scoring is the too frequent use of the choke which brings a lot of liquid gasoline into the cylinders, cutting the lubricating oil and cutting either the rings, pistons or cylinder walls.

The end clearance of connecting rod and main bearings on pressure fed oil engines has considerable to do with the amount of oil that gets to the combustion chamber. This is something that is more or less new and has not been given very much thought before. Where the end clearance of the bearings is excessive the pressure on the oil gage drops and in the effort to keep it higher, the adjustment on the pump is changed with the result that a great quantity of oil escapes through the end clearance and this is thrown to the cylinder walls.

One or two new model cars are coming through with oil troughs partly shielded so that too much oil will not be thrown by the rods when the dippers go into the troughs. Some of the older models that are oil pumpers can be made to work better by affixing some device of this kind. In other cars the trouble can sometimes be overcome by drilling holes in the sides of the trough to keep the level of the oil down.

Grinding the Valves

Valve grinding is such a frequent operation in the repairshop that any directions would seem to be almost superfluous. However, there are some fundamental methods that must be adhered to, and recently service men have found ways of shortening the operations.

In the first place the valves must be marked with the number of the cylinder they go in, or they must be marked in rotation. It is easy enough to tell

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the exhaust valve from the inlet valve by inspection, because the inlet valve will have the most carbon and will be gummy, whereas the exhaust valve will be comparatively free from carbon and will often have a rusty appearance. What carbon appears on the valve will be a dusty soot rather than a gummy substance.

The valves are removed by inserting a valve lifter under the valve cup or washer and lifting the cup until the valve pin appears. The head of the valve must be held down at the same time or the whole valve will lift. The pin is pulled out with a small pair of pliers and the valve lifter released. Some valve lifters are so made that they will hold the spring compress until it is desired to replace the valve, but in grinding all the valves this would require a lifter for each valve. The spring and cup need not be pulled out, but simply allowed to rest on the valve tappet.

Each valve should be scraped and cleaned, removing all carbon, rust, etc. If the stem does not clean up well, use strips of fine emery cloth to polish them. After the cleaning the valves should be tried to see if the stem is loose in the valve stem hole. If there is looseness, try a new valve. If this does not take up the looseness, the valve stem guide will have to be replaced. The method of doing this varies with the make of engine, and some engines not provided with valve stem guides will have to have the hole reamed out and an oversize valve inserted. There is no use grinding valves if the stem is loose in the guide, because there is no control over the valve seat position. The valve would move around in it, and every time it came down it would come in a different position.

If the valve seat in the cylinder is in bad shape, much time can be saved by using a valve reseater, which is simply a reamer of the correct size and angle to cut the metal down to a new seat. A valve reseater has a stem which goes into the valve stem hole for a guide. Care is to be used not to cut any more metal than necessary to get a seat all around. The seat should be as narrow as possible. If it is necessary to cut deep and the seat is thereby widened, the opening should be bored or reamed out to narrow the seat.

Where the valve is in bad shape much time can be saved by using a "valve lathe," which is a bench device to true the face of the valve. A still quicker operation is a valve refacing grinder.

After both valve and seat are in good shape, the valve is ground, as the reseating and refacing do not do away with the necessity of grinding each valve to its own seat. A coarse compound can be used at first, this being wiped off and the finishing grinding done with fine compound. Ready prepared valve grinding compounds will be found more convenient to use than those prepared in the shop.

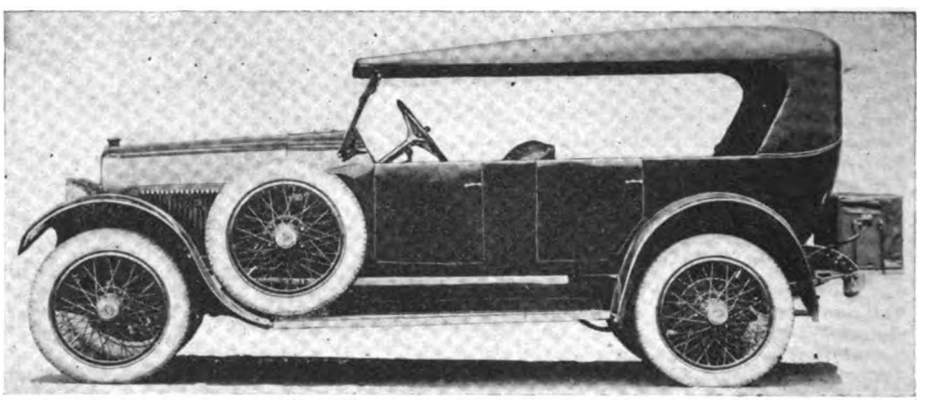
Before replacing the valves, all traces of grinding compound must be thoroughly removed as even a very small amount will do a great deal of damage.

After replacing the valves, lifting the springs and inserting the pins, the tappet clearance will have to be adjusted. The clearance on the intake should be from .003 to .004 in., and on the exhaust from .004 to .006 in. Various manufacturers recommend different clearances, depending on the construction and materials, and these instructions should be adhered to in preference to others. Valves which have just been ground should be given slightly more clearance as the valve will settle down when it gets into its seat. A readjustment after a few hundred miles is preferable.

The use of electric, pneumatic or hand oscillating valve grinders will save time in grinding, and there are one or two makes of multiple valve grinders for grinding more than one valve at a time.

New Westcott Phaeton Has California Top

A NEW seven-passenger phaeton has been brought out by the Westcott Motor Car Co. This car is distinguished by the fact that it is the first touring car with a permanent type of top as standard equipment. The price will be $1,990, or $100 more than the seven-passenger C-48. The top is of California type with a rigid frame. It is braced with angle iron and the rear quarters are steel sheathed. The car is known as the Larger Six. It is mounted on a 125 in. wheelbase. The equipment of the car is particularly complete, including storm curtains which are designed to fit with the Westcott permanent top. There is a cowl ventilator controlled by a rod on the instrument board. For $100 additional, a rigid frame plate glass window enclosure is provided, which is designed to give practically a closed car appearance and weather protection. One of the features claimed for the new model is the particularly complete finish, seventeen coats hand rubbed with a semi-baked finish being employed.

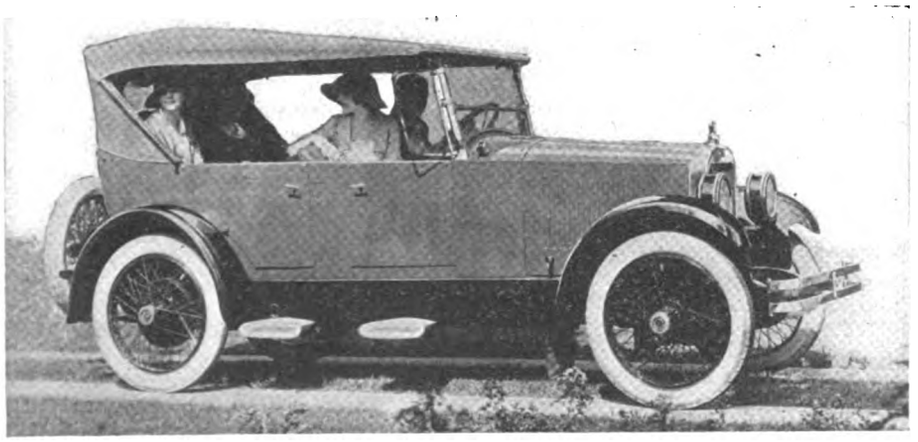


The Westcott Larger Six with Permanent Top, $1990

Units in New Westcott

The units employed in the Westcott Larger Six chassis include the Continental type 12-X six-cylinder engine; 3½ by 5¼ in. bore and stroke. The radiator is Fedders; ignition and other electrical equipment, Delco; battery, Willard, 120 amp. hr. capacity; carbureter, Rayfield; axles, Timken, steering gear, Gemmer, and the chassis is provided with the pressure gun system.

Cleveland Chesterfield Special, $1260



This new body model is finished in biege brown and upholstered in Spanish leather to match. The rear of the body is fitted with aluminum trunk guards, an aluminum trunk rack and behind this an extra wheel. Other equipment includes spring bumper in front, windshield wings, cowl ventilator, rear vision mirror and set of five wire wheels. The price is $1260

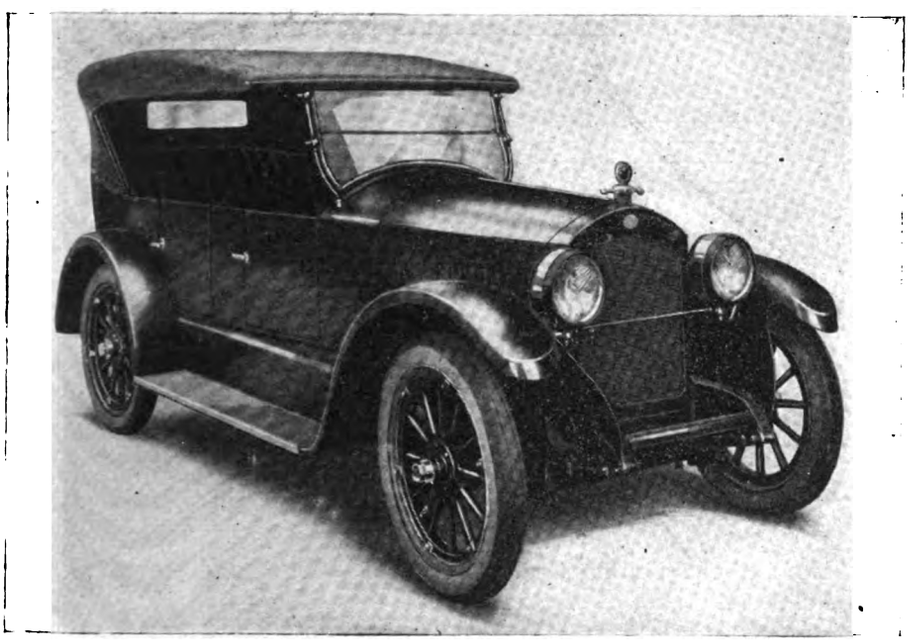
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Anderson Producing Light Aluminum Six

THE Anderson Motor Co. is bringing out a new Light Aluminum Six, the 5-passenger phaeton model of which is to sell at $1.195. The price on the Series 90 phaeton model is $1,650. A closed model will be put out later at a price that will be very little in advance of the phaeton model. The new model is shorter than the old one, having a 114 in. wheelbase. The engine is Continental, Model 6-Y. Other standard parts are Borg & Beck clutch, Salisbury front and rear axles and Westinghouse starting, lighting and ignition.

The springs are semi-elliptic and are 37 in. in front and 57 in. in rear with tapered leaves. The tires are 32 x 4 cord and the weight of the phaeton model fully equipped is 2,450 lb. The construction of the cowl and hood brings the body forward four inches, which really gives the equivalent of a 118 in. wheelbase in actual body length. The top is clear vision with gipsy side curtains, upholstered in genuine leather. The headlights are drum type and a Moto-Meter and Alemite system are part of the standard equipment.

The car takes its name from the fact that the body is covered with aluminum on a framework of ash. The previous line of Anderson models, known as the Series 40, are to be continued along with the Light Aluminum Six.

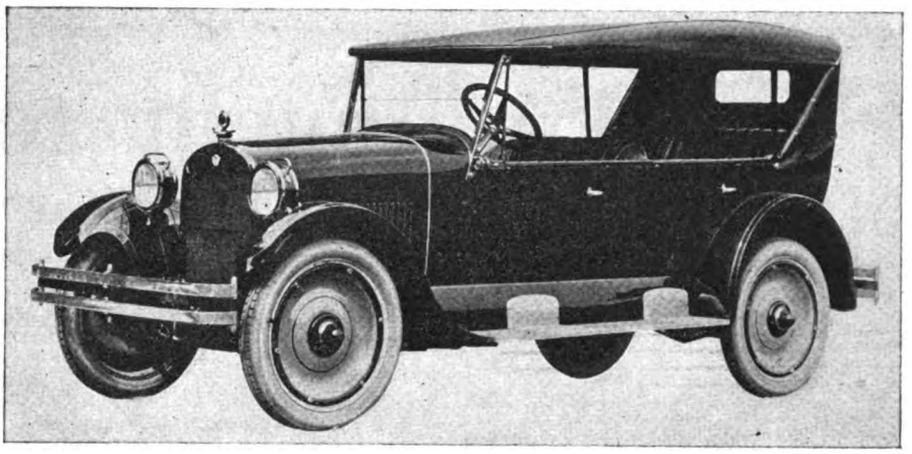


The Anderson Light Aluminum Six, $1650

New Reo Phaeton Is $1,745

A NEW 5-passenger phaeton has been added to the Reo line. The chassis is the standard T-6, but the regular furnishings and equipment are considerably augmented. The price is $1,745.

The car is equipped with 32 x 4 in. steel disk wheels, and the body itself is of the semi-sport type. The body is somewhat narrower than the standard 7-passenger body, and will comfortably carry four or five passengers. The finish is in dark blue, striped with ivory, and the trimming is Spanish gray, hand buffed leather. The seats are so arranged that passengers sit low in the body in a comfortable position.

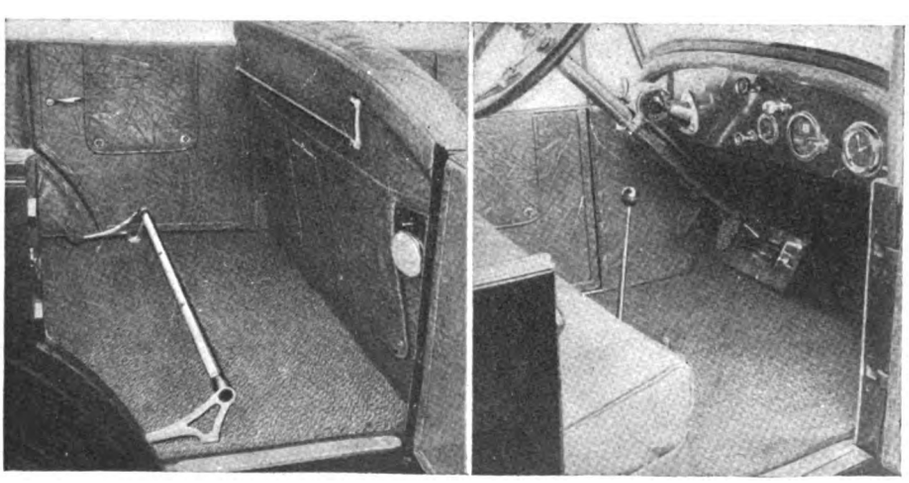


The new Reo phaeton, $1745

The top is of new design, with gray interior trimming, and the windshield has the lower half stationary. The upper half is arranged to swing in either direction. The windshield is fitted with side wings, as standard, these being in the form of heavy nickeled braces, supporting the entire shield and making a more convenient means of attaching the side curtains. A cowl ventilator is standard equipment, and aluminum moulding is fitted at the back of the hood, where it joins the cowl at the body. There are seven polished aluminum guard bars on the rear seat back panel.

The headlights are of a new design with a nickel bail or handle and fitted with dimming lenses. There is a combination parking light and automatic stop signal on the rear.

Other standard equipment includes Moto-Meter, radiator cap with ball handles, eight day keyless clock, cigar lighter, ladies' vanity case, front and rear bumpers, aluminum step plates on the running boards, nickeled foot rail with aluminum covering, windshield cleaner and radiator core finished in nickel with polished front.



Tonneau and driver's compartment of the new Reo phaeton

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Equipment to Sell

New Devices for the Car and Truck

Beacon Combination Parking and Stop Light

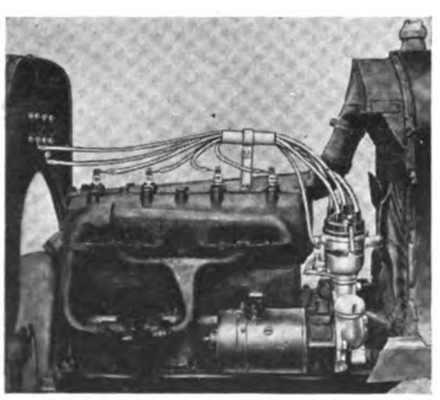
Beacon Motor Lamp Mfg. Co.,
515-517 Huron Road, Cleveland, Ohio



The stop light portion of the device is of drum design and flashes red stop signal when the brake is depressed by means of a switch carried underneath the car. The parking light shows red to the rear and white to the front and is fitted with a 2 cp. bulb effecting a considerable saving in storage battery capacity over the lighting of head and tail lamps.

Bosch Ignition System for Fords

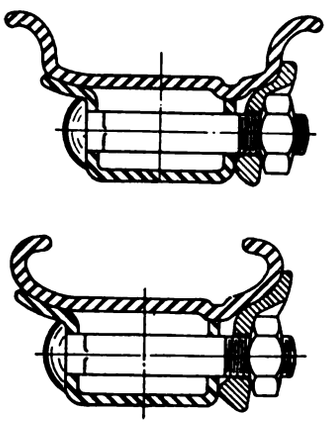
American Bosch Magneto Corp.,
Springfield, Mass.
Price $19.



This system is made up by adopting the previous $26 system by using one Ford coil instead of the Bosch coil. If the Bosch coil is desired it can be purchased later and made a part of the system, which is then virtually the same as the $26 system. When the $19 outfit is used the Bosch starting amplifier is furnished. This is mounted on the dash and operates in connection with one of the Ford coils. It has a button which the driver pushes when about to start the car, supplying a hotter spark for starting. The system uses a Bosch compensating governor and standard timer-distributor.

Stanweld Model 80 Steel Felloe

Standard Welding Co., Cleveland.



This is a new steel felloe intended for use in place of the usual type of wood felloe. The felloe is channel section, but in exterior appearance resembles the conventional wood felloe. It is light in weight and gives full circumferential contact on both sides between the detachable rim and the felloe to eliminate squeaks and prevent the entrance of dirt and water. It is adaptable to clincher and straight side rims. The clamps conform to the contour of the rim.

Hoof Silent Timing Gear

John C. Hoof & Co., 157-159 West Illinois Street, Chicago.
Price, Ford size, $7.50; other sizes, $4.80 to $40.

The gears are made from laminations of heavy duck, treated and impregnated with a gum and then heated and held under great pressure, forming a dense material resisting oil and water. One of these gears is intended to work between metal gears to dampen noise, ringing, etc. Some cars require only one gear, others more than one to get an alternation of metal and composition gears.

Brown Headlamp Reflector

Brown Reflector Sales Co.,
25 Jersey Street, Boston.



The control of the headlamp light is entirely taken care of in the reflector without the use of lenses. The character of the beam is one of extreme width and with no glare above the legal limit.

All-in-One Folding Beds for Fords

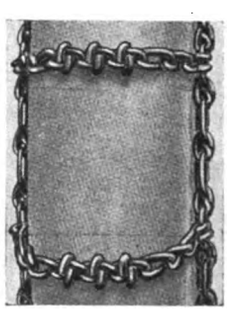
Outers Equipments Co., 812 Mayer Building, Milwaukee, Wis.
Price $14.50



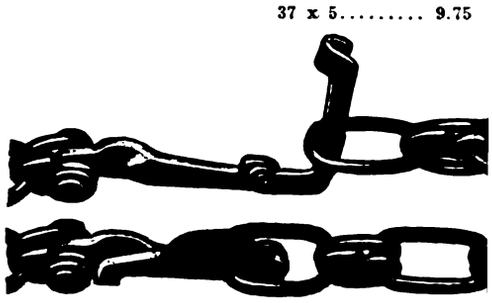
The bed rolls into a package 4½-in. in diameter by 4 ft. long and weighs 14 lbs. It can be used in a Ford sedan or touring car. The back of the driver's seat is removed and by the installation of the stringer the cushion can be shifted to a new position in the front of the car.

Weed De Luxe Tire Chains

American Chain Co., Inc., Bridgeport, Conn.
Price Per Pair



30 x 3½	$5.00
32 x 3½	5.50
31 x 4	6.00
32 x 4	6.00
33 x 4	6.50
34 x 4	7.00
35 x 4	7.50
32 x 4½	7.00
33 x 4½	7.25
34 x 4½	7.50
35 x 4½	8.00
33 x 5	8.50
34 x 5	8.50
35 x 5	9.00
36 x 5	9.00
37 x 5	9.75



The new De Luxe chains have three improvements which increase the mileage and make the attaching and locking of the chain easier. The reinforcing links which are superimposed on the main cross chains prevent breaking from excessive strains, increase the traction and increase the mileage. The twin-lok side chain link is smooth on both sides to withstand excessive strains from any angle. The lever locking connecting hook draws the side chains together with little effort and is locked with pressure of the thumb.

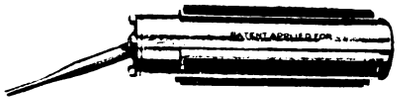
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Equipment for the Shop

New Machinery and Tools

Cylinder Auto Hone

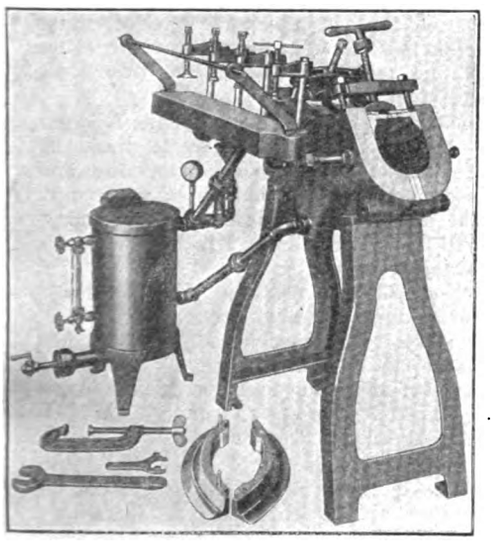
The Auto Hone Co., 1587 Main Street, Buffalo, N. Y.
Price Model A $85; Model B $95.



The device is for honing cylinder walls either after they are reground or rebored, or without the use of regrinding or reboring. The tool consists of a center arbor of cast aluminum with honing stones mounted on its circumference. These stones are held in trays and their position is adjustable to fit cylinder sizes between maximum and minimum. The steel driving handle is demountable and pressure on the stone is regulated from the driving end of the tool. As the stones are forced out radially the device centers itself. In revolving, the stones tend to keep the cylinder cylindrical. Model A for cylinders from 2⅛ to 3⅜. Model B for cylinder 3½ to 4½. Extra stones $1. each. The tool is operated by a portable electric drill.

Western Single Cavity Adjustable Tire Mold

Western Rubber Mold Co.,
321 North Crawford Avenue, Chicago

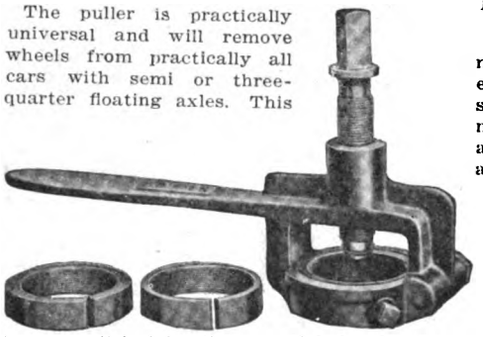


The single cavity adjustable passenger car tire mold can be adjusted to fit all sizes of passenger car tires. This is accomplished by having the cavity in separate halves, and held together by quickly adjustable bolts. The cavity can be widened or narrowed to any size by the use of spacers between the molds to form the larger sizes and reducing shells for the smaller sizes. By being adjustable laterally, as well as perpendicularly, the insertion and removal of tires from the molds is a very simple and easily accomplished operation.

Thomason Universal Wheel Puller

Shepard, Thomason Co., 506 West Pico Street, Los Angeles, Cal.

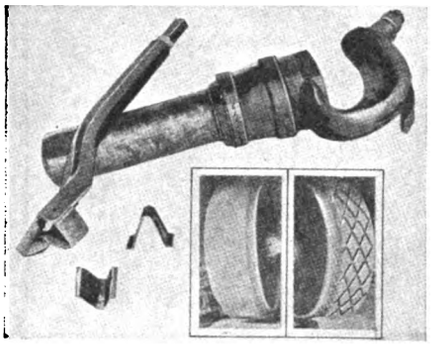
The puller is practically universal and will remove wheels from practically all cars with semi or three-quarter floating axles. This



is accomplished by the use of hub adapters which are tapered on their outer circumference to fit the receiving bore and exert great clamping power on the hub. The taper allows quick insertion of adapters. A blank adapter allows threading for special hub caps. A steel ball imbedded on the point of the wheel prevents the dragging up of metal on the axle when the pressure is applied.

Boyer Chipping Hammer for Grooving Solid Tires

Chicago Pneumatic Tool Co.,
6 East Forty-fourth Street, New York City

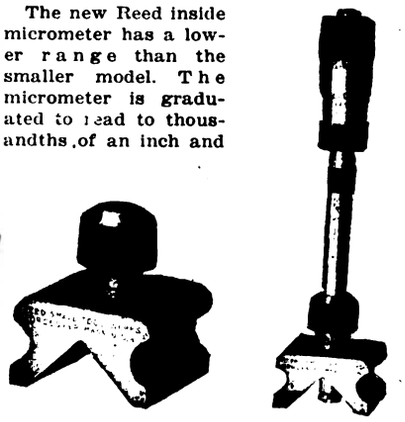


Solid tires can be regrooved in less than an hour with a pneumatic hammer fitted with a special tool holder and cutting knife. The tool holder limits the depth of the cut and the blade is driven through the rubber, completing a groove at each operation. The tool can be operated by any air power that will properly inflate pneumatic truck tires. The illustrations show the tool and a tire before and after grooving.

Reed Height and Alinement Attachment for Inside Micrometer

Reed Small Tool Works, Worcester, Mass.

The new Reed inside micrometer has a lower range than the smaller model. The micrometer is graduated to read to thousandths of an inch and



and has ½ in. run of spindle with a measuring range from 2 in. to 32 in. A detachable handle allows the micrometer to be used for right or left handed work. The height gage attachment consists of a hardened steel brace for obtaining the height of projection from plane surfaces. The V groove at the bottom of the base allows for measuring distances between shafts.

Little Giant Pipe Wrench

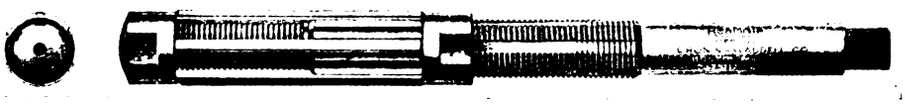
Greenfield Tap & Die Corp.,
Greenfield, Mass.

The wrench has the end opening feature familiar to users of machinists' wrenches. The advantages claimed for the wrench are ease of handling pipes in corners, close to walls and similar confined places. It is possible to get in close places to turn body bolts, etc., and if the wrench will not take hold in one direction, the jaws can be reversed. It has no springs, rivets, frame or pins. It is made in 8, 10, 14, 18 and 24-in. sizes of which the three smaller are already on the market.



Reamrite Reamers

Cronin-Waddell Co., 104-106 Portland Street, Boston.
Price $4.50 to $24.



The reamers are of the expansion type and are so designed that each reamer will expand to overlap the smallest size of the next reamer. It is possible to sharpen the blades on a cylindrical grinder or a lathe with an electric tool post grinder.

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Repairshop Shortcuts

Look at It from the Outside

AFTER seeing shortcut No. 3349 in action we asked another shop manager whether his taps and reamers ever got rusty. He said that he did not believe they did but did not know. We went over to the rack and, while the much used sizes were free from rust, there were some of the seldom used sizes that were getting in bad shape.

Look at your own shop this way. Read these ideas and see if they won't apply in your organization and save you money or time.

Don't assume that things are as good as they can be. Then if you have some other good ideas, send them to Motor World. We pay $1 each for those accepted. The ideas must be practical and must not have been previously used in this department.



No. 3349—Keeping Oil on Fine Tools—The rack containing reamers, taps, dies, etc., is in shelves, each slanting toward the front and made oil tight. A gutter runs along the bottom of each to catch the oil and return it to a can.—Don Hastings, Williams & Hastings, Detroit.

No. 3350—Insulating a Screw Driver Handle—A screw driver handle is insulated for high tension work around spark plugs by melting up an old talking machine record, first breaking it into small pieces, placing them in tin can which is placed on a hot stove. When the record melts, the handle of the tool is dipped in and allowed to cool. Several coats of material can be put on.—Myron Baker, Logan, Utah.

No. 3351—Three Point Support Machine Tools—Where the floor is uneven, a machine tool can be mounted on three points to insure accuracy of alignment. Two heavy wooden blocks are mounted to the legs of the tool, one of these being bolted at two points and the other at one point.—J. M. Alden, Aberdeen, Scotland.

No. 3352—Piston Ring Groove Scraper—A piston groove scraper is made by breaking off a piece of piston ring and inserting it in the hole in a wrist pin. The end of the pin is filed or ground.—Will Saffer, Saffer & Kirkham Garage, Corydon, Ind.

No. 3353—An Auxiliary Vise Holder—For holding long work vertically in a vise, two pieces of hard wood or steel are placed between the jaws and a packing block of the same diameter as the work is placed at the opposite end.—J. W. Alden, Aberdeen, Scotland.

No. 3354—Cutting Connecting Rod Shims—Connecting rod shims are cut by drilling a hole through the shim and clamping it between the rod and the cap. A cold chisel or shears can be used to trim the shim.—T. F. White, Foreman-King Motor Co., Columbia, S. C.

No. 3355—Ford Transmission Stand—A stand for the Ford transmission makes it easy to hold the unit for replacing the magnets. The stand is made from an old Ford universal joint cap which is bolted through the work bench or on a separate stand.—Frank A. Valenta, Proprietor, Schwertner Garage, Schwertner, Texas.

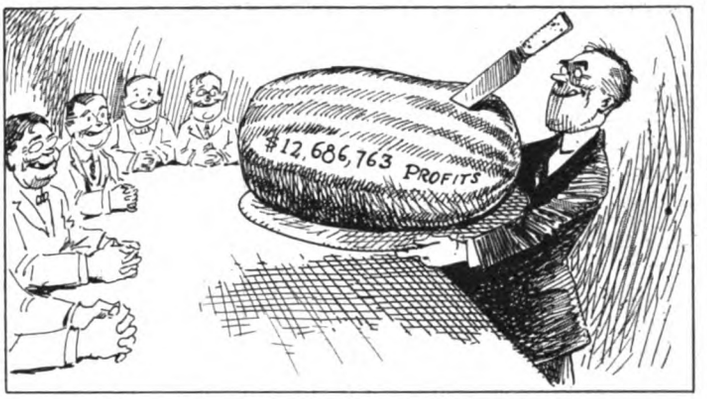
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Along the Automotive Newsway

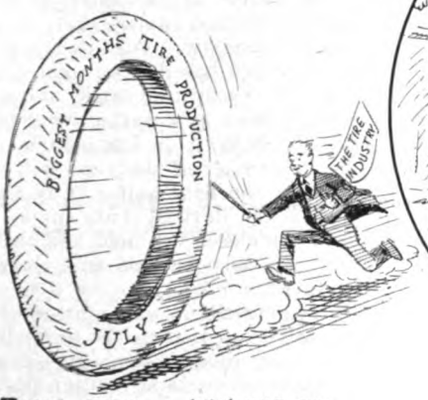
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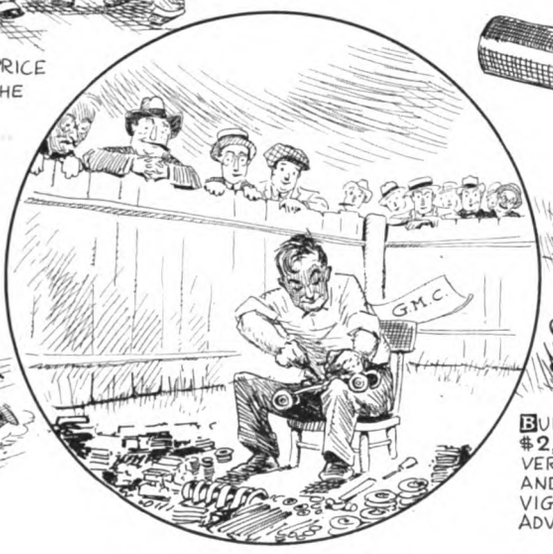
IT LOOKS AS IF A LOWER RETAIL PRICE OF GASOLINE WILL RESULT FROM THE FEDERAL GAS PROBE



NICE MELONS ARE IN SEASON — STUDEBAKER COMMON BRINGS PROFITS OF $12,686,763 FOR FIRST SIX MONTHS OF 1922



AKRON, AUG. 3.— JULY WAS THE BIGGEST MONTH FOR PRODUCTION IN THE ENTIRE HISTORY OF THE RUBBER TIRE INDUSTRY OF AMERICA



GENERAL MOTORS CORP. TO BUILD 5000 COPPER COOLED CARS. PRODUCTION TO START IN AUGUST



BUICK HAS SET ASIDE $2,000,000 FOR ADVERTISING PURPOSES AND WILL LAUNCH A VIGOROUS SALES AND ADVERTISING DRIVE



THERE SEEMS TO BE A GENERAL, THOUGH MILD, EPIDEMIC OF PRICE CUTTING



APPLETON, WIS., GARAGEMEN HAVE TAKEN TO STUDYING TECHNICAL BOOKS ON THE AUTOMOBILE WHICH THE PUBLIC LIBRARY THERE HAS ADDED TO ITS SERVICE



THE FIRST SIX MONTHS OF 1922 SHOWS TOTAL OF 1,148,788 CARS AND TRUCKS PRODUCED

ROCHE

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Price Cuts Follow Large Output

MANUFACTURERS ABLE TO LOWER OVERHEAD

Industry Again Passes Resulting Benefits on to Consuming Public

NEW YORK, Aug. 8—Price cuts naturally are the chief topic of conversation in the industry at this time, but it is difficult to find anything especially alarming in the changes made. None of them is sensational, and most of them have been made by highly competitive companies.

Revisions have been based on the reasonable expectation of a continuance of heavy production. They have been made possible by large output and a consequent lowering of overhead and manufacturing costs. The industry is again passing on to the consuming public the benefit of reduced production expense. This policy has had much to do with bringing the phenomenal business which the industry has enjoyed this year.

Will Affect Farm Market

This will be one of the factors which will encourage a strong farm market. Farmers have felt for two years that they were having to pay extortionate prices for the goods they needed, while not getting fair prices for their own products. They have been convinced that automobile makers are playing fair with them and for that reason are in a mood to buy when they get enough cash to go into the market for something they don't actually have to get.

The price cuts may slow up sales for August, but they will not have a really demoralizing effect unless they are followed by a second series of cuts. Such a move is highly improbable, however. Manufacturers now have their prices down to such a level that they can't go on indefinitely making them lower if they expect to operate at a profit. There are no companies in the field which expect to operate at a loss.

Many Unfilled Orders

The industry went into August with a large number of unfilled orders on hand in the plants making the more popular lines. How many of these orders will stand in the face of price reductions is problematical, but it is not likely there will be a heavy shrinkage. July business probably was about 25 per cent less than June, and it is not probable August will fall more than 25 per cent under the July level. Indications now are that business will be shaken down to a solid foundation by Sept. 1 and that the industry will go into the fall season with excellent prospects for a large sale, especially in the closed car field.

FORD TOTAL OUTPUT PERCENTAGE LOWERED

NEW YORK, Aug. 5—Analysis of passenger car production figures for the first half of 1922 shows that Ford produced only about 40 per cent of the total as compared with about 65 per cent in the same period last year. His output for the six months was about 375,000.

It is interesting to note that in the same period the Chevrolet Motor Co. produced approximately 100,000 cars. It now appears practically certain that Chevrolet will establish a record this year for the biggest production in history next to Ford. The best previous mark was established by the Willys-Overland company in 1916 with a total of 140,000.

The seasonal decline thus far has been less than normal, and conditions are entirely satisfactory for this period of the year. Factories are not forcing production as they did in the second quarter, but they are doing exceedingly well. This applies also to parts manufacturers.

The market for light trucks promises to be very satisfactory the last half of the year, and sales of heavy vehicles are running about as they have for several months past.

ROLLS-ROYCE REPORTS GAIN OF 233 PER CENT

SPRINGFIELD, MASS., Aug. 7—Sales for the second quarter increased 233 per cent over the first quarter, Rolls-Royce, Inc., reports. These sales were widely distributed as a result of the company's sales plan, establishing representatives in the principal cities.

In the factory the output also showed a satisfactory increase, as additions were made to the works force at intervals during May and June. In July, when the force was complemented throughout the different departments, an increase was reached in finished cars of more than double the average monthly shipments of any previous quarter in the history of the company. A night force in some of the departments is being considered.

Oldsmobile Dealers Optimistic

DENVER, Aug. 4—Colorado Oldsmobile dealers in convention here under the auspices of W. W. Barnett, Oldsmobile distributor, report marked improvement in business conditions and with new prices announced look for an active fall business. All anticipate an exceptional demand for closed cars at the new prices.

REDUCTIONS GREATEST IN CLOSED CAR FIELD

No Unhealthy Period of Competition Expected as Result of Revision

NEW YORK, Aug. 4—Financial interests appear to be much perturbed over August price cuts already announced. They seem to feel that these reductions will inaugurate a period of such competition that the companies may have difficulty in making a satisfactory profit.

There seems to be small basis for undue alarm on this score. Competition is not likely to be any more keen in the next six months than it has been in the past six and the price changes which have been made by the lines in closest competition do not change their relative position materially. All these reductions have been based upon expectations of quantity production and, unless all signs fail, these expectations will be realized, although it is improbable sales for the remainder of the year will be as large as in the first half. It is significant that the largest cuts have been made in the closed car field and that reductions on open models are comparatively small.

While competition will continue to be exceedingly sharp, there is small likelihood of anything resembling a price war. There seems to be enough business to go around and none of the companies proposes to operate at a loss. By increasing volume of production, they are cutting down their overhead and manufacturing cost sufficiently to offset any stiffening in material prices, except that which is of a temporary nature resulting from the mine and rail strikes.

R. & V. WILL INCREASE PRODUCTION PROGRAM

EAST MOLINE, ILL., Aug. 8—Operations at the R. & V. Motor Co., resumed after a two weeks' inventory taking, are rapidly picking up momentum and A. A. Gustafson, superintendent, says forces will be increased as fast as the arrival of materials warrants. Indications are that full schedule production will be maintained throughout the winter.

The production program outlined the first of the year intended to run the plants until Oct. 1 was run through before mid-June due to record breaking sales of April, May and June and now new materials are needed. Directors have authorized a production program on a scale larger than ever before in the company's history and anticipate material expansion in 1923.

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Makers Plan Big August Programs

KEEP EYE ON EFFECT OF LOWERED PRICES

Ready to Curtail Schedules If Public Shows Hesitancy in Buying

DETROIT, Aug. 3—With production in July running just seasonably under the three record-breaking spring months, factories in the Detroit district are entering the month of August with considerable anxiety as to the effect of price reductions on the automobile market. In the opinion of many, the reductions at this time will have the effect of causing a general holding off of buying which may continue into September.

Going into August, practically every factory had a large number of orders ahead and were assured of operation on a nearly capacity scale. There is little hesitation in saying, however, that these orders are subject to heavy reduction under the influence of a price raid, and officials are keeping in very close touch with the situation so that schedules may be quickly altered to meet the rapidly changed conditions.

Holding Off on Reductions

There is a seeming tendency on the part of a majority of factories to hold off on price reductions until the effect of the early ones has been considered. Many factories would undoubtedly prefer to maintain their present price positions if it is possible to do it without the sacrifice of their production positions. This situation will not clear itself before the first 10 days of the month.

Ford, in July, came through with another record month, the production exceeding the 151,000 figure fixed, and August schedules have been placed at approximately the same level. Ford domestic sales ran at approximately 135,000 cars and trucks and 10,000 tractors The tractors showed a slight falling off. With the foreign sales it was said the total would exceed the 151,000 schedule fixed for the month.

Schedules at Factories

Dodge Brothers opperated at close to its 600 a day schedule for the month, piling up orders on its new utility coupe several months in advance of production facilities.

Maxwell operation was at about 50 per cent of its June total owing to manufacturing changes at the plant, which are rapidly being perfected and will permit the company to resume on a schedule of about 300 daily.

The Durant Lansing factory bettered its production of 100 daily on the Durant fours and will begin manufacture this month of the Star, the low-priced car, in addition to the usual total of Durants.

Dort continues on a schedule of 50 to 70 daily.

Buick with its completely revised line has set a schedule of 185,000 for the year, a monthly total of about 15,500. This total can easily be reached with additional facilities afforded by the former Scripps-Booth plant, which is to

(*Continued on page* 42)

MOTOR VEHICLES BOON IN CHICAGO STRIKE

CHICAGO, Aug. 5—Motor vehicles provided Chicago's chief means of local transportation to-day following the strike of service lines and elevated trainmen which caused complete suspension of street cars and elevated railroad service.

Large downtown department stores and other business houses used trucks and privately owned automobiles to bring their employees to work. Persons who drove their own cars usually arrived down town with all seats filled. Motor clubs have urged that all persons driving their own cars accommodate as many passengers as possible.

The first day passed with surprisingly little confusion and showed the possibility of the second largest city in the United States getting along with motor car transportation as a substitute for street railway systems.

NEW YORK PEERLESS MANAGEMENT CHANGES

NEW YORK, Aug. 7—Distribution of Peerless motor cars in New York and the Metropolitan district, which includes Connecticut as far as Hartford and to New Brunswick, N. J., hereafter will be under the active direction of J. A. Clark, formerly sales manager of the Van Cortlandt Vehicle Corp. of New York, who took over the Peerless distribution from C. T. Silver in 1916 under the management of W. A. Woods as vice-president and general manager.

R. H. Collins, president of the Peerless Motor Car Co., announces the election of Clark as vice-president and general manager of the Van Cortlandt Vehicle Corp. and that the company will continue as a direct factory branch.

D. A. Burke, general sales manager at the factory, has been elected president of the Van Cortlandt Vehicle Corp., and Clark succeeds W. A. Woods, who has resigned.

JULY BIGGEST MONTH IN OUTPUT OF TIRES

For First Seven Months of This Year Akron's Output Exceeded 11,000,000

AKRON, Aug. 3—July was the biggest month for production in the entire history of the rubber tire industry of America.

The Akron district alone during July turned out tires on a basis of 33,000,000 a year, July production here being in excess of 2,750,000 casings. On this basis of production and upon the basis of present tire requirements, these figures mean that at their present pace of production Akron district tire companies can meet practically the entire needs of the world.

With July's astounding production figure, tire output in the Akron area for the first seven months of the current year is estimated to have exceeded 11,000,000. Tire output was considerably less during the first three months of the year than during the following three months but from Jan. 1 steadily climbed, making conservative the 11,000,000 production estimate.

107,000 Tires Daily

Daily production continues at about 107,000 tires a day here. This is a climb up from 85,000 a day six weeks ago, the increase in demand for tires which necessitated the heavier output coming at a time when practically all tire producing companies were "sitting tight" and were prepared for a seasonal slump in sales. But the falling off of sales failed to materialize when, according to all the laws of the industry based upon a study of every year's ebb and flow of production, there should have been a diminution of sales.

Whether this slump will come in August manufacturers now are not prepared to say. They were outguessed by developments to such an extent in July that they were reluctant to venture a prediction for August and are content to accept conditions as they arise.

Mitchell Executives with Kardex

TONAWANDA, N. Y., Aug. 7—A. G. McMillan, formerly director of sales for the Mitchell Motors Co., Inc., has become director of sales of the American Kardex Corp. With McMillan in his new undertaking are Paul C. Lott, previously sales promotion manager for Mitchell, and Fred T. Yeager, who was western sales manager. Lott will act as sales promotion manager and Yeager will manage the newly created automotive sales division.

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DURANT TAKES OVER MASON "ROAD KING"

Will Be Built at Flint and Bridgeport—Production, 60 Daily

NEW YORK, Aug. 7—A truck line has joined the Durant family, it being announced to-day that the Mason Road King hereafter will be manufactured under the direction of W. C. Durant. This gives him a line consisting of the Locomobile, the Durant Four and Durant Six, the Flint and the low priced Star.

The truck, which is of 1 ton capacity, will be made both at Flint and at Bridgeport and each factory will turn out thirty a day. A. C. Mason is president of the truck company.

The Mason Road King chassis will be furnished with all of the standard types of bodies, including stake, delivery and bus, and the price will be $1,200. It carries a four cylinder motor of 35.40 hp. and the gear reduction is 4.9 to 1, which makes 40 miles an hour with full capacity load a possibility. The wheelbase is 131 inches and the weight of the chassis with hood and fenders is 2,950 lbs. Rear springs are 2½ in. wide and 38¼ long, and the front springs are 28½ in. in length. Cord tires, 34 x 5, are standard equipment as also are electric starter, electric lights and electric horn.

30,000 Durants Built

NEW YORK, Aug. 7—The anniversary of the first Durant year was celebrated last Friday. A year ago that day the first Durant car was placed on public exhibition in New York City. Since that time 30,000 Durants have been produced, of which number 14,755 came through the second quarter of 1922.

FORD'S COAL SUPPLY WILL LAST 14 DAYS

DETROIT, Aug. 5—Ford Motor Co. has but fourteen days supply of coal, according to an application for priority shipments filed with the Michigan State fuel administration offices in Lansing this week. If supplies are not available within that time its plants at River Rouge and Highland Park, and the Lincoln plant will be compelled either to close or go on such limited production as may be possible through the use of Detroit Edison power or auxiliary power generated with other fuel than coal.

Up to the issuance of the priority regulations by the Interstate Commerce Commission the company had been hauling daily supplies over its Detroit, Toledo & Ironton railroad, but this supply is now cut off. Without coal it will be compelled to cut off its supply of coke which it has been selling to other large car manufacturing companies in the district, and will likewise be unable to furnish gas by-product of its coke plant to the city.

USED "SPLIT" PLATES; PENALIZED BY STATE

BOSTON, Aug. 2—A Roxbury dealer was bringing over from New York six new cars. But it operates only three or four dealer number plates.

So three sets of plates were taken, and the real numbers issued by the state authorities were placed on the front of each vehicle. On the rear were cardboard numbers.

One of the motor registrar's deputies saw the cars coming through Hudson and stopped them. After making an investigation the facts were reported to Motor Vehicle Registrar Goodwin. His assistant went over the facts and then suspended the dealer's registration for ten days, and also the licenses of the men driving the cars.

Under the law substitute plates are not allowed to be used except where one has been lost, and application made to the motor registrar for a new one. Pending its arrival a substitute may be used. Many owners and dealers never apply for a new one, but make their own substitute, so a crusade will be opened against this, and also against the split plates, because it deprives the state of revenue for full sets.

HORACE E. RICE DIES WHEN TRAIN HITS CAR

SPRINGFIELD, MASS., Aug. 4—Horace E. Rice, assistant to the president of the American Bosch Magneto Corp., was killed to-day when his automobile was wrecked by a Pennsylvania railroad train at a grade crossing in Oxford, Pa. He was on a trip that was to have comprised the principal cities of the middle west. Rice was an ignition expert and came to Bosch from the Atwater Kent Manufacturing Co. of Philadelphia last September.

Bid for Allen Rejected

COLUMBUS, Aug. 8—Only one bid was received July 31 by W. C. Willard and George A. Archer, receivers for the Allen Motor Co., for the plant located on Dublin Avenue. This property is on the tax duplicate for something over $303,000 and the bid was so low that it was not considered. Bids will again be received by the receivers August 14.

Apco Wins Injunction

PROVIDENCE, R. I., Aug. 5—A temporary injunction restraining the Hudson Motor Specialties Co. of Philadelphia from alleged unfair advertising and false representations concerning the Apco Manufacturing Co. of Providence, has been granted by Federal Judge Arthur Brown, following the hearing of arguments.

TRUCK WEIGHTS NOW CALIFORNIA ISSUE

County Supervisors in State Want Maximum Fixed at 22,000 Pounds

LOS ANGELES, Aug. 8—The county supervisors of California undoubtedly sounded a battle-cry when, in convention at Eureka, their legislative committee reported in favor of 22,000 pounds as the gross maximum weight on State highways and the committee's report was adopted unanimously by the convention.

The county supervisors have absolutely no jurisdiction over the State highways, but in going on record for 22,000 pounds they threw down the gauntlet to truck owners and dealers, who are advocating a gross maximum limit of not less than 26,000 pounds. Undoubtedly this means a fight will be waged at next winter's session of the legislature.

The supervisors, by their action, publicly revealed the political line-up in the State. The California Highway Commission has jurisdiction over State roads and the supervisors control weight limits on county roads. The present law permits 30,000 pounds on State roads and, by going on record as favoring a decrease in this to 22,000 lbs., it becomes apparent the commission has lined up the supervisors to help to bring about a reduction in the State through the legislature. There are 58 counties in the State and 5 supervisors in each. There are but 120 members of the legislature, so the preponderance of political influence that can be exerted upon members of the legislature through the supervisors is what the commission believes will prove a trump card.

Supervisors of some counties have gone on record as favoring the prevention of the use of motor vehicles equipped with other than pneumatic tires.

DODGE SOON TO HAVE FACTORY AT WINDSOR

DETROIT, Aug. 7—Plans for the erection of a Dodge Brothers factory in Windsor have not yet reached a point where the company will make an announcement of its plans, or the extent to which it will go in a Canadian investment, but it is definitely determined that the company will build soon. The property obtained is at the west end of Windsor, an option having been taken on it about a year ago. The former owner was M. G. Campbell, manager of the Windsor branch of the Kelsey Wheel Co.

The system of incorporating certain Canadian made parts into the Dodge Brothers cars exported into that country will be continued for the present, the lease the company holds on the Canadian Pacific dock remaining, though subject to cancellation. The new factory will provide for an all Canadian built car, it is understood, and will not be assembled from parts made in the Detroit plant.

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STUDEBAKER REDUCES LISTS ON FULL LINE

Largest Reductions, $175 to $300, Are Made on Special Sixes

SOUTH BEND, IND., Aug. 5—Substantial price reductions have been announced by the Studebaker Corp. of America on all its models effective Aug. 1. The reductions range from $70 to $200 on the light sixes and $175 to $300 on the special sixes, and $135 to $225 on the big sixes. The new schedule is as follows:

	Old Price	New Price
Light Sixes:		
Chassis	$875	$785
2-passenger roadster	1,045	975
Touring car	1,045	975
Coupe	1,375	1,225
Sedan	1,750	1,550
Special Sixes:		
Chassis	1,200	1,000
2-passenger roadster	1,425	1,250
Touring	1,475	1,275
4-passenger roadster	1,475	1,275
Coupe	2,150	1,785
Sedan	2,350	2,050
Big Sixes:		
Chassis	1,500	1,300
Touring	1,785	1,650
Speedster	1,985	1,785
Coupe	2,500	2,275
Sedan	2,700	2,475

CHANDLER, CLEVELAND LOWER THEIR PRICES

CLEVELAND, Aug. 5—Price changes in both the Chandler and Cleveland lines have been announced. With the Cleveland the drops ranged from $20 to $100 and with the Chandler from $50 to $300. The new lists are as follows:

CHANDLER

	Old Price	New Price
5-pass. Phaeton	$1,595	$1,495
4-pass. Chummy Roadster	1,595	1,495
2-pass. Roadster	1,595	1,495
7-pass. Phaeton	1,695	1,645
Dispatch (open)	1,695	1,645
Royal Dispatch	1,795	1,745
Coupe	2,295	1,995
5-pass. Sedan	2,395	2,295
7-pass. Sedan	2,395	2,375
Limousine	2,995	2,895

CLEVELAND

	Old Price	New Price
5-pass. Phaeton	$1,195	1,095
Chesterfield	1,295	1,260
2-pass. Roadster	1,175	1,085
Sedan	1,595	1,585
Coupe	1,550	1,495

New Miller Lists

AKRON, Aug. 7—Price reductions averaging 10 per cent on cords and 12½ per cent on fabrics is announced by the Miller Rubber Co. The 30 x 3½ cord, which formerly sold at $24.75 and more recently at $18, is priced at $15.95 on the new list. There is another 30 x 3½ Miller cord at $13.95 and still another—the new Wedge tread—at $12.50. The 32 x 4 cord has been dropped from $32.40 to $29.15, and the 35 x 5 cord to $49.30. Fabric prices begin at $9.

U. S. Tire Reduced

NEW YORK, Aug. 8—United States Tire Co. has announced price reductions of 10 per cent on cords and 15 per cent on fabrics, with the exception of Ford sizes, which remain unchanged.

HUPP'S QUOTATIONS DROP $100 TO $200

DETROIT, Aug. 7—Reductions in the Hupmobile line range from $100 to $200. In addition a price of $1,025 is quoted on the chassis. The new list is as follows:

	Old Price	New Price
2-pass. roadster	$1,250	$1,150
5-pass. phaeton	1,250	1,150
Coupe	1,835	1,635
Sedan	1,935	1,785
Roadster coupe	1,485	1,335
Chassis	—	1,025

DORT LARGE SEDAN QUOTED $60 LOWER

FLINT, MICH., Aug. 7—A revised list is offered by Dort, which has raised prices on three of its models, dropped on one and stood pat on the two open jobs. The only reduction is on the large sedan, which now is $60 cheaper than before. The new list is as follows:

	Old Price	New Price
2-pass. roadster	$885	$885
5-pass. phaeton	885	885
Large coupe	1,315	1,350
Small coupe	1,065	1,120
Small sedan	1,115	1,150
Large sedan	1,445	1,385

JEWETT OPEN MODELS TAKE DROP IN PRICE

DETROIT, Aug. 7—Price changes on the Jewett announced by the Paige Detroit Motor Car Co., effective Aug. 6, lowers the price on the open models $70, while on the sedan it is advanced $70 and the coupe $50. The revised list is as follows:

	Old Price	New Price
5-pass. phaeton	$1,065	$995
3-pass. roadster	1,065	995
5-pass. sedan	1,395	1,465
4-pass. coupe	1,395	1,445

CHALMERS REDUCTIONS GO FROM $160 TO $400

DETROIT, Aug. 7—Price reductions ranging from $160 to $400 are announced by the Chalmers Motor Corp. as follows:

	Old Price	New Price
2-pass. roadster	$1,345	$1,185
5-pass. phaeton	1,395	1,185
7-pass. phaeton	1,495	1,345
Coupe	1,995	1,595

President Hardy on Vacation

DETROIT, Aug. 5—A. B. C. Hardy, president and general manager of the Olds Motor Works, is taking his fourth vacation in 30 years. He left for Pittsburgh Monday where he will speak to a meeting of Olds Pennsylvania dealers.

NASH CUTS PRICES FROM $50 TO $200

Biggest Reductions Are on Closed Models of 6-Cylinder Line

KENOSHA, WIS., Aug. 5—Price reductions ranging from $50 to $200, effective Aug. 2, have been made by the Nash Motors Co. The biggest cuts are on the two closed jobs in the six cylinder line and the smallest on the two open types in the four cylinder field. The new list is as follows:

SIX CYLINDER

	Old Price	New Price
5-pass. phaeton	$1,390	$1,240
7-pass. phaeton	1,540	1,390
Sedan	2,390	2,190
Coupe	2,090	1,890
Roadster	1,360	1,210
4-pass. sport	1,545	1,395

FOUR CYLINDER

	Old Price	New Price
5-pass. phaeton	$985	$935
Roadster	965	915
Coupe	1,485	1,385
Sedan	1,645	1,545
Cab	1,295	1,195
Carriole	1,350	1,275

HAYNES CUTS PRICES ON ITS MODEL NO. 50

KOKOMO, IND., Aug. 7—A new price list, showing reductions of $100 on the open 55 models and $200 on the closed 55 models is announced by the Haynes Automobile Co. The revised prices became effective Aug. 2. The list follows:

	Old Price	New Price
Phaeton	$1,595	$1,495
Roadster	1,645	1,545
Coupelet	2,295	2,095
Sedan	2,595	2,395

SIGNAL TRUCK CUT $500 ON ALL MODELS

DETROIT, Aug. 4—The Signal Motor Truck Co. has cut $500 from the prices throughout its entire line. The changes are as follows:

	Old Price	New Price
Model N-F, 1 ton	$1,950	$1,450
Model H, 1½ ton	2,450	1,950
Model I, 2½ ton	2,875	2,375
Model M, 3½ ton	3,675	3,175
Model R, 5 ton	4,400	3,900

These prices are in effect as of Aug. 1.

Pierce-Arrow Reports

NEW YORK, Aug. 5—Pierce-Arrow Motor Car Co. for the three months ended June 30, 1922, reports a deficit, after interest and Federal taxes, of $11,766, against $1,400,550 for the same quarter in the previous year. The deficit for the first quarter of this year was $25,226. Operating income for the period, after allowing for maintenance and depreciation, was $348,855, against an operating loss of $828,866 last year.

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MORE GASOLINE DATA ASKED OF N. A. D. A.

Counsel for Senate Committee Seeks to Check Prices for Two Years

WASHINGTON, Aug. 5—Joint congressional investigation of rising gasoline prices will be begun the early part of next week, Counsel Gilbert E. Roe of the committee has announced. The first witness will be C. H. Welsh of the Petroleum Institute.

One of the benefits of the investigation, it has been learned, will be the establishment of a uniform gasoline price all over the country, which it is hoped can be arranged on some voluntary plan between the government and the gasoline producers.

Appeals to Association

ST. LOUIS, Aug. 5—Further assistance has been asked from the National Automobile Dealers Association by the United States Senate Committee investigating the gasoline price situation in a letter from Gilbert A. Roe, attorney for the Senate Committee on Manufactures to C. A. Vane, general manager of the association. Recently the dealer association laid before the committee data showing average prices for twelve months in twenty-eight cities selected at random throughout the country and in which a wide discrepancy existed as to retail gasoline prices.

Roe has now asked the dealer association to provide him with similar information for the same cities for the year 1920 and the first half of 1921 which, with the information already supplied by the N. A. D. A., will give a check on prices for virtually the last three years.

Since charges were made by the N. A. D. A. to the Senate Committee and to the Federal Trade Committee that gasoline prices had been "juggled" there has been a general reduction in gasoline prices of about two cents a gallon for practically the whole country. Considering this as a country-wide influence this means that a saving has been effected for motorists amounting to substantially $75,000,000. Motor clubs throughout the country have quite liberally credited the saving to the N. A. D. A. campaign.

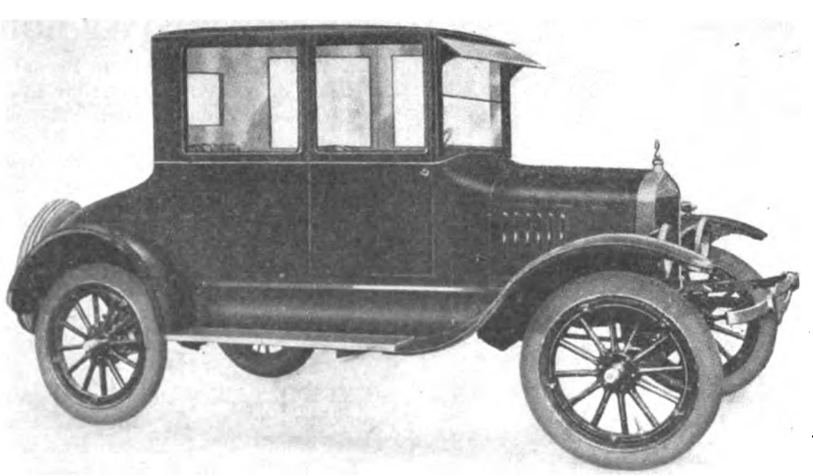
Vane has offered the entire facilities of the dealer organization to the committee investigating the gas price situation and has advised Roe that when hearings are begun the N. A. D. A. will have witnesses present that will offer additional evidence on the gasoline situation.

OFFICIALS NAMED FOR STAR COMPANY

NEW YORK, Aug. 7—Carroll Downes, vice-president of Durant Motors, Inc., and president and general manager of the Durant Motor Co. of Michigan, has been named by W. C. Durant as president and general manager of Star Motors, Inc., the personnel of which has just been announced. C. F. Daly, who also is assistant to the president of Durant Motors, has been selected as vice-president of Star. W. W. Murphy, treasurer of Durant Motors, will serve in the same capacity with the Star company, while Secretary H. F. Herbermann of Durant Motors will have the same title with Star.

Star common will be placed on the market for the first time on Aug. 10. It will be listed at $15 a share and sold in lots of from 5 to 50.

Lawrence Coupe Body for Fords



A new victoria four-passenger coupe body for Ford cars has been put on the market by the J. C. Lawrence Body Co., 3032 Locust Street, St. Louis, Mo. The new body is designed for any standard Ford chassis. It is light and strong, and is finished in low, graceful lines of higher priced cars. There is a dome light, auxiliary package compartment, full size disappearing auxiliary seat and winding window ratchets which permit the windows to be opened to any extent desired. The body melts into a rounded cowl and has a sun and rain visor

CHICAGO SHOWS CARS AT PAGEANT DISPLAY

All Makes Exhibited at City's Exposition Held on Municipal Pier

CHICAGO, Aug. 4—An elaborate automobile show which Chicago dealers and distributors are counting upon to greatly stimulate sales throughout this territory during the late summer and early fall is a part of Chicago's Pageant of Progress exposition at the Municipal Pier which opened Saturday. The automobile show is under the direction of the Chicago Automobile Trade Association.

A car having its first showing at this exposition is the American Steamer, manufactured by the American Steam Truck Co. of Chicago, at its factory at 5008 Bloomingdale Avenue. A chassis of this car with engine exposed is on display. The car is in production on the 5-passenger phaeton model, priced at $1,650.

Included in the Ford Motor Co.'s extensive exhibit of what is said to be the oldest Ford in existence, a roadster made in 1903. The car still runs. The company also shows a miniature model of its Detroit plant. The Lincoln exhibit is included with that of the Ford.

An industrial tractor exhibition similar to those which have been shown in other cities by the Ford Company occupies a large area near the entrance to the Municipal Pier.

BANK BUYS STUTZ STOCK AT AUCTION

NEW YORK, Aug. 8—Efforts on the part of Receiver Caffey to force the banks to offer Allan A. Ryan's Stutz stock at private sale having failed, the original plan of selling the securities at auction was followed out. The holdings of the bankrupt financier were put on the block and were bought in at $20 a share by the Guaranty Trust Co., which purchased all but 1,500 of the 134,414 and one-third shares that were offered, the sale of the Stutz property bringing a total of $2,686,286.06. The odd block of 1,500 shares went to the Empire Trust Co. for $30,000.

The Guaranty Trust Co., prior to the bankruptcy proceedings, held the big majority of Stutz stock which had been put up as collateral by Ryan. After the failure the bank announced it would protect itself by means of the auction block, an action that was participated in also by several other banks which held smaller blocks of Stutz stock. Inasmuch as this stock carried with it control of the Stutz company and the last financial report of the company showed it to be a going concern and prospering, interest in the sale was keen indeed.

As yet the Guaranty Trust Co. has not decided what the next step will be. It is felt that the bankers will retain control and take steps immediately to increase production and sales.

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HIDDEN FUNDS BUY CARS THROUGH WEST

Survey Made Shows Percentage of First Time Purchases— Many Cash Sales

ST. LOUIS, MO., Aug. 8—Print of the bed springs on greenbacks, rust from old tin cans, and mould on money that has been used in the purchase of motor vehicles in Boise, Idaho, indicate the source from which have come the funds for the unusually high percentage of cash motor vehicle sales since Jan. 1. One car was sold in Boise for gold. Banking chaos which hit Idaho some months ago evidently sent the workers to their stockings, and other hoarding places.

The stories of this kind of money come from all parts of the Rocky Mountains and the northwest and the Pacific coast. They come in response to that question which was asked two months ago in the Gulf States, the Atlantic States and the Blue Ridge States:

Inquiry Since May 25

How many first time buyers?

The information that was checkable in the territory through which this question has been repeated since May 25 is quite interesting. In western Texas the first time buyers were about five per cent. In Phoenix, Ariz., it ran as high as 20 per cent in all lines, but in one particular line went beyond 40 per cent. In San Diego, Los Angeles, San Francisco and inland counties of California the percentage was low. It would average less than five per cent for the whole State. In San Francisco, one dealer handling a product selling above $1,500 had made only one clean sale this year. It was not to a "first timer."

California dealers say their conditions are different, that almost everyone who comes into the State has been or is an owner of a motor vehicle. This condition seemed to be reflected in northern California.

In Oregon the percentages began increasing. In Eugene it would average 10 per cent. In Astoria, Salem, Albany, Medford it would average about 15 per cent.

Washington Shows Gain

Washington also showed an increase. In one Washington city the sales record for a $1,000 car was checked carefully. Seven weeks were picked at random, beginning with March 4. It showed that 35 of 62 sales were made to first time buyers. The dealers in this city developed intensive methods of prospect hunting.

Seattle figures indicated about 27 per cent were first time buyers. Running down through Pocatello, Twin Falls, and Boise in Idaho the percentages ran from 20 to 30 and even 45 per cent. In Idaho and Washington the percentage of cash sales was asserted to be about 50 per cent of all sales.

The coast dealers say they have had no depression and very little experience of the tough months that have hardened the dealers in the central and eastern States.

Lack of cars for delivery is still prominent in the West and Northwest. It is as bad here as it was in the South and Southeast and central States.

Break up of dealer organizations has been noted in Washington, Oregon and Idaho thus far. Banking accommodations again are found to be one of the reasons for the small proportions of the dealer organizations. Mortality has not been so high in percentage among the dealers as it has in numbers. And to reestablish some of the dealer organizations will be a task in the eastern Rocky Mountains and northern districts of that range because of bank conditions. Finance companies are also making things difficult for some of the work of building dealer organizations. Some have indicated that unless various States enact laws requiring compulsory recording of title notes and sales contracts they will withdraw from those States. This the dealers claim would be a sales resistance but see not how to avoid it.

Despite all of these things there is an apparent cheerful attitude in general and a feeling of hopefulness that the automobile industry is settling down to a healthy condition. What the future will bring in keen competition is not creating any great worry, but there seems to be a spirit of desire to get down to a rock bottom basis of sane operating practices.

Blakiston Promoted

BALTIMORE, Aug. 7—Thomas B. Blakiston, who was formerly assistant general sales manager, has been appointed general sales manager of the American Hammered Piston Ring Co. of Baltimore.

WILLYS AND OVERLAND SETTLE LITIGATION

Latter Will Pay Corporation's Receivers $750,000 in Three Notes

TOLEDO, Aug. 8—Litigation between the receivers for the Willys Corp. and the Willys-Overland Co. in relation to claims and counter claims has been settled in the Federal court when all sides agreed to an order by which the Willys-Overland Co. paid to the receivers $750,000 in three notes. The Willys-Overland Co. also will pay counsel fees.

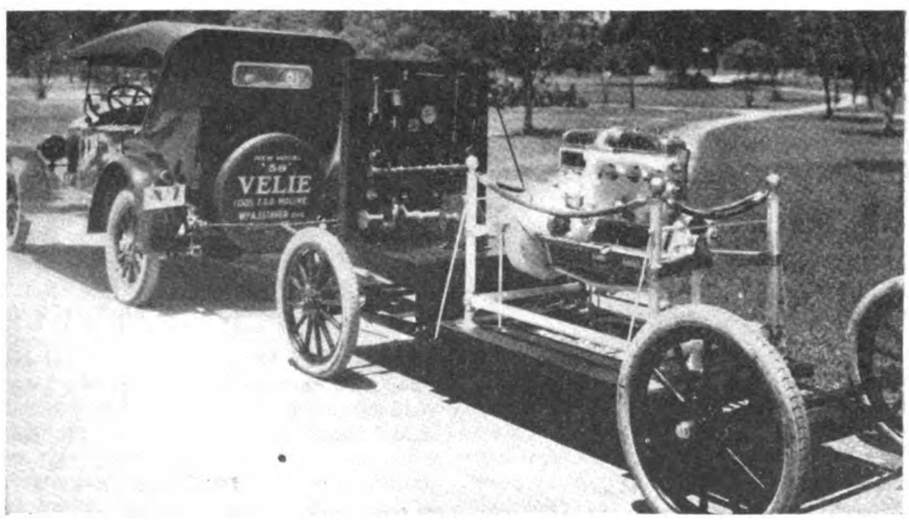
The intercompany accounts which are limited to a balance of $167,197 owing to the Willys Corp. by the Overland and to a balance of $189,554 owing to the Willys-Overland on its own account and for the Willys Morrow Co. also, by the Willys Corp. will be ironed out by special master Curtis T. Johnson.

"The court believes that it has been profitable to both sides of the dispute to avoid litigation," declared Judge Killits from the bench. "The court has had a desire to go into the merits of the case but great delay probably would have resulted with no better results."

The claims of the Willys Corp. against the Overland company grew out of the sale of the common stock to the corporation in 1919, and a contract dealing with the development of the Chrysler six car.

The Willys-Overland claims, totalling nearly $5,000,000, were based upon the expenditure made on the Chrysler Six, which it designed and developed. The Willys Corp. was to manufacture the car in its plant at Elizabeth, N. J., built at a cost of more than $13,000,000.

Demonstrating Engine and Parts



A trailer, upon which is mounted an engine, and a parts board, which displays several important parts of the new model 58 Velie, is being used effectively by William A. Estaver, Velie distributor in Jacksonville. The display is carried on the trailer, as shown in the accompanying picture. When Estaver wishes to demonstrate, he backs the car up to the trailer, jacks up the rear end, and connects a pulley on the left rear wheel to one on the engine with a belt. His demonstrations always attract large crowds and secure for him a lot of good publicity

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PRODUCTION IN JULY MAY EXCEED 215,000

Incomplete Returns Show Good Output Record for Usually Slow Month

NEW YORK, Aug. 7—Complete returns are not in on July production, but it is safe to predict that the report of the National Automobile Chamber of Commerce will show that the seventh month of the year saw a production of at least 215,000 passenger cars and trucks. A year ago in July the official production figures were 177,643.

When this approximate total for July is compared with June, 1922, the industry cannot help but feel gratified, for June, 1922, stands as a record in production. A falling off of from 20 to 25 per cent in July in this total, therefore, is certain evidence that the automobile business is more than holding up.

In the first place, the continued buying demand is being maintained, while there are at least two other conclusive reasons why conditions look good for a strong demand throughout the fall. The farmer is coming into the market right now and is buying freely, while the other factor is the heavy sales in closed cars. Whereas the buying public usually waited until at least October before ordering closed jobs, it now is placing orders.

KEEP EYE ON EFFECT OF LOWERED PRICES

(*Continued from page* 37)

be the closed car unit of the company. Under pressure, the company can build about 800 cars a day in its Detroit and Flint factories.

Studebaker is continuing at its capacity of 440 daily, having maintained this rate since early in February.

Hudson-Essex operated at the rate of 285 daily in July and plans to continue this figure in August. Hudson reports that its sedan is practically sold out for the balance of the year. The demand for its coach models continues to be a feature of its business.

Paige came through July with an output in both Paige and Jewett models of about 140 daily.

Hupp totals for the month maintained its 140 daily rate.

Columbia has increased its August total to 2000 after building about 1650 in July.

Oldsmobile maintained a schedule of about 100 daily through July and a similar total was reached at the Oakland plant.

Chevrolet totals kept close to the 1000 daily mark reached by the company in the earlier months.

Reo resumed operation in July after a two weeks' general vacation period at a daily rate of about 100 cars and speed wagons.

Liberty continued on its schedule of 30 to 35 daily, and Rickenbacker continued its 25 daily total.

The companies producing cars in the higher priced field are continuing heavy production. Cadillac, with about 100 daily, is working at capacity, as is Lincoln with a daily output of 30 to 35.

Packard total production continues on the 2000 monthly schedule, the light six being sold through to early fall.

Wills Sainte Claire is planning to add to its schedule of 25 daily.

BANK AND WAREHOUSE PLANNED FOR CHICAGO

CHICAGO, Aug. 7—A $500,000 automobile bank and warehouse, an institution unique in Chicago motor circles, will be the first of the big building project predicted last week for the South Central District. If an injunction against the property, brought for alleged violation of the Volstead act, can be dissolved, work will start within a month by Joseph Glazer, automobile dealer and investment broker.

Glazer plans to erect a sixteen story building, the ground floor to be used for his automobile banking business, the upper floors for the storage of new automobiles by firms along automobile row. Dealers and manufacturers can store their cars here and borrow money from Glazer on warehouse certificates.

MAY BUY FACTORY FOR NEW STEAM CAR

ELGIN, ILL., Aug. 4—It was announced the American Steam Truck Co. of Chicago, manufacturer of the American steam passenger car, has signed a contract for the purchase of the plant of the Duty Motor Corp. here. The Duty company was established a year and a half ago to manufacture trucks here but encountered financial difficulties and only a few trucks were made.

The plant has more than 22,000 sq. ft. of space and is said to be well adapted for motor car manufacture. R. R. Howard, president of the American company said that although the contract has been signed it is subject to ratification by the stockholders of the Duty company and the Chamber of Commerce of Elgin and that it could not be announced definitely that the deal would be closed.

NEW EARL ROADSTER IS PRICED AT $1,485

JACKSON, MICH., Aug. 7—Earl Motors, Inc., has brought out a new custom roadster priced at $1,485. The new body model, which is mounted on the standard chassis, is offered in three choices of paint and upholstery. The luggage space in the rear deck gives ample room for golf bag and week-end kit. Radiator, lamps, funnel ventilators and windshield frame and standards are all nickeled. Ignition and dimmer switch are located on the left side to facilitate driving at night. Wire or disk wheels with cord tires are regular equipment.

AMERICAN VEHICLES TO STAY IN GERMANY

Department of Agriculture Decides Not to Seek Recovery of Sold Trucks

WASHINGTON, Aug. 7—The sale of approximately 1800 trucks, recently made by General Henry C. Allen, in charge of the Army of Occupation in Germany, will not be contested by the Department of Agriculture which, through its representative abroad, has agreed to waive the department's claim to the trucks.

All of the automotive equipment sold by the Army of Occupation when it withdrew from Germany had previously been offered to the Department of Agriculture, which in turn was to proportion it out among the states to be used in highway building.

Without authority, it was charged by the Department of Agriculture, the War Department sold the 1800 trucks to the highest bidders in the occupied area. A representative of the bureau of roads went immediately to Germany and reported that the sale of the trucks has been so nearly consummated that for the agricultural department to insist on its right to the trucks would embarrass this government with a foreign country. Consequently the agricultural department has announced that it will not re-import to this country the expected trucks.

It is not thought likely, however, that even if the trucks had not already been sold, the full number would have been re-imported, as the bureau of road's representative reports that a large percentage of the trucks, including some passenger cars, would not be worth re-importing to America.

HUDSON, ESSEX MADE $1,264,071 IN JUNE

DETROIT, Aug. 7.—The June earnings of the consolidated Hudson and Essex companies were $1,264,071, or more than $1 per share, according to the report issued by President Roy D. Chapin of the Hudson Motor Car Co.

This report is for the seven months' period ending June 30, 1922, and shows the net income of the Hudson Motor Car Co. to have been $3,041,774, after provision for Federal taxes.

This includes only one month's earnings of Essex Motors, as the shares of stock of that company were not acquired by the Hudson Motor Car Co. until the end of May.

The consolidated balance sheet of the two companies as of June 30, 1922, shows: Cash in banks and on hand, $4,050,195; sight drafts for car shipments, $1,963,882, and accounts receivable, net of reserves, $576,493.

Accounts payable, for invoices not due, covering materials and current expenses, are $4,060,314, and accrued accounts and distributors' deposits, $1,050,763.

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WASHINGTON DEALERS CHOOSE TITUS HEAD

Governor and Representatives of Industry Speak at Olympia Convention

OLYMPIA, WASH., Aug. 4—L. E. Titus of Centralia, Wash., was reelected president of the Washington Automotive Trade Association at the close of the most successful State meeting in the history of the trade association work which was begun in this State eight years ago.

Among many features were the addresses by State officials, pledging cooperation and service to the motor trades. Chief of these was the assertion by Gov. L. F. Hart, at the close of his address this morning.

Gov. Hart Speaks

"Never in my administration will I permit a gasoline tax that is excessive," said Gov. Hart, and he followed with the announcement that he has called a conference of governors of California, Oregon and Washington, for the purpose of discussing a uniform gasoline tax for Pacific coast States.

Reduction of the number of automobile dealers in Washington and in increase in the sales of new motor vehicles in the last year, was an announcement of Fred J. Dibble, head of the license department.

From September of 1921 to July 1 of 1922 the registration of new motor vehicles was 12,365 greater than the registration of new motor vehicles from September, 1920, to September 1921.

To Seek Change in Taxation

Increase of the speed limit on State highways from 30 to 35 miles an hour will be recommended to the State legislature. The convention adopted a resolution asking the change.

Readjustment of the automobile taxes will be sought in the next session of the legislature. Reports presented to the convention were that automobiles have an assessed valuation of 4 per cent of the total of personal property in the State and that the automobile is paying 21 per cent of the total of taxes collected on assessed valuations.

The uniform gasoline tax conference of Pacific State governors will be asked to consider the proposal of eliminating all other forms of taxation on the automobile and levying a gasoline tax, the revenues from which will be applied exclusively to road work.

The convention took no action on this subject but there was considerable favorable sentiment. The proposal will provide that the license shall be continued but registration shall be made for only a nominal fee to cover cost and not to produce revenue. The dealers will ask that their licenses be considered only a basis equal to that of the fundamental purpose of licenses and registration and not from a revenue standpoint and that dealers be permitted to use their licenses for all purposes in connection with their business.

"Public confidence" in the motor vehicle dealer is the first essential to be considered by the prospective purchaser of a motor vehicle," said L. M. Shaw, assistant general manager of the National Automobile Dealers Association, in his address on "The Automobile Merchant of 1925." His address covered the campaign that is being conducted by the N. A. D. A. to bring into its membership the really high grade automobile merchants of the nation. Shaw also addressed the national convention on Association work in general.

P. E. Chamberlain addressed several divisions of the convention on "The Flat Rate." Wayne Hearne, A. V. Comings and others spoke to the various crafts group meetings.

The secretaries of the various counties and two conferences under the chairmanship of W. A. Simonds, secretary-manager of the Washington association. Shaw presented the outline of the Secretaries' Service Bureau, established this year by the N. A. D. A., and explained its uses and values to the secretaries. All of the secretaries signed to subscribe for the service which will be handled from the N. A. D. A. office through the State office of Simonds.

The financial report of Secretary Simonds showed that the State association was operated at a cost of $4,058 in the last year. Part of this low cost was due to the fact that the Seattle Dealers Club carried part of the expense and paid part of the salaries. The year was closed with a balance of $800 over expenses of operation.

Officers were elected as follows: President, L. E. Titus, Centralia; vice-presidents, Kenneth McAlpine, Seattle, and Edward Anderson, Ellensburg; executive committee, L. W. Harkins, Tacoma; P. E. Sands, A. S. Eldridge and J. J. Graveley, Seattle; Sig Follestad, Everett; W. E. Bronson, Olympia; L. W. Thaller, Tacoma; Ted Jungmeyer, Sedro-Wooley; M. Kulp, Spokane; Harry Andrews, Yakima; G. A. Campbell, Chehalis, and Fred Sherman, Auburn.

NEW TRUCK COMPANY PLANS TWO MODELS

GRAND RAPIDS, MICH., Aug. 8—United Motor Products has been incorporated in Grand Rapids to build two truck models, one under 1 ton, the other from 1 to 2 tons.

The officers of the company are: F. T. Hulswit, president; Harry Green, vice-president in charge of finances, and G. R. Wilbur, vice-president and general manager. Hulswit is president of the United Light & Railway Co. of Grand Rapids. Wilbur has been for the last eight years with the Republic and Ruggles companies. A. G. Boone, formerly chief engineer of the Ruggles company, will be in charge of manufacturing and engineering production.

INCREASED EARNINGS REPORTED BY G. M. C.

Total Profits for First Six Months, 1922, Were $27,403,428

NEW YORK, Aug. 5—The financial statement of the General Motors Corp. for the first six months of 1922, ending June 30, has followed the preliminary statement issued two weeks ago. The formal statement does not vary much in essential details, except that the auditors have discovered more net earnings on the common stock than was reported in the preliminary statement. Whereas the company's earnings for the first six months were first reported at $26,839,391, the formal statement gives these profits at $27,403,428.30.

The balance sheet shows total current and working assets as of June 30 to be $162,957,714.44 as against $179,214,317.05 as of Dec. 31, 1921. Total current liabilities on June 30 reached $40,232,450.98 as compared with $81,553,967.17 on Dec. 31.

DURANT INCORPORATES NEW FLINT MOTOR CO.

DETROIT, Aug. 4—Articles of incorporation of the Flint Motor Co., the formation of which was announced by W. C. Durant, were filed at Lansing last week. The company, according to its statement, is to make a six-cylinder car at Flint, the price of which will be $1,180, in the touring car model.

The company will have 500,000 shares of no-par value stock to sell for not less than $10 a share. Preferred stock will total $10,000. The articles state that $10,000 has been subscribed and $1,500 paid in.

The incorporators are listed as W. C. Durant, C. F. Daly, Carroll Downes, H. F. Herberman and W. W. Murphy, all of New York. Each of them has twenty shares of preferred stock and ten shares of common.

STEPHENS COMPLETES ORGANIZATION PLANS

FREEPORT, ILL., Aug. 7—Establishment of the Stephens Motor Car Co., Inc., as a separate organization, although subsidiary to the reorganized Moline Plow Co., has been completed.

All production activities, including accounting, service and similar features, will continue in Freeport under direction of H. J. Leonard, for many years general manager of the company, who has been made vice-president in the new corporation. O. P. Robb, another vice-president, and active many years in the sales and territory problems of the company, will be sales manager with offices in Moline, Ill., under direction of R. W. Lea, second vice-president.

Robb succeeds C. Roy Clough, many years director of sales for the Stephens.

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CHANGES IN THE TRADE

Roeske Motor Co., Davenport, Iowa, will devote its sales attention solely to the Oakland car.

Snyder Automotive, Inc., Ford dealer, will also distribute Transport trucks in the Minneapolis territory.

C. P. Beechinor, Turners Falls, Mass., has taken the agency for the Rickenbacker for Franklin County.

San Antonio Cadillac Co., San Antonio, has taken over the distribution of the Durant for southwest Texas.

Gaines Oakland Co. has established an agency and service station for Oakland cars at Augusta, Ga., acting as distributor in adjacent counties.

J. B. Lykke, proprietor of the Jefferson Garage, Springfield, Mass., has been appointed distributor for the Republic truck in that territory.

Austin Abbott of Atlanta, who has distributed the Stutz in the Atlanta territory for some time, has also taken over the distribution of the new Rickenbacker.

Torgler Motor Sales Co. has been organized to handle Stearns-Knight and Elcar cars and International trucks in Toledo territory. **Carl V. Torgler** heads the new firm.

Wills Sainte Claire Co., of Minneapolis, has been incorporated by W. H. Schmelzel, the present representative of the car; E. E. Rockhill and Paul W. Feist, all of St. Paul.

Ideal Auto & Garage Co. of San Antonio has been appointed distributor in the southwest Texas territory for the Columbia. Dealers will be established throughout the territory.

Russell Wilson, for over nine years with the **Legare Automobile Supply Co., Ltd.**, has resigned and will be associated with the new Franklin dealership to be opened in Montreal shortly.

F. Franklin, Seattle, has resigned as manager and buyer for the automobile accessory department of the Seattle Hardware Co., to become manufacturer's agent in Washington and Oregon.

L. L. Parish has taken control of the **Central Garage** in Minneapolis, one of the largest in the Northwest. He will restore a service system he abandoned a year ago when he gave up the garage.

T. Harris Smith, recently general manager of the Packard factory branch at Kansas City, has joined the factory organization of the Mitchell Motors Co., Inc., as manager of advertising and sales promotion.

Cecil L. Rood, for six years county engineer at Toledo, has been elected general manager of the **Wills Sainte Claire Co. of Toledo**, to succeed **Edward C. Gernhardt.** Rood is one of the four owners of the company.

J. H. Hansen, distributor of the Cadillac car for Omaha, Lincoln and Sioux City, has left on a seven weeks' trip abroad. Hansen will visit with his parents in Copenhagen, and will travel in Norway, Sweden, Germany, Belgium, Holland and England before his return.

Platto Co., Minneapolis, has obtained the distribution of the Stephens car in the Northwest. Taking over the plant on Tenth Street is part of the campaign by the new company. Bert A. Platto is president. He traveled four years in the Northwest for the Reilly-Herz Co., and more recently has been with the Dort.

Townsend & Varner Nash Co. has been organized for the distribution of the Nash in the Houston territory. Both Townsend and Varner have been in the motor business for a long time in Houston.

Leon G. Myers, formerly with Wright-Nash Sales Co., Huntingdon, Pa., has taken over the agency for Hupmobile and Marmon for Huntingdon and Bedford counties with selling rights in part of Blair and Center counties.

J. H. Whittington, Jr., for five years head salesman for T. K. Hays, Buick distributor at Bloomington, Ill., has resigned and has formed a partnership with **Frank Dalton**, to distribute the Rickenbacker car in central Illinois.

Witherbee Storage Battery Co., Inc., has moved its general offices and the metropolitan district sales and service station to 234 West 55th Street, New York. The manufacturing plant was recently located at Belleville, N. J.

B. F. Powers Motor Co., Inc., selling the Gardner car in the Northwest, has sold a fleet of cars to the White Bear Auto Transit Co., successor to Fuller's Auto Line, operating bus service from St. Paul to lake points and Minneapolis.

W. H. Hoyt, formerly manager of the Trenton, N. J., branch for the Packard company, and prior to that Packard distributor at Charlotte, N. C., has joined the **Packard Enterprises of Georgia, Inc.**, distributor in the Atlanta territory.

H. G. Blakeslee has been appointed by the Splitdorf Electrical Co., of Newark, N. J., as sales and service engineer for the southern territory, with headquarters with the Automotive Sales & Service Co., Splitdorf distributor in Atlanta.

W. R. Dunn has been put in charge of retail sales of the Mitchell car by the **McNulty-Dafoe Co.**, which has taken distribution of the Mitchell in the Minneapolis district. He has been fifteen years in the mechanical end of the automobile business.

Burlington Battery & Electric Co., Burlington, Iowa, has been established as a branch of the Friday Battery & Electric Corp., of Ottumwa and Sigourney. Twenty-seven systems are handled by these distributors in both the wholesale and retail fields.

C. H. Spencer, formerly with the Gilbert & Barker Manufacturing Co., has become a member of the **Clark & Breck Co.**, Winton and Velie distributors, Springfield, Mass. **R. G. Breck** and **Harry W. Stacy** have retired from the concern. The maintenance department has been put under the charge of **Charles Pettis.**

Arthur P. Hawes, formerly of the H. C. S. car organization in Philadelphia, has joined the E. W. Motor Corp., Philadelphia, distributor of Durant cars, in the capacity of salesmanager. Prior to joining the Stutz concern Hawes was general manager of the Locomobile Co. of America, having charge of the Philadelphia, Baltimore and Washington territory.

Enos Ashley, head of the **Ashley Motor Co.**, Franklin distributor in Minneapolis, has taken over the **Town & Country Motor Co.** establishment where he will have Earl sales and service and a general garage and service business. **Samuel Nelson**, many years with the Ashley company as manager of the service department, is to manage sales and service at the Town & Country, as a member of the company.

Stanley E. Stady has been appointed sales promotion and advertising manager for **Harper & Harper**, Philadelphia, in connection with the Hupmobile agency. Stady formerly was in charge of the advertising of the International Harvester Co. for the eastern district. He was an instructor in advertising and salesmanship at Temple University.

Mason Tire & Rubber Co. has opened a new branch office and warehouse at 6305 Penn Avenue, Pittsburgh, with R. W. Mason as manager and Harry P. Hahn, cashier. The territory assigned consists of practically the western half of Pennsylvania and the northern half of West Virginia, a district formerly covered by the Cleveland branch.

Dr. O. R. Kloehn, formerly of Brillion, Wis., has taken the agency for Chevrolet cars for Outagamie and part of Calumet counties, transacting business under the name of the **Fox River Motor Co.**, of Appleton, Wis. Dr. Kloehn was the president of the Calumet Auto Co., of Brillion, and sold the Buick and Chevrolet cars, Samson tractors and Delco Light and is a pioneer in the automobile business.

Charles W. Tway has been appointed sales manager of the Haynes Automobile Co. for the states of Georgia, Alabama, Florida, South Carolina, Mississippi, Louisiana, Tennessee, and a portion of North Carolina, Kentucky, Arkansas, Indiana and Texas. He was formerly Haynes distributor for the twelve southern states he will now travel. Headquarters will be maintained at Atlanta. Several additional district sales managers will be selected and new dealers will be added.

James O. Harris, formerly a sales representative for the Cadillac Motor Car Co., and **Ralph A. Parker**, formerly manager of the Toledo Cadillac Co., have formed the **Cadillac Company** at Atlanta, Ga. **Eugene Dautell** of the Toledo organization has been selected as general manager of the Toledo Cadillac Co. Harris has been with the Cadillac organization since 1914. The connection of Ralph Parker with the Toledo Cadillac company started five years ago. Dautell has also been with the Toledo company that length of time.

Campbell Wood, who formerly represented the wholesale division of the Klaxon Co. in the states of Missouri, Kansas, Oklahoma, Texas, Colorado and New Mexico, has become a sales representative of the motor equipment division of that company with headquarters in Detroit. **T. B. McBride**, recently connected with the Peden Iron & Steel Co. at Fort Worth, Tex., succeeds Wood. **E. V. Scotford**, formerly of the advertising and sales promotion department of the United States Tire Co., is now acting advertising and sales promotion manager of the Klaxon company.

New Accessory Maker

NEW YORK, Aug. 4—Paul M. Farmer, who was formerly connected with the Klaxon Co. wholesale division, and later chief engineer of its industrial division, has organized the Farco Manufacturing Co., 30 Church Street, New York City. The company is producing and will market through the trade channels, a line of automotive accessories, among them a foot accelerator for Fords.

Gilchrist Tours East

SPRINGFIELD, OHIO, Aug. 8—E. H. Gilchrist, general sales manager for the Westcott Motor Car Co., is making a trip through the East, visiting district managers and distributors in New York, Boston and other points.

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ASSOCIATION ACTIVITIES

Jobbers and Boosters Outing

BOSTON, Aug. 5—The combined annual outing of the New England Automotive Jobbers Club, made up of jobbers in automotive equipment, and the Boosters Club, New England, consisting of manufacturers' representatives calling on the automotive trade in New England, was held at the "Hummocks," a resort about twenty miles from Providence, R. I.

Approximately one hundred men attended the outing, which was by far the most successful ever held by the organization. Jobbers were present from Boston, Worcester, Portland, Springfield, Hartford, New Haven and Providence, while the Boosters came from Chicago, Washington, Philadelphia, Cleveland, New York and Boston.

The Boosters Club was organized about a year and a half ago, and now with its eighty members, it is rapidly taking national scope with a club already formed in Kansas City and others forming in New York, Atlanta, Minneapolis and Philadelphia.

The object of the club is covered by the pledge which each Booster is required to sign. In this pledge he agrees to raise the level of the automotive industry by boosting the other fellow, keeping his promises, being truthful, inspiring confidence, playing clean, having a real policy, being ethical, rendering service, not misrepresenting and serving the service that serves by giving both manufacturers and jobbers a square deal.

Regular meetings of the Boosters Club are held on the third Friday of each month. The next one is to be held in Portland with the Maine jobbers as the guests of the club.

The officers of the club are T. F. Wilson, Apco Manufacturing Co., president; D. G. Caywood, Black & Decker Manufacturing Co., treasurer, and C. M. S. Foster, manufacturer's representative, secretary. The directors are the above officers and W. C. Scott, Biflex Products Co.; George S. Fable, Thermoid Rubber Co.; Daniel Tannen, L. Sonneborn Sons, Inc.; D. G. Head, Pinkerton Elec. Equipment Co., and Ralph Green, Edw. C. Cassidy Co.

Outing for St. Louis

ST. LOUIS, Aug. 5—An attendance of more than 3500 persons marked the second annual picnic of the automobile industry of St. Louis, held July 20 under the auspices of the St. Louis Automobile Dealers Association at Lake Hill, an amusement resort near Valley Park, reached by two lines of railroad and by good motor roads. The attendance included all persons connected with the industry in any capacity. It reached its maximum during the afternoon, when the premises of the dealers throughout the city were closed.

A large platform surrounded by ropes attached to corner stakes had been erected and a number of short talks opened the exercises. Mayor Henry W. Kiel was the principal speaker, being introduced by H. F. Fahrenkrog, president of the dealers association, who was introduced by G. W. D. Donnelly, chairman of the entertainment committee, which planned the picnic. Mayor Kiel congratulated the dealers on the spirit of co-operation which the picnic indicated.

Athletic events, most of them held on a cinder track improvised on the road leading through the resort, formed the chief amusement. At the first picnic held at the same resort last summer little scrutiny was given to the persons who entered and won the athletic events and it was reported that several athletic men with no connection whatever with the automobile industry carried off the bulk of the prizes.

This year the entries were limited to persons connected with the industry and each winner was required to establish his eligibility to compete, the prizes being delivered at the end of the program. Each dealer was required to provide the committee managing the event with the list of the persons in his employ who, with the members of families, were eligible to take part.

Barbecue for Buffalo

BUFFALO, Aug. 4—The Buffalo Automobile Dealers Association held its annual outing and barbecue at Dold's Wheatfield farm. All automobile dealers of the city were there. Mayor Schwab and Gus Miller of the State license bureau also attended. In the afternoon there was a baseball game, fat men's races and thin men's races, which were followed in the evening by a campfire and clambake.

Takes Movie at Outing

LOUISVILLE, KY., Aug. 5—The first attempt at an outing by the Louisville Automobile Dealers Association was made at a summer cafe about eight miles outside of the city. It was voted to be an unqualified success by the ninety-three dealers and their salesmen who attended.

The festivities included a baseball game between the dealers located on Third Street and Broadway, two of the thoroughfares claiming the designation "Automobile Row." The game resulted in a victory for Third Street. It was played on a grassy lawn near the cafe with indoor style ball and bat.

A chicken dinner followed by an interesting talk by Richard Bean, president of the Louisville National Bank, concluded the outing. Pictures were made, including a movie of the game.

Fall Show for Los Angeles

LOS ANGELES, Aug. 5—An automobile show will be held in Los Angeles this fall. The Motor Car Dealers Association has decided on this and a committee has been appointed. There was a very pronounced demand among some of the dealers that a show be held last spring, but they lacked sufficient strength to influence enough others to put it across.

Business has been remarkably good and the show that more recently was proposed for one of the summer months will not materialize. It will be two years next winter since Los Angeles had a show, and feeling that the stimulating effect undoubtedly will be needed this fall, all of the forces will unite in favor of it.

Chicago Dealers Hold Outing

CHICAGO, Aug. 8.—The second annual field day outing and barbecue of the Chicago Automobile Trade Association was held at Deer Grove, Ill., thirty miles from Chicago, and was largely attended by dealers and their employees. The affair was in charge of an entertainment committee composed of the following: Harry Branstetter, chairman; C. E. Gregory, Arthur Jones, O. G. Temme, H. N. Fowler, Elmer Rich, H. W. Cooper, M. J. Moriarty and John Quinlan.

Atlanta A. E. A. Elects

ATLANTA, Aug. 5—Fred G. Tegder, head of the E. M. Thomas Auto Top & Manufacturing Co., was elected president of the Atlanta Automotive Equipment Association at the annual meeting here. Lon Credelle was elected vice-president, E. H. Elleby was re-elected secretary, and C. V. Hohenstein will continue as executive secretary. The membership now includes forty-eight firms in the equipment field in Atlanta.

New England Jobbers' and Boosters' Club at Outing



The New England Jobbers Club and the Boosters Club, consisting of manufacturers' representatives calling on the New England trade, joined in their annual outing recently at the "Hummocks," near Providence, R. I. About a hundred attended

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Calendar of Trade Events

CONVENTIONS

Toledo ..... September
Annual Convention of the Ohio Automotive Trades Association.

Buffalo ..... Sept. 13-14-15
Annual Fall Convention of the Motor and Accessory Manufacturers Association. Lafayette Hotel.

Santa Barbara ..... October
Annual Convention of the California Automobile Trade Association.

Chicago ..... Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

SHOWS

Watsonville, Cal. ..... Aug. 12-15
Automobile Show under the Auspices of the Watsonville Motor Car Dealers Association, J. S. Martin, manager.

Aurora, Ill. ..... Aug. 18-26
Central States Fair and Exposition.

Toronto, Ont. ..... Aug. 26-Sept. 1
National Automobile Show held in conjunction with the Canadian National Exhibition.

Columbus ..... Aug. 28-Sept. 2
Ohio State Fair.

Minneapolis, Minn. ..... Sept. 2-9
Minnesota State Fair.

Hartford, Conn. ..... Sept. 4-9
Connecticut Fair Grounds.

Wilmington, Del. ..... Sept. 4-9
Delaware State Fair.

Spokane ..... Sept. 4-9
Annual Automobile Show held in connection with the Spokane Interstate Fair, B. J. Garnet, manager.

Indianapolis ..... Sept. 4-9
Automobile and Accessory Show in conjunction with the Indiana State Fair, Automobile Show Building under the auspices of the Indianapolis Automobile Trade Association, J. B. Orman, manager.

Syracuse, N. Y. ..... Sept. 11-16
New York State Fair.

Memphis, Tenn. ..... Sept. 23-30
Annual Automobile Show held under auspices of the Memphis Automobile Dealers Association, Tri-State Fair Grounds.

New York ..... Sept. 23-30
Closed Car Show, under Auspices of Automobile Merchants Association, Grand Central Palace.

Washington, D. C. ..... Oct. 21-28
Annual Closed Car Salon held under auspices of the Washington Automobile Trade Association, Convention Hall.

Chicago ..... Nov. 13-18
Annual Show of Automotive Equipment Association.

New York ..... Dec. 3-9
Eighteenth Annual Automobile Salon, National Automobile Chamber of Commerce, Commodore Hotel.

New York ..... Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

Chicago ..... Jan. 27-Feb. 3
Annual Automobile Salon, National Automobile Chamber of Commerce.

Chicago ..... Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Minneapolis ..... Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Leaves Security Company

NEW YORK, Aug. 7—Fred A. Weber, Jr., has resigned as assistant treasurer of the Bankers Commercial Security Co. of New York, one of the largest national automobile financing companies. He will leave Aug. 15 and will take a much needed rest before accepting one of several offers he has under consideration.

Weber was one of the organizers and the second president of the Automobile Financing Credit Men's Association of New York. He now is president of the National Association of Automobile Financing Companies. He went with the Bankers Commercial four years ago as credit man after serving for some time in the credit department of the Liberty bank which is now the New York Trust Co.

M. A. M. A. Sales Increase

NEW YORK, Aug. 5—Sales by members of the Motor and Accessory Manufacturers Association for the first half of 1922 aggregated $187,500,000 as compared with $113,000,000 for the same period in 1921. Sales for June of this year were nearly double those of June, 1921. Business was almost on the same level as in May.

The New Car and Truck Description Index

Giving the date and page number on which they appeared

CARS

Ace ..... Jan. 11, 1922-26
Anderson Phaeton ..... Aug. 9, 1922-31
Anderson (Refinements) ..... Jan. 11, 1922-27
Auburn (sport model) ..... Jan. 11, 1922-22
Auburn Sedan ..... June 7, 1922-39
Bay State ..... Jan. 11, 1922-27
Buick Special 6-54 (Roadster) ..... Jan. 4, 1922-21
Buick (Special Delivery Car) ..... Mar. 29, 1922-31
Buick (Special Six-55 Sport) ..... May 17, 1922-22
Buick (Details) ..... July 26, 1922-14
Cadillac (Victoria) ..... July 26, 1922-24
Case Model X ..... Jan. 11, 1922-20
Chandler ..... Jan. 11, 1922-12
Chandler (Metropolitan Sedan) ..... June 7, 1922-38
Chevrolet 490 Sedan ..... Jan. 4, 1922-41
Cleveland ..... Jan. 11, 1922-14
Cleveland (Chesterfield Special) ..... Aug. 9, 1922-30
Cole (Coupe-Brougham) ..... Feb. 22, 1922-40
Cole (Two-passenger Coupe) ..... Apr. 12, 1922-40
Columbia Light Six ..... Feb. 1, 1922-11
Columbia (Six Shooter) ..... Jan. 11, 1922-23
Davis Model 71 (Phaeton) ..... June 28, 1922-29
Detroit Air-Cooled ..... Feb. 1, 1922-32
Dodge Bros. (Business Coupe) ..... June 7, 1922-33
Dort 1922 ..... Jan. 11, 1922-18
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Durant Six ..... Jan. 11, 1922-14
Durant Four (Sport Roadster) ..... Apr. 12, 1922-41
Earl (Cabriole) ..... July 26, 1922-17
Elcar (Refined bodies) ..... Jan. 11, 1922-26
Elgin Model 700 ..... Jan. 11, 1922-15
Essex (Engine changes) ..... Jan. 11, 1922-27
Essex (Phaeton) ..... Apr. 12, 1922-38
Essex (Cabriolet) ..... Apr. 19, 1922-40
Fox ..... Jan. 11, 1922-20
Franklin 4 ..... Jan. 18, 1922-10, 18
Franklin Six (New Coupe) ..... Jan. 11, 1922-26
Frontenac ..... Jan. 11, 1922-22
Gardiner (Coupe and Sedan) ..... July 26, 1922-24
Gearless (Steam) ..... Jan. 11, 1922-26
Goodspeed ..... Jan. 11, 1922-26
Gray ..... Jan. 11, 1922-19
Hanson, Light Six ..... Jan. 11, 1922-27
Hatfield Model 42 (New body) ..... Jan. 11, 1922-27
Haynes (7-passenger Suburban) ..... June 21, 1922-41
Hudson Coach ..... Feb. 1, 1922-12
Hudson Sedan ..... Aug. 2, 1922-40
Hupmobile (Utility Body) ..... Jan. 11, 1922-22
Jewett ..... Jan. 11, 1922-17
Jewett (Roadster) ..... June 14, 1922-38
Jewett (Sedan) ..... Mar. 15, 1922-36
Jewett (Coupe) ..... July 19, 1922-38
Kissel (Phaeton) ..... Mar. 24, 1922-32
Lafayette (Coupe) ..... Jan. 11, 1922-23
Lexington Series U ..... Jan. 11, 1922-22
Lexington 7-passenger Phaeton ..... May 3, 1922-41
Lexington (Supreme 7-pass. Phaeton) ..... May 3, 1922-41
Liberty Coupe ..... July 19, 1922-26
Liberty (New body) ..... Jan. 11, 1922-16
Liberty (Special Roadster) ..... Apr. 19, 1922-39
Locomobile (Detailed changes) ..... Jan. 11, 1922-26
Mack (New Bus Body) ..... June 21, 1922-42
Marmon (4-pass. Speedster) ..... Mar. 15, 1922-19
Maxwell (New fuel feed) ..... Jan. 11, 1922-27
Mercer (Increased equipment) ..... Jan. 11, 1922-25
Merit ..... Feb. 1, 1922-33
Milburn, Model 27-L ..... Jan. 11, 1922-24
Mitchell (De Luxe Sport Model) ..... Mar. 29, 1922-31
Moon 6-40 ..... Feb. 1, 1922-11
Moon 6-40 (details) ..... Feb. 8, 1922-31
Moon 6-40 (Chassis) ..... June 28, 1922-28
Nash Carriole ..... Feb. 1, 1922-12
Nash Four and Six ..... Jan. 11, 1922-16
National (Newport bodies) ..... Jan. 11, 1922-23
Neracar ..... Jan. 18, 1922-42
Noma (Sedan) ..... Jan. 11, 1922-24
Oakland (2-pass. Coupe) ..... June 28, 1922-28
Oakland 6-44 ..... Jan. 11, 1922-14
Oldsmobile Light Eight ..... July 19, 1922-26
Oldsmobile Model 47 (Phaeton) ..... Mar. 15, 1922-37
Oldsmobile (New Body) ..... July 26, 1922-17
Ogren ..... Jan. 11, 1922-26
Packard (New single six) ..... May 3, 1922-23
Paterson ..... Jan. 11, 1922-23
Pierce-Arrow (Changes) ..... Jan. 11, 1922-27
Pilot (Sport Model) ..... Jan. 11, 1922-22
Premier 6D ..... Jan. 4, 1922-34
Premier Model 6D ..... Jan. 11, 1922-24
Rauch & Lang ..... Jan. 11, 1922-24
Reo ..... Aug. 9, 1922-31
Reo Taxicab ..... Jan. 4, 1922-35
Rickenbacker ..... Jan. 4, 1922-32
Rotary Six ..... Jan. 11, 1922-26
Seneca (Phaeton and Roadster) ..... June 28, 1922-29
Star (Details) ..... June 28, 1922-28
Star ..... Mar. 15, 1922-14
Standard (Sterling model) ..... Jan. 11, 1922-26
Stearns (Frame changes) ..... Jan. 11, 1922-25
Stearns-Knight Six ..... July 12, 1922-29
Studebaker (1922 changes) ..... Jan. 11, 1922-21
Studebaker (Big Six Speedster) ..... May 24, 1922-43
Stutz (Left side drive) ..... Jan. 11, 1922-26
Stutz (1922 model) ..... Apr. 5, 1922-32
Sun ..... Jan. 11, 1922-26
Vauxhall ..... Jan. 18, 1922-12
Velie Model 58 ..... Jan. 11, 1922-18
Westcott 7-pass. Phaeton ..... Aug. 9, 1922-30
Westcott (Changes) ..... Jan. 11, 1922-27
Wills Sainte Claire (Sedan and Town Car) ..... Mar. 8, 1922-36

TRUCKS

Autocar (2-ton heavy duty) ..... Jan. 25, 1922-30
Commerce (Bus) ..... Mar. 8, 1922-19
Duplex (Bus) ..... Feb. 22, 1922-36
F W D (3-ton Roadbuilder) ..... Mar. 8, 1922-41
Federal Express Chassis ..... July 19, 1922-26
G. M. C. (Bus) ..... Mar. 8, 1922-30
Mack ..... June 21, 1922-42
Milburn Electric (1 and 1½-ton) ..... Mar. 8, 1922-31
Overland ..... Apr. 19, 1922-41
Schacht (2, 3, 4 and 5-ton) ..... Feb. 8, 1922-31
Steinmetz (¾-ton electric) ..... Feb. 22, 1922-30
Stewart Utility Wagon ..... July 12, 1922-30
Transport (1, 1½, 2, 3, 3¼ and 5-ton) ..... May 17, 1922-22
United States (1¼-ton) ..... Mar. 8, 1922-37
Walker-Johnson (2-ton elec.) ..... Feb. 15, 1922-31
White (Bus) ..... Feb. 22, 1922-36

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason.....A	¾-1	$1650a	3¼x5	34x5n	34x5n	W
Acason.....RB	1½	1950	3¾x5¼	36x3½	36x6	W
Acason.....H	2½	2750	4½x5¾	36x4k	36x8k	W
Acason.....L	3½	3450	4½x5¾	36x5k	36x10k	W
Acason.....M	5	4350	5 x6¼	36x6	40x12	W
Ace.....C	1½	2295	3¾x5½	34x3½k	34x5k	W
Ace.....A	2½	2795	4¼x5½	36x4k	36x7	W
Acme.....20	1	....	3¾x5	35x5n	35x5n	W
Acme.....30	1½	....	3¾x5	34x3½	34x5	W
Acme.....40	2	....	3¾x5	34x3½	34x5	W
Acme.....60	3	....	4¼x5¼	36x4	36x7	W
Acme.....60L	3	....	4½x5½	36x4	36x7k	W
Acme.....90	4½	....	4½x5½	36x5	40x10	W
Acme.....125	6¼	....	4¾x6	36x6	40x12	W
American.....25	2½	3350	4 x6	36x4k	36x4dk	W
American.....40	4	4275	4½x6	36x5k	36x5dk	W
Armleder.....20	1	....	3¾x5¼	34x3½k	34x6k	W
Armleder.....21	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder.....41-B	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder.....41-C	1½	....	4½x5¼	34x3½k	34x6k	W
Armleder..HW-B	2½	....	4¼x5½	36x4k	38x7k	W
Armleder..HW-C	2½	....	4½x5¼	36x4k	36x7k	W
Armleder..KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder..KW-C	3½	....	4½x5½	36x5k	36x5dk	W
Athas.....MD	1	1185	3½x5	32x1½n	32x4½n	W
Atterbury.....20R	1½	2475	3¾x5	34x3½	34x5	W
Atterbury.....7CX	2½	3175	4½x5½	36x4	36x4d	W
Atterbury.....22C	2½	3375	4½x5¼	36x4	36x4d	W
Atterbury.....7D	3½	3975	4½x5½	36x5	40x5d	W
Atterbury.....22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury.....8E	5	4975	4½x6	36x5	40x6d	W
Autocar.....21UF	1½-2	1950	4¼x4½	34x4k	34x5k	D
Autocar.....21UG	1½-2	2050	4¼x4½	34x4k	34x5k	D
Autocar.....27H	2	2950	4 x5½	34x5	36x7	D
Autocar.....27K2	2	3075	4 x5½	34x5	36x7k	D
Autocar.....26Y	5	3950	4½x5½	34x6	36x12	D
Autocar.....26-B	5	4100	4½x5½	34x6	36x12	D
Available.....H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available.....H2	2	2775	4 x5	36x3½k	36x6k	W
Available.....H2½	2½	3160	4 x5	36x4k	36x8k	W
Available.....H3½	3½	4175	4½x5½	36x5	40x5d	W
Available.....H5	5	5375	5 x6	36x6	40x12	W
*Avery.....	1	....	3 x4a	34x5n	34x5n	I
Beck.....A Jr.	1½	1285a	3½x5	34x4½n	34x4½n	I
Beck.....B-30	1½	1725	3¾x5	34x5	36x6	
Beck.....C-40	2	1810	3¾x5	36x6	36x6	
Beck.....D-50	2½	2396	4¼x6¼	38x7	40x8	
*Bell.....(Penn.)	½	1000b	3½x5	31x4n	31x4n	B
Bell.....M (Iowa)	1	1495	3¾x5½	35x5	35x5n	W
Bell.....E (Iowa)	1½	2100	3¾x5½	34x3½	34x5	I
Bell.....O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Belmont.....A	½	725	3¼x4¼	31x4	31x4	B
Belmont.....D	2	2575	4¼x5½	34x3½k	34x6k	I
Belmont.....F	3	3500	4 x6	36x5k	36x5dk	I
Bessemer.....G	1	....	3½x5	35x5n	35x5n	I
Bessemer.....H-2	1½	....	3¾x5	36x3½	36x5	I
Bessemer.....J-2	2½	....	4¼x5¼	36x4	36x4d	I
Bessemer.....K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem.....KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem.....CN	2	1595	4 x6¼	34x4½k	34x6k	I
Bethlehem.....HN	3	2195	4 x5¼	36x4k	36x8k	I
Brinton.....C	1½	1501	3¼x5	4x4	34x5	W
Brinton.....D	2½	2250	4½x5¼	36x4	36x7	W
Brockway.....E	1	....	3¼x5½	35x5n	35x5n	B
Brockway.....S-5	1½	....	3¾x5	36x4	36x6	W
Brockway.....SK	1½	....	4½x5¼	36x4	36x6	W
Brockway.....KR	2½	....	4½x5½	36x4	36x8	W
Brockway.....K-5	2½	....	4½x5¼	36x4	36x8	W
Brockway.....RT	3½	....	4¾x6	36x5	36x10	W
Brockway.....R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway.....T-4	5	....	4¾x6	36x6	40x6d	W
*Buick.....	½	945b	3½x4¾	31x4n	31x4n	B
Capitol.....G	1½	2975	3¾x5	35x5	38x7	W
Capitol.....H2	2½	3700	4¼x6	36x4	36x8	W
Capitol.....K2	2½	4250	4¼x6	36x6	42x9	W
Capitol.....M3½	3½	4125	4¼x6	36x5	36x10	W
Case.....	2	....	4¼x5¾	36x6	38x7	I
*Chevrolet.....	¼	510b	3½x4	30x3½n	30x3½n	B
*Chevrolet.....G	¼	650	3¼x4	31x4n	34x4½n	B
*Chevrolet.....T	1	1095	3¼x5¼	33x4n	35x5n	W
Chicago.....C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago.....C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago.....C3½	3½	....	4½x5½	36x5	36x10	W
Chicago.....D5	5	....	4½x5½	36x6	40x12	W
Clydesdale.....10	¾-1½	1485	3¾x5	34x5n	34x5n	B
Clydesdale.....18	¾-1½	1890	3¾x5	34x5	34x5	W
Clydesdale.....20	1-1½	2385	3¾x5	34x5	34x5k	W
Clydesdale.....42	1½-2	2475	3¾x5	36x3½	36x6	W
Clydesdale.....65X	2½-3	3250	4½x5¼	36x4	36x8	W
Clydesdale.....65EX	2½-3	3450	4½x5½	36x4	36x8	W
Clydesdale.....90	3½-4½	4100	4½x5½	36x5	36x10	W
Clydesdale.....120	5-6	4500	4¾x6	36x6	40x12	W
Columbia.....H	1½	1995	4 x5	35x5	38x7n	I
Columbia.....G	2½	2335	4 x5¼	36x4	36x7	I
Comet.....T	1½	1950	3¾x5	34x4	34x4	W
Commerce.....T	¾-1½	1450	3¾x5	34x4½n	34x4½n	B
Commerce.....12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce.....16	2	2150	3¾x5	35x5n	36x6n	I
Commerce.....18	2½	2495	4½x5¼	36x6n	40x8n	I
Commerce.....25	2½	2425	4½x5½	36x4	36x7	W
Cook.....51	2½	3600	4 x5½	36x6n	40x8n	W
Corbitt.....E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt.....D-22	1½	$2200	3¾x5	34x3½	34x5	W
Corbitt.....C-22	2	2600	4½x5¼	30x3½	36x7	W
Corbitt.....B-22	2½	3000	4½x5½	36x4	36x7	W
Corbitt.....R-22	†3	3200	4½x5½	36x4	30x8	W
Corbitt.....A-22	3½-4	3800	4½x5½	36x5	36x10	W
Corbitt.....AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder.....AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder.....B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder.....D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder.....C	2½	2750	4½x5½	36x4	36x7	W
Day-Elder.....F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder.....E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn.....E	1	1600	3⅝x5½	35x5n	35x5n	W
Dearborn.....FX	1½	2300	3⅝x5⅛	34x4	34x5	W
Dearborn.....F	1½	2180	3⅝x5⅛	34x4	34x5	W
Dearborn.....48	2	2590	3⅝x5⅛	34x4½n	34x7	W
Defiance.....G	1	1695a	3¾x5	35x5n	35x5n	B
Defiance.....D	1½	2095a	3¾x5	35x5n	36x6n	I
Defiance.....E	2	2275a	3¾x5	35x5n	38x7n	I
Denby.....31	1½	1485	3½x5	35x5n	35x5n	B
Denby.....33	1½	2145	3¾x5	35x5n	38x7n	I
Denby.....34	2	2395	3¾x5	36x3½	36x6	I
Denby.....35	2½-3	2795	4½x5¼	36x4	36x7	I
Denby.....27	4	3895	4½x5½	36x5	36x5d	I
Denby.....210	5	4295	4½x5½	36x6	40x6d	I
Dependable.....A	¾-1	1050	3⅝x5½	34x5n	36x6n	W
Dependable.....C	2	2350	3¾x5½	34x3½	34x5	W
Dependable.....D	2½	2650	4 x5½	34x5	36x6	W
Dependable.....E	3	2950	4¼x5½	36x4	36x7	W
Diamond T.....O-3	1-1½	1975	3⅝x5¼	36x3½n	36x4n	W
Diamond T.....T	1½	2250	3¾x5½	36x3½	36x5	W
Diamond T.....U	2-2½	2650	4 x5¼	36x4	36x7	W
Diamond T.....K	3½	3750	4½x5½	36x5	36x5d	W
Diamond T.....EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T.....S	5	4500	4¾x6	36x6	40x6d	W
*Diehl.....	A	1	....	31½x5	34x4½	35x5	I
Diehl.....	B	1½	....	31½x5	36x6	36x6	I
Deane.....		2½	4100b	4¼x5¾	36x5	36x7	C
Deane.....		3½	5100b	4⅝x5¾	36x5	36x5d	C
Deane.....		6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers.		¾	730	3⅞x4½	32x4n	32x4n	B
Derris.....K-4		2-2½	3400	4¼x5½	30x4	36x7	W
Derris.....K-7		3½	4400	4¼x5½	36x5	36x10	W
*Dort.....	103	½	685a	3½x5	31x4n	31x4n	B
Double Drive.....B		3	4000	4¼x5½	6	6	W
Duplex.....	A	2	2775	4 x5¼	35x5n	38x7n	W
Duplex.....	E	3½	3500	4½x5½	36x8	36x8	I
Duty.....	22	2	1590	3½x5	34x3½	34x5	I
Eagle.....	101	1½	1875	3⅝x5½	34x5	34x5	I
Eagle.....	100-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D.....	B	3	4200	4¼x5½	30x6	36x6	B
Fageol.....	1	1½	3000	3¾x5¼	34x3½k	31x6k	W
Fageol.....	2	2½	3900	4¼x5¾	34x4	36x7	W
Fageol.....	3	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol.....	5	5	5700	4½x6¼	36x6	40x6d	W
Fargo.....	R	2	1700	3¾x5	30x4	30x6	I
*Federal.....		1½	1375	3¾x5	—x5n	—x5n	
Federal.....	SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal.....	TE	1½	2175	4½x5¼	36x3½	36x5	W
Federal.....	UE	2-2½	2425	4½x5¼	30x4	36x7	W
Federal.....	WE	3½-4	3150	4½x5½	30x5	30x5d	W
Federal.....	X2	5-6	4500	4¾x6	36x6	40x6d	W
*Ford.....	TT	1	430	3¾x4	30x3½n	32x4½n	W
Front Drive.....C		1½	2800	3¾x5½	5	4	W
G & J**.....	20	1	2275	3⅝x5½	34x5n	34x5n	W
G & J**.....	A	2-2½	3375	4x5¼	36x4	36x7	W
G & J**.....	B	3½-4	4475	4½x5½	36x5	36x10	W
G.M.C.....	K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C.....	K-41A	2	2375	4 x5½	36x1k	36x7k	W
G.M.C.....	K-41B	2	2375	4 x5½	36x1k	36x7k	W
G.M.C.....	K41-T	2	2150	4x5½	36x4	36x8	W
G.M.C.....	K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C.....	K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C.....	K71-T	3½	3700	4½x6	36x5	40x12	W
G.M.C.....	K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C.....	K101-T	5	4050	4½x6	36x5	40x14	W
G.M.C.....	K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W.....		1½	1850	3¾x5½	35x5	35x5	I
*Garford.....	15	1	1590	3⅝x5⅛	34x5n	34x5n	W
Garford.....	25-B	1½	1990	3¾x5⅛	36x3½	36x5	W
Garford.....	70-H	2½	2750	4¼x5½	36x4	36x8	W
Garford.....	77-D	4	3750	4½x6	36x5	36x5d	W
Garford.....	68D	5	4500	5 x6½	36x6	40x6d	W
Garford.....	150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary.....	F	1-1½	1675	3¾x5	36x3½	36x5	W
Gary.....	I	2	2250	4 x5½	36x3½	36x6	W
Gary.....	J	2½	2650	4¼x5½	30x4	36x8	W
Gary.....	K	3½	3651	4½x6	36x5	40x5d	W
Gary.....	M	5	4100	5 x6½	36x6	40x6d	W
Gersix.....	M	1½	3100	4 x5½	36x3½	36x7	W
Gersix.....	K	2½	3500	4½x5½	36x4	36x8	W
Gersix.....		3½	$4500	4½x6	36x5	40x12	W
Graham Bros.....		1	1265	3½x4½	32x4½n	34x5n	B
Graham Bros.....		1½	1825	3½x4½	33x4½n	36x6n	B
†Gramm-Pion.....	10	1	1245	3½x5	33x5n	33x5n	B
†Gramm-Pion.....	15	1½	1750a	3¾x5	36x3½k	36x5k	I
†Gramm-Pion.....	65	1¾	2250a	3¾x5	36x3½k	36x5	W
†Gramm-Pion.....	20	2	2475a	4¼x5¼	36x4k	36x7k	W
†Gramm-Pion.....	30	3	3300a	4¼x5½	36x4k	36x4dk	W
†Gramm-Pion.....	75P	3½	4225a	4½x5½	36x6n	42x9n	W
†Gramm-Pion.....	40	4	3850a	4½x5½	36x5	36x5dk	W
†Gramm-Pion.....	50	5-6	4450a	4¾x6	36x6	40x6dk	W
Hahn.....	B2	1	1750	3½x5	34x5k	34x5k	W
Hahn.....	O	1½	2150	3¾x5¼	36x3½k	36x6k	W
Hahn.....	K	2	2550	4¼x5½	36x4k	36x7k	W
Hahn.....	L	3	3350	4½x5½	36x5k	36x8k	W
Hahn.....	M	5	3850	4½x5½	36x5	36x10	W
Hahn.....	N	6	4250	4¾x6	36x6	40x12	W
Hal-Fur.....	E	1½	2350	4x5½	34x5n	38x7n	W
Hal-Fur.....	B	2½	3000	4¼x5½	36x6n	36x8	W
Hal-Fur.....	F	3½	4000	4½x5½	36x6n	40x10	W
Hall.....	1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall.....	2½	2½	3275	4½x5¼	36x4	36x6	W
Hall.....	3½	3½	4100	4½x5½	36x5	36x5d	W
Hall.....	5	5	5100	4½x5½	36x5	40x6d	W
Hall.....7 chain		7	5100	4½x5½	36x5	40x6d	C
Harvey.....	WOA	2	2650	4¼x5½	34x4	34x7	W
Harvey.....	WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey.....	WHA	3½	3050	4½x6	36x5	36x5d	W
Hawkeye.....	K	1½	1850	3¾x5½	34x3½k	34x5k	I
Hawkeye.....	M	2	2650	4¼x5	36x4k	36x6k	I
Hawkeye.....	N	3½	3700	4½x6¾	36x5k	36x10k	I
Hendrickson.....	O	1½	2200	3⅝x5½	36x4n	36x5n	W
Hendrickson.....	N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson.....	M	3½	3090	4¼x5	36x5k	36x5dk	W
Hendrickson.....	K	5	4000	5 x6¼	36x6	40x6	W
Huffman.....	B	1½-2	1795	3¾x5	34x3½	34x6	W
Huffman.....	C	1½-2	1695	3¾x5½	36x3½	36x6	I
Huffman.....	D	2-3	2895	4¼x5½	36x4	36x7	
Hurlburt.....A-A		1-1½	1950	3¾x5	34x5n	34x5n	W
Hurlburt.....B-B		2-2½	2800	4¼x5½	36x4	36x4d	W
Hurlburt.....C-C		3-3½	3475	4¼x5½	36x5	36x5d	W
Hurlburt.....D-		4-4½	4150	4½x6	36x5	36x6d	W
Hurlburt.....E-E		6-6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa).	B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa).	G	1½	2040	3¾x5½	34x3½	34x5	I
Indep'd't(Ia.)	H	2½	2040	4½x5¼	36x4	36x7	I
Indep'd't(Ohio).	F	1½	2385	3¾x5	36x3½	36x5	W
Indep'd't(Ohio)	H	2½	3085	4½x5¼	36x4	36x4d	W
Indep'd't(Ohio)	K	3½	3985	4½x5½	36x5	36x5d	W
Indiana.....	12	1½-2	....	3¾x5¼	34x3½k	34x5k	W
Indiana.....	20	2	....	4½x5½	36x4k	36x7k	W
Indiana.....	25	2½-3	....	4½x5½	30x4k	36x8k	W
Indiana.....	35	3½-4	....	4¾x5½	36x5k	36x5dk	W
Indiana.....	51	5-7	....	5 x6¼	36x5k	40x6dk	W
*International...	S	1	1250	3½x5	34x5n	34x5n	I
International...	21	1	1550	3½x5½	36x3½	36x3½	I
International...	31	1½	1650	3½x5½	36x3½	36x4	I
International...	41	2	2100	3½x5½	36x3½	36x5	I
International...	61	3	2400	4¼x5	36x4	36x6	I
International...	101	5	3600	4¾x5	36x5	40x10	I
Jackson.....4WD		3½	3850	4½x5½	36x7	36x7	B
Jumbo.....	15	1½	2295	3¾x5¼	36x3½	36x5	I
Jumbo.....	20	2	2520	3¾x5½	35x5n	38x7n	I
Jumbo.....	25	2½	2660	4½x5½	36x4	36x7	I
Jumbo.....	30	3	3060	4½x5½	36x6n	42x9n	I
Jumbo.....	35	3½	3900	4½x6	36x5	36x10n	I
Jumbo.....	40	4	4400	4½x6	38x7n	44x10	I
K-Z.....	1	1	1750	3½x5	34x3½	34x5	W
K-Z.....	1½	1½	2075	3¾x5	36x4	36x6	W
K-Z.....	2½	2½	2550	4½x5¼	36x4	36x8	W
K-Z.....	3½	3½	3350	4½x5½	36x5	40x10	W
K-Z.....	5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo.....	T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo.....	G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo.....	LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo.....	NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo.....	HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo.....	SK	4	3845	4¼x6	36x5	36x12	W
Kalamazoo.....	OK	5	4350	4½x6	36x6	40x6d	W
‡Kelly-S.....	K-31	1½	2700	3¾x5¼	36x3½	36x6	C
‡Kelly-S.....	K-34	1½	2700	3¾x5¼	36x3½	36x6	W
‡Kelly-S.....	K-38	2½	2900	3¾x5¼	36x4	36x4d	W
‡Kelly-S.....	K-35	2½	2900	3¾x5¼	36x4	36x4d	C
‡Kelly-S.....	K-40	3½	3900	4½x6½	36x5	40x5d	C
‡Kelly-S.....	K-41	3½	3900	4½x6½	36x5	36x10	I
‡Kelly-S.....	K-42	3½	3900	4½x6½	36x5	40x5d	W
‡Kelly-S.....	K-50	5	4400	4½x6½	36x6	40x6d	C
‡Kelly-S.....	K-60	6	4600	4½x6½	36x6	40x7d	C
‡Kelly-S.....	K-61	5-7	4800	4½x6½	36x6	36x7d	I
Keystone.....	40	2	2175	3¾x5½	34x5n	38x7n	I
Kimball.....	AB	2	3675	4 x6	36x4	36x7	W
Kimball.....	AC	2½	3975	4¼x6	36x4	36x8	W
Kimball.....	AK	3	4500	4½x6	36x4	36x10	W
Kimball.....	AE	4	5000	4¾x6	36x5	40x12	W
Kimball.....	AF	5	5500	5 x6	36x6	40x7d	W
*Kissel...Express		1	1595	3⅞x5½	34x5n	34x5n	W
Kissel.....Utility		1½	1975	3⅞x5½	36x3½	36x5	W
Kissel...Freighter		2½	2875	4¼x5½	36x4	36x7	W
Kissel.....H. D.		4	3675	4¼x5½	36x5	36x5d	W
Kleiber.....	AA	1	2200	4½x5¼	34x3½k	34x5k	W
Kleiber.....	A	1½	3100	4½x5¼	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

1—Gramm-Pioneer. 2—Kelly-Springfield.

Passenger Car Specifications on page 50. For latest price changes see page 39.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3650	4½x5½	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....D	1½	2150	3½x5	34x3½	34x5	W
Koehler.....M	2½	3175	4 x5⅛	36x4	36x7	W
Koehler.....MCS	2½	3275	4 x5⅛	36x4	36x7	W
Koehler.....F	3½	4170	4½x5½	36x5	36x10	W
Koehler.MT. Trac	5	3275	4 x5⅛	36x4	36x7	W
Krebs.....23	¾	1200	3¾x5	31x4½	31x4½	B
Krebs.....24	1	1565	3¾x5	34x5	34x5	W
Krebs.....45	1½	2125	4½x5½	36x4	36x7	W
Krebs.....75	2½	2375	4½x5½	36x4	36x8	W
Krebs.....110	3½	2975	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1925	3½x4½	31x5n	31x5n	B
Larrabee.....U	1½	2100	3½x5	31x3½	31x5	W
Larrabee.....J	1½–2	2400	3½x5	34x3½k	34x5k	W
Larrabee.....K	2½–3	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½–3	3150	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½–5	4030	4½x5½	36x5	36x5.1	W
Larrabee.....W	5–7	4800	4½x6	30x6	40x6d	W
Maccar.....L	1½	....	4½x5½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4d	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4½x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack...AB D.R.	1½	3150	4 x5	36x4	36x3½d	D
Mack...AB Chain	1½	3000	4 x5	36x4	36x3½d	C
Mack...AB Chain	2	3100	4 x5	36x4	36x4d	C
Mack....AB D.R.	2	3750	4 x5	36x4	36x4d	D
Mack....AB D.R	2½	3850	4 x5	36x4	36x4d	D
Mack...AB Chain	2½	3100	4 x5	36x4	36x4d	C
Mack...AC Chain	3½	4950	5 x6	36x5	40x5d	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac...AB	5	3400	4 x5	36x4	36x4d	C
Mack Trac...AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac...AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac...AC	13	5750	5 x6	36x6	40x12	C
Mack Trac...AC	15	6000	5 x6	36x7	40x7d	C
*Mapleleaf.....**	1½	3000	3¾x5½	34x5n	36x6n	W
Mapleleaf...AA**	2	3600	4 x5¼	36x4	36x7	W
Mapleleaf...BB**	3	4050	4½x5½	36x4	36x4d	W
Mapleleaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Mapleleaf...DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2200	3½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x5	D
Master.....Z	2	2200	4½x5½	34x3½	34x5	W
Master.....W	2½	2300	4½x5½	34x4	36x7	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3900	5½x6	36x5	40x5d	W
Master.....E	3½	4200	5½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4½x6½	36x6	40x6d	W
Master.....F	5	5000	4½x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	942	3¾x4½	32x3n	32x4n	W
*Menominee.....1	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1–1¼	2010	3¼x5	34x3½	36x5	W
Menominee...H	1½	2175	4 x5	36x3½	36x5	W
Menominee...D	2–2½	2875	4 x6	36x4	36x8	W
Menominee...G	3½	3890	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4½x6	36x6	40x12	W
Moline.....10	1½	1985	3½x5	34x5n	36x6n	I
3Moreland...R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½ 5	4600	4½x6	36x6	40x6	W
Nash.....2018	1–1½	1595	3¾x5¼	34x3k	34x4k	I
Nash.....3018	2–2½	2150	3¾x5¼	34x4k	34x7k	I
Nash.....Quad	2–2½	2750	4½x5½	36x5k	36x5k	I
Nash 3018, LWB	2–2½	2200	3¾x5¼	34x4k	34x7k	I
Nash Quad, LWB	2–2½	2800	4½x5½	36x5k	36x5k	I
Nash.....5018	2½	2250	3¾x5¼	34x4k	34x7k	I
4Nelson.....G2	1½	....	4½x5½	36x3½	36x6	W
4Nelson.....G3	2½	....	4½x5½	36x4	36x7	W
4Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
4Nelson.....G5	5	....	4½x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5½	36x4k	36x7k	W
Netco.....HL	2–3	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5½	36x4k	36x7k	W
Noble.....A21	1½ 2	1810	3¾x5½	34x5	34x5	W
Noble.....B31	1½ 2	2480	3¾x5½	36x4	36x7	W
Noble.....D51	2½–3	2950	4½x5½	36x4	36x8	W
Noble.....E71	3½ 5	3850	4½x6	36x5	36x10	W
Noble.....B39	1½	....	4½x5½	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4½x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern.W	1½	2700	4½x5½	34x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	31x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk.35E.Spec	1½	2285	3¾x5¼	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	31x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	36x3½	36x5	W
Ogden.....E	2½	....	4½x5½	36x4	36x8	W

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Old Hickory...W	1	$1775	3¾x5	36x3½k	30x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4½x6	34x4	36x4d	W
Old Reliable....C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6½	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5¼	35x5n	35x5n	I
Olympic.....A	2½	3200	4¼x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	2½	3200	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	3250	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	3400	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3850	4 x5½	38x7n	38x7n	B
Oshkosh.....BB	2½	4000	4 x5½	38x7n	38x7n	B
*Overland.....4	1	450	3½x4	30x3½n	30x3½n	B
Packard.....EC	2 3	3100	4½x5½	36x4	36x7	W
Packard.....EX	2–2½	3100	4½x5½	36x6n	40x8n	W
Packard.....ED	3½–4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5–7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5¼	31x3½	34x5	W
Paige.....51-20	2½	2120	4¼x5½	31x4	34x8	W
Paige.....51-13	3½	3115	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	31x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot...Revere	1	1380	3¾x5	35x5n	35x5n	
Patriot...Lincoln	2	2050	4 x5¼	34x3½	34x5	W
Patriot .Washgt'n	3	2990	4½x5½	36x4	36x7	W
Pierce-Arrow.....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow.....	3½	4350	4½x6½	36x5	36x5d	W
Pierce-Arrow.....	5	4850	4½x6½	36x5	40x6d	W
Pittsburgher.....	1½–2	3000	3¾x5	36x1	36x6	..
Pittsburgher.....	3	3800	4½x5½	36x5k	36x8	W
Power.....F	2	3150	3¾x5¼	36x5	36x7	W
Power.....C	3½	4250	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier.....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4½x5½	34x4	34x6	W
Rainier.....R-20	2½–3	....	4½x5½	34x4	34x7	W
Rainier.....R-15	3½–5	....	4½x5½	36x5	36x5d	W
Rainier.....R-17	5–6	....	4¾x6	36x6	40x6d	W
Ranger..TK-20-2	1½	2450	3¾x5	30x6n	38x7n	W
*Reo.....F	4–11	1245	4½x4½	31x4½n	31x4½n	B
Reliance.....10A	1½	2100	4 x5½	36x3½	36x5	I
Reliance.....20B	2½	3100	4½x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3½x5	34x3	34x4	I
Republic..10 Exp	1	1695	3¾x5	34x5n	34x5n	I
Republic.....11X	1½	1795	3¾x5	31x4	31x6	I
Republic.....19	2½	2195	4½x5½	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rowe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rowe....C.D.W.	2	3300	4 x5	34x4	30x3½d	W
Rowe....G.S.W.	3	4150	4 x6	31x5	36x5d	W
Rowe....G.P.W.	3	5250	3½x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4½x6	36x5	36x6d	W
Rowe.....F. W.	5	5500	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4–3½x4	32x4n	32x4n	B
Samson.....25	1¼	....	4–3½x5½	35x5n	35x5n	B
Sanford.....W-15	1½–2	2150b	3¾x5	36x3½k	36x5k	
Sanford.....25	2½–3½	....	4½x5½	36x4	36x4d	W
Sanford.....35	3½–5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5–7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ton	3	3500	4¼x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....k	2	3300	3¾x5¼	34x3½	34x7	W
Schwartz.....I	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....3	1½–2½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½–2½	3350	4¼x5½	34x5n	38x7n	W
Selden.....50	2½–3	3250	4½x5½	36x4	36x7	W
Selden.....51	2½–3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½–5	3750	4½x5½	36x5	36x10	W
Selden.....90	5–7	4950	4¾x6	36x6	40x12	W
Seneca.....M	1½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3½x4½	32x4½n	32x4½n	B
*Service.....15	1¼	....	3¾x5	31x4½n	35x5n	B
*Service.....21	1½	....	3½x5½	31x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Service.....37	2	....	4¼x5½	35x5n	38x7n	W
Service.....52	3	....	4¼x5½	36x4	36x8	W
Service.....72	3½	....	4¼x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	$1950	3¾x5	34x5n	36x6n	W
Signal.....H	1½	2450	4½x5¼	34x4	36x6	W
Signal.....J	2½	2875	4½x5¼	34x4	36x8	W
Signal.....M	3½	3675	4½x5½	36x5	40x5d	W
Signal.....R	5	4400	4¾x6	36x6	40x6d	W
Southern.....10	1	2090	3¾x5	34x3½	34x4	W
Southern.....15	1½	2590	3¾x5½	36x6n	34x4	W
Southern.....20	2	2900	4¼x5¼	36x6n	40x8k	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½–3	2400	4½x5¼	36x4k	36x7k	W
Standard.....66	3½–5	3150	4½x5½	36x5	36x10	W
Standard.....5-K	5–7	4400	4¾x6	36x6	40x12	W
*Star.....	½	610b	3½x4¾	30x3½n	30x3½n	B
Sterling.....1½	1½	2885	4 x5¾	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5¾	36x4k	36x6k	W
Sterling.....2½	2½	3290	4½x5¾	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6½	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6½	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6½	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6½	36x6	40x7d	C
*Stewart.....14	1¼	1245	3¾x5½	34x4½n	34x4½n	I
Stewart.....15	1½–1¾	1445	3¾x5⅛	35x5n	35x5n	I
Stewart.....9	1½–2	1790	3¾x5	34x3½	34x5	I
Stewart.....7	2–2½	2190	4½x5¼	34x4	34x7	I
Stewart.....7-X	2½–3	2300	4¼x5½	34x4	34x7	I
Stewart.....10	3½–4	3190	4½x5½	36x5	36x5d	I
Stewart.....10-X	3½–4	3190	4½x6	36x5	36x5d	I
*Stewart.....	1¼	1245	4–3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1240	3½x5	34x4½n	34x4½n	W
Stoughton.....A	1	1790	3¾x5¼	34x5	34x5	W
Stoughton.....B	1½	2150	3¾x5¼	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....F	3	3150	4¼x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4¼x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Themart.....	1¼	1795a	4 x5¼	34x5	34x5	C
Tiffin.....GW	1½	2100	4½x5¼	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5¼	36x4	36x3½d	W
Tiffin.....PW	3½	3600	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4¼x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000a	4½x5¼	35x5n	38x7n	W
Tower.....H	2½	2475a	4½x5¼	36x4	36x7	W
Tower.....G	3½	3475a	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595	3¾x5	35x5n	35-5n	I
Traffic.....C	2	1595	3¾x5	31x3½k	34x5k	I
Traffic.....	3	1895a	3¾x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5½	34x3½k	34x4k	I
Transport.....35	2	1895	3¾x5	34x3½k	36x6k	I
Transport.....55	3	2385	4½x5¼	36x4k	36x8k	I
Transport.....60	3½	2585	4¼x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Traylor.....B	1½	2390	3¾x5½	34x3½	34x5	W
Traylor.....C	2–2½	2850	4 x5½	36x4	36x7	W
Traylor.....D	3–3½	3300	4¼x5½	36x4	36x8k	W
Traylor.....F	5–6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3¾x5	34x4½n	34x4½n	I
Triangle.....A	1½–2	1985	3¾x5¼	34x3½k	34x6k	I
Triangle.....C	2–2½	2285	3¾x5¼	36x4k	36x7k	I
Triangle.....B	2½–3	2585	4 x5¾	36x4k	36x7k	I
Twin City...B.W.	2	2750	4 x5½	36x6	40x8	I
Twin City...A.W.	3½	3950	4¼x6	36x5	40x5d	W
*Twin City.....B	3½	....	5½x6	36x6	36x6	I
*Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4¼x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4¼x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4¼x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4¼x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
Union.....FW	2½	3190	4 x6	36x5k	36x8k	D
Union.....HW	4	4650	4½x6	36x6	40x12	D
United.....A	1½	2145	3¾x5¼	36x3½k	34x5k	W
United.....B	2½	3150	4¼x5½	36x4k	36x7k	W
United.....C	3½	3975	4½x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States .U	1	1875	3¾x5½	34x5n	34x5n	B
UnitedStates,NW	1½	2225	3¾x5	36x5	36x3½	W
United States...N	1½	1975	3¾x5	36x3½k	36x5k	I
United States...R	3	3075	4 x5¼	36x4	36x4d	W
United States...S	4	3875	4½x5½	36x5	36x5d	W
United States...T	6	4850	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Veteran.....M**	1½	2699	3¾x5½	35x5n	35x5n	W
Veteran.....P**	2	3699	4¼x5½	36x4	36x7	W
Veteran.....R**	3	4200	4½x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	½	1050	3½x4½	31x4n	31x4n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl.
d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express, truck or delivery wagon. **—Canadian Make. trac. tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Vim.....30	1½	$1175	3½x4½	32x4½	32x4½	W
Vim.....31	1	1975	3¾x5½	35x5n	35x5n	W
Vim.....22	2	3150	3¾x5½	36x4	36x6	W
Vim.....23	3	3950	4¼x5½	36x5	36x5d	W
Walker-JohnsonA	2	2250	3¾x5	34x3½	34x6	W
Walker-JohnsonB	3	2750	4¼x5½	36x4	36x8	W
Walker.....M	2½	3850	4½x5¾	36x4	36x8	D
Walker.....S	5	4850	4½x6¼	36x6	40x6d	W
*Watson.....C	1	1465a	3⅝x5½	35x5n	35x5n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2550	4⅛x5¼	36x3½k	36x5k	W
Western....L1½	1½	2550	3¾x5	36x3½k	36x5k	W
Western....W2½	2½	3250	4½x5¼	36x4	36x7	W
Western....L2½	2½	3250	4¼x6	36x4	36x7	W
Western....W3½	3½	4250	4½x6	36x5	40x5d	W
*White.....15	3¼	2400	3¾x5½	34x5n	34x5n	B
White.....20	2	3250	3¾x5½	36x4k	36x7k	D
White.....40	3½	$4200	3¾x5¾	36x5	40x5d	D
White.....45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick....E	1	1225	3¾x5	34x5n	34x5n	W
White Hick....H	1½	1375	4¼x5	36x3½	36x5	W
White Hick....K	2½	1675	4⅛x5¼	36x4	36x5	W
Wichita.....I	2	1875	3¾x5¼	36x3½	36x4k	W
Wichita.....M	1	2400	4¼x5¼	36x3½k	36x6k	W
Wichita.....R	3	3200	4⅛x5¾	36x4k	36x8k	W
Wichita.....O	4	$3500	4½x6¼	36x5k	36x5k	W
Wilcox.....AA	1½	1900	3¾x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4¼x5	36x4k	36x3½dk	W
Wilcox.....E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox.....F	5	4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¾x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4½x5¼	36x4	36x7	W
Wilson.....G	3½	3685	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin.....A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin.....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin.....C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin.....D	3½	3000	4⅜x5¾	36x6n	40x8	W
Wisconsin.....E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin.....F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will.....N	1½	2450	3¾x5	36x3½k	36x5k	W
Witt-Will.....P	2½	2900	4½x5¼	36x3½k	36x7k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm...	15-25	1185	4	Midw.	4-4½x5½	Gas.	3
Allis-Chalm...	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm..	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork...2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork.....C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T....	15-30	1900	4	Clim.	4-5 x6½	G,K	4
Aultman-T....	22-45	2800	4	Own	4-5½x8	G,K	6
Aultman-T....	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Automot. B-3	12-24	1250	4	Herc.	4-4 x5⅛	Gas.	2-3
Avery,SR.Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery..Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4½x6	G,K,D	3-4
‡Avery.....	....	....	*	Own	4-4x5½	G,K,D	3
Avery.....	12-25	....	4	Own	2-6½x7	G,K,D	3-4
Avery.....	14-28	....	4	Own	4-4⅝	G,K,D	3-4
Avery.....	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7¾x8	G,K,D	8-10
Bates Mule.H	15-25	....	4	Midw	4-4½x5¼	Gas.	3
Bates Mule..F	18-25	....	*2	Midw	4-4½x5¼	Gas.	3
‡Bates MuleG	25-35	....	*2	Midw	4-4½x6	Gas.	..
Bear.....	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman...G	2-4	240	4	Own	1-3½x4½	Gas.	....
Best.....	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best.....	60	....	*2	Own	4-6¼x8½	G,K,D	8-9
Boring.....	5-10	395	4	LeR.	4-3¼x4½	G	..
Boring...1921	.....	1850	3	Wauk	4-4⅜x5¾	GorK	2
Burn-Oil, 1922	15-30	1395	4	Own	2-6¾x7	Ker.	3-4
Capital.....	15-30	1000	2	Own	4-4¼x6	Gas.	3
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	3
Case.....	12-20	....	....	....	4-4½x5	....	2
Case.....	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case.....	22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case.....	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T3S	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar 5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur.....	5-21½	345	2	N Way	2-4½x4½	GorK	1
Chicago.....40	40	2500	4	Own	4-4½x6	Gas.	4
Cletrac.....F	9-16	595	*2	Own	4-3¼x4½	G,K,D	2
Cletrac.....W	12-20	1315	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom,	4-4¾x6	Gas.	3
Depue.....A	20-30	2500	4	Buda	4-4½x6	Gas.	4
Dill.....D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dill.....R.W.	20	2980	4	Midw	4-4½x6	Gas.	3
Do-it-All....A	3-6	495	..	Own	1-4½x5	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B.....AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol.....D	9-18	1525	4	Lyc.	4-3½x5	Gas.	2
Farm Horse.B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Fergu[illegible]	15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Fergu[illegible]	18-35	....	4	Own	4-6 x8	G,K,D	4-5
Fergu[illegible]	25-50	....	4	Own	4-7 x8	G,K,D	6-7
Flish..4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	$ 395	4	Own	4-4x5	G,K	2
Franklin....G	18-30	4000	*2	Clim.	4-5 x6½	G or K	3-4
Franklin....C	18-30	3350	*2	Clim.	4-5 x6½	G or K	3-4
Franklin...G2	18-30	4350	2	Clim.	4-5 x6½	G or K	3-4
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt,..A	18-36	2150	4	Wauk.	4-4¾x6¾	G or K	4
Gray.....	20-36	1975	3	Wauk.	4-4½x8½	Gas.	4
Gray.....	22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. Western St	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr..20	20	765	4	Own	2-5¼x6½	K,D.	2
Hart-Parr..30	30	895	4	Own	2-6½x7	K,D.	3
‡Hart-Parr....	....	1695	4	Own	6½x7	K.D.	..
Heider.....D	9-16	870	4	Wauk	4-4¼x5¾	G,K	2
Heider.....C	12-20	995	4	Wauk	4-4½x6¾	G,K	3
Heider....Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4.	12-25	985	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4	15-30	1885	4	Midw	4-4½x6	Gas	3
Illinois.....C	15-30	....	4	Clim.	4-5 x6½	G,K	4
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International .	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5½x8	G,K,D	4
J-T.....N	25-40	3000	*2	Clim.	4-5x6½	G,K,D	3-4
¶Kinkade....	1½	190	1	Own	1-3 x3	Gas.	....
La Crosse.....	12-24	985	2	Own	2-6 x7	G,K	3
Lauson.....S	12-25	1295	4	Midw	4-4½x5¼	Gas.	3
Lauson.....21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lauson Road	15-30	2000	4	Beav.	4-4¾x6	K	....
Leader.....B	12-18	685	4	Own	2-6 x6¼	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn.....H4J	40-	4500	*	Cont.	4-4½x5½	Gas	4
Linn.....W	60	5000	*	Wauk	4-5 x6¼	Gas	6
Little Giant,.B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant,.A	26-35	3300	4	Own	4-5½x6	K	6
Lombard..1922	85-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard..1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2⅝x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Med.D	22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD	35-70	3850	4	Own	4-7¼x9	G or K	8-9
Mohawk .1922	8-16	650	2	Light	4-3¼x4½	K or G	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch..	9-18	....	2	Own	4-3½x5	Gas.	2-3
Motor Macult,	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	425	4	Own	2-3¾x4	Gas.	1
Nichols-Shep.	20-42	2650	4	Own	8 x10	G or K	3-6
Nichols Shep.	25-50	3000	4	Own	9 x12	G or K	4-7
Nilson Senior..	20-40	1975	5	Wauk	4-5 x6¼	G,K	4
Oil Pull.....K	12-20	....	4	Own	2-6 x8	K,D	3
Oil Pull.....H	16-30	....	4	Own	2-7 x8½	K,D	4
Oil Pull .... G	20-40	....	4	Own	2-8 x10	K,D	5-6
Oil Pull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
Oldsmar GarK	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Peoria.....L	12-25	1600	4	Clim.	4-5 x6½	G,K	3
Pioneer.....G	18-36	1750	4	Own	4-5½x6	G,K,D	4
Pioneer.....C	40-75	3550	4	Own	4-7 x8	Gas.	10
Plowman....A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable.....	10-20	390	4	Own	2-6 x7	Ker.	2
Rex.....	12-25	1600	4	Wauk	4-4¼x5¾	G or K	3
Russell.....	12-24	1500	4	Own	4-4¼x5¾	G or K	2-3
Russell.....	15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson....M	....	445	4	Own	4-4 x5½	G,K	2
Sandusky,...J	10-20	1250	4	Own	4-4½x5¼	G,K,D	2
Sandusky...E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
Shelby.....D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby.....C	9-18	....	4	Wauk	4-3¾x5¼	G or K	2
Steady Pull..	12-24	1485	4	Own	4-4 x5	Gas.	3
Tioga.....3	18-32	....	4	Wisc.	4-4½x6	Gas.	3-4
Toro Cultivater	6	750	3	LeR	4-3½x4½	Gas.	2
ToroTractor'22	6-10	495	3	LeR	4-3½x4½	Gas.	2
Townsend.....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend.....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend.....	25-50	2500	2	Own	4-8½x10	Ker.	4-5
Traction Meter	40-50	....	4	....	8-3½x5	Gas.	4-5
Trayler....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar...10	25-40	3750	*2	Wauk	4-5 x6¼	G or K	4
Twin City.....	12-20	1200	4	Own	4-4¼x6	G,K	3
Twin City.....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City.....	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle Sam C20	12-20	1295	4	Weid.	4-4 x5½	G	2-3
Uncle Sam B19	20-30	1985	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam D21	20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utiliter....501	2½-4	295	4	Own	1-3½x4½	G	1
Utiliter...501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	....	4	Own	4-4½x5¾	G,K	3
Waterloo....N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore 21-22	12-25	1185	4	Wauk	4-4 x5¾	G,K	3
Whitney....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin...E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin...F	20-40	2050	4	Wauk	4-5 x6¼	G or K	4
Wisconsin...H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba....12-20	12-20	2400	*2	Wisc.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4¼x6	G,K,D	..
Yuba....20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
†Yuba.....	$25-40	4750	*2	Yuba	4-5¼x7	D	..
Zelle.....	12-25	....	4	Buda	4-4¼x5½	G or K	3

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. Clim.—Climax. Cont.—Continental. Dom.—Domas. Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. T.C.—Twin City. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows §Track Runner. ‡Industrial Tractor. ¶Garden Tractor.

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Specifications of Current Passenger Car Models

NAME AND MODEL	Engine Make	Cylinders, Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Ace....F	G-B	4-3½x5	114	32x4	$1295	$1295	....	....	$2295
Ace....L	H-S	6-3¼x5	117	32x4	2260	2260	....	....	3680
Ace....C	Cont.	6-3⅝x5¼	123	33x4½	2975	2975	....	....	4500
Ambassador....R	Cont.	6-3⅝x5¼	136	33x5	....	b4500	$4500	....	6500
American....C	H-S.	6-3¼x5	127	33x4½	b1995	1850	1925	....	2695
Anderson....Series 40	Cont.	6-3¼x4½	120	33x4	2195	1650	1795	$2450	2550
Apperson....8-21-S	Own.	8-3¼x5	130	34x4½	....	2620	2645	3625	3635
Auburn....6-51	Cont.	6-3⅜x4½	121	32x4	1575	1575	1615	2275	2395
Auburn....6-51	Cont.	6-3⅜x4½	121	32x4½	....	n2195	....	....	....
Bay State....	Cont.	6-3¼x4½	121	32x4	1800	1800	....	2400	2500
Bell....4-32	H-S.	4-3½x5	114	31x4	1095	1095	....	....	....
Bell....6-50	H-S.	6-3¼x5	124	32x4	1545	1545	....	....	....
Biddle....B1 & B5	Buda.	4-3¾x5½	121	32x4	2950	b2950	....	3950	3950
Brewster....91	Own.	4-4 x5½	125	32x4½	5000	5000	....	....	7000
Buick..1922-31-5-6-7-38	Own.	4-3⅜x4¾	109	31x4	865	885	u725	1175	{1395 {1325e
Buick....1922-41-4-5-47	Own.	6-3⅜x4½	118	33x4t	1175	1195	u975	1935e	1985
Buick.1922-48-9-50-4-55	Own.	6-3⅜x4½	124	34x4½	n1625v	n1675v	1435	1895	2195
Cadillac....61	Own.	8-3½x5½	132	33x5	3100	3150	3150	b3875	4100
Case....X	Cont.	6-3⅜x4½	122	32x4½	1750	1790	....	2550	2630
Case....W	Cont.	6-3⅜x5¼	129	34x4½	....	2200	2250	2350	3250
Chalmers....1922	Own.	6-3¼x4½	117	32x4	1345	1395	1495	1995	2295
Chalmers....1922	Own.	6-3¼x4½	122	32x4	....	....	1495	....	....
Chandler....Six	Own.	6-3½x5	123	33x4	1495	b1495	1645	b1995	2295
Chevrolet....Superior	Own.	4-3½x4	102	30x3½	510	525	u425	{b840 {k680	860
Cievrolet....FB	Own.	4-3½x5¼	110	32x4	865	885	....	1325	1395
Cleveland....41	Own.	6-3 x4½	112	32x4	1085	1095	n1260	1495	1585
Cole....890	Nort.	8-3½x4½	127¼	33x5	2685	b2685n	2685	b3385	3685
Columbia....DeLuxe	Cont.	6-3⅜x4¾	115	32x4	1475	1475	b1475n	b1925	1995
Columbia....Light Six	Cont.	6-3¼x4¼	115	31x4	995	985	....	....	1395
Comet....C-53	Cont.	6-3½x5¼	125	33x4½	....	1985	2085	....	2985
Crawford....22-6-60	Cont.	6-3⅝x5½	122½	32x4	3000	3000	3000	....	4500
Crawford-Dagmar...6-60	Cont.	6-3⅝x5¼	135	33x5	....	n3500	....	....	....
Daniels....D-19	Own.	8-3½x5¼	132	33x5	a4350	b4350	4350	5250	6000
Davis....71	Cont.	6-3¾x4¼	114	31x4	....	1295	....	....	....
Davis....61-67	Cont.	6-3¾x4½	120	32x4	1595	1595	b1695	2095	2195
Dixie Flyer....H-S-70	H-S.	4-3½x5	112	32x4	1175	1175	b1295	1545	1595
Dodge Brothers....	Own.	4-3⅞x4½	114	32x4	850	880	....	{1280 {980h	1410
Dorris....6-80	Own.	6-4 x5	132	33x5	....	b3970	3950	4985b	5750
Dort....19-14	D-Ly.	4-3½x5	108	31x4	885	885	....	{1315 {1065k	{1445 {1115k
Driggs....	Own.	4-2⅝x4½	104	30x3½	1275	1275	....	....	1975
Duesenberg...Straight 8	Own.	8-2⅞x5	134	33x5	6500	6500	6750	7800	7800
Du Pont....A	Own.	4-3⅛x5½	124	32x4½	3000	3200	....	3800	4000
Durant....A-22	Cont.	4-3⅛x4½	109	31x4	n890	890	....	1365	1365
Durant....B-22	Anst.	6-3½x4½	123½	32x4½	1600	1650	....	2250	2400
Earl....40	Own.	4-3⅞x5½	112	32x4	1485	1095	950u	b1395	1795
Elcar....K-4	Lyc.	4-3½x5	118	33x4	1095	1095	n1095	1345	....
Elcar....7-R	Cont.	6-3¼x4½	118	33x4	1395	1395	n1395	2065	2165
Elgin....K-1	Falls.	6-3¼x4¼	118	33x4	1345	1295	b1345	2195	2195
Essex....	Own.	4-3⅜x5	108½	32x4	....	1095	....	1195k	{1895 {1295k
Ford....T	Own.	4-3¾x4	100	30x3½	r319	s348	u285	580	645
Franklin....9-B	Own.	6-3¼x4	115	32x4	1900	1950	u1750	2750	2850
Gardner....T-R & G	Lyc.	4-3½x5	112	32x4	895	895	....	1095k	{1595 {1345k
Grant....	Own.	6-3½x4½	116	32x4	1385	1385	....	1895	1945
Gray....	Own.	4-3⅝x4	100	30x3½	....	490	....	....	760
H.C.S....Series 3	Weid.	4-3⅝x5½	120	32x4½	2400	2400	....	2850	3150
Halladay....4	Own.	4-3½x5	115	32x4	1095	1095	....	1990	2085
Halladay....6	Own.	6-3¼x5	115	32x4	1595	1595	....	2295	2395
Handley-Knight....	Own.	4-4⅜x4½	115	32x4½	....	....	2650	3450	3450
Hanson....30	Cont.	6-3¼x4¼	114	31x4	....	995	....	....	....
Hanson Six....60	Cont.	6-3⅜x4½	121	32x4	1595	1595	1795	b2475	2585
Hatfield....A-42	H-S.	4-3½x5	115	32x4	....	1315	b1315	1950	1950
Haynes....75	Own.	6-3½x5⅞	132	31x4½	2395	b2395	2395	....	3395
Haynes....55	Own.	6-3½x5	121	32x4½	1645	1595	....	2295	2595
Haynes....48	Own.	12-2½x5	132	33x5	2895	3595	2895	....	3895
Holmes....Series 4	Own.	6-3½x4¼	126	34x4½	....	b2500	2500	b3300	3600
Hudson....Super 6	Own.	6-3½x5	126	34x4½	....	b1645	1695	2570	{2650 {1745k
Huffman....	Cont.	6-3⅜x4½	120	32x4	1395	1395	....	....	2295
Hupmobile....Series R	Own.	4-3¼x5½	112	32x4	1250	1250	....	1835	1935
Jackson....638	Cont.	6-3¼x4½	121	32x4½	....	1485	b1685	2985	2985
Jewett....Six	Own.	6-3¼x5	112	31x4	1065	1065	....	1395	1395
Jordan....MX	Own.	6-3⅞x4¾	120	32x4	1895	1795	....	2785	2785
Kenworthy....8-90	Own.	8-3 x5¼	130	32x4½	5000	5000	5250	6000	6000
King....K	Own.	8-3 x5	120	32x4½	1795	1795	b1795	2400	2550
Kissel....45	Own.	6-3⅞x5½	124	32x4½	n2385	1885	2385	b2975	3075
Kline Kar....6-55-K	Cont.	6-3⅜x4½	121	33x4	1690	1690	1690	2750	2890
LaFayette....	Own.	8-3¼x5¼	132	33x5	3985	b4090	4090	5500	5590
Leach....999	Own.	6-3¾x5¼	134	32x4½	5500	5500	5500	5500	5500
Lexington....22	Anst.	6-3¼x4½	123	32x4½	....	1745	....	....	....
Lexington....T-22	Anst.	6-3¼x4½	128	32x4½	....	....	2285	....	3350
Lexington....ST-22	Anst.	6-3¼x4½	122	32x4	....	2100	....	....	....
Liberty....10-D	Own.	6-3½x5	117	32x4	1575	1395	1575n	{2085 {1695k	2245

NAME AND MODEL	Engine Make	Cylinders, Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Lincoln....	Own.	8-3⅜x5	130	33x5	....	....	....	$3900	....
Lincoln....	Own.	8-3⅜x5	136	33x5	$3800	b3800	$3800	....	$4900
Locomobile....48	Own.	6-4½x5½	142	35x5	....	b7600	7600	10500	11000
Maibohm....B	Own.	6-3½x4½	116	32x4	1395	1395	b1495	2165	2165
Marmon....34	Own.	6-3⅜x5⅛	136	32x4½	3385	b3185	3185	3985	4385
Maxwell....	Own.	4-3⅜x4½	109	31x4	885	885	....	1385	1485
McFarlan....1922	Own.	6-4½x6	140	33x5	6300	b6300	6300	7500	7500
Mercer....Series 5	Own.	4-3¾x6¾	132	32x4½	3950	b3950	c3950	4850	5250
Merit....	Cont.	6-3¼x4½	119	32x4	1895	1895	....	....	....
Mitchell....F-50	Own.	6-3½x5	120	33x4	a1490	1490	b1690	2050	2275
Mitchell....F-50	Own.	6-3½x5	127	32x4½	....	....	1690	....	....
Monroe....1922-S-9	Own.	4-3¼x4½	115	32x3½	950	950	....	....	....
Moon....6-40	Cont.	6-3½x4¼	115	31x4	....	1295	....	....	1695
Moon....6-58	Cont.	6-3⅜x4½	118	33x4½	1785	1785	2285	2785	2785
Nash....691-96-97	Own.	6-3¼x5	121	33x1	1210	1240	b1395n	....	....
Nash....692-94-95	Own.	6-3¼x5	127	34x4½	....	....	1390	b1890	2190
Nash Four....41-4	Own.	4-3⅜x5	112	33x4	915	935	....	{a1385 {1195k	{1545 {1275k
National ....BB	Own.	6-3½x5½	130	32x4½	a2475	b2475	2375	b3725	3825
Noma....3C	Cont.	6-3¼x4½	128	32x4½	2000	b2100	c2200	....	3200
Noma....1D	Bea...	6-3½x5¼	128	32x4½	3000	b3100	c3200	....	5500
Norwalk....430-KS	Lyc...	4-3½x5	110	32x3½	....	1035	....	....	....
Oakland....6-44	Own.	6-2½x4¾	115	32x4	975	{995 {u795	b1165n	{b1445 {1185k	1545
Ogren....6 T De Luxe	Cont.	6-3⅝x5¼	134	33x5	b3750	3750	3850	4500	4800
Oldsmobile....43-A	Own.	4-3⅛x5¼	115	32x4	1145	1145	b1265	1645	1795
Oldsmobile....46	Own.	8-2⅞x4¾	122	33x4½	....	b1735	1735	....	2635
Oldsmobile....47	Own.	8-2⅞x4½	115	32x4	1595	1595	b1595	2145	2295
Overland....4	Own.	4-3⅜x4	100	30x3½	550	550	...	850	895
Packard....Single-Six	Own.	6-3⅜x5	126	33x4½	2485	2485	u2250	3175	3275
Packard....Single-Six	Own.	6-3⅜x5	133	33x4½	....	u2350	2685	....	3525
Packard....Twin Six	Own.	12-3 x5	136	35x5	3850	3850	3850	5240	5400
Paige....6-44	Own.	6-3¼x5	119	32x4	1465	1465	u1290	1995	2245
Paige....6-66	Cont.	6-3⅜x5	131	33x4½	a2495	a2495	n2245	2195	3100
Paterson....22-6-52	Cont.	6-3⅜x4½	120	32x4½	....	1550	1585	2595	2595
Peerless....56-S-7	Own.	8-3½x5	125	34x4½	....	b2790	2790	3500	3790
Pierce-Arrow....	Own.	6-4 x5½	138	33x5	5250	b5250	5250	6800	7000
Pilot....6-50	H-S.	6-3¼x5	126	32x4½	2050	2000	2050	2950	3000
Premier....6-D	Own.	6-3⅜x5½	126¾	33x5	3150	b3100	3250	4300	5100
Premocar....6-40-A	Falls.	6-3½x4¼	117	32x4	1095	1095	...	1750	1825
R & V Knight....R	Own.	4-3¾x5	116	32x4	..	1665	....	2385	2475
R & V Knight....J	Own.	6-3½x4½	127	32x4½	2475	b2475	2475	3015	3105
Reo Series....T6 & U6	Own.	6-3⅞x5	120	33x4	1595	n1745	1595	2355	2435
ReVere....C	Dues.	4-4¼x6	131	32x4½	3200	3200	3200	....	4000
Rickenbacker....A	Own.	6-3½x4¾	117	32x4	....	1485	....	1885	1985
Roamer....6-54-E	Cont.	6-3½x5¼	128	32x4½	2850	b2585	2785	3850	3850
Roamer....4-75-E	Dues.	4-4¼x6	128	32x4½	3985	b3585	b3750n	....	b4650
Rolls-Royce....	Own.	6-4½x4¾	143½	33x5	....	10,900	....	....	....
Saxon....125	Own.	4-3½x5	112	32x4	1195	1195	....	1795	1795
Sayers Six....DP	Cont.	6-3¼x4½	118	33x4	1645	1645	....	2645	2645
Seneca....L-2 & O-2	Lyc...	4-3½x5	108	30x3½	875	875	....	....	....
Seneca....50 & 51	Lyc...	4-3½x5	112	31x4	1095	1095	....	....	....
Sperling....A	Supr.	4-3⅜x5	114	32x4	980	980	....	1685	1685
Standard 98	Own.	8-3¼x5	127	34x4½	2150	b2500	2500	2750	3200
Stanley....	Own.	2-4 x5	130	32x4½	2700	2700	2700	3775	3950
Stanwood Six....	Cont.	6-3¼x4½	118	33x4	1765	1765	....	2750	....
Star....	Cont.	4-3½x4¼	102	30x3½	r319	s348	u285	580	645
Stearns-Knight....SKL4	Own.	4-3¾x5⅛	125	34x4½	2250	2250	2450	3150	3450
Stearns-Knight....6	Own.	6-3⅜x5	130	34x4½	2700	2700	2850	2350	3700
Stephens....90	Own.	6-3¼x4½	122	33x4½	1575	b1595	c1625	2450	2550
Stevens-Duryea....E	Own.	6-4⅛x5½	138	35x5	7250	b6900	6800	c5600	b6900
Studebaker....Light Six	Own.	6-3½x4½	112	32x4	975	975	u785	1225	1550
Studebaker....Special Six	Own.	6-3½x5	119	32x4	1250	1275	b1275	1875	2050
Studebaker....Big Six	Own.	6-3⅞x5	126	33x4½	u1300	1650	n1785	2275	2475
Stutz....	Own.	4-4⅜x6	130	32x4½	2950	b2990	c2990	3990	4450
Templar....A-445	Own.	4-3⅜x5½	118	32x4	2025	2125	b2175	2785	2785
Tulsa....E-1-2-3	H-S.	4-3½x5	117	33x4	1175	1175	....	....	....
Velie....48	Cont.	6-3¼x4½	115	32x4	1585	1585	b1800	2485	2485
Velie....34	Falls.	6-3½x4½	112	32x3½	1235	1235	....	1750	2085
Velie....58	Own.	6-3½x4¼	115	32x4	1275	1275	....	2185	2185
Washington....C	Cont.	6-3⅜x4½	120	32x4	....	1785	....	....	2285
Westcott....C-48	Cont.	6-3½x5¼	125	32x4½	....	....	1890	....	2890
Westcott....A-44	Cont.	6-3¼x4½	120	32x4	....	1690	u1890	....	2690
Wills Sainte Claire..A-68	Own.	8-3¼x4	121	32x4½	2475	2475	....	3275	3475
Willys-Knight....20	Own.	4-3⅝x4½	118	32x4	1350	1375	....	1875	2095
Winton....40	Own.	6-3¾x5¼	132	35x5	3100	n3600	3400	b4450	4550

a—3-passenger. b—4-passenger. c—6-passenger. n—Sport. h—All Metal Type. k—Soft Top Type. u—Chassis Price. r—Price without starter and demountable rims. Price with starter and demountable rims $414. s—Price without starter and demountable rims. Price with starter and demountable rims $443. t—Model 47—34x4½ Tires. v—Tire Sizes 32x4½. e—Touring Sedan.

Engine Make: Anst—Ansted. Bea—Beaver. Cont—Continental. Curt—Curtis. D.Ly—Dort Lycoming. G-B—Grey Beal. H-S—Herscaell-Spillman. Lyc—Lycoming. Nort—Northway. Roch—Rochester. Rut—Rutenberg. Supr—Supreme. Weid—Weidely. Wisc—Wisconsin.

The following price changes have been announced since the above table was compiled.

CHALMERS, 2 passenger roadster, $1,185; 5 passenger phaeton, $1,185; 7 passenger phaeton, $1,345; coupe, $1,595. **HAYNES, 55**, 2 passenger roadster, $1,515; 5 passenger phaeton, $1,495; coupe, $2,095; Sedan $2,395. **JEWETT**, 3 passenger roadster, $995; 5 passenger phaeton, $995; Sedan, $1,465; coupe, $1,445.

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an announcement of

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MINUTE MAN SIX

Series 22 Coupe, $2345

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It seats four adults comfortably, with plenty of luggage space.

Lexington Motor Cars have long been recognized as ideal for women to drive, and this Coupe is no exception.

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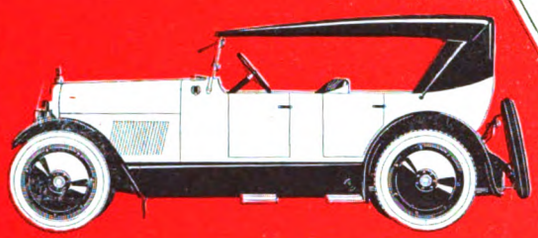
Subsidiary United States Automotive Corporation

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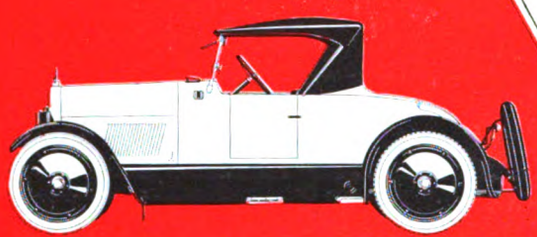
Outstanding among the greatest motor car values of the year—

The HAYNES 55

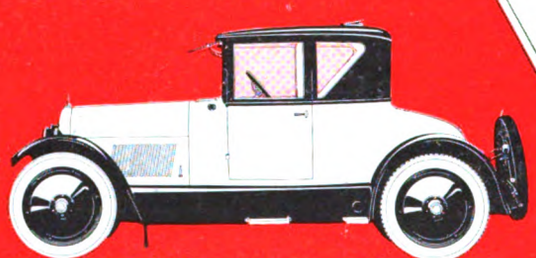
The lasting success of the new, improved Haynes 55 rests upon its proved, established worth as "the value of values" in automobiles. The illustrations show how these cars meet the wishes of the motorist in either open or closed types. With the sturdy, Haynes-built, light six engine, its power plant leaves nothing to be desired. In design and finish the Haynes 55 models respond to the exacting wishes of those who insist upon beauty, attractiveness and service. Inspect these cars, and your judgment will confirm that of every owner of these unusual productions of the great Haynes factories at Kokomo.



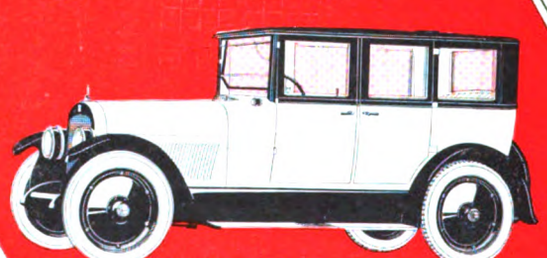
THE NEW, IMPROVED HAYNES 55 TOURING CAR, 5 PASSENGER, $1495



THE NEW, IMPROVED HAYNES 55 ROADSTER, 2 PASSENGER, $1545



THE NEW, IMPROVED HAYNES 55 COUPELET, 3 PASSENGER, $2095



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Disc wheels are optional equipment on all the new, improved Haynes 55 and 75 models, at no extra charge.

HAYNES
Character Cars 55

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Volume LXXII
Number 7

PUBLISHED WEEKLY AT 239 WEST 39th STREET
NEW YORK, AUGUST 16, 1922

Thirty-five cents a copy
Three dollars a year

Here's a thought for every man
who makes his living selling
motor cars—

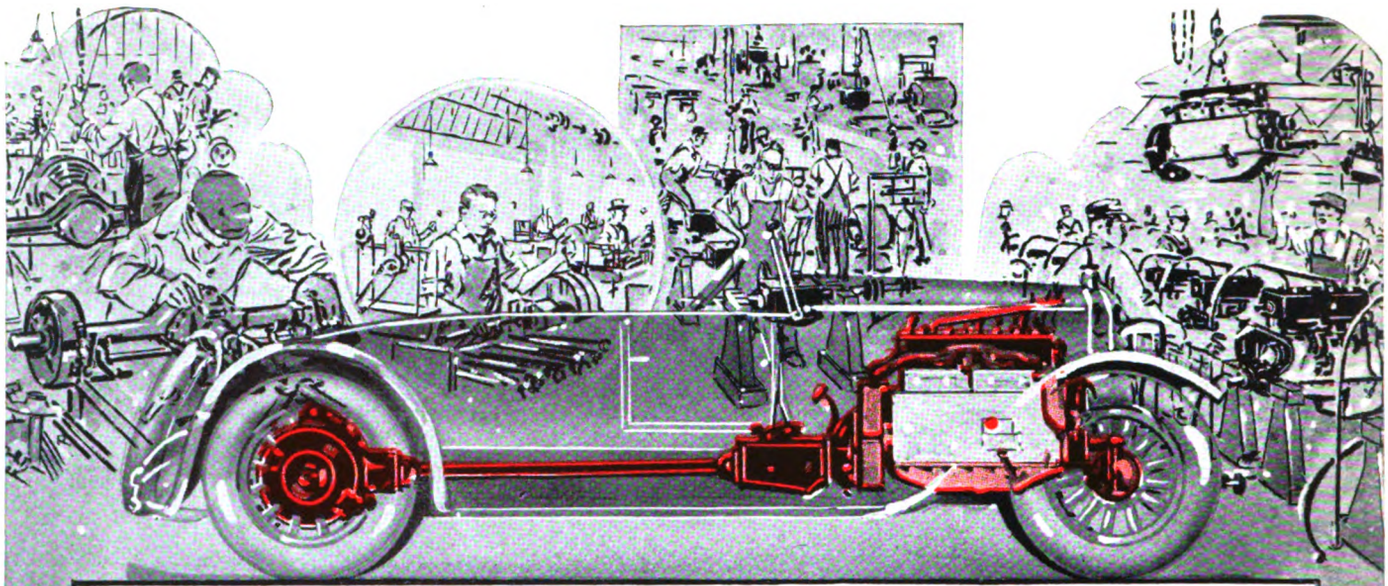
The open car is more of a luxury
now than the enclosed car. It
is completely satisfactory for
only three months of the year.

The enclosed car is a necessity
the year 'round.

Edward S. Jordan

Entered as second-class matter Jan. 2, 1903, at the post office at New York, N. Y., under Act of March 3, 1879.

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Back of the SPECIALIZED vehicle

Tests that no one organization could afford to conduct

The car market today is peculiarly a buyer's market. Not only is the buyer in a position to be most exacting but *he knows how to be,* to a greater degree than ever before.

This explains the preference for the SPECIALIZED car whose major units—motor, clutch, transmission, universal joints, axles—are *proven in production* by tests more detailed and exacting than any one manufacturer could afford to conduct.

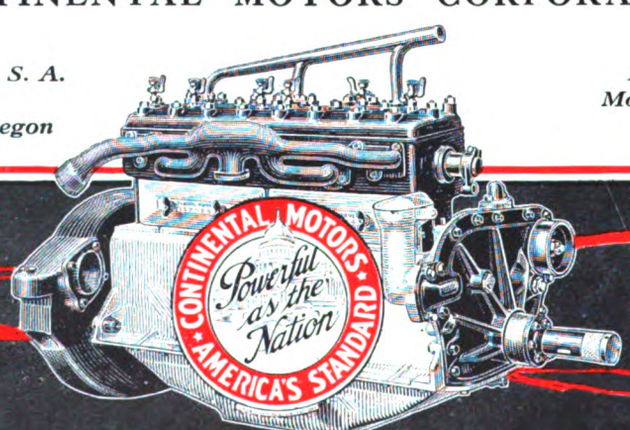
Before the Continental Motor, for example, is delivered to the car builder it is run for hours under the scrutiny of experts; it is taken down and minutely examined; is reassembled and tested again. Careful production tests also insure the service of the genuine replacement parts that are sent to parts-distributing stations throughout the world.

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DEALERS, JOBBERS AND GARAGEMEN

Reg. U. S. Pat. Off.

239 West 39th St., New York City Phone Bryant 8760

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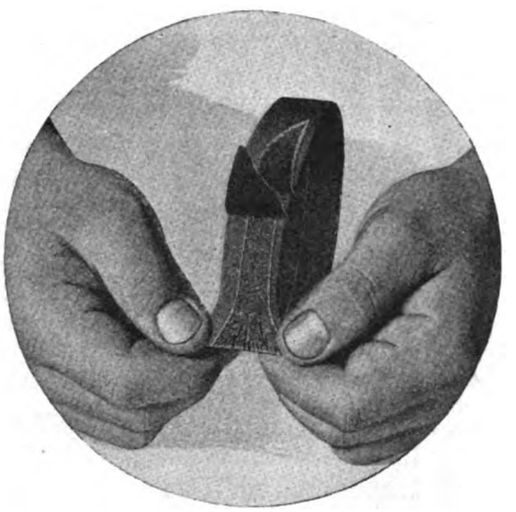
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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXII New York, U. S. A., Wednesday, August 16, 1922 No. 7

Wanted—the Best Cook in the World



Now that the boarding house landlady has such a big family—10,608,127 cars and trucks—with a chance of making it even bigger, she ought to be pretty careful about the table she sets

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Meeting the Used Car Prospect With a Special Selling Plan

A Discussion of the Kind of Merchandising That Attracts Attention and Wins Confidence for the Dealer

THE typical used-car prospect approaches the job of buying from vastly different angles than the new-car buyer, and appreciation of this fact is helping some dealers to more successfully move their traded-in vehicles.

Analysis of a number of more or less successful used-car selling plans reveals a set of merchandising factors that are very much different from those which enter into new-car sales. And, where the factors may be classified under similar names, such as reputation of the car, price, dependability of the dealer, service facilities, etc., they often present themselves in different proportions of importance in the used and new car purchases.

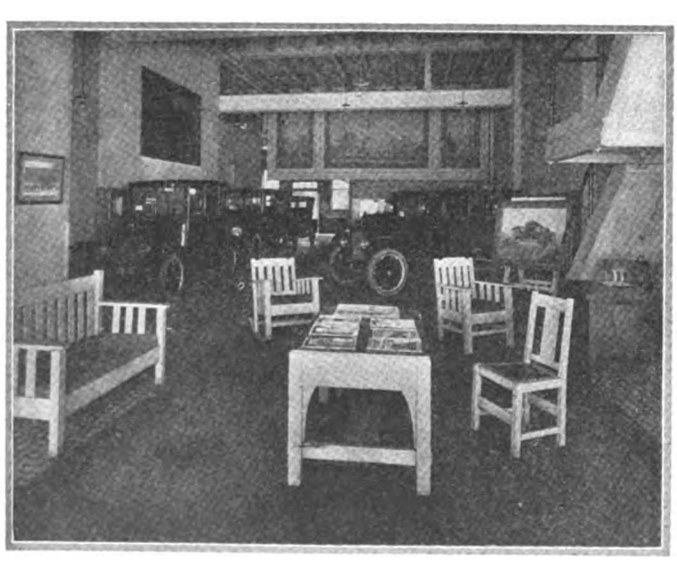
An important thing to be considered in selling the used vehicle is the fact that the prospect's attention is concentrated on a single unit, and while he may be interested in some particular make, the purchase often hinges, in the case of a used-car sale, on the particular car under consideration.

THEREFORE, the used cars must be presented in a much more intimate manner, car by car, than a line of new cars. The prospect's mind must be directed to the car as an individual unit—to its individual virtues, such as price, condition of units, etc.

For instance. Price is a dominant factor in the sale of both new and used cars, but it is usually of greater importance in the sale of the used car because the prospect almost invariably is a price buyer and price must be one of the first things to attract his attention and interest.

Any good used car selling plan should provide for bringing the price factor strongly to the front at the very beginning of the effort and hammering it home strongly throughout the merchandising effort.

Another strong factor in selling used cars is the establishment in the mind of the prospect of confidence — CONFIDENCE IN THE DEALER AND IN THE PARTICULAR CAR THAT IS BEING SOLD. The building of this confidence is somewhat different from the same procedure in selling a new car. In the new car sale the reputation of the car, its maker, the dealer and his service may be built up in the prospect's mind, but in the case of the used car sale, the confidence of the prospect must be centered in a particular unit, first, and then in the dealer who is selling it. So the merchandising effort can very properly be concentrated on the condition of the particular car, then the reputation of the dealer and the maker.



Attractive surroundings greet the used car buyer entering the Bemb-Robinson salesroom in Detroit

The following used car selling plan of the Bemb-Robinson Co., Hudson and Essex distributor in Detroit is interesting because it contains, in the proportion that has been proved successful, some of the most important used car selling factors.

The attention of the reader is directed to the presentation of price as the first big appeal to the prospect. Then, the presence of a mechanic in the used car salesroom to assist in building up in the prospect's mind his confidence in the particular car he is considering. And finally, the placing of the cars in dignified surroundings in a separate, well appointed salesroom and standing behind them when the sale is effected.

A BLACKBOARD, about four by six feet in size, mounted on an easel in the display window of the Bemb-Robinson Co., Hudson and Essex distributor, Detroit, has sold at least forty-five exchanged cars in the thirty days it has been in use, according to Edward J. Quirk, manager of the exchanged car department.

The board is just the usual composition blackboard and was formerly used in the service station for checking drivers out and in. The headings have been changed so that they now indicate job number, year, make and price of exchanged cars. There are lines for ten cars.

"The first day we put up that board," said Mr. Quirk, "a man came along here carrying a bundle. When he saw the board, he stopped and looked at it for a few moments then came in and bought a touring car.

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When he started to go, after making the purchase he remarked: 'Well, I'm a h— of a guy! I came down town to buy a straw hat and bought an automobile before I got home.' The price appeal sold that car.

"People have now got into the habit of watching the board for bargains, just as they watch the ads in the paper for bargains in the department stores. I see the same people who pass here day after day stop for a moment each time to see what we are offering. There is a high school boy who passes here—just a little fellow—and I noticed that he was stopping every day to look at the board. Then one day we had a coupe for $450 and the moment he saw it listed on the board he came right in and bought it.

"I think one of the secrets of the success of the scheme is having the board near the entrance. People don't like to walk a step out of their way. When they stop to look at the board, they find themselves almost in front of the door, and it is easy to step in and see the car, or else to make inquiries. If they had to walk back a few steps to the door, they probably wouldn't come in.

"The board also serves as a directory for the new car salesmen who relieve me at noon and in the evening. They used to keep my telephone ringing at night, asking me about exchanged cars; what they could sell them for, who turned them in and all kinds of questions. Now they can look at the board and see for themselves."

Specials Presented Daily

At one side of this board is a smaller, ornamental board, also mounted on an easel, on which are featured "Today's Bargains." One or two specials are painted on strips of composition board, about one inch wide and eight or ten inches long, which are tacked across the face of this board, which is also of composition board. A small electric light, with a shade, mounted at the top of the board renders the specials conspicuous all night.

Exchanged cars are never placed in the window or in the front part of the display room, but occupy the rear of the room. This leaves ample space for the salesmanager's desk and for a rug, table and seating arrangements in the front of the room. This, it is thought, is more attractive and dignified than is placing the cars in front. It also enables the salesman on duty to meet prospects at the door as they enter.

A plan that has been very highly successful in this exchanged car department is that of letting a mechanic do much of the selling. One man is detailed from the service station to come up and examine the exchanged cars and get them in running order when they come in, and he is frequently instrumental in making sales that the regular salesman would probably fail on. The mechanic—"Eddie" he is called—is typical of his trade and is dressed accordingly.

"As a salesman," Quirk explains, "he is not an expert by any means, but he knows how to answer technical questions about the cars, and the very fact that he is a mechanic inspires confidence in the customer.

"He seldom approaches a customer himself, but he is busying himself around nearby, and the customer approaches him with some confidential questions about the car he is thinking of buying. Eddie is just as confidential, of course, and gives the prospect several little pointers that greatly strengthen his confidence. Sometimes, too, Eddie will approach a prospect who is looking around and give him a tip that such and such a car over here is a mighty good buy. He has inspected the car himself, he tells the prospect, which is very true, and he knows what he is talking about.

"Eddie sells a lot of cars for us, some of which I probably would not be able to sell myself."

This man is a genuine mechanic, employed as such and receives no commission on sales other than what the regular salesman may see fit to give him.

In his own selling Quirk believes in letting the prospect sell himself. It doesn't do to try too hard to sell an exchanged car, he says, else the prospect will suspect that one is trying to get rid of a piece of junk—that one is too anxious to make the sale. Dignity is just as important in the used car salesroom as in the new car.

Handling the Prospect

"I meet them at the door and conduct them back to the car that they ask to see," he says, "then when they get to examining it closely and looking thoughtful, I excuse myself for a moment and go on away, leaving them to decide for themselves. When I think they have had sufficient time to reach a decision, I simply go back and say: 'Well, how do you like it?' If he then asks questions, I, of course, answer them, but I make little effort to sell the car.

"When it comes to talking about price, I take him over to my desk and get him in front of the pen and paper. All of our exchanged cars are bargains, because we buy them at prices that enable us to sell them as such, and there is no use arguing about the matter of price. If the prospect likes the car, he is ready to sign a contract, and the sooner he does it, the better. I don't try to rush him, but I take the attitude of being fully persuaded that he is going to buy the car and that is all there is to it. 'Just sign here.'"

Everyone a Used Car Prospect

Quirk thinks that every person nowadays is a prospect for a car, either new or used, and believes in letting people know he sells them. He always has his business cards handy, and he hands them out on the least provocation. Your grocery boy or the elevator boy or the usher at the theater may be in the market for a car, he says, so let him know that you sell cars. He, of course, doesn't force his cards on strangers, but he takes advantage of every opportunity to hand them out, and he tells of many sales made as a result.

New car prospects are frequently led to buy exchanged cars when they complain of having to wait for deliveries. They are sold new cars preferably, of course, but in case they show signs of not being content to wait for delivery, they are invited to buy an exchanged car and save the difference.

Blackboard in Window Attracts Used Car Prospects



A blackboard in the window of this Detroit dealer's used car store presents daily special offers in used cars to attract public attention. Many sales are directly traceable to this method of presenting the cars

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Connecticut Control Plan Wins Good Will of Motorists

State System Strives to Facilitate Travel and Prevent Accidents —Warnings Instead of Speed Laws and Speed Traps —Law Against Jaywalking

By LEON F. BANIGAN

WHAT can be done to reduce congestion, accelerate traffic and at the same time make the rural highways safer for motorists and pedestrians?

This is the big problem before state motor vehicle authorities to-day—and it is of equal importance to the automotive industry because upon its successful solution rests the minimizing of a definite factor of sales resistance that is being caused by existing traffic conditions.

There are indications, in some sections at least, that state departments NEED the advice and co-operation of the automobile industry, and particularly the local dealers, in establishing the kind of traffic control that will be most beneficial to all.

There are instances where discriminatory and often freak laws and regulations have actually hindered rather than helped motor vehicle traffic. There are instances where good systems have not had the opportunity of proving their merit because of the antagonism of the automotive dealers of the state or section. Such antagonism, in some cases, asked not whether the plans were good or bad but marshalled political force to beat the regulations because they were regulations.

Then, too, there are systems that indicate a desire on the part of state authorities to serve intelligently the best interests of all. Such systems invariably show the guiding hand of a man who has practical knowledge of motor cars and the motor car industry.

A GOOD example of the more desirable handling of traffic regulations on rural highways is found in Connecticut. Perhaps it is significant to observe at the outset that this State's motor vehicle department has as consulting engineer an automotive engineer with wide experience in the industry in both manufacturing and sales. *And this State is trying to intelligently apply practical knowledge of automobiles and the automobile business in regulating motor vehicle traffic.*

The need for intensive study of traffic regulations is perhaps stronger in Connecticut than in some other States, because Connecticut is the gateway to New England, and Connecticut's highways are the principal routes of travel for passenger and commercial vehicles between New York and Boston and other New England cities.

It probably accommodates more "foreign" traffic than any other State. And this condition, in itself, presents for Connecticut the problem of facilitating traffic, relieving congestion and at the same time safeguarding the lives of its people and the people who use its highways. Connecticut realizes that the impressions that are going to be carried away by "foreign" motorists depend to an appreciable extent upon their contact with the State as users of its highways.

Connecticut must maintain good highways, facilitate travel over them, prevent accidents and at the same time cultivate the good will of the thousands of motorists who daily use its roads.

And so to do all these things Connecticut has built up a system of rural traffic control, the outstanding aim of which is to ACCELERATE TRAVEL AND AT THE SAME TIME PREVENT ACCIDENTS.

One of the most effective things that Connecticut has done to accelerate traffic and reduce congestion is the elimination of speed limits and speed traps. Motorists are expected to drive at a speed that is "reasonable and proper." The Connecticut law puts it: "Reasonable and proper, having regard to the width, traffic and use of the highway, the intersection of streets and weather conditions."

So, under favorable conditions, a motorist may drive 40 miles an hour

There's a Law Against Reckless Pedestrians in Connecticut

SOME legislatures appear to be working overtime grinding out laws to curb the reckless driver. Undoubtedly he deserves all he gets but what is to be done about the reckless pedestrian?

It's time there were more stringent laws to "spank" the jaywalker.

Connecticut is showing the way with a law that carries the penalty of a fine for reckless pedestrians.

The Connecticut law reads:

"Any pedestrians who shall use any street or highway negligently or recklessly; or who shall willfully refuse or neglect to obey the signal of any traffic officer, or who shall recklessly disregard his own safety or the safety of any person by the manner of his use of any street or highway, shall be fined not less than two nor more than twenty-five dollars for each offense."

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on rural highways and not violate the law, yet he may violate the law at a speed of 15 miles an hour where conditions are unfavorable. However, when motorists drive at more than 30 miles an hour on rural highways, and 20 miles an hour in thickly populated sections where conditions are unfavorable for such speeds, it is considered *prima facie* evidence of reckless driving. And the convicted reckless driver gets all he deserves.

After all, it is but the application of common sense to the problem of traffic control, for what any really efficient traffic control system must do is accelerate—not retard and congest traffic—and at the same time provide proper insurance against accidents.

Reckless Driving Defined

It is the opinion of Alden L. McMurtry, Connecticut's consulting engineer in the department of motor vehicles, that an automobile in motion is being recklessly driven when its brakes are being outdriven. That is, when it is operated at a speed which would prevent the brakes being effective in the distance that the surrounding conditions indicate the car should be able to stop. For instance, a car traveling at a speed that could not be stopped in two or three feet in a street where children were playing would be considered recklessly driven. McMurtry also points to the danger of outdriving the headlights and the brakes at night and its indication of reckless driving.

Timely Warning Helped

STATE OF CONNECTICUT
Motor Vehicle Department
Hartford

OFFICIAL WARNING!

On Saturday, November 30th, the automobile traffic on the roads leading to and from New Haven will be very heavy

In order that this heavy traffic may be moved without delay or congestion operators are warned that the following directions must be observed

1 OVERTAKING or driving to the left of the highway on congested traffic, on a curve or the crest of a hill is absolutely prohibited.

2 CUTTING IN in front of a car which is maintaining a reasonable distance in back of the car ahead will be prosecuted

3 KEEP IN LINE Officers will keep the line of vehicles moving as fast as safety will permit

4 DO NOT STOP ON THE HIGHWAY Tire troubles or repairs can be made with greater safety to yourself and others by stopping on a side road

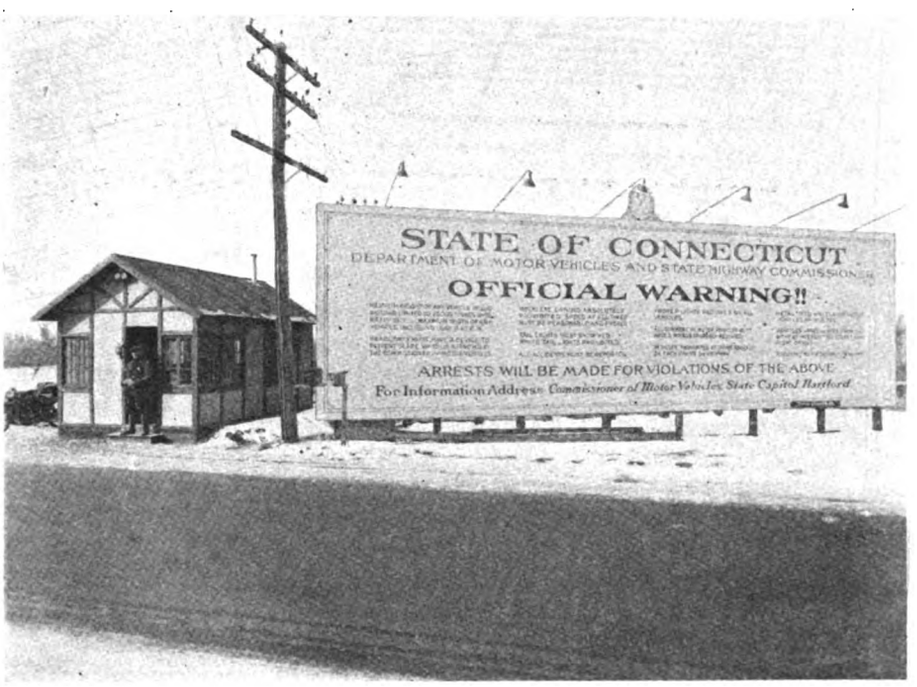
5 DON'T TAKE CHANCES Reckless driving may be prosecuted for ANY SPEED NOT REASONABLE AND PROPER

6 SAFETY FIRST If another car passes you at a high rate of speed DO NOT FOLLOW HIM The inspectors will take care of him

7 Drivers are requested to cooperate with the Department of Motor Vehicles in moving this heavy traffic without accident or delay

Before an important football game Connecticut distributed these cards to motorists. Inspectors inforced the rules and violators were given the choice of delaying half an hour at the side of the road or accepting a summons. Although thousands of cars entered the State that day there was not an accident

Acquainting the Motorists with the Laws



Connecticut acquaints the motorist with its motor laws on entering the State with these signs. Inspectors, at the State line, render a distinct service to motorists while inspecting trucks and other vehicles to see that they conform to highway regulations. The signs are the tourist's first introduction to the State's system of warnings

In its accident prevention activities the Connecticut Motor Vehicle Department again demonstrates its desire to apply common sense in its regulator methods. The seriousness of accidents is not determined by the number of people killed or injured but by the *cause* of the accidents. And Connecticut has an elaborate accident analysis system.

Carelessness of drivers causes 37 per cent of the accidents in Connecticut, and reckless driving causes 19 per cent, but sometimes the analysis shows that the State itself, or some individual other than the driver, is responsible through the existence of contributory causes in poor highways, imperfect markings, etc. Once it was found that a telegraph pole that was too close to the highway, and caused motorists to swerve to the center of the road, was responsible for numerous collisions. Very often an analysis of a number of accidents at certain points shows that something other than carelessness of drivers is responsible. And in such cases the motorists are not punished because they happened to have an accident. *The CAUSE is removed.*

Connecticut strives for the *friendly assistance of the motorist* in accelerating traffic and preventing accidents. It does not arrest and inconvenience motorists for small violations of the rules—but it WARNS those who transgress, and it keeps accurate account of warnings. When a motorist doesn't heed these warnings he is severely dealt with. *The big effort, however, is toward the prevention of violations rather than the trapping and punishing of violators.*

Some of the things that Connecticut does to HELP the motorist do the things that prevent congestion and accident are:

1—*Painting white lines in the center of dangerous curves and over the brow of hills.*

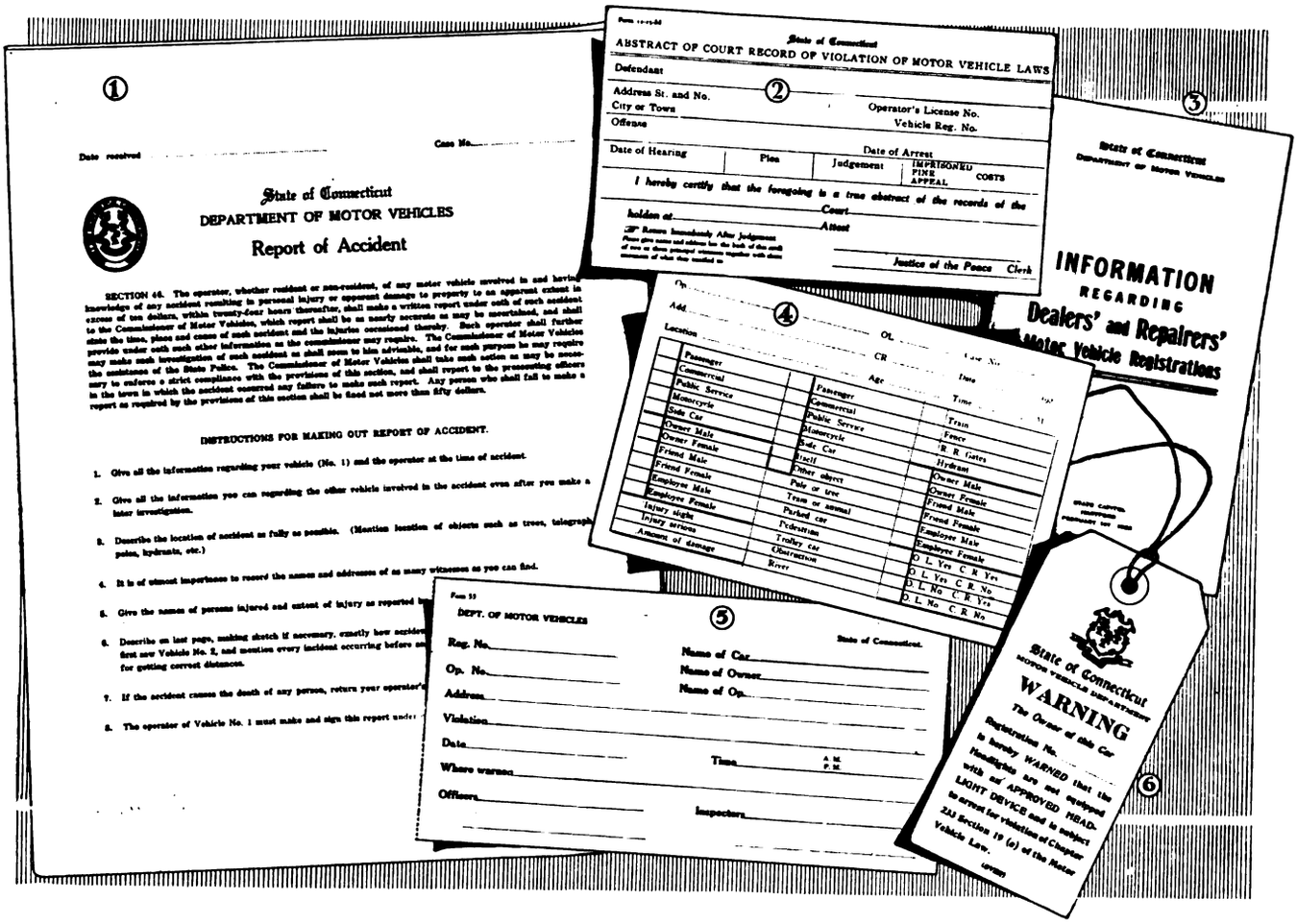
2—*Erecting warning signs showing the approach to railroad crossings, steep grades, sharp curves, etc.*

3—*Placing illuminated and reflector danger signs at danger points.*

4—*Erecting "official warning" signs* at the State lines on the principal highways entering the State which give important traffic laws for the information of strangers entering the State.

5—*Safety propaganda including "No Accident Week," Films: "Where are your children?" and "Here are*

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Connecticut's entire system of traffic control on the State highways is built upon co-operation with the motorists and the municipal authorities. Among the forms that help keep the State in close touch with these are the following shown above: 1—Report furnished motorists for reporting accidents. 2—Report of traffic conviction which court clerks forward to State Department, the forms being furnished by the State. 3—Digest of laws affecting dealers and garagemen furnished by the State. 4—Accident analysis card used in statistical department. 5—Warning notice given motorists for minor violations. 6—Warning tag attached to cars not properly equipped with headlights

your children;" published reports of accident statistics showing causes, etc.

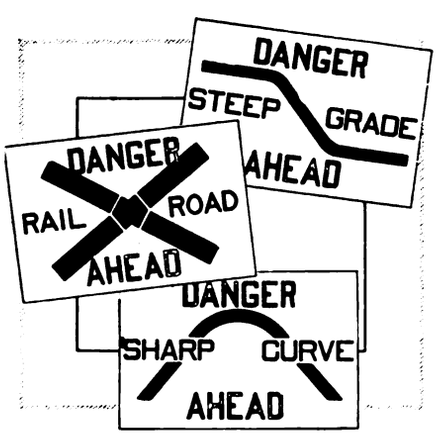
Local Police Co-operate

All markings on the highways, removal of obstructions to sight on curves, painting of pavements and fences at curves, and many other activities to aid the motorist are under the jurisdiction of the highway department of the State, which co-operates closely with the motor vehicle department in its aim to accelerate traffic and prevent accidents.

The Connecticut Motor Vehicle Department also has the close co-operation of the law enforcement machinery of the municipalities. All police departments are required by law to report all violations and convictions under the motor vehicle law.

More than 9000 automobiles entered the State in one day, carrying people to a football game at New Haven, and got out of the State again without a single accident. The State's system of warning motorists was principally responsible. An interesting phase of the work in connection with this record was the issuance by the motor vehicle department of warning cards which were distributed to motorists.

An interesting phase of Connecticut's warning system, which is also used by Massachusetts and some other states, is the tag that is attached to the steering wheels of cars not equipped with approved headlight devices.



Connecticut protects motorists with warning signs at dangerous places. Here are three samples of the signs along the State highways telling of places where motorists should drive with extra caution

When motorists are stopped and warned by inspectors for any violation of the traffic laws, a report of the warning is sent to the department of motor vehicles on a blank, a carbon of which is given to the motorist. A close check is kept on these warnings and they form a permanent record against the motorist, and may be the basis of a complaint and prosecution where certain violations become particularly noticeable.

"OUR city thoroughfares—shall they be highways or garages?" asks a traffic expert who has prepared a story for Motor World on the parking problem, with definite suggestions for solving it. The story will appear in an early issue. Other stories on traffic, written to interest and assist dealers, will appear from time to time, among them the comments of an automobile trade association secretary on police and public hysteria over traffic, with methods the trade can employ to fight such conditions.

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DENVER HOLDS MIDSUMMER OUTDOOR AUTOMOBILE SHOW

Exhibition in Far Famed Civic Center Draws 35,000 Interested Spectators—Event a Yearly Feature in Western City

DENVER, Aug. 11.

DENVER'S second annual outdoor automotive show was held at the city's widely famed Civic Center, with seventy-seven passenger cars, seven motorcycles, six automobile camp equipment exhibits and one special transportation bus, and with an attendance running well into the thousands. There was no registering of visitors or any other method provided for an accurate count, and people kept coming and going throughout the evening's program, thus making the attendance rather difficult to judge; but careful observers gave estimates ranging from 25,000 to 35,000. That the crowd included a substantial number of motorists was shown by the fact that all the available parking space within several blocks of the Civic Center was filled with cars throughout the evening, and also by the remarks of many of the visitors asking salesmen about the cars on exhibit.

While the crowd kept almost constantly on the move, surging from one end of the block-long exhibition to the other, the exhibiting dealers were well pleased with the percentage of visitors that stopped to ask questions indicating genuine interest of the prospective buying kind. "If I don't make a single sale as a direct result of the show, I'll still figure the event well worth while from an advertising standpoint," one dealer declared. "People can come here and feel free to ask all sorts of questions, make quick comparisons of cars in a certain price class and go away well satisfied with getting practical information in far shorter time than they could visit all the salesrooms handling the cars they happen to be interested in."

This "Midsummer Automobile Festival," as it is officially called, is conducted on less formal lines than a regulation motor car show, and some of the exhibitors believe that this free-and-easy spirit of the affair, combined with the open-air setting, displays their cars in a natural "atmosphere" and tends to do away with any restraint liable to be felt by visitors under ordinary show conditions. In fact, a few exhibitors are experimenting with the idea of a salesman standing by the side of his car or on the running-board and asking passersby to tarry long enough to take a good look at his car and remember its name.

Admission was free to the public, and the only cost to the exhibitors is the expense of arranging and maintaining their displays, all entertainment expenses and similar costs being borne by the Denver *Post*, which promoted the event.

Outdoor displays of automobiles in the summer and early fall offer opportunities for exceptionally fine merchandising effort along the advertising and publicity line, particularly for dealers in medium and small towns. Not all cities, of course, present the wonderful setting that Denver does in its Civic Center. However, the co-operation of the local trade bureau or some newspaper often can be had if the dealers combine in presenting the idea, and can show how the plan is carried out in Denver.

The expense of an outdoor show is not large. The site for the show may be a vacant lot, a city park or even a square near the center of the city where the space is large enough to rope off a section in the center. The publicity should consist, first of all of news stories in the local and country papers and some advertising in these papers by the dealer association or co-operative ads by the dealers. A small amount is usually appropriated for musical talent to provide entertainment. At the Denver and other similar shows no attempt was made by dealers to show their full lines. Each dealer showed two cars.

Denver's Midsummer Outdoor Show



DENVER'S second outdoor automotive show in the widely famed Civic Center drew an attendance of 35,000 *people recently. Each dealer exhibited two models. The event proved an exceptionally fine advertising stunt. The idea was promoted by the Denver Post, which also furnished entertainment features.*

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"Well Bought Is Half Sold"

An Interesting Discussion of the Relationship and Need for Co-operation Between the Sales and Purchasing Departments of a Jobber Business

By VICTOR ALLEN
Purchasing Department, Auto Equipment Co., Denver

THERE closed recently, in a large western city, a highly successful conference in the sales organization of a large jobbing house devoted exclusively to the automotive trade. Sales campaigns were planned, territories realloted for a finer combing, problems discussed, new lines introduced—experts gave advice which if carried out would reduce sales resistance to a minimum. "Ask 'em to buy," the slogan of the moment, was heard on every side, and the enthusiasm of the members in the organization seemed to grow rather than diminish as the time drew near for a return to their territories.

In a part of his speech closing the conference, the head of this organization spoke for the first time of the buying staff. "Boys, our purchasing department is putting forth its best efforts to help lessen the resistance we will find in selling these lines. You know 'well bought is half sold.'" So with a few more words of no further consequence he dismissed this department from his speech as well as his thoughts.

And why not; for had he not gathered a wonderful selling organization together, men with pep, punch and personality, at the same time ridding himself of the order takers, the dead timber who fall always when normalcy is back.

Slight praise for a department on whom lies the responsibility of obtaining all of the material that the sales department must put over. Yet does this mean that the buying staff is of no importance? From this it would seem so.

Whether you are the largest or the smallest merchandiser of automotive products in your locality, the buying end of your business presents angles and difficulties that must be met in a way far different from the post-war methods of a year or two ago.

The period of a so-called "buyers market" is harder to operate on than the period of a "sellers market." The problems of your salesmen instantly become most vital to you and this naturally brings to attention the fundamental principal underlying any selling organization: A HELPING CO-OPERATION BETWEEN THE SALES AND PURCHASING DEPARTMENTS OF THE BUSINESS.

ARE you the kind of a buyer who looks at his stock inventory records and finding an item that is not moving mutters audibly, "The darn sales end of this business is not on the job—here I've made a *real* buy and they've passed it up."

If you are that kind of a buyer you no doubt will send a note to the sales manager and call his attention to the fact that "Those jacks we bought four months ago are not moving." This note will probably stimulate a sales bulletin or two out of the sales manager but does it really enthuse him and sell him on the particular line? If he comes back with one good reason for the slow sale of the jacks you will quickly realize that you have not gone far enough into the thing to warrant a note of this kind.

Before any buyer has a right to demand of a sales manager why some one line or item is not turning over properly he should satisfy himself of these essentials:

1—Is this a quality item?
2—Is the price right?
3—Has it been properly advertised?
4—Is it representative of your house and its policy?
5—Has a competitive item more merit than this?
6—The salesman that introduced the line sold it to you thoroughly; have you in turn made a great effort to sell it to your sales department?

Last January a Western firm purchased a complete line of camp stoves and ovens, priced right, meritorious, profitable; with all the qualifications of a leader in this class of material. Shipment reached the warehouse shelves about the middle of February, all ready for the tourist season.

During the second week of May the purchasing agent referring to his stock records was astonished to find that his stock of camp stoves was intact with the exception of one he had purchased for his own personal use. Upon inquiry there was not even a future order at hand for any stoves. This with the season started.

According to the best traditions he should have torn his hair with one hand, ripped off a sharp note to the sales manager with the other, at the time saying things out of the corner of his mouth.

Instead, a request for a few minutes of the sales manager's time, and taking one of the stoves out of stock he brought into play the very arguments that had sold him on the line. At the same time giving a display of the merits of the stove.

Past seasons had shown only grief in the handling of this type of merchandise. The sales manager was surprised beyond measure to be shown from his own stock a stove that had overcome the difficulties previously met with. Selling him on the line was a matter of minutes.

The first week of June saw a shipment en route to this firm just four times the size of the first order. The turnover has been a revelation to both sales manager and buyer.

Your house has a policy and this policy should be so installed in your mind that it is before you in every purchase or contract you make.

A wholesaler cannot do business on a brokerage or mail order drop shipment plan; likewise a retailer with

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limited capital and lacking a widespread sales organization is fooling no one but himself when he attempts entering the jobbing field of prices with the hope of a larger margin of profit.

There are at the present time a number of factory representative selling agencies, who send their missionaries to the retail dealers and garages in the smaller towns with a varied line of Ford accessories. Their proposition briefly is: — for purchasing from ten to twenty dollars of material they are granted exclusive rights to sell in their town or locality, also a catchy jobbers discount of fifty per cent off of a trick list price that apparently changes with the weather.



These products have no merit or real quality but many sane dealers have entered into the proposition. Seems a case of greener grass over in the jobbers field.

By the same token a half dozen manufacturers who last year consigned stocks in jobbers warehouses found a lack of volume that was deplorable and the sad experience will not be repeated again this year if they can help it.

Your policy in buying means as much to the welfare and reputation of your house as does its selling policy. Bargaining with "gyp" houses whom you know are not selling legitimately is not advantageous and in the end will only mean grief to you.

Of the details in the buying end of the business, there are two essentials important. The stock inventory. The keeping and regulating of costs. Regardless of the size of your organization this work should be under the immediate supervision of the buyer.

This is a period when everyone is demanding (rightfully too) service in the Nth degree. Stocks are not now carried on shelves in great quantities. Specialized lines are coming into vogue with the advent of replacement axles, pistons, piston rings and gears. This means one thing—the buyer must have a complete knowledge of the movement of the stock either by means of a perpetual inventory (if the stock is small), or a careful periodical check on inventory cards by a competent checker, if the stock is large. A competent man in a checker's position is a man thoroughly versed in this work for he is one of the pivots on which the purchasing department will operate. Specialized lines, for example piston rings and ignition parts, should be checked three or four times as many times as the general line in the same length of time. This will go far in eliminating back orders also the delays of drop shipments. Certainly both of these are enemies of service.

One of the pleasant features of the rising markets two years ago (though it doesn't seem that long) was the ease with which costs and selling prices were marked up. With margins made broader and wider of course any system of costs was not difficult to keep. The question seemed not so much—what will it cost—but rather—when can we get it?

The pendulum has swung back. Now the all important question of "What will it cost?" has caused the buyer to move the cost clerk over next to his desk and the cost records have become dog eared and heavily finger printed, from constant use.

Quotations never came so thick and fast in the mails as now. If you are to show wide awake, live competition to others in your locality or territory these quotations are not to be ignored or filed in the waste basket. On the contrary they are examined carefully if of interest, and filed for instant reference.

Transportation charges, freight allowances, cash discounts are the little things that count for much when yearly profits are figured. The buyer who constantly keeps an eye on this imporant feature of the business is not likely to be asked "Why" at the close of the fiscal year.

Truly—"Well bought is more than half sold" but buying must be done with eyes wide open, both feet on the ground and in an active, aggressive manner.

Nothing Like Knowing Where You're At, Says Ford Dealer

TERRITORIAL analysis is the basis of Ernest Burwell's success in making Spartanburg County, South Carolina, leader of all counties in the state in the sale of Ford cars.

Ernest Burwell is but 27 years old. He came to Spartanburg, S. C., from Charlotte, N. C., about three and a half months ago. System is written on the threshold of the main entrance to his handsome place of business on West Main Street.

Entering the sanctorum of the youthful, smiling, blue-eyed manager, one notices two large maps above his desk on the wall—one of the city and the other the county. These maps are dotted like a new polka-dot dress with tacks of varicolored heads. The colors index a card system. Each tack represents a Ford car, the color tells what filing case to get the record card of that car. And this card system record is so complete that Ernest Burwell and his live-wire lieutenants can find out almost anything about the machine or the man who drives it.

When Ernest Burwell looks at the map of Spartanburg County and sees any portion of it undotted or thinly dotted with tack-heads he investigates personally to find the reason. The reason located, he calls a conference of his "sharp shooters" and discusses the situation. The best man is put in that area, and in a few weeks it begins to look as though someone had sprinkled it with a broadside of tacks.

A glance at Burwell's sales card shows whether the owner of the car is having his garage work done at the Ford home or elsewhere. If he is not another man is sent after him, and the chances are dollars to doughnuts he will be driving his machine into Burwell's for garage work or to get parts.

This is Burwell's creed:

You may talk about this
And you may talk about that,
But there ain't no fun
Like knowin' where you're at.

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Practical Farmer as Field Man Keeps Owners Satisfied

Ohio Tractor Dealer Follows Up Every Sale With Service That Insures Proper Use and Maintenance

By DONALD D. BLANCHARD

SOMEONE has said that the function of the service department is to make good on the promises of the sales department.

Charles M. Cole, Ford and Fordson dealer in Ada, Ohio, employs a man in his service department whose duty it is to make good on the promises of the tractor salesmen. This employee spends his entire time in the field calling on tractor owners.

The field man is an ex-farmer and a successful one too. Previously Cole had sold him a Fordson with which he had unusual success. Furthermore he had become an exceptionally skillful operator. In addition to these qualifications, his personality is especially well adapted to this work.

THE duties of the field man may be grouped under four headings:

Delivery
Demonstration
Inspection
Instruction

When he delivers a new tractor to a farmer, he shows him how to drive it. During the first week of ownership he sometimes makes four or five calls to make sure that the farmer gets started along the right lines. During the balance of the season he makes at least one call each week.

His practical farming experience is especially useful in making demonstrations. He knows how to operate the tractor so that its important selling points will be brought out strongly. He knows what things the farmers are most interested in seeing done and he is capable of demonstrating these operations in an expert manner.

The field man visits every Fordson owner as often as possible regardless of the length of time they have been owners. A report of each visit is made. Cole goes over these reports each morning. If three successive reports show that a farmer is abusing or neglecting his tractor, Cole pays him a personal visit. He explains the dangers of abuse and neglect and how mistreatment affects power, reliability and economy. Owners appreciate his interest in their tractors. In some instances Cole found that the tractor was being abused by hired help and that the owner had no knowledge that the tractor was not being properly used.

The field man has eyes open for sales tips. On every visit, he makes it a point to ask the owner if he knows of anyone who might be interested in buying a tractor. If he secures any names, they are placed on the inspection report form.

Repairs are not handled by the field man. He inspects and makes minor adjustments. If extensive repairs are necessary, a skilled mechanic is sent from the shop. Cole sells tractor service on the flat rate basis. The charge for work done in the field is the flat rate for the operations performed plus 10 cents for each mile traveled by the mechanic.

A small stock of such necessities as spark plugs, fan belts, ignition parts and lubricants is carried by the field man. This merchandise is carried as a convenience only. The field man makes no effort to push its sale nor is he judged by the amount he sells. However, he does dispose of a considerable amount of these commodities and the profits on these sales help, in a small way, to pay his expenses.

The field man makes an average of six calls a day. There are about 120 Fordson owners in Cole's territory and the field man is in active touch with about 75 of these.

In addition to the educational work done by the field man, Cole sends out frequent service messages by mail. These are short and cover but one feature of tractor operation.

Cole endeavors to get farmers to bring their tractors in for overhaul during the winter months when work, both on the farm and in the shop, is slack. As an inducement he made a special offer last winter of a free coat of paint for all tractors brought in for overhaul before March 1. He obtained eight jobs on this basis at an average price of $85.

Cole shows this unusual interest in his tractor owners because he knows that, without it, they will not get the

Field Man's Report

REPORT OF TRACTOR FIELD MAN.

DATE 5/23/22

Called on W. L. Roberts

Oil Level in Motor O.K.

What kind of oil is he using? Standard

What was the condition of oil in Motor? Fair

Was it thin or worn out? No

Was it diluted with fuel? No

If so, did you explain to the operator how to operate his tractor so as to avoid getting fuel into oil sump?

Was carburetor properly adjusted? Yes

Was air washer float working all right? No

Does tractor smoke at exhaust? No

When had operator changed oil in Motor? Every 4 or 5 days

When had operator changed oil in transmission? Once

Did you find rear wheels loose or tight? Tight

What kind of work was tractor doing today? Plowing

Examine timer in each case and state whether you found it dry or properly lubricated. Well oiled

Does driver operate tractor at proper speed? Yes

Is owner satisfied with his tractor? Yes
If not report full particulars.

Does he know anyone who is interested in a tractor or who is talking of buying?

If so give names Send circular to Wm Roberts.
He has a couple of tractor prospects.

How much oil has he on hand? 5 gals.

FIELD MAN John Lloyd

When necessary use back of this card for reporting details.

The field man makes a record of each visit on this form. Cole goes through the reports of the previous day the first thing in the morning. Owners that habitually neglect their tractors receive his personal attention.

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satisfactory performance that they expect. The salesman gets the order by convincing the farmer of the reliability and economy of the tractor he buys with these promises of performance in his mind. In making these promises, however, the salesman has assumed that the tractor will be properly used and maintained. Proper use and care are essential to the fulfillment of these promises. If the farmer abuses or neglects his tractor, he is not likely to get the reliability and economy that he has been promised.

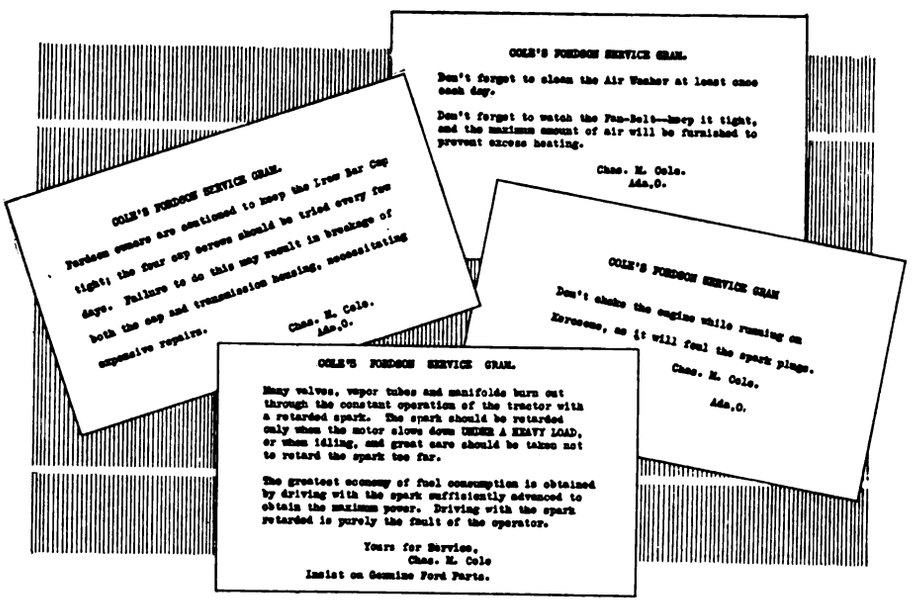
There are many farmers that need the guidance that Cole's field man gives them. There are, of course, some farmers who are naturally disposed to handle machinery intelligently, but on the whole, the average farmer is quite likely to be careless in this respect. If left to his own devices such a farmer would not get from his tractor what the salesman had promised him. And the failure of the tractor to live up to his expectations would create a feeling of dissatisfaction with it.

Cole anticipates such dissatisfaction by having his field man keep careful watch of the use and care that the tractor is given. He is on the job constantly showing owners how to use their tractors properly and how to take care of them. He reaches the farmer who is plowing too fast before he has done any serious damage to the tractor. He warns the farmer whose oil is too thin before his bearings are damaged. His reports show Cole whether a tractor is being handled correctly. If the field man cannot bring about the desired change in methods, Cole makes it his personal business to tell the farmer of the dangers he is courting.

The instruction book that goes with every tractor tells the farmer how to use it and how to care for it. But the average farmer pays no more attention to this book than the automobile owner does to the one he gets with his car. If the farmer would read and follow these instructions, much of the work of the field man would be unnecessary.

In providing this service, Cole shows his appreciation of the fact that he is selling an agricultural utility—not merely a machine. He sells a tractor and the farmer buys it because it will perform certain farming operations more profitably than they can be done in any other way. Cole, through his field man, makes it his business to see that the tractor does perform these operations satisfactorily.

Service Grams That Help Sell Fordsons



Cole's Fordson Service Grams are typical of the effort he makes to have his customers get the best of service from their tractors. A mimeograph is used to print this message on postcards.

Bagging the Tourist Trade

THROUGH the spring days of 1922 the proprietors of the Central Tire Shop, Walla Walla, Wash., stood in the doorway of their establishment and watched hundreds of dollars worth of potential business whirl past them. The business lay in the worn, shredded tires on the wheels of the tourists' automobiles. These tires, the tire men knew, would have to be repaired or replaced soon. They decided that if ordinary signboard advertising was not effective in bringing travelers to their doors other methods must be found.

They have found the method, one that operates effectively at very little expense and adds a volume of business that, to the average small tire shop, is very welcome.

A representative of the shop, a tire expert, visits the Walla Walla public tourist camp early every morning. His first duty is to make a general inspection of the tires on the large number of transient cars encamped there, discovering cuts, sand blisters, side wall weaknesses and any of a hundred defects readily noticeable to the practiced eye. He then informs the car owners of the defects of their tires, suggesting the most rapid and effective method of repair. With him he carries a supply of small hand-bills with a schedule of tire prices and repair rates offered by the Central Tire Shop.

At the same time he suggests repairs —and he does this only when he believes they are legitimately needed — he also tells the prospective customers of the speedy service which his shop can afford them. To most tourists saving of time is a vital necessity; therefore when he says he can remove tires in need of repair, put them in the small service truck he drives, take them to the shop and return them by the time the campers have packed their tents and finished their breakfasts, he usually is awarded the business he seeks.

As a result of this service the Central Tire Shop is selling about three casings a week to tourists, an item of no small importance to a comparatively small establishment in a town of Walla Walla's size, 15,000. In addition to the sale of casings a large amount of repair work is also obtained, so that as the tourists whirl past the shop door the proprietors no longer feel that their share of the business is being carried to the next town.

The Central Tire Shop carries two lines of casings, one of the best grade and the other of a less expensive grade which they are able to sell at a low figure through special arrangements with the manufacturers. In this way they are ordinarily prepared to satisfy any tourist who needs new casings.

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Editorial Notes

Where Does the Money Come From?

THE above question has been asked by many persons contemplating the record-breaking production and sale of automobiles this year. The logical answer seems to be that the money comes from the earnings of the American people, who are coming to realize more clearly every year that the automobile is one of the leading modern agencies to keep families in a state of health, contentment and enlightenment.

From many sections have come complaints that the summer resorts are not being patronized. There seems to be a partial reason for this condition in the widespread purchase of motor cars, particularly by people who have never owned them before. Thousands of vacations this year are being spent in the car, with home as the overnight base, and thousands of men and women are learning that a few hundred dollars invested in an automobile may mean more to them than an equal amount spent in two or three weeks at a more or less fashionable vacation place.

The majority of first-time buyers, who have had no cars to trade in and who apparently had not been able or had not thought they were able previously to own automobiles, are not careless spenders. The country has pretty well recovered from the free-spending habit of two or three years ago. These people who have bought their first cars this year, many of them on time-payment plans, are investing in personal and family utilities which they think they are entitled to. This trend is encouraging for future business. It pushes still further into the background that bogy of saturation point, and suggests that the ordinary citizen's money will always be available for motor car purchases. It also suggests that in spite of the antagonistic or indifferent attitude of some banks, this very demand for cars and for methods of financing their purchase will compel the expansion of credit facilities which even now are the wonder of many observers.

Self-Analysis

THE Portland, Oregon, Automobile Dealers Association has been dong some interesting work in investigating and telling the public about the importance of the automotive industry within that commonwealth. The association has compiled figures on capital invested, payrolls and volume of business done by automobile men throughout the State and has disseminated the information, first to dealer organizations so that they would understand better their own standing as compared with other businesses, and then to the public in newspaper articles and mail matter addressed to both public officials and private individuals.

The Oregon investigation showed that $56,000,000 was invested in the automobile business in the State, that annual payrolls amounted to $11,000,000, and the volume of business done to $85,000,000. Rather impressive figures, aren't they? They impressed the people of Oregon and helped the dealers of that State to prove their standing as one of the big productive businesses of the community. Among other things, it was established that for every automobile in service in the State there was approximately $840 invested in repair facilities and stocks of parts and accessories.

Would information like this be valuable in your State? It is not expensive either to prepare or publish.

The March of Closed Cars

THE growing tendency of manufacturers to cut down the differential between closed and open car prices has the unanimous approval of dealers, but the trade would like to see also the greatest possible attention paid to production facilities assuring adequate supplies of closed models. Dealers in some lines have suffered much from inability to get closed cars in the early fall months when they are in greatest demand and more recently there has been in some lines a closed car shortage even in the summer. All this suggests that the industry still has quite a task before it in regulating production facilities so that the closed car supply can keep up with the demand, and particularly so that there will be no shortages depriving dealers of potential sales in the logical closed car months.

The bringing out of new models in late summer and early fall naturally complicates the situation, as it takes more time to get closed cars than open cars into production. The result has been that many dealers have found themselves facing the fall months with little to offer their trade except open cars. They have had to sit by and see business go to competitors because prospects would not wait until winter had actually arrived for deliveries of sedans and coupes.

The closed car can be made an important factor, as it has already been made to some extent, in encouraging year-'round purchase of automobiles and in giving dealers a more continuous business throughout the year. Every effort should be made by the manufacturers, both of cars and bodies, to assist in this stabilization. No more favorable opportunity to take the problem firmly in hand has ever been presented than the present growing public demand for closed cars, stimulated by tempting closed car prices.

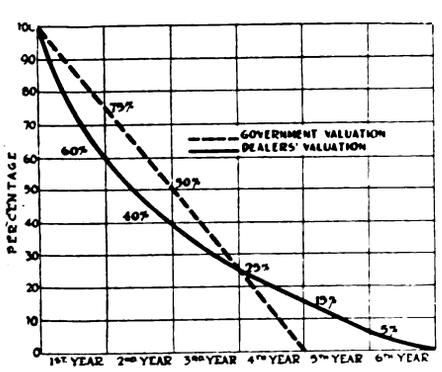
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Government vs. Dealers' Used Car Valuation

The Federal Tax Return Method of Depreciation Is an Arbitrary One While Dealers Base Estimates on Market Value

EDITOR Motor World: Several prospects who have had used cars to trade have argued with me about my allowance, claiming that the Federal Government, in connection with tax returns, depreciates the value of a car only 25 per cent during its first year, while my average allowance for a car in good condition, a year old, is 35 per cent off the list price. Of course, I have told these fellows that I cannot take cars in for more than I can get for them, and that I can't get more than 65 per cent of the new car price, but some of them are hard to convince and have argued pretty hard about these Government figures. Do you know of any way I could state the case more plainly?—Veteran Reader.

Answer: You can tell your prospects at the start that the Government depreciation figure is an arbitrary one, established to simplify figuring of tax returns. As a matter of fact, the Government depreciation figure is the same every year, that is, the depreciation allowed each year is 25 per cent of the original value, so that the investment in the car is entirely written off at the end of four years.



The chart shows the difference between the arbitrary Government depreciation of used cars, for purposes of figuring taxes, and what might be termed an average dealers' depreciation. Note that the Government's figure is higher than the dealers' when the car is undergoing its sharpest decline in resale value, that is, in the first two years of its life as a used car. The Government and dealers' figures cross each other at the end of the third year, but the Government figure reaches zero at the end of the fourth year, while the car does not drop to junk value, in the dealers' estimation, until it is six years old.

An automobile dealer, of course, knows that such a depreciation plan is fictitious, as depreciation of a car's value immediately after it is put in use and becomes a used car is more rapid than during the second and third years.

For instance, in Boston, where the Used Car Statistical Bureau operated by the dealers has fixed valuations on the basis of actual resale prices of many sales of nearly all makes and models of cars, the average is as follows: At end of first year, 68 per cent of list price; second year, 40 per cent; third year, 30 per cent; fourth year, 24 per cent; fifth year, 17 per cent.

A valuation of 68 per cent at the end of the first year, that is, a depreciation of only 32 per cent, would be considered high in many communities, where it has been more or less the custom among dealers at least to start talking about valuations on last year's models at 60 per cent of the current new car price, two year old models at 40 per cent, three year old models at 25 per cent, four year old models at 15 per cent and five year old models at 5 per cent, while some cars six years old or more are rated at junk value.

The difference between what might be termed an average dealers' or market value depreciation and the arbitrary Government depreciation for convenience in figuring tax returns can be shown by a diagram of the two depreciation curves. You might find it useful to show this diagram to some of your prospects, particularly calling attention to the Government rating of a car as of no value at all, for taxable purposes, after the end of its fourth year, while dealers figure it at 15 per cent, more or less, according to its condition and local market condition.

California Dealer's Attractive New Building





Usually a center driveway interferes with display. In a building as wide as the one shown above, however, there is sufficient display frontage on either side of the driveway to take care of the two salesrooms. The center driveway has the advantage of giving the building a more balanced appearance. The lower photograph shows the interior of the garage and service station. The lighting is unusually good. This building belongs to Roy A. Priest, Ford dealer, Ventura, Cal.

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A Flat Rate Schedule for Oakland Cars

(*Continued from the August 9 issue*)

18—Fit six new pistons with pins and hang on connecting rod, when connecting rods are brought in with pistons 2.0

1—Remove connecting rod clamp bolt, nut and cotter pin.
2—Remove piston pin and connecting rod from pistons.
3—Measure each piston pin with micrometer.
4—Adjust reamer to piston pin measurement.
5—Ream piston.
6—Fit piston pin to piston.
7—Assemble connecting rods to pistons.
8—Assemble connecting rod clamp bolt, nut and cotter pins.
9—Align pistons and connecting rods with lining bar or an aligning gauge. Repeat operations 3 to 7 for each of six pistons.
Material: Pistons (standard) 2.810-2.811, piston pins.

20—Grind valves and clean carbon.. 5.0

1—Drain radiator.
2—Remove hood.
3—Remove cylinder head cover.
4—Remove cylinder head water outlet cap screws.
5—Remove front and rear rocker arm bracket and shaft assemblies.
6—Remove carburetor head tube elbow.
7—Remove exhaust pipe to manifold screw.
8—Disconnect vacuum tank to intake manifold pipe assembly.
9—Remove hot air stove from carburetor.
10—Disconnect carburetor from intake manifold.
11—Remove cylinder head to cylinder block screws 10 cap screws.
12—Remove cylinder head.
13—Remove 12 "U" washers, valve spring cups and valve springs.
14—Remove cotter pins from valve stems (12).
15—Clean carbon from valves and cylinder head.
16—Grind 12 valves, using screw driver wipe clean after grinding.
17—Replace valve stem cotter pin.
18—Replace valve springs, valve spring cups and U washers.
19—Clean carbon from cylinders.
20—Renew or replace cylinder head gasket.
21—Replace cylinder head.
22—Replace cylinder head to cylinder block screws. (10 cap screws.)
23—Replace front and rear rocker arm brackets (6 cap screws).
24—Replace cylinder head water outlet.
25—Replace exhaust pipe to manifold screw.
26—Connect carburetor to intake manifold.
27—Connect vacuum tank intake manifold pipe assembly.
28—Connect heat tube elbow to manifold.
29—Clean spark plugs.
30—Fill radiator.
31—Start and allow engine to warm up.
32—Adjust valve rocker arms to .010 clearance.
33—Adjust carburetor.
34—Replace cylinder head cover.
35—Replace hood.

21—Adjusting valve clearance.....0.34

1—Raise hood.
2—Remove cylinder head cover.
3—Start engine and run until warmed up.
4—Adjust valves using feeler (.010 clearance allowed)
5—Replace cylinder head cover.
6—Lower hood.

22—Tighten down cylinder head after which adjust tappets.....0.50

1—Raise hood.
2—Remove cylinder head cover.
3—Tighten cylinder head to cylinder block screws.
4—Tighten rocker arm bracket and shaft assembly cap screws.
5—Adjust valve rocker arms to .010.
6—Replace cylinder head cover.
7—Lower hood.

23—Install new cylinder head gasket.1.50

1—Drain radiator.
2—Remove hood.
3—Remove cylinder head cover.
4—Remove cylinder head water outlet.
5—Remove front and rear rocker arm brackets and shaft assemblies (6 bolts).
6—Disconnect heat tube elbow from manifold.
7—Loosen exhaust pipe to manifold screw.
8—Loosen manifold to vacuum tank pipe from manifold.
9—Remove hot air stove from carburetor and exhaust pipe.
10—Loosen carburetor from manifold.
11—Remove cylinder head to cylinder block screws (10 bolts).
12—Remove cylinder head.
13—Remove oil and install new cylinder head gasket.
14—Replace cylinder head after cleaning carbon from same.
15—Replace and tighten cylinder head to cylinder block screws (10 bolts).
16—Replace front and rear rocker arm bracket and shaft assemblies (6 bolts).
17—Replace cylinder head water outlet.
18—Tighten exhaust pipe to manifold screw.
19—Connect carburetor to manifold.
20—Connect manifold to vacuum tank pipe to manifold.
21—Connect heat tube elbow to manifold.
22—Fill radiator.
23—Start and allow engine to warm up.
24—Adjust valve rocker arms to .010 clearance.
25—Replace cylinder head cover.
26—Replace hood.
Material: Cylinder head gasket.

30—Drain oil from motor and put in new oil 0.34

1—Remove oil pan drain plug.
2—Drain oil.
3—Replace oil pan drain plug.
4—Refill oil reservoir.
Material: Engine oil.

31—Remove oil pan and clean same..1.50

1—Drain oil from motor.
2—Raise hood, remove five engine side pan stud nuts.
3—Remove 22 oil pan to crank case screws and oil pan.
4—Wash oil pan and oil pump screen.
5—Inspect oil pan gasket and renew if necessary.
6—Replace oil pan and 22 oil pan to crankcase screws.
7—Replace five engine side pan nuts.
8—Refill oil reservoir to level.
9—Lower hood.
Material: Oil pan gasket.

35—Install new carburetor and adjust 1.0

1—Raise hood.
2—Disconnect carburetor spring from manifold.
3—Remove heat tube elbow, carburetor to manifold.
4—Remove carburetor choker rod.
5—Disconnect foot accelerator rod.
6—Disconnect hand throttle control rod.
7—Disconnect gas pipe carburetor to vacuum tank.
8—Remove carburetor stove from manifold.
9—Take off two stud bolt nuts, carburetor to manifold.
10—Remove old carburetor.
11—Install new carburetor.
12—Replace two stud nut carburetor to manifold.
13—Connect gas pipe to carburetor to vacuum tank.
14—Connect carburetor stove to manifold.
15—Connect foot accelerator rod.
16—Connect hand throttle control rod.
17—Connect carburetor spring to manifold.
18—Connect heat tube elbow carburetor to manifold.
19—Connect carburetor choker rod
Material: Carburetor assembly.

36—Replace vacuum tank.....0.84

1—Disconnect vacuum to carburetor pipe.
2—Disconnect vacuum to manifold pipe.
3—Disconnect vacuum to gas tank pipe.
4—Take off four bolts vacuum tank bracket to dash.
5—Remove vacuum tank.
6—Install new vacuum tank by replacing four vacuum tank bracket to dash bolts.
7—Connect vaccum to gas tank pipe.
8—Connect vacuum to manifold pipe.
9—Connect vacuum to carburetor pipe.
Material: Vacuum tank assembly.

40—Remove and install all or any parts needed to repair fan or water pump 1.50

1—Drain radiator.
2—Remove hood.
3—Remove radiator splash guard by removing two front spring shackle. bolt nuts and two center splash guard screws.
4—Remove radiator support nuts.
5—Remove cylinder head cover.
6—Disconnect cylinder head water outlet.
7—Disconnect water inlet hose.
8—Remove radiator.
9—Remove fan belt.
10—Remove water pump body.
11—Examine and clean water pump body.
12—Remove impeller set screw.
13—Replace or install new set screw.
14—Replace water pump body.
15—Replace and adjust fan belt if needed.
16—Replace radiator and fasten with two radiator support bolts.
17—Assemble radiator slash guard to frame with two splash guard screws.
18—Assemble front spring shackle bolt nuts and cotter pins.
19—Replace cylinder head water outlet.
20—Connect water inlet hose.
21—Replace hood.
22—Fill radiator.
Material—Water pump body, water pump bushing, water pump impeller, water pump shaft, water pump packing net, fan complete.

41—Adjust fan pulley 0.25

1—Raise hood.
2—Loosen three cap screws in fan pulley.
3—Tighten belt by turning outer half of fan pulley.
4—Tighten three cap screws in fan pulley.
5—Lower hood.

42—Install radiator hose upper.....0.34

1—Raise hood.
2—Drain radiator.
3—Remove cylinder head water outlet hose clamps.
4—Remove outlet hose from radiator.
5—Assemble new hose to radiator.
6—Assemble hose to cylinder head water outlet.
7—Fill radiator.
8—Lower hood.
Material: Radiator inlet hose.

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43—Install radiator hose lower.....0.34

1—Drain radiator.
2—Raise hood.
3—Remove water inlet hose clamp and hose.
4—Assemble new hose and fasten.
5—Fill radiator.
6—Lower hood.
Material: Radiator hose lower.

101—Change transmission gears.... 7.0

1—Raise hood and remove accelerator pedal.
2—Remove carpet, cushions and auxiliary seat.
3—Remove floor board gearset cover plate.
4—Remove floor board.
5—Disconnect clutch release bearing lubricator tube from toe board.
6—Remove lower half of lower toe board.
7—Remove upper half of lower toe board.
8—Disconnect universal joints.
9—Remove hand brake lever.
10—Disconnect speedometer cable. Disconnect clutch pedal come back spring from transmission case.
11—Remove clutch pedal shaft auxiliary bracket and pedal.
12—Remove four gearset to bell housing screws and take off gearset.
13—Remove four main drive gear retainer screws.
14—Remove main drive gear assembly and retainer.
15—Remove retainer and spacer from main drive gear assembly.
16—Remove main drive shaft rear bearing retainer.
17—Remove main drive shaft and gearset sliding gears.
18—Clean gears main drive shaft and rear main driveshaft bearing. Universal joint housing and drain gearcase.
19—Assemble main drive gear felt to new main drive gear assembly.
20—Remove main drive gear ball bearing front from main drive gear and inspect bearing.
21—Replace or renew main drive gear ballbearing on new main drive gear.
22—Fit end of main drive shaft to main drive gear bushing.
23—Fit sliding gears to main drive shaft.
24—Assemble sliding gears and main drive shaft to gearcase.
25—Assemble main drive gear and retainer to gearcase.
26—Assemble and bolt gearcase to bell housing.
27—Assemble pedals and clutch pedal shaft auxiliary bracket.
28—Oil clutch.
29—Assemble universal joint.
30—Assemble gearcase cover.
31—Fill gearset to level with fresh oil.
32—Assemble hand brake lever.
33—Connect clutch pedal come back spring and clutch adjusting line.
34—Connect speedometer drive cable.
35—Replace upper half of toe board.
36—Replace lower half of toe board.
37—Connect clutch release bearing lubricator tube to toe board.
38—Replace floor board.
39—Connect accelerator pedal rod.
Material: Tear down transmission and inform customer price of parts needed before resuming work.

111—Reline clutch cone 5.0

1—Raise hood and remove accelerator pedal.
2—Remove floor board.
3—Disconnect clutch release bearing lubricator tube from toe board.
4—Remove lower toe board.
5—Remove front universal joint.
6—Remove hand brake lever.
7—Disconnect come back spring and clutch pedal adjustment link.
8—Remove four transmission to bell housing screws and take off transmission.
9—Remove clutch release bearing lubricator tube from clutch release bearing.
10—Remove three mud pan to bell housing screws.
11—Remove five clutch bell housing to crankcase screws. Remove bell housing.
12—Unscrew clutch spring support bearing nut.
13—Remove clutch cone assembly.
14—Remove lining from clutch with cold chisel.
15—Assemble and rivet new clutch leather to clutch cone.
16—Assemble four clutch cone leather spring inserts under leather.
17—Assemble clutch cone assembly to fly wheel.
18—Assemble clutch release bearing lubricator tube to clutch release bearing.
19—Assemble bell housing and tighten five bell housing to crankcase screws.
20—Replace gearset and tighten four gearset to bell housing screws.
21—Assemble adjusting link to come back spring.
22—Assemble universal joint.
23—Connect speedometer cable.
24—Connect lubricator tube to toe board.
25—Assemble toe board.
26—Assemble hand brake lever.
27—Assemble and tighten three bell housing to cross member bolts.
28—Assemble floor board.
29—Assemble accelerator pedal rod.
30—Test clutch.
Material: Clutch cone leather, clutch cone leather rivet.

112—Install new clutch assembly.... 2.0

1—Raise hood and remove accelerator pedal rod.
2—Remove floor boards.
3—Disconnect clutch release bearing lubricator tube from toe board.
4—Remove toe board.
5—Disconnect Universal joint.
6—Remove hand brake lever.

This is the tenth flat rate schedule published in Motor World. The previous schedules covered Paige, Overland Four, Studebaker, Dodge, Dort, Buick, Chandler, Hupmobile and Marmon.

7—Disconnect speedometer cable. Disconnect clutch pedal come back spring from gearcase.
8—Remove four gearset ball housing screws and take off gearset.
9—Remove clutch release bearing lubricator tube from clutch release bearing.
10—Remove three mud pan to bell housing screws.
11—Remove five clutch bell housing to crankcase screws. Remove bell housing.
12—Unscrew clutch spring support bearing nut.
13—Remove clutch assembly.
14—Assemble new clutch assembly.
15—Assemble clutch release bearing lubricator tube to clutch release bearing.
16—Assemble bell housing and tighten five bell housing to crankcase screws.
17—Replace gearset and tighten four gearset to bell housing screws.
18—Assemble clutch pedal come back spring and assemble clutch adjusting link.
19—Assemble universal joint.
20—Connect speedometer cable.
21—Assemble toe board.
22—Assemble clutch release bearing lubricating tube to toe board.
23—Assemble hand brake lever.
24—Assemble and tighten three mud pan to bell housing screws.
25—Replace floor board.
26—Assemble accelerator pedal rod.
27—Test clutch.
Material: Clutch assembly.

151—Install new front spring 1.50

1—Jack frame and block at rear of spring shackle.
2—Remove radiator splash guard by removing two front spring shackle bolt nuts, and two center splash guards.
3—Take off four spring clip nuts and remove two spring clips.
4—Take out rear lower shackle bolt.
5—Take out front shackle bolt.
6—Take off old spring.
7—Install new spring.
8—Install rear shackle bolt.
9—Install front shackle bolt.
10—Install two spring clips.
11—Replace radiator splash guard, two center splash guard nuts and spring shackle bolt nuts.
12—Lower car to floor.
Material: Front spring.

156—Replace rear spring 2.50

1—Jack up frame or use chain fall.
2—Remove two spring clips.
3—Take out rear lower shackle bolt.
4—Take out rear spring bolt front.
5—Remove old spring.
6—Install new spring.
7—Install rear spring bolt front.
8—Install rear shackle bolt front.
9—Install two spring clips.
10—Lower and remove jack or disconnect chain fall.
Material: Rear spring.

301—Measure and adjust "gather" of front wheels 0.50

1—Measure the angle of front wheels.
2—Adjust tie rod tube to proper angle.

302—Install any new parts needed in front wheels 1.50

1—Jack up front wheel.
2—Remove hub cap.
3—Remove cotter pin bearing spindle nut and wheel.
4—Remove all bearing parts from wheel.
5—Wash all parts.
6—Assemble inner and outer bearing in wheel.
7—Remove bearing cone from spindle.
8—Assemble new bearing cone to spindle.
9—Replace hub cap and lower wheel.
Material: Hub, inner cone, outer cone, inner balls, safety washer.

310—Reline external brakes 1.50

1—Jack up rear wheel and block car.
2—Remove hub cap.
3—Remove driving shaft star washer and nut.
4—Remove wheel with wheel puller.
5—Remove external brake stop pin adjusting screw.
6—Remove end brake band end clevis pins (2).
7—Remove brake band assembly.
8—Remove old brake lining from band.
9—Assemble new brake band facing to band, 20 tubular rivets.
10—Assemble brake band and stop pin.
11—Assemble brake stop pin adjusting screw and cotter pin.
12—Assemble two brake bad end clevis pins in end of band and cotter pin.
13—Assemble wheel.
14—Assemble driving shaft star washer and nut.
15—Lock star washer and put on hub cap.
16—Adjust brakes.
17—Lower car.
Duplicate above operations if relining both brakes.
18—Road test.
Material: External brakeband facing, rivet tubular band and lining.

311—Reline internal brake bands—
1 brake 1.84
2 brakes 3.75

1—Jack up rear wheel and block car.
2—Remove hub cap.
3—Remove driving shaft star washer and nut.
4—Remove wheel with wheel puller.
5—Remove cotter key and pull connecting link to toggle link pin.
6—Remove internal brake bank stop pin head and brake band clip guide.
7—Remove internal brake band assembly.
8—Cut old brake lining off with a cold chisel.
9—Rivet on new brake band lining.
10—Replace brake band assembly on axle.
11—Assemble brake band clip guide and brake band stop pin head.
12—Replace connecting link to toggle link pin and fasten with cotter key.
13—Assemble wheel to axle.
14—Replace star lock washer, tighten driving shaft end nut and crimp star washer.
15—Screw on hub cap.
16—Lower wheel with jack.
Repeat above when relining both internal brakes.
Material: Brake band facing, rivet tubular band to lining.

320—Change rear wheel oil shedders
1 wheel 1.42
2 wheels 2.75

1—Jack up rear wheel and block car.
2—Remove hub cap.
3—Remove driving shaft, end nut, star lock washer and nut.

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4—Remove wheel with wheel puller.
5—Clean mud and grease from wheel.
6—Take out six oil shedder screws and remove oil shedder.
7—Assemble new oil shedder and gaskets to wheel.
8—Wash and clean brake drum, wheel and tire with gasoline.
9—Clean grease and mud from brakes and wash with gasoline.
10—Assemble wheel to axle.
11—Replace star washer, tighten driving shaft end nut and crimp star lock washer.
12—Screw on hub cap.
13—Lower wheel with jack.
Repeat same when required on both wheels.
Material: Oil shedder assembly, oil shedder felt, oil shedder gasket.

401—Supply and install any part needed in rear axle 12.0

1—Raise rear end of car with chain hoist.
2—Remove hub caps.
3—Remove driving shaft star washer and nut.
4—Remove both rear wheels, using wheel puller.
5—Remove truss rod.
6—Remove spring clip, two on each rear spring.
7—Disconnect rear universal joint and brake pull rods.
8—Remove rear axle complete (two men).
9—Remove seven housing bolts from differential housing and six piston flange stud nuts from third member.
10—Remove wheel key.
11—Remove axle housing, left and right side.
12—Clean axle shafts and differential.
13—Disassemble third member.
14—Disassemble and clean pinion shaft outer bearing sleeve nut.
15—Remove bevel pinion, bevel pinion shaft and spacer from differential.
16—Remove cotters, main axle shafts, nuts and axle shafts and intermediate bevel gears from differential case.
17—Remove bevel ring gear from differential case, using cold chisel in cutting rivets.
18—Rivet new bevel ring gear to differential case (12 rivets).
19—Reassemble third member pinion shaft outer bearing sleeve.
20—Assemble main drive shaft and intermediate bevel gear with main drive shaft nut inner and cotter to differential case.
21—Assemble bevel pinion with shaft and spacer to differential case.
22—Pin shaft with pinion shaft lock pin.
23—Assemble third member.
24—Clean out left and right axle housings.
25—Assemble differential thrust and Hyatt bearing in axle housing.
26—Assemble left side housing and third member to differential and main drive shaft assembly.
27—Adjust third member to proper bearing and back lash, after which remove from housing.
28—Assemble right side housing and bolt with seven housing bolts.
29—Assemble third member to axle housing by six pinion flange stud nuts.
30—Oil differential. ....
31—Reset brake camshaft shaft collars.
32—Assemble grease cups.
33—Assemble axle to car (two men).
34—Fasten spring clips.
35—Assemble truss rod (two men).
36—Assemble and oil universal joint rear.
37—Connect brake pull rods.
38—Assemble rear wheel key and rear wheels.
39—Lower car to floor.
40—Test car on floor for axle noise.
Material: Bevel ring gear, bevel pinion gear, differential bevel pinions, third member bearing outer, third member bearing inner, differential bevel pinion pins, differential intermediate gears, bevel pinion spacer.

451—Install new front fender, right or left hand 1.0

1—Remove headlight tie rod bolt.
2—Remove two bolts from headlight bracket to fender.
3—Remove front spring shackle bolts.
4—Remove two bolts from radiator splash guard to front cross member.
5—Take off radiator splash guard.
6—Remove three front fender to runningboard screws.
7—Remove six front fender to frame stove bolts.
8—Remove three bolts fender reinforcement bracket to frame.
9—Take off old fender.
10—Install new fender.
11—Replace three bolts, fender reinforcement bracket to frame.
12—Replace six fender to frame stove bolts.
13—Replace three fender to runningboard screws.
14—Fasten radiator splash guard by two splash guard center screws.
15—Replace two front spring shackle bolt nuts.
16—Assemble headlight bracket to fender.
17—Connect up headlight tie rod.
Material: Front fender, right hand, front fender left hand.

455—Install new rear fender, right or left hand 0.7

1—Remove three fender to runningboard screws.
2—Remove nine fender to body bolts.
3—Take off fender.
4—Install new fender.
5—Replace nine fender to body bolts.
6—Replace three fender to runningboard screws.
Material: Left rear fender, right rear fender.

551—Adjust distributing or timing...0.4

1—Raise hood.
2—Remove number one spark plug.
3—Crank motor to upper head center on number one cylinder.
4—Remove distributor head and rotor.
5—Set distributor cam.
6—Replace rotor.
7—Replace distributor head and number one spark plug.
8—Start motor.
9—Lower hood.

552—Replace Bendix drive spring....0.8

1—Raise hood.
2—Disconnect wire on starting motor.
3—Remove starting motor lock bolt.
4—Remove starting motor.
5—Remove Bendix spring from starting motor.
6—Remove Bendix gear.
7—Assemble Bendix gear to starting motor.
8—Assemble Bendix spring.
9—Assemble starting motor to engine and connect wire.
Material: Bendix drive spring.

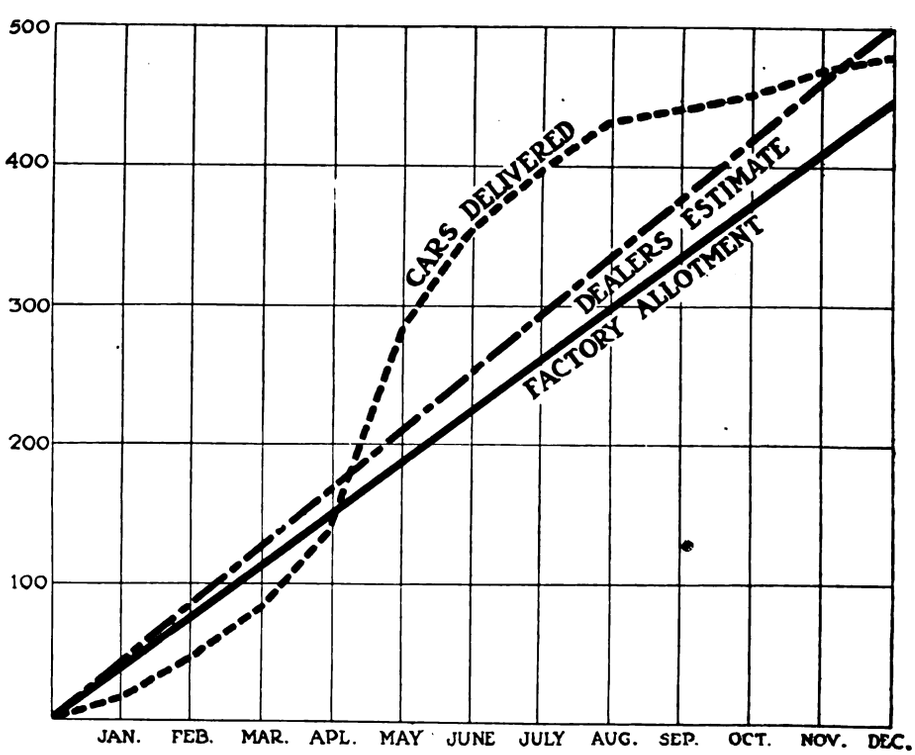
575—Change oil gage.....0.5

1—Remove oil gage and glass and frame.
2—Remove glass from frame.
3—Replace glass in frame.
4—Assemble to instrument board.
Material: Oil pressure gage.

Chart Shows Relation of Car Deliveries to Allotment

VISUALIZATION of the number of cars allotted by the factory for the year and the actual car deliveries by the dealer is not only helpful in guiding the dealer's business but also serves as a stimulus to greater activity. The bicycle rider who is paced makes a better time than the one who is not paced. Let the factory allotment or the dealer's estimate for the year be the pacer to spur sales to increased speed.

Williams & Hastings, Detroit distributor for the Hupmobile, uses a chart on which is laid out the factory allotment for the year and the estimate of the number of cars that ought to be sold. Each month the actual car deliveries are plotted on the chart, including the sales of the previous month. It is easy to see at a glance just how far ahead or behind the allotment the sales are at any month of the year. In the chart shown, deliveries were behind the allotment for the first three months of the year, but picked up rapidly in the spring and summer, running the cars delivered curve far ahead of the allotment. The curve later drops back to a point between the allotment and the estimate.



This chart, used by Williams & Hastings, Detroit Hupmobile distributor, is a selling stimulant through its comparison of estimated accomplishment with actual performance

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Complete Equipment Features New Mitchell Phaeton

Standard equipment on the new Mitchell De Luxe five-passenger phaeton includes extra tire, tube and tire cover, De Luxe motometer and nickeled radiator cap, windshield wings, sun visor, front and rear bumpers, step plates, rear view mirror, windshield wiper, motor driven tire pump, disk wheels and demountable rims with nickel plated retaining rings. Side curtains are carried in compartments in the rear of the front seat and tools in the left front door. The design of the radiator has been changed as has the name plate. Standard colors are maroon with gold striping and blue with white striping. The price is $1,790



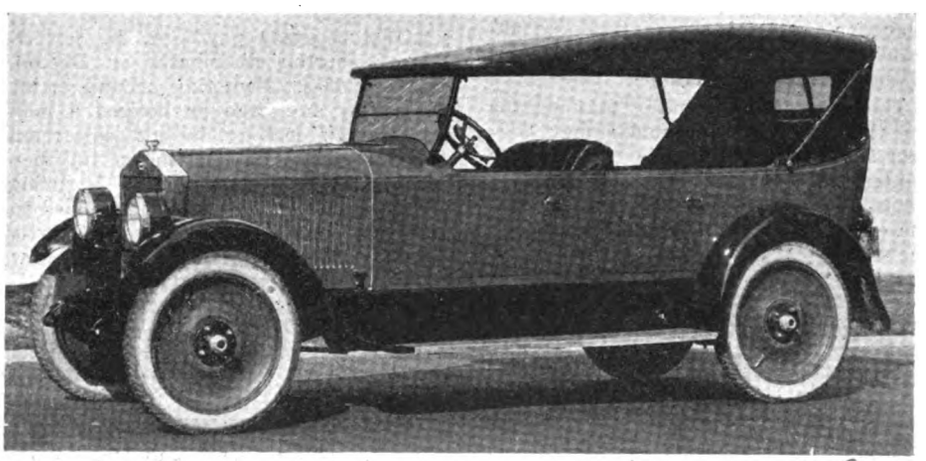


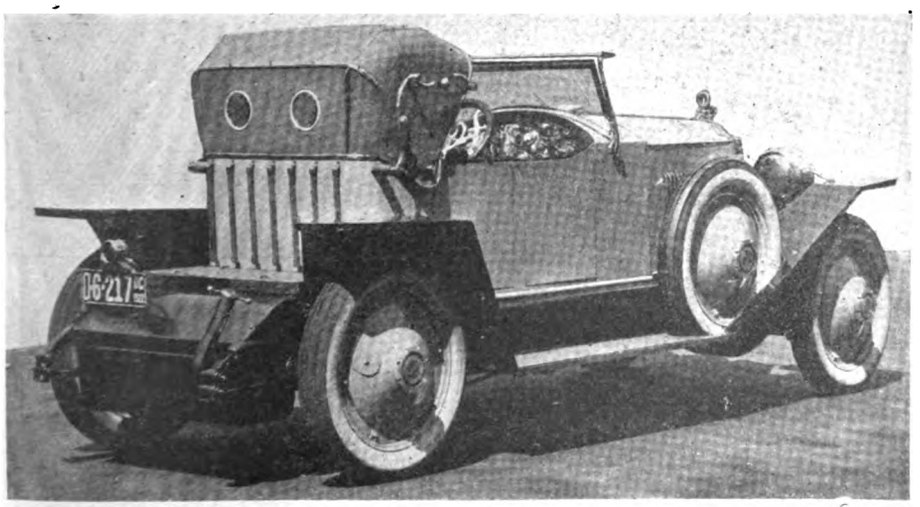
New G M C Road Tractor

Three new models of truck tractors, of which the above is typical, are being placed on the market by The General Motors Truck Co. The tractors are rated at 5, 10 *and* 15 *tons. The prices are* $2,650, $3,900 *and* $4,250 *respectively. The Standard GMC truck design is the foundation for the tractors. The heavy duty power plant is used and standard equipment will include convertible cab and odometers*

New Moon Seven-Passenger Phaeton at $1,785

This phaeton body is mounted on the new Moon 6-58 *chassis, which supersedes the model* 6-48. *Comparing the new and old models, the former has a* 3⅜ *in. by* 4½ *in. engine, as compared with a* 3¼ *by* 4½ *in. in the* 6-48. *The wheelbase has been increased from* 122 *to* 128 *in. and* 4½ *in. tires are used instead of* 4 *in.*





Dagmar Four-Passenger Sport Priced at $3,500

This car is built by the Crawford Automobile Co., Hagerstown, Md. It has a six-cylinder, 3⅝ *x* 5¼ *in. Continental engine, Westinghouse starting motor, American Bosch generator and magneto, Willard battery, Stewart-Warner vacuum gasoline feed and Zenith carbureter. The clutch and gearset are Brown-Lipe and the universals Spicer. The axles are Timken. The springs are half-elliptic fitted with Hartford shock absorbers. Body colors are optional. The wheelbase is* 135 *in. and the tires are* 33 *x* 5 *in. cords*

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Parts Show Proves a Good Sales Stimulant

Exhibit in Salesroom of Denver Hupmobile Dealer Draws Large Attendance and Sells Cars

A UNIQUE activity on Denver's "Automotive Row" recently was a parts show at the salesroom of the S. B. I. Motor Sales Co., Hupmobile distributor for Colorado and adjacent territory. The idea was originated by this firm for the purpose of educating motorists and prospective motorists regarding the what, why and how of the principal mechanical parts of the Hupmobile. All the important parts are displayed neatly on tables, and salesmen and members of the firm are on hand to explain carefully the exact workings of these parts, the nature of material and construction, how to get the best results when operating a car, what to expect of a car, etc., and to answer questions as thoroughly as possible, with the aid of the parts to make explanations clear and practical.

The parts show opened with an attendance of about 150, and one night there were fully 400 visitors. From 6 o'clock until 10:30, five men were kept busy explaining, demonstrating and answering questions, and the real interest of the visitors was highly gratifying.

The show was originally planned for the three days of the midsummer outdoor automobile show at the nearby Civic Center, but the attendance has been so surprising and the interest so keen that the enterprise was continued the rest of the week.

At least two cars were sold as a direct result of the parts show, and the event is considered of far reaching value from both an educational standpoint and as a sales stimulant.

Dealer Writes Personal Letter to Each Buyer

A BIRMINGHAM, Ala., automobile dealer follows up every sale with a personal letter, making the letter carry the idea of individual interest. In this letter he asks the customer to come by for a free examination of his car. Ten or twelve days after this letter is written it is followed up by a post card again asking the customer to call by and requesting that he send in the names of his friends who are in the market for a car. This method of follow-up has produced good results in both the feelings of the customers and in building up the prospect list.

Courtesy Pays

DOES courtesy pay? A. H. Sowers, Lexington distributor in Boston, knows it does. Swinging around in his car a few days ago he noticed a man and woman looking in his salesroom window. They started to go in, then hesitated and passed along. Figuring that they were a bit timid, he decided to remedy that for the future. Shortly afterward there appeared in his window a small, neat card reading:

"Thank you for stopping to look at
THE LEXINGTON
MINUTE MAN SIX.

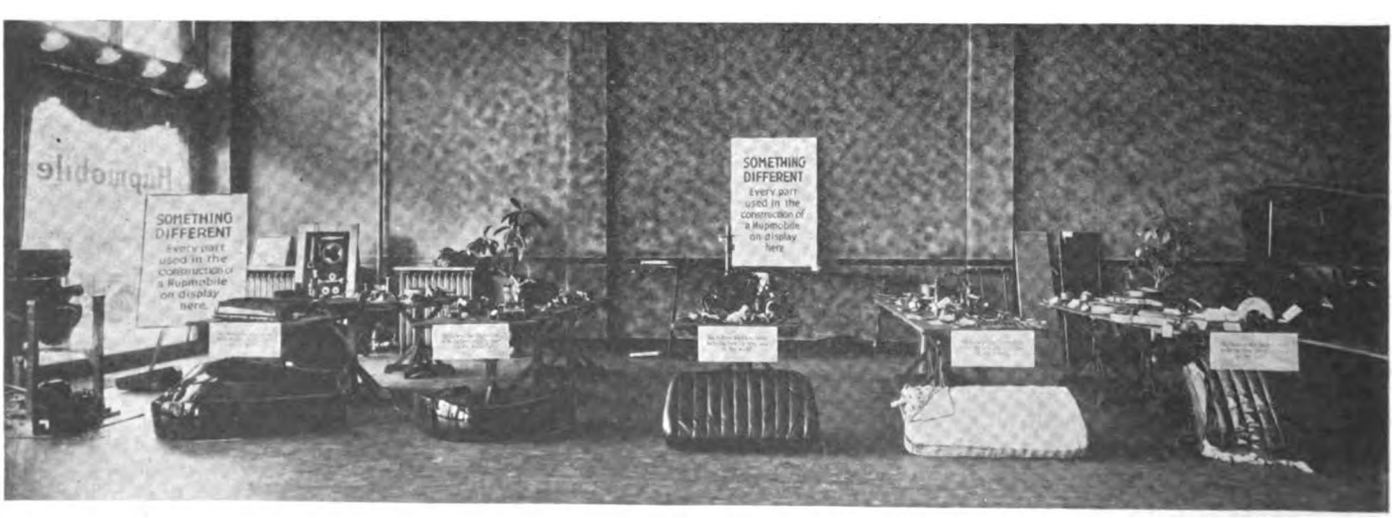
There are many things about this motor car that we should be glad to explain to you. Stepping inside will not subject you to annoyance by insistent, overzealous salesmen, for we wish to emphasize our appreciation of your courtesy in taking the time to note what Lexington cars look like."

Within a week, while a salesman was booking an order for a Lexington coupe, the woman accompanying the buyer smiled as she said: "We could not resist that little card in the window. It seemed so assuring. And you may charge up part of the commission to whoever wrote it, for he earned this sale from it."

Driving Lessons for Live Prospect

"FREE instruction in driving to anyone who gives us the name of a live prospect." This is the unique stunt adopted by an enterprising dealer in getting new prospects. This sort of thing doesn't cost the dealer anything beyond a little time when there is nothing else doing and in this way the dealer not only gets the name of a prospect but also makes a prospect out of the person he is teaching to drive.

The Parts Display as an Educational and Selling Force



At least two car sales are directly traceable to this parts show staged recently in the salesroom of the S. B. I. Motor Sales Co., Hupmobile distributor in Denver

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Lubricating Service Helps Sell Accessories

Philadelphia Dealer Sells Automotive Equipment Through Opportunities Offered by Unusual Plan

PRIMARILY a retail automotive equipment concern, the Fred G. Byers Co., Inc., 2011 Market Street, Philadelphia, is operating a plan which serves to produce customers for the accessories and tire departments. Instead of advertising at the outset that for $35 a year, payable in advance, the concern would service a car on a yearly contract basis involving thorough inspection and lubrication once a month, the Byers company employed the more attention-compelling terms of announcement that "$2.92 a month keeps your car in perfect condition as far as lubrication is concerned."

As lubricating service, offering as many advantages as this, commonly costs in Philadelphia from $6 to $8 a month and the prospect readily recalls this fact, that low charge of $2.92 stands out prominently.

Patrons of the house, secured by means of such announcements, acquire their confidence in it, of course, through the service end and it is extremely necessary that this service be most thorough and painstaking.

Once a month the owner brings, or sends his car to the service station, which is in the rear of the accessories salesroom, in a closely shut-off department, so that the gasoline fumes will not penetrate into the store. The car is run up on a specially-built lubricating platform of iron, with flanged tracks, so that the vehicle cannot fall off. The platform is high enough so that the workmen engaged in the lubricating process may sit beneath it. There is no lying on the floor and the arrangement is superior to a pit. If the car is not equipped with high-pressure lubrication cups, the company will install them, free of charge. The crank case is drained and refilled, the dead grease being cut with kerosene, by means of a high-pressure lubricating gun and then every part of the car requiring it is thoroughly greased and oiled in strict compliance with the specifications of the car manufacturer. If the car has grease cups, the company will equip them with nipples, free.

The speedometer reading on every incoming car is checked to see whether the car has been run 600 to 800 miles and upward, in which case it needs the thorough lubrication.

The opportunity to examine the car, note what it lacks in the way of accessories and "ask 'em to buy" when it is on the stand, or afterward, makes the lubricating system an invaluable "feeder" to the store's business. Not only does every employee in the store proper "ask 'em to buy," but this good habit extends to every shopman in the service station department. The results are worth while and are becoming increasingly so.

The house has still another contract, whereby it agrees to lubricate a car twice a month for $50 a year, payable in advance.

Under either contract, the owner's car, as soon as it has been placed upon the lubrication stand, is rocked back and forth and sideways to note if there are any body-squeaks. The company is particular about stopping and preventing such noises—another point that is always keenly appreciated by the customer. If a bolt is found to be loose, it is immediately tightened and other such minor adjustments are made so that the car will run smoothly and receive the good of its new lubrication.

The company has among its customers a large number of physicians, surgeons and other professional men. In most cases they enter the store, attracted by the notably good display window which is changed at least once a week, get to examining the wares and discussing them and usually make substantial purchases.

Women car owners frequently come into the store, after noting the window. As the interior of the store is as neat as the proverbial pin, and always is kept so, they are apt to repeat their visit when they need accessories.

Those who have their car greased and oiled, usually bring it and also call for it, thus affording two good opportunities to "ask 'em to buy."

In addition to advertising in the newspapers the company sends out postcards every month to its large list of customers and prospects. Stiff folders, a part of which forms a return postcard, are mailed to prospects only. The return postcard states that the writer, without incurring any obligation, wishes to learn more about the lubricating service, and gives the type of car he owns.

In addition to the lubricating service, the house is a battery service station, has a towing service and washes cars and cleans their interiors with a vacuum cleaner. There is a free air line, and tubes are repaired free of charge in cases where the tires have been purchased from the company. U. S. Royal Cords, Goodyear, Fisk, Michelin and Goodrich tires are kept in stock.

The lubrication system, begun as an experiment, forms a very valuable part of the business, not only for its own sake, but because of its greatly increasing the sale of accessories.

Selling Lubrication Service



A monthly lubrication service, sold in newspaper advertising like this and through direct mail effort is also providing the opportunity for accessory merchandising for the Fred G. Byers Co., Philadelphia

Frequent Use of Tags Sells Tires

H. C. MACK, of Hellums & Mack, operating a tire service station at Independence, Mo., nine miles from Kansas City, has a definite idea on how to get good from advertising.

"Give it to the public often," he says. The company uses chiefly shipping tags which are thrown into cars on the streets, or tied to windshield. There is much casual traffic through the town. But the frequent distribution of the tags is not for the purpose of reaching motorists who had not seen the cards before. The chief purpose is to keep the name before motorists.

"If they see the name often, it will make an impression finally," said Mack, "and we will get some business. A single shot is just as futile in use of advertising cards, as in newspapers."

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Power and Economy Depend on Carbureter Adjustment

General Principles of Adjustment Applying to All Carbureters and Detailed Instructions for Some Widely Used Models

A GREAT majority of the automobiles operating on the streets and roads to-day have poorly adjusted carbureters. This statement can easily be verified at any congested traffic corner by watching the number of cars emitting black smoke from the exhaust, an indication of a mixture too rich. There are probably two reasons for this condition. In the first place, many of these carbureters have been adjusted for easy starting, or for cold weather running, with the result that when the engine gets warmed up, or when it operates under summer temperatures, the mixture is entirely too rich. The second reason is that carbureter manufacturers and car manufacturers have printed so many cautions against making adjustments on the carbureter that the average owner and some repairshops hesitate to make any adjustments with the carbureter, on the theory that as long as the car runs pretty well at present, they better let things alone. Poor carbureter adjustment is responsible not only for low gasoline mileage, but for fouling of the cylinders, and dilution of the crankcase oil.

Any standard designed carbureter embodies parts with two distinct functions. The portion of the carbureter into which the gasoline enters from the feed pipe and which is known as the float chamber, is in reality a very small tank in which the gasoline is maintained at a constant level so as to supply gasoline to the mixing chamber always at the same head or pressure and to maintain it at the same level when the engine is not in operation.

The other portion of the carbureter is the metering device and vaporizing device. By various means the gasoline is atomized, then vaporized and supplied to the engine, mixed with air in the correct proportion to effect combustion in the cylinders at the proper time.

In order to make a good adjustment on the carbureter, it is first necessary to see that other operating parts of the engine are in good condition. The ignition should be tested as to the breaker points in either the magneto or distributor, the condition of the spark plugs and the gaps which should be gaged in accordance with the manufacturer's instructions. The fuel feeding device, whether of the vacuum or gravity type, should be gone over to see that the carbureter receives its gasoline without interference or obstruction. It almost goes without saying that the engine should have good compression and that the timing of the valves should be correct.

The most common trouble with carbureters is that of dirt getting into the needle valve or jet. It is almost impossible to be sure that dirt or water does not get into the gasoline tank, along with the gasoline, and even if it is very carefully strained, there are liable to be particles of dirt or chemical combinations on the inside of the tank and the fuel pipe which will eventually work down into the carbureter. For this reason the carbureter is supplied with a sediment trap, or a strainer, or both, and these must, from time to time, be cleaned.

When for some reason or other dirt manages to slip through the strainer, or get by the sediment trap, it lodges in the small hole of the jet with the result that the engine shows signs of insufficient gasoline. It is often possible to get rid of this dirt by suddenly throwing on the choke when the car is operating at a speed of about 25 m. p. h. on high gear. The high vacuum caused in the jet by this action will often draw small particles of dirt through the jet, and get rid of them in this way.

The air control band on the carbureter is of considerable importance in the operation of gasoline engines to-day. The gasolines sold for automobile purposes are of low grade and require heat for their effective vaporization. Practically every car on the market is provided with some kind of a stove, which surrounds the exhaust pipe and draws hot air from this vicinity. Other cars are equipped with additional means of vaporizing the gasoline, some by diverting a part of the exhaust through a section of the carbureter, and others by means of water jackets surrounding the float chamber. The air control band controls the amount of cold air admitted near the carbureter. When the air control band is all the way closed, all the air that gets into the carbureter is heated air from around the exhaust pipe. Opening the orifice increases the amount of cold air and as the suction on the hot air portion is reduced, not so much hot air comes in. In the winter time it is necessary to completely close the air band on practically all makes of cars, so that all the air admitted to the carbureter has been previously heated. In the summer time it is possible to effect a little better adjustment by opening the air band slightly to admit the cold air.

Idling Adjustment

The throttle adjustment can be very much improved on a great many cars that are in use at the present time. Most of the throttles are kept open too wide at their lowest position, with the result that the engine idles at a high rate of speed and this leads to noisy changing of gears. It also results in the consumption of a considerable quantity of gasoline that could otherwise be saved by slowing this adjustment down. The adjustment is practically always controlled by a small screw and lock nut on the throttle quadrant. This is adjusted with a screw driver and should be closed up until the engine just idles slowly when it is warm. To keep the engine running when it has not warmed up to its running temperature the hand throttle should be opened slightly. After making the adjustment, the screw should be locked.

A flooding carbureter is nearly always caused by dirt on the float needle. There are, of course, some other causes for flooding, but this is the most usual cause. The dirt can sometimes be removed by moving the float up and down in the bowl, thus washing the seat off with gasoline. At other times it is necessary to disassemble the float mechanism and remove the obstruction. In case of mechanical injury to the valve seat, this can be overcome in most cases by giving the needle a slight tap against the seat with a very light hammer. It is impossible to grind a needle to a seat.

The actual mixture adjustment of any carbureter is controlled by the fuel needle valve or the jet. On some carbureters this adjustment is made by a needle valve which closes or opens the jet, allowing a larger or smaller quantity of gasoline to be drawn through. On other models the jet is a fixed size, and the proportion of the mixture is controlled by the air valves. On any carbureter the proper adjustment is obtained by making the mixture leaner, or reducing the amount of gasoline, until the engine pops back in the carbureter. The adjustment should not be attempted until the engine has reached its running

Better Mechanics

ARTICLE No. 253

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.

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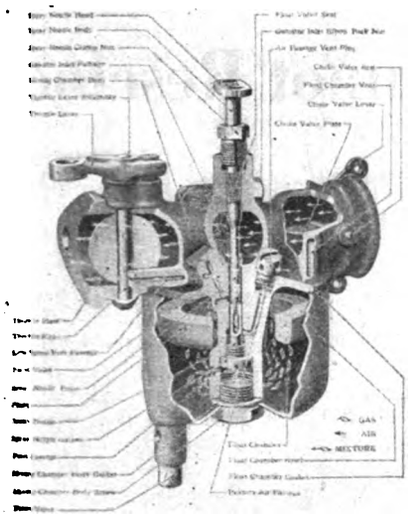


Fig. 1—Ford carbureter (Holley or Kingston)

temperature, which is around 140 deg. or over. When the engine pops back in the carbureter, the mixture can be made just a trifle richer to allow for normal running and it can then be considered correct.

The following are brief instructions for adjusting various types of carbureters in common use.

Ford

The carbureter adjustment on the Ford is from the dash, the lower end of the rod having a fork which rotates the needle valve on top of the carbureter. Some mechanics prefer to remove the rod from the needle valve and adjust the needle valve direct, but this does not make any difference in the adjustment. The adjustment is made by turning the needle valve in the clockwise direction until the mixture is lean enough to pop back in the carbureter. The needle valve is then given about one-eighth turn in a counter clock-wise direction to allow for smooth running. When the adjustment is correct, the control rod to the dash is put in place and the lock nut tightened up so that the adjustment cannot be changed.

Dodge

There is only one point of adjustment on the Dodge carbureter. This adjustment varies the relative height of the metering pin to the opening of the aspirating tube or spray nozzle, when the dash control ratchet on the instrument board is in its regular running position. The tapered metering pin is subject to control within fixed limits by means of the dash control ratchet, located on the instrument board, for the purpose of obtaining a rich mixture for starting. This fixed adjustment can be changed by turning the top screw to the right or left, as desired. The turning of the screw to the right lowers the position of the metering pin and allows more gasoline to be admitted to the spray nozzle, thus enriching the mixture. Turning the screw to the left raises the pin, decreasing the supply of gasoline and impoverishing the mixture.

Hudson

The Hudson carbureter has a pneumatic control for regulating the amount of air admitted and this pneumatic control is carried out by means of a piston. The piston should be examined to see that the packing gland nut in the base of the carbureter, is holding the packing tight, thereby preventing leakage at this point. The piston should be removed and cleaned with whiting and oil, metal polish or jeweler's rouge, until the surface is polished. Under no circumstances should crocus cloth, emery cloth, sand paper, valve grinding compound or anything of this nature be used on the piston. When the carbureter is reassembled, the arrow on the top of the piston and the groove in the metering pin should point toward the engine. Should the packing gland nut become loose, it will not manifest itself in a leakage in the carbureter, but the gasoline mileage will be low and there will be trouble due to diluted crankcase oil, fouled plugs, etc. To tighten this gland, it is necessary to remove the pet cock and float chamber. The gland nut outside can be tightened with a broad screw driver and they should be tightened until the regulating lever offers resistance. If necessary, the glands should be repacked with soft candle wick.

Reo

The Reo carbureter is a Rayfield. It has no air valve adjustment, but has two gasoline adjustments. Both adjustments are turned to the right for a richer mixture and to the left for a leaner mixture. The carbureter should

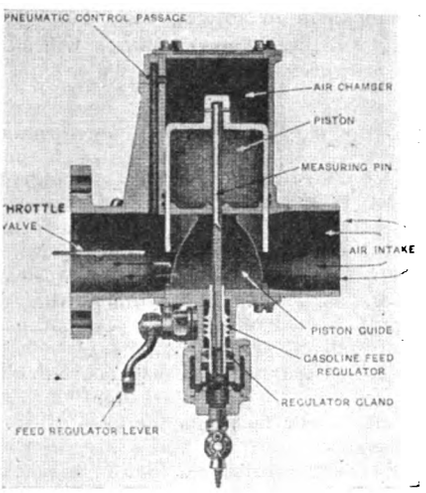


Fig. 3—Hudson carbureter

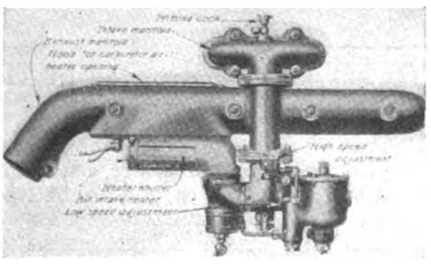


Fig. 4—Rayfield carbureter on Reo

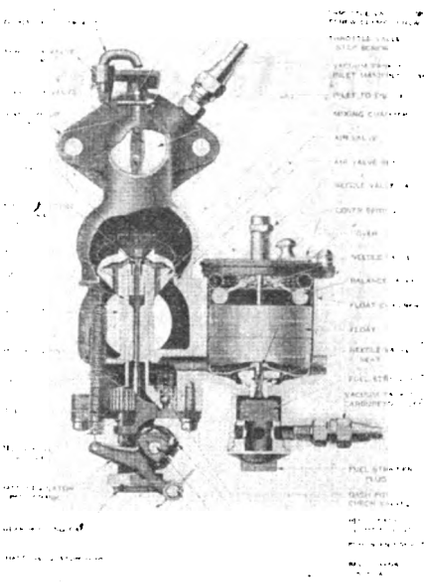


Fig. 2—Dodge carbureter (Michigan Lubricator Co.)

always be adjusted with the steering column control lever set at "run." The low speed adjustment must be completed before adjusting the high speeds. Adjustment made for high speeds will not affect the low speeds and the low speed adjustment must not be used to get a correct mixture for high speed. In adjusting for low speed, the throttle should be closed. Close the nozzle needle by turning the low speed adjustment to the left until the block slightly leaves contact with the cam. Then turn to the right about three complete turns. Start the engine and allow it to run until warmed up to a temperature of about 170 deg. After the engine is thoroughly heated, the control lever is pushed all the way to the "run" position and with a retarded spark close the throttle until the engine runs slowly without stopping. Make the final low speed adjustment by turning the low speed through to the left until the engine slows down and then turn to the right and notch it a time until the engine idles smoothly. The quality of the mixture can be tested in the following manner: With the shutter of the heater body open, it is possible to press with the fingers gently on the air valve so as to just unseat it, and admit more air to the carbureter. If the engine begins to pick up in speed, it indicates that the mixture is too rich. If the engine begins to die immediately when the engine valve is open, the mixture is too lean. When the mixture is correct, you can press on the air valve, admitting more air and the engine will hold its speed for several seconds before it will begin to die away very slowly.

To adjust the high speed, the spark should be advanced about one-fourth the way. The throttle is opened rather quickly. Should the engine back fire, the high speed adjusting screw is to be turned to the right, one notch at a time, until the throttle can be opened quickly without back firing.

(To be continued)

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In Absence of Fraud Buyer Cannot Rescind

Case in Which Identification Plate Number Does Not Agree With Motor Number Raises Legal Question

EDITOR Motor World: We handle a truck which has an identification plate attached to the instrument board. In this is stamped the serial number and motor number of the truck. There is apparently no other serial number marked on the chassis. The motor, however, has the number corresponding with the plate stamped on the motor arm.

Some months ago we sold one of these trucks and used our office records in making out the conditional sale contract. The numbers in our records correspond with the numbers on the identification plate. We did not check these numbers with the numbers stamped on the motor arm.

After a number of months' service there was some dissatisfaction with the truck, and in some way it was noticed that the number on the motor arm and the number on the plate did not correspond. Wishing to leave this section of the country, and the truck giving them some little trouble, they seized upon this as a pretext for refusing to go on with their contract, and on their failure to do this, we repossessed the truck.

They have turned the account over to an attorney and are now starting action against us for an amount equal to the original purchase price of the truck plus an additional amount for damages.

Our difficulty is somewhat aggravated because of the fact that this truck along with a number of others was taken over by us from the previous distributor in this section and the numbers appear to be somewhat mixed in the records of the state license bureau.

These identification plates could have been changed by taking out the screws and changing the motor from one machine to another, and, we are to blame in a way, in not having checked the office record numbers with those on the trucks. It was not our intention to practise fraud in any manner. The truck delivered to this purchaser was absolutely new, but the motor in the truck in question is shown by the records in the license bureau to have been sold a couple of months previous to another purchaser.

Our attorney does not fear any serious consequence in the suit, as they have the original chassis and motor purchased from us and which was new at the time of purchase.

They had the opportunity to inspect and examine the truck thoroughly and, in fact, did so before delivery.

This truck was used in exceptional heavy jitney service here over a period of several months, making between twenty-five and thirty thousand miles of travel, yet because of the fact that the motor, according to the state records shows as having been sold a couple of months previous to another purchaser, we are very anxious when this goes before a jury as to what their action on it would be.

Do you know of any other such instance?

We would be pleased to have information and advice from you.—O. M. Co., Spokane, Wash.

Answer—The best suggestion I can make is for you to follow the advice of your attorney and not worry if he is able to tell you that he knows there will be no serious consequence to the suit. It is difficult to give a satisfactory answer in a case of this kind where the facts are set out briefly in letter form.

I see no reason why you should not convince any jury that you were not guilty of fraud or deceit, and from the letter I cannot see that the purchaser suffered any actual damage.

There are many cases reported similar to yours. The latest one which has come to our notice is the case of W. D. Sessums Motor Co. vs. White, in which the Texas courts held that in absence of actual fraud or agreement to return, a buyer cannot rescind for breach of warranty. (239 S. W., page 329.)

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

Owner Cannot Recover in This Case

That a motor car owner who delivered his car to a used car dealer and authorized him to make repairs when he stated he could sell the car if the repairs were made, could not sue and recover the purchase price from a subsequent buyer who paid the dealer, was the recent decision of the Supreme Court of the State of Washington.

The court held that as the owner had knowledge and encouraged the negotiations between the dealer and the prospective buyer he could not afterward contend that the dealer was limited by an agreement that he must sell before a certain date. (Buckley vs. Matheson, 206 Pac. page 935.)

Garageman Should Have Lien for Labor

Editor Motor World: One of our customers filed a petition in bankruptcy within the last two weeks. Last summer he obtained credit for a sizable amount saying that he would pay us in the fall of 1921, but he did not. Last winter we stored his car and have that account as well as the last year's account against the car. Will you kindly advise us if we can hold the car for the both accounts and if so, what our procedure would be. —W. M. Co., Washburn, Maine.

Answer—You do not say what you extended credit to your customer for. That is, whether you gave him credit for labor, repairs, supplies, accessories, etc. You apparently have no lien for your storage charges, but you would have a lien for labor. Under the circumstances the best thing you can do is put the matter in the hands of local counsel and let him advise you whether or not it is possible to foreclose your lien if you have one.

Unlawful to Lock Car in Garage?

Editor Motor World: When a person brings his car in a garage for storage, is it against the law for him to lock his car?

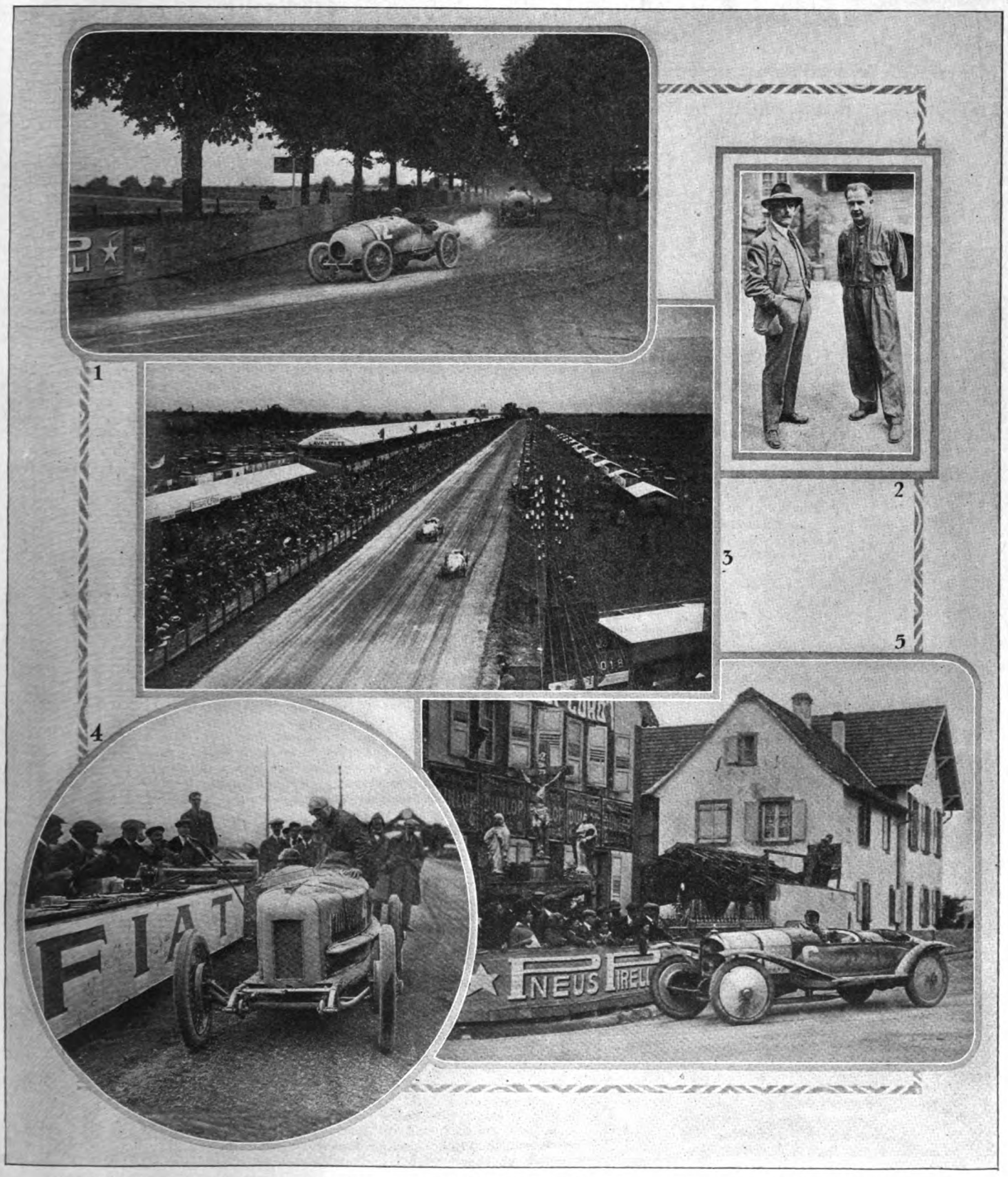
Some people insist upon locking the car, which in case of fire would be an obstacle in getting cars out.

I often hear this question argued pro and con and would like to know if there has ever been any legislation enacted to prevent the owner locking his car under these circumstances. Will you please enlighten me.—J. S. T., Newburgh, N. Y.

Answer—Never heard of this one. Might be a good thing at that. If it is unlawful it would be by virtue of some municipal ordinance or department regulation and there are so many of these in our big United States that we simply cannot keep track of all of them. Can any subscriber furnish the answer to this inquiry?

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Interesting Scenes at the Grand Prix Race



HERE are a few glimpses of the recent Grand Prix Race at Strasbourg, France: 1—*A Bugatti car pressing a Ballot at Entzheim hairpin turn. Note the peculiar front cowling of these French cars.* 2—*W. F. Bradley, Motor World representative, talking with the winner, Felice Nazzaro.* 3—*A view of the grandstand stretch at Strasbourg, and the crowds gathered there for the finish.* 4—*Felice Nazarro in the winning Fiat, starting away after changing rear tires and taking gas.* 5—*A quaint scene at one of the turns.*

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Equipment to Sell

New Devices for the Car and Truck

Commonsense Radius Rods for Fords

Silver Mfg. Co., Salem, Ohio
Price $10.



The radius rods extend from the front axle of the Ford to a point on the frame, just back of the dash, instead of the lower side of the crankcase. The anchorage at the rear end is floated between two springs and is adjustable by means of nuts. One portion of the arm goes to the top of the axle and the other to the bottom to keep it in line.

American-Akron Cord Tire for Fords

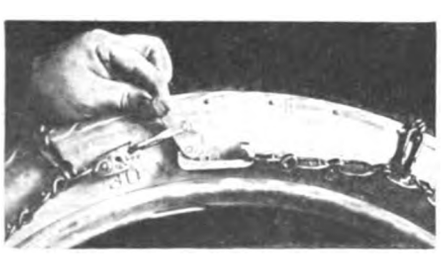
American Rubber & Tire Co., Akron, Ohio
Price $12.50.



This is a 30 x 3½ regular sized cord tire, carrying the name American-Akron regular, differentiated from the old 30 x 3½ size tire which has been in production for some time. It carries the same non-skid design as the other cords, but the tread is banked to conform with the present day practice to secure the greatest traction contact. It is considerably larger than the average fabric casing, and is slightly smaller than the oversize 30 x 3½ cord. It is being made in both clincher and straight side type and carries the regulation four plies of cords. The tread and side wall are black, with a scarlet band on the side.

Brown Safety Hook for Skid Chains

William A. Brown, Lincoln, Me.
Price $1 per set of four.



The safety hook operates by pressing the sides of the hook. This opens the hook so that the end of the chain can be inserted and the hook then closed. The loose links are cut off. Chains are removed by unlocking the hook.

Jiffy Dump Body for Ford Trucks

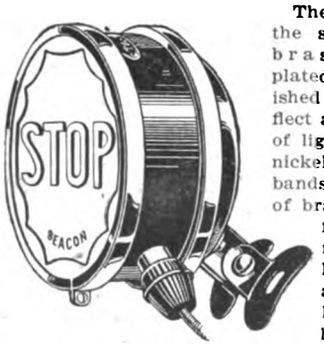
Griscom-Russell Co., 90 West Street, New York City.



This is an automatic dump body which operates by reason of the fact that the larger part of the load is back of the pivot and the body is dumped by tripping the catch. The dumping mechanism can be operated from the driver's seat and without stopping the truck. The tail gate automatically opens at the time the load dumps. The balance support is about 5 in. in front of the rear axle.

Beacon Drum-Shaped Stop Light

Beacon Motor Lamp Mfg. Co., 515-517 Huron Road, Cleveland
Price $5.50 Black; $6 Nickel Plated; $7.50 Silver Plated



The reflector of the stop light is brass, silver plated and polished highly to reflect a full stream of light. The two nickel plated bands are made of brass and conform to the new drum head lights and side lights being largely used. The cable is armored. The lens is molded so that the black background is a permanent part and will not rub or peel off.

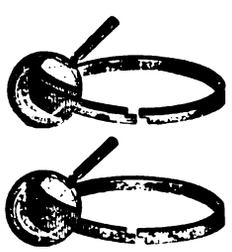
Trainor Front Spring for Ford Trucks and Cars

National Spring Co., New Castle, Ind.
Price $2.50.

The spring is designed to replace the standard seven leaf front spring on Ford cars and trucks. The Trainor spring has nine leaves which are heat treated and oil tempered. The springs are intended for cars and trucks engaged in unusual service. The company has also developed special eight and ten leaf front springs and nine, ten and eleven leaf rear springs for Ford cars and trucks.

Unico Piston Ring

Unico Motor Products Corp., 4969 71st Street, St. Louis, Mo.
Price 30 cents plain; 50 cents with oil groove.



The piston ring is made in two styles, either plain step joint with a plain finish or the same style with an oil ring cut at the top to prevent oil pumping. The rings are made of light and soft gray iron individually cast. The inside scale of the ring is only partly removed to leave resiliency in the metal and increase the tension. Oversizes in the plain step cut are 35 cents each. Ford sizes 25 cents.

Mason Maxi-Mile Cord Tire for Fords

Mason Tire & Rubber Co., Kent, Ohio
Price $11.80.



A new cord tire 30 x 3½ clincher type has been added to the Mason line. It is of full cord construction, air bag cured and about 3 per cent oversize. The tread has the same non-skid design as the larger Mason sizes and also the distinguishing green stripe.

Stirling Moto-Meter Lock

East Chicago Mfg. Co., 4426-30 Olcott Avenue, East Chicago, Ind.



The lock replaces the regular cap on the radiator and an extension is provided for filling the radiator. The lock itself is attached with a screw with a special head which breaks off at the last turn so that the device can only be removed by drilling out the screw. An apron protects the Moto-Meter nut and prevents it from being turned. Furnished in two sizes, Junior and Standard

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R-K-D Instrument Board Gasoline Gage

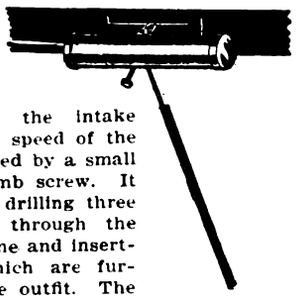
Reiter-King-Dugan Co., Akron, Ohio
Price $8.50.



The gage is electrically operated and registers the amount of gasoline in the tank by means of a float mechanism which replaces the stock gage. The recording is shown on a dial placed on the instrument board and the dial is operated by single protected wire which extends from the tank to the meter on the instrument board.

Thorn Automatic Windshield Wiper

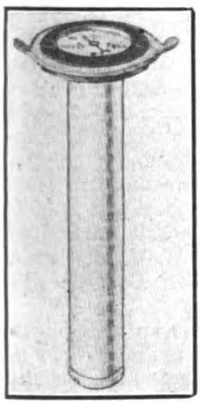
Thorn Machine Tool Wks., Syracuse, N. Y.
Price $5



The wiper is operated automatically by a small vacuum pump which connects with the intake manifold. The speed of the pump is adjusted by a small regulating thumb screw. It is installed by drilling three small holes through the windshield frame and inserting screws which are furnished with the outfit. The connection to the intake manifold is made with flexible rubber tubing. Connection can also be made to the vacuum tank. The parts are made of non-corrosive metal.

Tasco Gasoline Gage for Fords

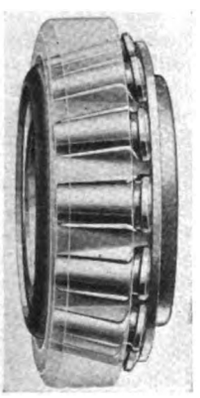
Akron-Selle Co., Akron, Ohio
Price $1.



The gage has a threaded upper portion which screws into the tank filler opening of the Ford. A glass-covered dial on the top indicates empty, one-quarter, one-half, three-quarters, and full. The gage takes the place of the filler cap which is not used.

Improved Cage for Bock Taper Roller Bearing

Bock Bearing Co.,
Toledo, Ohio.



A new cage is in production for the Bock bearing. In this design the cage and rollers are assembled with the cone as one unit, the cup being the second unit in the complete bearing, which formerly consisted of three parts. This allows for greater convenience in handling and leaves less to the discretion of the mechanic.

Bec-Mar Spark Plug

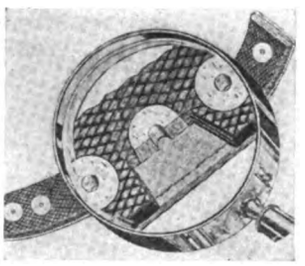
Bec-Mar Mfg. Co., 109-111 Sylvan Avenue, Newark, N. J.
Price $2.



The upper part of the plug contains a visible spark gap which is seen through any one of the four holes in the insulator. The shell is of conventional type with lock-nut and standard terminal.

Feltbak Transmission Lining for Fords

Advance Automobile Accessories Corp.,
1721 Prairie Avenue, Chicago
Price $2.75 Per Set



The lining has cork inserts intended to take the harshness out of the brake action. Beside cushioning the action the felt acts as a reservoir for the oil which comes out through the holes in the cork.

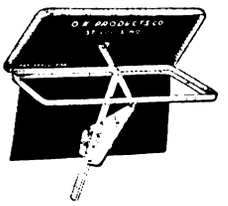
Deluxe Velvet Clutch Control for Chevrolet 490

Clarke-Turner Piston Co., Los Angeles, Cal.
Price $6.50 installed.

This is a clutch control for the Chevrolet 490 to ease the clutch action and prevent premature clutch seizure, through the introduction of a new compound leverage ratio, reducing the tension 8 to 1.

O-K Cowl Ventilator

O. K. Products Co., St. Louis, Mo.
Price $3.00



This is a cowl ventilator for Fords and other cars. It is installed by cutting a hole in the cowl and fastening the ventilator with small bolts on the inside of the ventilator. The air inlet is 3 by 7⅝ in. and the ventilator is finished with black baked-on enamel or can be had in brass, nickel-plate or any color to match the car.

Sunbeam Warning Signal

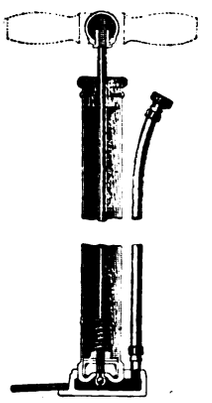
M. & M. Auto Products Co., Rock Island, Ill.



The device combines the features of a stop signal, tail lamp, backing light and license plate holder. As a stop signal it has a flash effect which shows up by day or night with red and white beams. When not in operation it is a tail lamp. A little pressure on the brake pedal raises the lid, which gives illumination to the rear for backing.

Coleman Quickfill Tire Pump

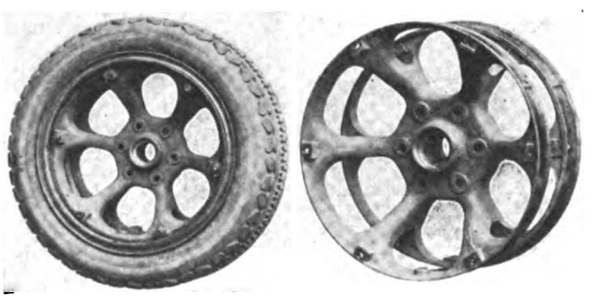
Coleman Lamp Co., Wichita, Kan.



The pump has a barrel of seamless nickel plated brass and a large nickel stirrup. A large catch chamber prevents pumping oil into the tire, but the pump lubricates itself at every stroke. The handle is ebonized and threaded to extend up into the wood and through a brass bushing, thus preventing the handle from coming off. The rubber hose is fitted with a quick fastening device.

Dayton Dual Pneumatic Cast Steel Wheel

Dayton Steel Foundry Co., Dayton, Ohio.



A new addition is made to the Dayton Steel Wheel line in which the spokes, hub and rim are cast integral, just as in the other type, but each wheel has two rims with a center of 8⅛ in. The dual pneumatic is designed for either a 30 x 5 or 36 x 6 tire. The wheel is made for trucks from ¾ to 2 ton capacity. The weight is 100 lbs. without rims. It is supplied completely machined and ready to receive standard rims and rim fittings for either of the two sizes in tires. The hub is an integral part of the wheel itself and each wheel and rim itself and the rim fittings are a complete and separate unit.

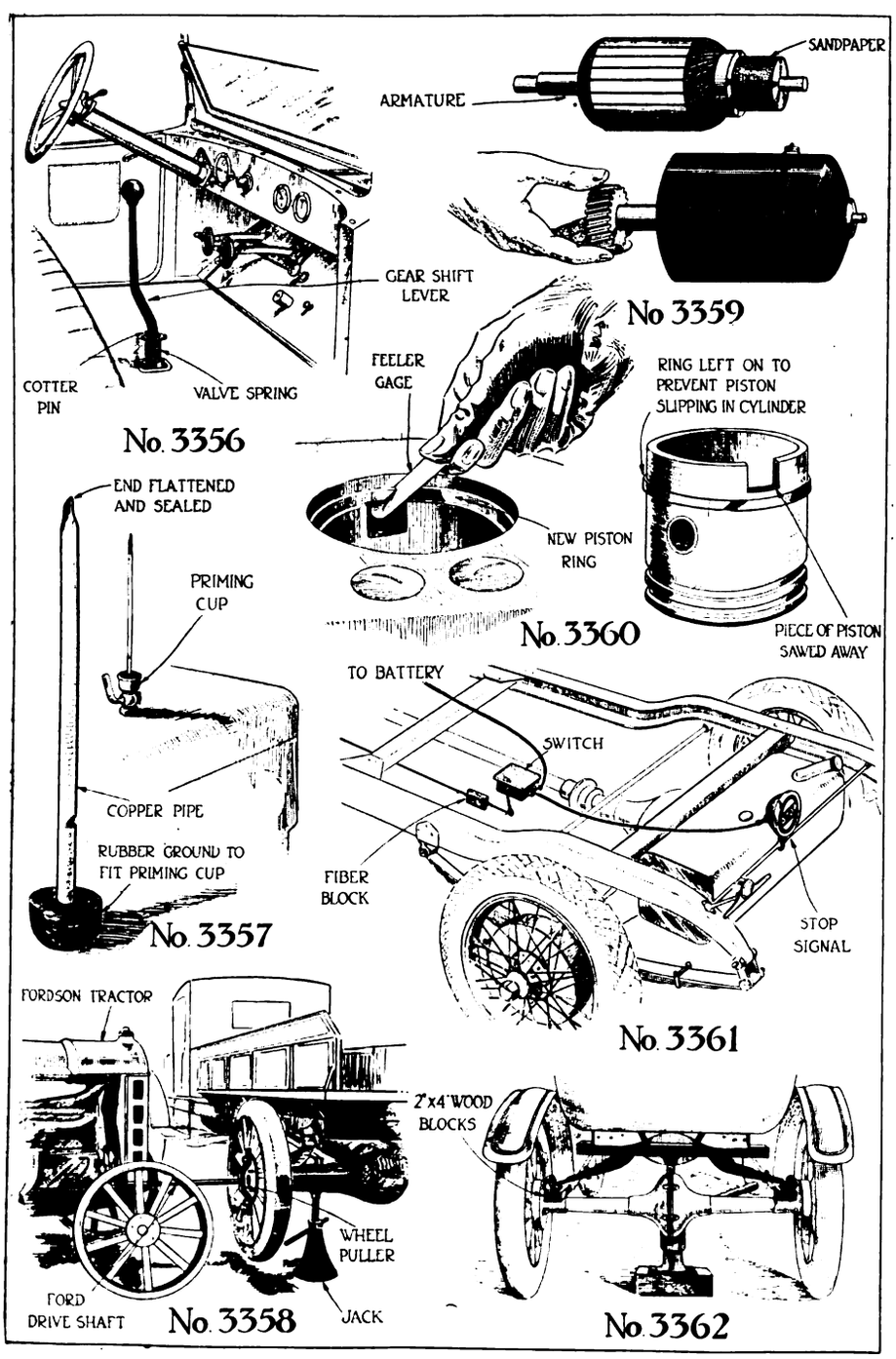
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Repairshop Shortcuts

A Good Idea for Sanding in Generator Brushes

THIS week we hand the cut glass bathing suit to No. 3359. This idea ought to save at least an hour or more on every Ford generator brush fitting job brought into the shop. There is no reason why it cannot be applied to some other generators. There are some others that will save you something too if you will try them.

Send some other good ideas to Motor World and make a dollar. We pay this amount for each practical idea accepted. If you cannot find time to do this yourself, give this notice to some of your men and let them make some pin money and get their names and the name of your establishment printed after the idea.



No. 3356—Control Lever Silencer for Chevrolet 490—The control lever of the Chevrolet 490 is prevented from chattering by removing the shifting lever and drilling a ⅛ in. hole about 2 in. from the control lever collar, inserting a cotter pin and valve spring.—R. Spellerberg, City Garage, Highland, Ill.

No. 3357—Finding the Top Dead Center—To find the top dead center of any cylinder, a whistle is made from a piece of copper tubing, one end being flattened and sealed and the other end fitted with a piece of rubber ground to fix the priming cup.—H. D. Booth, Cortland, N. Y.

No. 3358—Starting a Fordson Tractor Engine—A stiff engine on a Fordson tractor is started by jacking up the left rear wheel of a 1-ton truck and attaching a wheel puller to the wheel. A Ford drive shaft with squared end is placed between the wheel puller and the Fordson crankshaft.—Reader.

No. 3359—Sanding Ford Generator Brushes—A tool for sanding the brushes of the Ford generator is made from a discarded armature by turning the commutator down about ⅛ in. and glueing a band of No. 0 sandpaper around it. After the brushes have been installed this is slipped in place of the regular armature and revolved by hand.—H. V. D. Sweet, Canajoharie, Motor Sales Co., Canajoharie, N. Y.

No. 3360—Fitting Piston Rings—In fitting new rings to a cylinder, saw a small piece from a discarded piston and upsert in the cylinder upside down, leaving one ring on to keep it from falling through.—Canajoharie Motor Sales Co., H. V. D. Sweet, Canajoharie, N. Y.

No. 3361—Insulator for Stop-Light Switches—An insulator is placed in the pull wire of a stop-light switch to prevent damage to the wire in case of a short circuit in the switch.—H. V. D. Sweet, Canajoharie Motor Sales Co., Canajoharie, N. Y.

No. 3362—Assembling the Ford Rear Spring Shackles—The car is lowered enough to allow one side to be assembled and then a short piece of 2 by 4 is placed on the axle housing under each end of the spring. Lowering the blocks will force the spring eyes in line with the shackles. H. V. D. Sweet, Canajoharie Motor Sales Co., Canajoharie, N. Y.

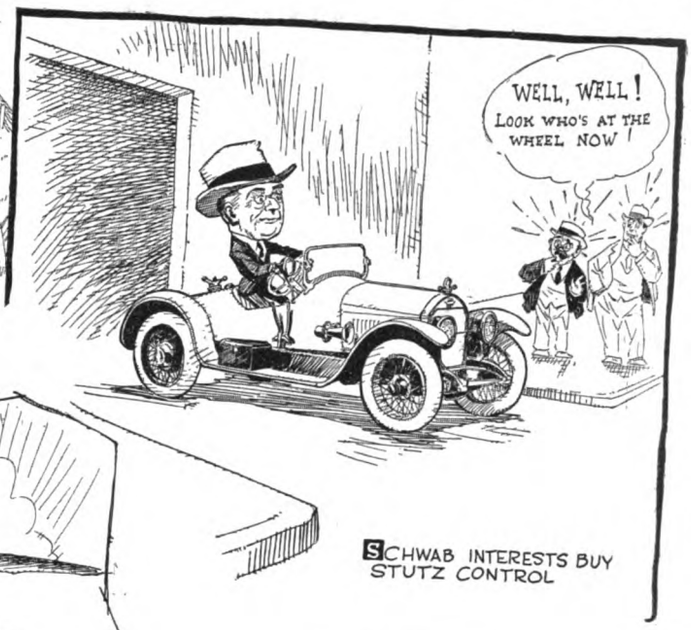
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Along the Automotive Newsway

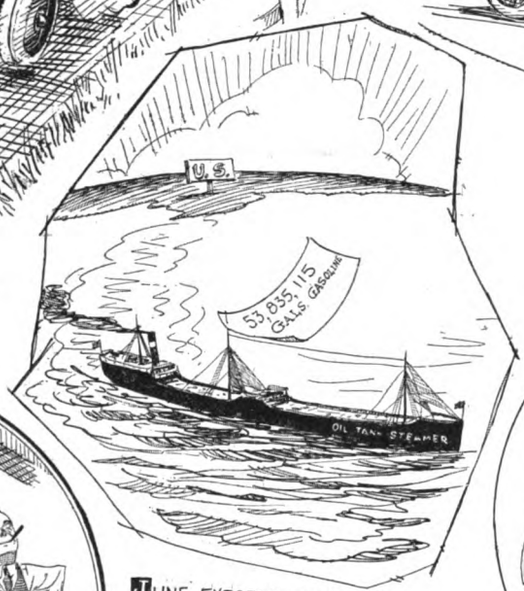
By Leo Roche



DEALER OUTINGS ARE QUITE THE THING RIGHT NOW, AND, JUDGING FROM THE NUMBERS BEING HELD ALL OVER, THE INDUSTRY BELIEVES IN THE "ALL WORK AND NO PLAY, ETC" IDEA



SCHWAB INTERESTS BUY STUTZ CONTROL

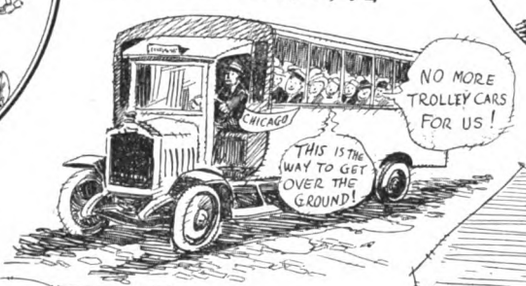


JUNE EXPORTS OF GASOLINE AMOUNTED TO 53,835,115 GALS. VALUED AT $12,356,792



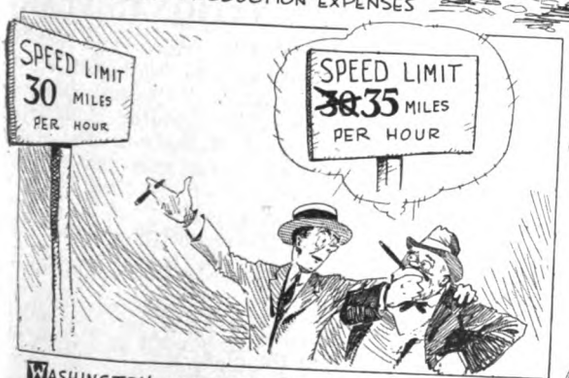


THE INDUSTRY IS AGAIN PASSING ON TO THE CONSUMING PUBLIC THE BENEFIT OF REDUCED PRODUCTION EXPENSES

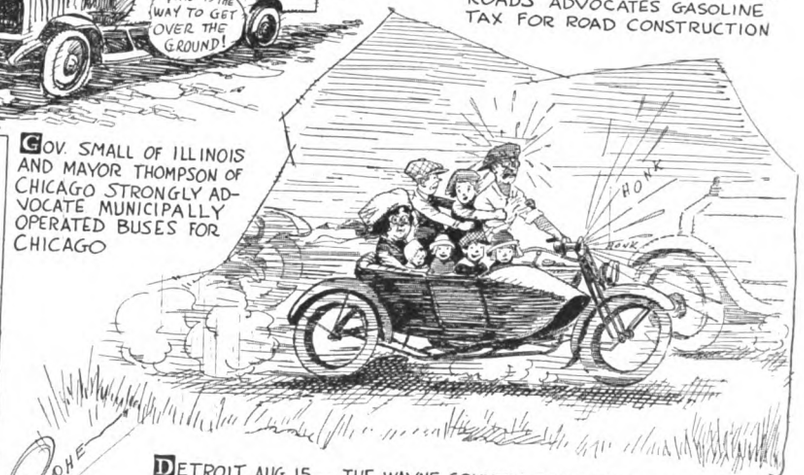


GOV. SMALL OF ILLINOIS AND MAYOR THOMPSON OF CHICAGO STRONGLY ADVOCATE MUNICIPALLY OPERATED BUSES FOR CHICAGO

FEDERAL BUREAU OF PUBLIC ROADS ADVOCATES GASOLINE TAX FOR ROAD CONSTRUCTION



WASHINGTON DEALERS WILL ENDEAVOR TO GET STATE LEGISLATURE TO INCREASE SPEED LIMIT ON STATE HIGHWAYS FROM 30 TO 35 MILES



DETROIT, AUG. 15 — THE WAYNE COUNTY CORONERS HAVE ASKED COMMON COUNCIL OF THE CITY OF DETROIT FOR AN ORDINANCE PROHIBITING CROWDING OF DRIVER'S SEATS OF AUTOMOBILES. — SEEMS AS IF SOMETHING LIKE THIS OUGHT TO BE APPLIED TO MOTORCYCLE SIDECARS THROUGHOUT THE COUNTRY

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July Production Reached 246,000

MONTH PROVED THIRD BIGGEST IN HISTORY

Surpassed Only By May and June—Total Thus Far, This Year, 1,403,000

NEW YORK, Aug. 15—The automobile industry has set another production record. Passenger cars and trucks produced in July numbered approximately 246,000, which is the largest July business and also the third largest month in the history of the industry, the record month having been June, 1922, with 288,000, and the second May, with 256,000.

Strikes May Interfere

The July record brings total production for the year up to 1,403,000 and indicates that 1922 will be the industry's greatest year unless the railroad and coal strike situations, with their effect on supplies of raw materials and general business, exert a serious curtailing influence on manufacturing activities for the rest of the year.

August production is bound to fall below the July record because of the natural midsummer decline in demand, and it may be still further affected by the coal scarcity which is rapidly approaching a crisis in the Detroit district. So far fuel shortage has not curtailed manufacturing but supplies on hand are being rapidly depleted and prospects are not bright for replenishment unless there is a sudden turn in the Detroit situation. If coal is not made available many plants will be forced to curtain production within the limitations of restricted power facilities available from Detroit public utilities.

No Excitement Over Cuts

Outside the strike situation the industry is going forward with confidence of a brisk business throughout the remainder of the year, as indicated by the absence of excitement over price reductions in the highly competitive field, ranging principally between $500 and $1,500. It is significant that reductions have been confined almost exclusively to cars in the big production class, none at all having been made by manufacturers producing cars ranging from $2,000 up. Reductions have been made by manufacturers whose quantity production has enabled them to pass the benefits of manufacturing economies on to the public. There is entire absence of indication that there is to be an epidemic of price cutting, or anything approaching a price war. A contrary indication is found in the fact that Durant Motors has guaranteed prices to Aug. 1, 1923.

Reports from various parts of the country indicate that the public has shown a normal reaction to the price reduction announcements. Sales have been stimulated slightly on most of the lines reduced while there is a temporary stagnation in some of the competing lines due to a natural holding off attitude on the part of purchasers. However, there are indications that the public is already beginning to see the reductions in their true light of a passing on of production economies by manufacturers.

DON'T CROWD DRIVER, ADVICE IN MICHIGAN

DETROIT, AUG. 15—The Wayne County coroners have asked the common council of the city of Detroit for an ordinance which will prohibit the crowding of drivers' seats of automobiles. The communication declares that many fatal accidents in the past few months could have been avoided if the driver's seat had not been crowded. The ordinance would prohibit the crowding of more than two people into a seat built for two. The proposal has been favorably received and has been referred to Inspector Jackson of the police traffic division for his approval.

RULING IS REVERSED ON GASOLINE PUMPS

WASHINGTON, Aug. 14—Orders of the Federal Trade Commission which forbade the lease of gasoline pumps to retailers upon the condition that only lessor's oil should be used in the pumps have been set aside by a recent decision of the United States Circuit Court of Appeals for the third district upon application of the Standard Oil Company and a number of other oil companies.

The court held that such a lease was not a tying contract which violated the Clayton Act. The court said that the public was not injured by the practice. As the retailer is free to install other pumps, the court held that the tying contract did not lessen competition to the extent contemplated by the statute.

Ruark A. E. A. Secretary

CHICAGO, Aug. 10—B. W. Ruark, formerly connected with the Champion Spark Plug Co. and later with the Pittsburgh Auto Equipment Co., has been appointed field secretary of the A. E. A.

FEW SLOUGH TRUCKS NOW REMAIN UNSOLD

Company Also Reports That It Can Get No More to Reimport to U. S.

NEW YORK, Aug. 14—Disposal of American trucks re-imported from the former war zones by the Slough Trading Corp. of America is proceeding rapidly and, according to officials of the company, only about 300 vehicles are yet to be sold at wholesale. It is also stated that reports indicate that dealers in various parts of the country who have bought the trucks for resale have been successful in disposing of the greater number of them.

Up to date the Slough company has brought into the country only about 1200 trucks, and about 200 others were brought here in small lots by other importers.

Information given the American company by the Slough Trading Corp. of England is that nearly all of the trucks available for reshipment to the United States have been sent here and that the process of putting these vehicles on the American market is practically completed. It was at first expected that a much larger number of trucks would be brought here, but a good many have been sold in Europe, and recent attempts of the Slough Trading Corp. of America to get additional shipments started on the way here have been met with the information that there are no vehicles to be had.

Virtually all the trucks brought here are heavy-duty vehicles, including Macks, Packards, Pierce-Arrows, Whites and a few other makes.

ASSOCIATED HEADS AT NATIONAL PLANT

INDIANAPOLIS, Aug. 14—Will H. Ohmer, chairman of the board of directors, and Louis Ruthenburg, president of Associated Motor Industries, visited the plant of the National Motor Car & Vehicle Corp. and with George Dickson, president of the National company and vice-president of Associated Motors, which recently absorbed the company, made an inspection of the plant.

The visitors expressed themselves as well pleased with the facilities and predicted that the plant would become more important than ever to the motor industry through Associated Motors plans. No details of definite plans for increasing production at the plant was available from the officials.

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Makers Prepare for Output in 1923

CLOSED CARS TO GET MORE PLANT SPACE

Demand in Cities for This Type Expected to Reach 60 to 75 Per Cent

DETROIT, Aug. 14—Despite the exigencies of the coal and rail strikes, the industry is proceeding unhesitatingly with its plans for expansion and increased production in 1923. The central thought in the general expansion program is to provide more room for the production of closed cars, though in some cases the expansion is to provide for increased output in all models.

In this expansion body and car makers are both participating, the former, however, on far the larger scale. By the spring of 1923 body manufacturers should be equipped with ample space to meet whatever demand for closed cars develops, and indications are at this time that the demand will run from 50 to 60 per cent of all cars produced. Demand in the cities, it is predicted, will run from 60 to 75 per cent for closed vehicles.

A noteworthy feature of the closed car demand is that it has resulted in a general extension of business to body builders in all parts of the country. With closed car demand prevailing, the body business has been limited to a smaller number of builders—almost concentrated in a few hands. This condition has given way to a widely diffused buying, making for more individuality and variety in coach work and equipment.

Closed Cars at Low Mark

Bodies are now coming into Detroit from all parts of the country. Despite the scattering of production into many hands, and the addition of freight rates which must be borne, closed car prices are lower now than ever before. This is due to improved manufacturing methods and the development of new types which permit of a reduction in operations. Increased demand has permitted car factories to adapt better handling methods. More space in the car factories will result in closed car production on any scale required.

Price of Gasoline Falls

NEW YORK, Aug. 14—The Standard Oil Co. of New Jersey announces a reduction of 2 cents in the price of gasoline for all of its territory. A similar cut in price together with a 1 cent reduction in kerosene throughout Pennsylvania and Delaware was made by the Atlantic Refining Co., the retail price of gasoline now being 27 cents and to garages, 24 cents. The Texas Co. has followed these reductions in the same territory and has also reduced crude oil 25 cents a barrel in Oklahoma, Kansas and Northern Texas districts.

CHEVROLET APPROVES BETTER WINDOW PLAN

DETROIT, Aug. 14—The Chevrolet Motor Co. has indorsed a program for better window displays throughout its dealer organization, under which the windows of the Chevrolet branch in the General Motors building will be a key for all sales windows throughout the country. This window will be given an elaborate dressing each month in which the utility of the car as a means to promoting outdoor pleasure will be featured.

The treatment of the window will be carried to all Chevrolet dealers by photographs and minute descriptions in the Chevrolet sales organ.

In indorsing the plan the company takes the attitude that it can be used effectively in all cities of 50,000 population or over to promote ownership desire among persons hitherto without cars, and of concentrating general automobile attention upon the Chevrolet line.

FORMER SAXON PLANT LEASED BY COLUMBIA

DETROIT, Aug. 15—Columbia Motor Car Co. has leased the plant formerly occupied by Saxon Motor Car Co. in this city and will begin using it in the manufacture of light six and de luxe model Columbias by Sept. 1. With the addition the company will have capacity for 300 cars daily, and expects to step up its production gradually to this figure, reaching 200 daily soon after the first of the year.

Demand for Columbia models was reported to be very brisk in practically all sections of the country, and reports from dealers in the farm district were to the effect that farmers would be large buyers in the middle priced car field.

Optimism at Buick Meeting

ATLANTA, Aug. 15—The keynote of the annual convention of southeastern Buick dealers held in Atlanta this month was optimism over the outlook, every dealer expressing the opinion that business the past four or five months has been very close to the pre-war normal, and that the outlook portends a steady sales demand for the coming year. About 150 dealers attended from five southeastern states.

SHORTAGE OF COAL MAY CLOSE WORKS

Detroit-Edison Warns Manufacturers That Power May Be Cut Off

DETROIT, Aug. 14—The coal situation continues to be the most serious problem facing Detroit manufacturers. Notices have been issued by the Detroit Edison Company and its power producing subsidiaries, that unless a material increase in its coal shipments take place immediately, it will be compelled to use its fuel for light producing purposes only, and for supplying power to companies engaged in the preparation or preservation of food-stuffs.

Under the terms of this notice it is indicated that a shutting off of power to companies other than these will take place within a period of ten days to two weeks. By this every company using Edison power exclusively would be compelled to close. The purpose in issuing the notice is to enable manufacturers to make any preparations necessary to meet the situation.

Without Edison power the big car and parts factories with power plants of their own will be compelled to reduce operations, as in most cases the private plants are not equipped to provide power in more than 25 to 50 per cent of requirements. Operations could be maintained in these factories on a reduced basis for several months, dependent upon the amount of coal in reserve. In most cases this represents from two to three months supply.

Ford Situation Serious

Ford Motor Co. is continuing full operations in all plants despite the serious shortage of coal in the company's bins at the River Rouge power plant. When this is exhausted the company will be enabled to operate on about 25 per cent of normal capacity on Edison power. When this is cut off the Ford factories at the Rouge, Highland Park and the Lincoln plants will close, sending about 80,000 men into enforced idleness.

The Ford situation is the most serious in the city because the company, owing to the immensity of its operations has been unable to lay aside a sizable reserve. Until the establishment of priorities it had been receiving a fair daily supply over its own railroads, but this has since been cut off. Some coal is still coming in but in negligible quantities, practically all shipments since the issuance of the priority order going to meet domestic demand and to utility companies.

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DUESENBERG SEEKING GREATER PRODUCTION

Breaks Ground for Addition to Plant—Fleetwood Bodies for Cars

INDIANAPOLIS, Aug. 14 — The Duesenberg Automobile & Motor Co. of this city will break ground at once for the erection of an additional building, which will be used as an assembly plant as well as for fitting-up and finishing cars. The announcement made by General Manager Chester Ricker also stated that Duesenberg will shortly add a line of Fleetwood bodies to be ready for fall deliveries.

No price announcements have yet been made regarding cars with Fleetwood bodies, but it was definitely stated that there would be no decrease in Duesenberg prices now or in the near future. At present there are practically no extras for Duesenbergs.

Increased production is what is being sought in the additional building and the desire to carry on all processes of manufacture and finish in the company plant. Some work has been done in outside buildings in recent times, but the new addition will remove this necessity. Since the first of July the production figures of the plant have been greatly increased. During July the plant was able to turn out 45 per cent as many cars as it had in the entire previous part of the year. This was brought about by reorganizations and by more efficient methods put into operation in recent weeks. The pace set in July is being kept up.

Variety of Body Styles

The Fleetwood line when offered will have a variety of body styles in both open and closed jobs. There will be five and seven passenger phaetons and and roadsters, as well as town brougham, sedan, inside drive cabriolet with Fleetwood bodies.

When the new building is ready about the first of the year it is hoped that production can be raised to four cars a day, these to include both standard models and the Fleetwood line. Factory officials insist that while production has been increased by rearrangement and better methods, the Duesenberg policy of building what are to all intents and purposes custom jobs will be continued with every car turned out by the plant.

Oakland 20 Per Cent Better

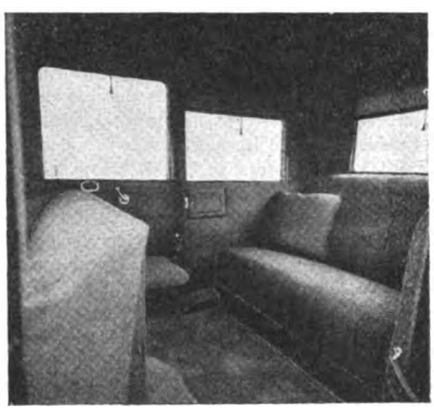
PONTIAC, MICH., Aug. 5—The Oakland Motor Car Co. reports an increase of output and of sales during July of 20 per cent over June.

Elgin to Keep at Capacity

CHICAGO, Aug. 14—Full production by the Elgin Motor Car Corp. is planned for the remainder of this season, according to an announcement made by the officials of the company. Shipments of Elgin cars for the months of May, June and July were greater than those of any three months since the peak buying season of 1920, according to factory statements.

The demand is said to be considerably in excess of the present factory output. Sales of closed models have exceeded the company's contemplated production, and it has been necessary to change the schedule to provide for the larger production of closed cars.

Interior of New Lexington Sedan



The new sedan, priced at $2,545, provides for five adult passengers and, in addition, has two folding taxi seats which fit into the back of the front seat.

GLENN A. TISDALE RETIRES AS DEALER

NEW YORK, Aug. 10—Glenn A. Tisdale, owner of the Franklin Motor Car Co. of New York and for the past ten years Franklin dealer in New York and Brooklyn, has given up his contract and will retire from business Oct. 1. His successor has not been selected.

Coming into the automobile business from an outside field, Tisdale has built up the Franklin business in New York from a few hundred thousand ten years ago to a volume which for several years past has been counted in the millions annually. He has maintained salesrooms and service stations in New York and Brooklyn and at times in several suburban communities.

Tisdale's present intention is to retire permanently from business, and unless this plan is altered it will probably be necessary to make some changes in the official personnel of the Automobile Merchants Association of New York, of which he is president.

Co-incident with Tisdale's retirement, his son, Glenn W. Tisdale, who for several years has been retail sales manager in New York, has taken over the Hupmobile agency in Newark, N. J., under the name of G. W. Tisdale, Inc. His territory includes Essex and Union Counties.

FINANCING OF SALES BY G. M. INCREASING

Acceptance Corporation's Business Indicates This Will Be Greatest Year

NEW YORK, Aug. 14—The condensed balance sheet as of June 30 shows that for the first six months of the year 1922 the General Motors Acceptance Corp. has exceeded the volume in any corresponding period since the organization of this institution, which finances the wholesale and retail sales of such General Motors properties as Buick, Cadillac, Oakland, G. M. C. truck, Chevrolet and Oakland. A total business of $68,251,586 for the half is reported, a showing which, if continued, will make this the corporation's greatest year.

Total assets for the six months are $49,405,658, of which $6,075,150 is cash and $41,667,151 secured receivables. Capital, surplus and undivided profits are $5,132,635.

186,161 Under Retail Plan

The report also shows that since the inception of the corporation early in 1919 to June 30, 1922, there have been financed under the G. M. A. C. retail plan a total of 186,161 cars, trucks and tractors, and under the wholesale plan 126,920. This does not include other General Motors products financed nor the operation of the foreign department. The total amount of financial accommodation extended by General Motors Acceptance Corp. from inception to June 30, 1922, is $270,692,236, distributed as follows:

	Foreign Department	G.M.A.C. Plan—Retail	G.M.A.C. Plan—Wholesale
1919.....	$3,256,192	$9,989,019	$7,635,777
1920.....	19,830,994	46,693,170	37,578,470
1921.....	3,361,881	39,725,007	34,370,140
1922*.....	3,303,479	36,339,750	28,608,357

*First six months.

The total business for 1919 amounted to $20,880,988; for 1920, $104,102,634; for 1921, $77,457,028 and for the first six months of 1922, $68,251,586, making a total of $270,692,236.

Record of Sales

Through a comprehensive sales organization the obligations arising from the sale of General Motors products under these financing plans are sold directly to banking institutions. From inception to June 30, 1922, total sales of obligations have been $267,257,000, representing over 5600 individual sales to over 1100 banks and trust companies. This record by years follows:

	Number of Sales	Amount of Sales
1919.....	258	$13,018,000
1920.....	2,078	92,389,000
1921.....	1,646	96,741,000
1922*.....	1,690	65,109,000
Totals.....	5,672	$267,257,000

*First six months.

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SCHWAB PURCHASES CONTROL OF STUTZ

Obtains Stock from Guaranty Trust—W. N. Thompson Remains as President

NEW YORK, Aug. 14—Charles M. Schwab became an automobile manufacturer to-day when he and Eugene V. R. Thayer, formerly president of the Chase National Bank of New York City, secured the controlling interest in the Stutz Motor Car Co. of America from the Guaranty Trust Co. of New York, which has been in power since it bought at auction last week 132,914 1/3 shares of the Indianapolis concern at $20 a share.

Rumors that Schwab really was acting for his friend, Allan A. Ryan, in consummating this latest deal, are scouted by those who have been in close touch with the chairman of the directors of the Bethlehem Steel Corp. They say that Ryan is completely out of Stutz affairs and that Schwab personally will take an active part in the operation of the company. In fact, following the closing of the deal with the Guaranty Trust Co. he started for Indianapolis to map out a vigorous campaign for Stutz.

It is understood that the deal whereby Schwab comes into control is one that the Stutz directors have been working on ever since the auction, and that the change in control is one that is most satisfactory to all parties concerned. That harmony exists and the old manufacturing administration has been indorsed is borne out by the action of the directors to-day by which W. N. Thompson is continued as president and given complete authority. Thayer and Willard Mitchell have been elected directors to fill the two vacancies, and Mitchell succeeds as secretary and treasurer George F. Lewis, who has resigned.

It is said that Schwab and Thayer secured the stock from the Guaranty Trust for about the same price—$20 a share—that the bank paid for it at the auction.

BIRMINGHAM MOTORS OFFICIALS INDICTED

WASHINGTON, Aug. 12—Alleged to have sold more than $300,000 worth of worthless stock to Virginia, Maryland and District of Columbia investors through misrepresentation, eighteen officials of the Birmingham No-Axel Motors Corp., Jamestown, N. Y., have been indicted by the Federal Grand Jury on a specific charge of violation of Federal statute number 215, involving misuse of the United States mails.

The indictment was returned as a result of more than ten months' investigation by the Post Office officials who charge that agents of the company sold hundreds of thousands of dollars worth of stock on fictitious holdings and on promises which were never lived up to and which, according to the Government's case, "the said Birmingham Motors knew never would be complied with."

President Denies Knowledge

BUFFALO, Aug. 14—In a dispatch received here to-day from Jamestown, N. Y., Samuel A. Carlson, mayor of that city, denied all knowledge of alleged fraudulent use of the mails by persons said to be interested in the Birmingham Motors Co., of which he is president.

VELIE DEALERS FORM NATION-WIDE BODY

MOLINE, ILL., Aug 14—Distributors and dealers handling the Velie cars have effected a permanent national organization. The following officers were elected at a meeting largely attended by representatives of Velie sales organizations from all over the country, at the factory in this city: President, J. K. Gregory of the Gregory Motor Co., Kansas City; vice-president, A. J. Shorey of the New England Velie Co., Boston; secretary, R. C. Cook of R. C. Cook Co., Chicago.

The organization is entirely independent of the factory and its field staff. The main purposes are close and active co-operation in expanding the market, the interchange of ideas.

SAXON STOCKHOLDERS APPROVE FINANCING

Company Now Working Out Plans Concerning Proposed Changes in Car

DETROIT, Aug. 15—The Saxon Motor Car Co., following the authorization by its stockholders of a new issue of preferred stock which will give the company $750,000 in additional working capital, is working out plans for revisions in its product which, if followed through, will result in changing it into a six cylinder line which will market at about the same selling price as the present four cylinder.

It is expected, too, that the introduction of the new capital will see the reorganization of the company, and the election of a new directing group, so that the company may proceed to market its product on an extensive scale. Harry L. Bill, vice-president in charge of manufacturing, who has been directing the affairs of the company since the resignation of Clarence A. Pfeffer as president, will probably become president of the reorganized company. The company will issue 200,000 shares of stock.

Twenty-five Years Ago with Oldsmobile



Oldsmobile is celebrating its twenty-fifth anniversary this month. Indulging in a bit of retrospection brings forward some of the Oldsmobile advertising of other days which suggests quite forcibly the advancement that has been made in this and other motor cars in but a few years. Look as these vehicles of the industry's "creeping days." One of the ads says: "The ideal vehicle for shopping and calling—equally suitable for a pleasant afternoon drive or an extended tour. It is built to run AND DOES IT—A turn of the starting crank and the Oldsmobile goes with NOTHING TO WATCH BUT THE ROAD. Price, including MUD GUARDS, $650

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SALES IN NEW YORK INCREASED BY CUTS

Effect Would Have Been More Keenly Felt Before Vacation Period

NEW YORK, Aug. 14—Price reductions on several popular lines of passenger cars have had the expected effect in New York, stimulating slightly midsummer sales of the cars reduced and materially slowing up deliveries in competitive lines.

Coming at one of the slow periods of the year in the Metropolitan District, when a large majority of car buyers are away on vacation, planning to go away or just getting back, the effect of price reductions has not been so keenly felt as it would have been a month or two ago. The lines reduced have made a more than seasonal number of retail sales within the past week, an unusually large number of which were without trades, indicating that the new prices had reached out and brought into the market some buyers who were holding off until the cars they wanted got within reach of their pocketbooks.

Wholesale Business Improved

There has also been quite a bit of improvement in wholesale business in these lines, and particularly there has been an increased demand for dealerships in some of the smaller communities of the territory. This applies especially to two or three cars in the class recently reduced whose dealer organizations had never been wholly rebuilt after the stagnation period of a year ago.

In connection with low and medium priced cars whose prices have not been reduced the public has adopted a natural waiting attitude. Some dealers, as well, are looking for reductions on their lines between now and the first of September.

The demand for closed cars continues strong and this with general conditions outside the railroad and coal strikes has prompted Metropolitan distributors and branch managers to anticipate a brisk fall business, provided the national industrial troubles are settled.

Sales During July

NEW YORK, Aug. 12—Registration figures as compiled by Sherlock & Arnold, publisher of the Automobile Sales Analysis, for the ten counties in and around New York City for July show a total of 8494, as compared with 9068 in June and 9431 in May. For the first seven months this year registrations aggregated 48,073 as against 30,422 for the same period last year.

In the medium and low priced class four cars lead the field with three others some distance behind, but considerably ahead of those following them. Nine cars are well in the lead in the higher priced cars.

A summary of registrations for the first seven months in the high, medium and low-priced classes is as follows:

	High Price	Medium and Low Price
January	283	2,017
February	273	2,231
March	632	6,354
April	862	8,428
May	961	8,470
June	865	8,203
July	678	7,816
Total	4,554	43,519
Total (1921)	2,879	27,543

BILL STATES DEALER MUST HAVE $10,000

ATLANTA, Aug. 14—A new bill that has as its objective a reduction in the number of automobile accidents in Georgia is being advocated for presentation before the present session of the Georgia Legislature, and should the plans of its formers materialize to the extent of resulting in its passage, it would probably have the effect of forcing at least 75 per cent of the dealers in this state out of business within another year.

The bill contains a number of objectionable features so far as the dealers are concerned, but the one that would have such disastrous results would require every individual, co-partnership or corporation before it could obtain a license to furnish evidence to the Secretary of State that the said applicant was worth over and above all debts, etc., the sum of $10,000. The average dealer can readily realize how ruinous to the industry any bill containing such a clause would prove, and if the present bill is actually offered before the legislature here, it will be bitterly opposed by the Georgia Automotive Dealers' Association.

Boston Sales Stimulated

BOSTON, Aug. 12—Whether the anticipation of reduced prices had anything to do with it or not, some of the dealers state that sales began to show a drop during the latter part of July. This does not apply to all dealers, for some of them had better July business than a year ago, others as good as June and some more showed a falling off. In other words the big buying wave showed a tendency to flatten down.

New prices seemed to stimulate sales among the cars announcing new figures.

Schillo Dies in Plane Crash

CHICAGO, Aug. 11—An aeroplane crash near Napierville, Ill., yesterday resulted in the death of Edward W. Schillo, president of the Schillo Motor Sales Co. of Chicago, representing the Mercer and Templar, and one of his employees, LeRoy Keller, who was piloting the plane. Schillo had been prominent in automobile trade circles in Chicago for more than ten years.

HARD WORK, SLOGAN IN ROCKY MOUNTAINS

As Result Gloom Is Gone and Business This Year Was Never Better

DENVER, COL., Aug. 14—"Business is better now than it has been at any time within a year."

This declaration, based upon a careful study of conditions, came to-day from W. W. Barnett, Oldsmobile distributor for Colorado and part of Wyoming and New Mexico, at the close of a two-day sales convention of his organization. The convention was attended by thirty dealers from all parts of the territory, and also by Thomas O'Brien, assistant general sales manager of the Olds Motor Works.

"There is no question but that stagnation was here, and that it had a frightful grip on a heap of normally good business folks for a rather long time," Barnett said. "But that fearful stagnation is now gone, and the right kind of thinking and the right kind of working will keep us from feeling the grip of stagnation again soon."

Encouragement for Dealers

Relating personal experiences, he said:

A few months ago one of my dealers in a somewhat thinly settled territory claimed that business was absolutely dead. But a little encouragement renewed his grit and prevented his believing this claim fully enough to cause him to give up entirely. He set his teeth for further effort, gradually turned the tide of the struggle, and for the last six weeks has been coming to Denver with a smile like a mountain sunrise and driving home with an average of three cars a week.

Another dealer came to me recently with a similar case of gloom, and I simply told him to go back home and see just how hard he really could work if he tried his darndest. He is now going strong on sales, and his determination and cheerfulness are having a mighty wholesome effect on other dealers, as well as on people in general in his community. A lot of folks are gradually learning that the safest and sanest cure for most business ills is downright hard work.

One lively feature of the sales convention was a banquet out at Lakeside's Casino Balcony, which affords an inspiring across-the-lake view, particularly at sunset, of some of the highest peaks of the Rockies, the nearby foothills and the well-farmed Clear Creek Valley. On this occasion, which was attended by eighty-six members of the Barnett sales and service organization, Old Man Gloom was given an elaborate funeral service and laid to rest amid ceremonies of befitting grandeur.

Moon Dealers Form Agency

CHICAGO, Aug. 10—Formation of the Dealers' Sales Corp., a retail Moon agency owned by ten community Moon dealers in Chicago, is announced by John Quinlan, president of the Quinlan Motors Co., wholesale distributor of Moon cars in Chicago.

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DURANT GUARANTEES LISTS FOR ONE YEAR

Does Not Concern Locomobile, Flint and Star Cars or Mason Truck

NEW YORK, Aug. 9—Present prices on Durant four and six cylinder cars are guaranteed until Aug. 1, 1923, by W. C. Durant, who has just advised his distributors and dealers of his decision.

"Our present prices were established when business was at a standstill, with material cost as low or lower than now prevailing," Durant writes. "Durant Motors, Inc., made an absolutely clean start Aug. 1, 1921, with no high priced inventories and no burden incident to war-time operations."

This price guarantee does not apply to others in the Durant line like Locomobile, Flint and Star cars and the Mason truck.

SCHWAB CUTS PRICES ON ALL STUTZ MODELS

INDIANAPOLIS, Aug. 14—Following the arrival in Indianapolis of Charles M. Schwab, came the announcement of substantial price reductions on the complete Stutz line, which was coupled with a statement from Schwab that he will give the company's affairs his personal attention and that the present officers will continue to handle the manufacturing operations.

The new schedule is as follows:

	Old Price	New Price
Roadster	$2,950	$2,450
6-pass. phaeton	2,990	2,640
4-pass. phaeton	2,990	2,790
Coupe	3,990	3,490

Noma Increases

NEW YORK, Aug. 14—Noma Motors of New York announces an increase in prices, ranging from $300 to $500, affecting the whole line of C models. The prices are as follows:

	Old Price	New Price
2-pass. speedster	$2,000	$2,500
Foursome	2,100	2,500
6-pass. phaeton	2,200	2,600
5-pass. sedan	3,200	3,500

Dort Prices

In the Aug. 9 issue of Motor World errors were made in quotations on the closed models of the Dort. The revised figures, showing substantial reductions in all but the open types, are as follows:

	Old Price	New Price
2-pass roadster	$885	$885
5 pass. phaeton	895	885
Large coupe	1,315	1,265
Small coupe	1,065	1,045
Small sedan	1,115	1,095
Large sedan	1,445	1,385

Amazon Tire Lower

AKRON, Aug. 14—Price reductions are announced by the Amazon Rubber Co., the cuts being on the heavy duty non-skid cords and the air bag cushioned non-skid fabrics. The excise tax is included in the new prices. Reductions on some of the popular sizes in cords are as follows: 30 x 3½, from $18.00 to $15.95; 33 x 4½, from $33.40 to $30.05; 34 x 4½, from $45.20 to $39.50. Fabrics: 30 x 3½, from $13.95 to $10.50; 31 x 4, from $21.75 to $20.65. In the larger sizes in the fabric line the old prices are retained.

$100 TO $110 TAKEN FROM COST OF REO

LANSING, MICH., Aug. 10—New prices announced by the Reo Motor Car Co. show a reduction of $100 on the 5 passenger phaeton and $110 on the 7 passenger phaeton. The prices on the two closed jobs remain unchanged. The revised list is as follows:

	Old Price	New Price
5-pass. phaeton	$1,745	$1,645
7-pass. phaeton	1,595	1,485
7-pass. sedan	2,435	2,435
4-pass. coupe	2,355	2,355

Auburn Prices Lower

AUBURN, IND., Aug. 14—Reductions ranging from $50 to $200 are announced by the Auburn Automobile Co. The new list is as follows:

	Old Price	New Price
2-pass. roadster	$1,575	$1,575
5-pass. phaeton	1,575	1,475
4-pass. sport	——	1,895
4-pass. sport (except equipment)	2.195	1,995
7-pass. phaeton	1,615	1,545
Coupe	2,275	2,275
Sedan	2,395	2,345

Prices Fixed on Buick Truck

FLINT, MICH., Aug. 11—The prices on the four-cylinder, special delivery Buick truck are based on a chassis price of $725. The body prices vary with the type and are as follows: Open express body with cab, $840; panel body with cab, $860; canopy top with roll curtains and cab, $855; canopy top with screen sides, roll curtains and cab, $875; de luxe panel body with cab, $960; combination passenger and express body with cab, $935.

Anderson Light Six Price

A description in last week's Motor World of the new Anderson Light Aluminum Six gave the price as $1,195, but a caption under a picture of the car quoted $1,650 as the price. The caption was incorrect, $1,650 being the price of the phaeton model of the Anderson Series 40 which will be continued in production along with the light six line. As stated, the new model phaeton will sell for $1,195 and shortly closed cars will be brought out priced only a little above the open model.

Templar Branch in Atlanta

ATLANTA, GA., Aug. 12—A factory distributing branch for the southeastern territory is to be established immediately in Atlanta by the Templar Motor Co. of Cleveland. The branch will handle southeastern Templar sales.

CITY OWNED BUSES PLANNED IN CHICAGO

Mayor Had Asked for Appropriation Before Street Car Strike Ended

CHICAGO, Aug. 15—Just when Chicago was about to experiment on a large scale with municipally operated motorbus transportation at a 5 cent fare to take the place of street car transportation the strike of street and elevated railway employees, which prompted the experiment, was ended. Mayor Thompson, who was back of the plan, stated, however, that he would proceed with the movement to have the city acquire and operate buses.

In the six days that the strike was on, the city arranged for a number of privately owned buses to operate under the municipal banner, charging 5-cent fares. On the last day of the strike the number of such buses was 20. On the day following the end of the strike 11 of these buses discontinued the regular passenger business and returned to the carrying of sightseers.

Preceding the end of the strike Mayor Thompson had asked the city council to appropriate $3,000,000 for the purchase of buses. He announces that he will press this request, and the transportation committee of the Council has decided to give it careful consideration.

The splendid assistance given the passenger transportation problem in the city during the strike by the municipally operated and other privately owned and operated buses was such that many strong advocates have been won over to this form of transportation.

FORD'S JULY OUTPUT APPROXIMATED 152,000

DETROIT, Aug. 14—Ford Motor Co. figures show that July production approximated 152,000, which surpasses June when a new Ford record was hung up in retail sales of cars, trucks and tractors. Sales for June totaled 148,439 vehicles, an average of 5709 daily. Of this total 132,950 were sold in the United States, 6054 in Canada and 9435 in Europe.

Another record is shown in the report of total sales for the first six months of 1922, a total of 652,261 being reached.

Peerless 1923 Line

CLEVELAND, Aug. 14—The Peerless Motor Car Co. will show its 1923 line about Sept. 1. The new models will have changes and refinements both in chassis and body styles.

New Southern Tire

AUGUSTA, Aug. 15—The Southern Tire & Rubber Co. manufacturer of fabric and cord tires, announced a new tire this month, a 30 by 3½ inch, five ply, to sell for $8.50.

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ELLIOTT SETS RECORD ON COTATI SPEEDWAY

In Leach Special Drives 50 Miles at Average Speed of 117.5 M.P.H.

STANDING OF DRIVERS

NEW YORK, Aug. 14 — No change in the standing of the leaders in the fight for the title of racing champion of 1922 resulted from the meeting at Cotati, Cal., Aug. 8, except that Elliott, the Cotati winner, was advanced to fourth place in the championship table. Jimmy Murphy, with his Miller-motored Leach, continues to lead the field by a big margin; in fact, he is so far ahead that Harry Hartz could not catch him even though Hartz won all of the remaining championship events.

The standing of the championship is announced as follows by the American Automobile Association:

Driver	Total Points	Driver	Total Points
Murphy	2910	Thomas	109
Hartz	1238	Fetterman	99
Milton	1100	Wilcox	83
Elliott	675	Hill	50
Hearne	363	Alley	44
Sarles	280	De Paolo	35
Wonderlich	280	Miller	28
Bordino	270	Vail	25
Klein	195	Koetzla	21
Mulford	179	Shafer	19
De Palma	160	Morton	17
Halbe	155	Melcher	15

COTATI, CAL., Aug. 12—Frank Elliott set a new world's record in winning the 50 mile race and also won the 100 mile feature of the triple event program of automobile races on this speedway.

Driving a Leach special, equipped with a Miller motor, California products, Elliott did the 50 miles at an average speed of 117.5 miles an hour, beating Bordino's record of 116.2 miles an hour, made in this same bowl last spring. Elliott's time was 25 minutes, 49.7 seconds. Tommy Milton, driving a Leach special, was second, and Eddie Hearne, in a Disteel Duesenberg, came third. Elliott did his fastest lap at the rate of 122 miles an hour.

Elliott won the 100 mile race in 53 minutes flat, at the rate of 113.7 miles per hour. Jimmy Murphy came in second. Murphy was forced into the pits in the 17th round of the 50 mile race and discovered that a tire had become wound into the inner disc of the wheel necessitating much time for repairs and so withdrew.

Tommy Milton was third in the long race, and Bennett Hill, a newcomer in Northern California racing, was fourth. Jerry Wonderlich, Harry Hartz, Joe Thomas, Al Melcher, Art Klein and Roscoe Sarles were the other entrees.

The 50 mile Ford dealers race, preliminary of the afternoon, was won by A. G. Matthews, driving the Hugheson Ford special in 43 minutes, 11.4 seconds.

To Open Kansas City Speedway

KANSAS CITY, Aug. 14—A sanction has been granted by the American Automobile Association for the opening meet of the new Kansas City board speedway, which is scheduled for Sept. 16. It will be a championship meet for which $30,000 in cash is hung up, while it is expected that $20,000 additional will be raised among the business houses to be distributed as lap prizes. The new speedway is 1¼ miles and the cost is estimated at around a half million dollars, including a steel framed grandstand.

"STAR" DISTRIBUTORS MEET IN CONFERENCE

NEW YORK, Aug. 14—At the meeting of 75 of the eastern distributors of the Star at the Biltmore here, it was announced by President Carroll Downes that the Star now is in production at the Lansing and Long Island plants and that production will start in the California plant in two weeks.

The distributors also were told of the awarding of a $1,000,000 contract for the construction of new buildings at Leaside, Canada, which will be used for Star construction. The new plant will have a floor space of 500,000 sq. ft. This Canadian plant will turn out 18,000 for 1923, 10,000 of which will be for domestic trade and 8000 for export. This plant will be completed Dec. 1.

While it has not been officially announced, it is believed that the Star policy to distributors and dealers will take the form of a fixed allowance instead of a discount on cars, which would protect the agents in case of a price reduction. The Star will be marketed through Durant distributors and dealers in that the Durant representatives will be given first choice when an appointment is made.

Forms for Stolen Cars

CONNERSVILLE, IND., Aug. 14—Lexington Motor Co. has inaugurated a bulletin service to aid Lexington owners in the recovery of cars which are stolen. The company supplies its dealers and insurance companies with printed forms upon which they are to report the theft of Lexington cars, giving name of owner, description of car and place from which it was stolen. The Lexington Company will then fill out the necessary number of duplicate forms and mail them to all Lexington dealers and to insurance companies.

Olds Factory Meeting

INDIANAPOLIS, Aug. 15 — Indiana Oldsmobile dealers visited the factory at Lansing and held a meeting there last week. The trip was arranged by Lathrop, McFarland & Co., Indianapolis distributor.

BETHLEHEM CONTRACT ON PERPETUAL BASIS

Provides Sliding Scale of Discounts, Depending on Territory and Deliveries

NEW YORK, Aug. 11—The Bethlehem Motors Corp., manufacturer of the Bethlehem truck, has developed a contract with dealers which will embody the best features of usual truck contracts, but will be on a perpetual basis, automatically renewable year after year, so that Bethlehem dealer connections will be permanent conhections of the new corporation.

The new contract provides for a stipulated number of deliveries during the first year—the number of trucks specified being on a conservative basis, in many instances only half the quantity the distributors and dealers estimate their territory will absorb. If the quota in the first year is taken, the contract continues for the second year, with an increase of 25 per cent in delivery specifications for the second year period and a similar increase each year thereafter.

A sliding scale of discounts is used, the chassis and parts discounts depending on the size of the territory and the number of deliveries to be taken during the first year.

Under the new form of dealer relationship, there will be no renewing of contracts at stated intervals, but, instead, changes that may be advisable from time to time will be made in the form of appendices to the contract proper.

FORD NOT DECIDED ON MEXICAN PLANS

MONTEREY, MEXICO, Aug. 10—No definite decision has as yet been reached by Henry Ford as to whether he will establish a plant in Mexico for the manufacture of automobiles and tractors, according to information received here direct from headquarters in Detroit.

Ford has had two sets of representatives in Mexico during the last few months. One set made an investigation of possible sites for the proposed plant and the other made a study of the iron ore and coal supplies.

It is explained by men who are in close touch with Ford's tentative plans for industrial development in Mexico that it may be several months before he is ready to make a move for their consummation.

Shaler Completes Plant

WAUPUN, WIS., Aug. 14—The C. A. Shaler Co., manufacturer of vulcanizing apparatus, headlight lenses and other specialized lines of garage and repairmen's and owners' equipment, has completed its new plant, erected to replace the works destroyed by fire early in the year. Operations were reinstated as quickly as the various departments were finished.

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SOUTH AFRICA HAS USED CAR PROBLEM

Dealers Buckling Down to Work of Making Strong Selling Efforts

JOHANNESBURG, July 14 (*By Mail*)—Dealers throughout South Africa are finding the used car problem difficult to solve. A number of dealers have stocks on hand taken in at very high prices, and they are now proceeding to cut their losses. In many instances these used cars have been sold at auction. Often the auctioned cars bring low prices and sometimes are bought in by other dealers who recondition them and get fair prices.

Up to the present the used car business has been poorly handled, as few dealers have taken the trouble really to sell the cars. It is good to be able to report, therefore, that several large firms in Johannesburg and elsewhere in the Union have decided to sell used cars properly. The General Garage, Dodge Brothers agent for the Transvaal and Orange Free State, has started a department for reconditioning Dodge Brothers' cars. These are thoroughly overhauled and are sold with the company's backing. The cars are kept in a good salesroom.

Some dealers are refusing to take in second hand cars at all, but it is certain that they are losing sales of new cars through this. They feel that the used car market is too unsteady to allow of holding any in stock. Others again are offering fair prices—prices that are too high in the opinion of many.

Tire Reductions Stop

The tire firms appear to have stopped price reductions. In one or two instances a rise in price is foreshadowed. A large number of small firms handling tires have come into being during the past few months. Some of these firms are importing direct from the United States and England, while others are simply jobbing them. The Union Government has just past an anti-dumping bill which prohibits the sale of goods below cost in South Africa. It is thought that this bill has been passed to stabilize prices of rubber goods. There is a fairly large rubber manufacturing company in South Africa, and it is said that this is a form of protection for them as well as many other industries that have been started.

The Provincial Councils of the four provinces of the Union are endeavoring to cut down allowances for roads, but are doing so in the face of much opposition. South Africa has few roads worthy of the name, and the importance of the motor car and motor truck is not fully realized.

Willys-Overland Report

TOLEDO, Aug. 14—The Willys-Overland Co. and subsidiary companies for the five months ended May 31, 1922, report net loss of $1,661,262 after charges and depreciation. The net sales totaled $28,281,981 and the operating profit $847,714. The consolidated balance sheet for these companies, with the exception of the Wilson Foundry & Machine Co., shows inventories of $15,263,753; accounts receivable, $2,291,643, notes receivable, $858,075, and cash, $7,703,713. Among the liabilities are included notes payable of $18,334,035 and accounts payable of $3,860,685.

DEALERS ISSUE "COURTESY" STICKERS TO RESTORE OLD CHIVALRY

Chicago, Aug. 15.

THE Chicago Automobile Trade Association has inaugurated a campaign to promote "Automobile Courtesy." It has had windshield stickers printed bearing the words: "Automobile Courtesy—Chicago Automobile Trade Association." The word "courtesy" is in large, bold type, the other words being subordinated. The inscription is on a white field, surrounded by a green border decorated with white stars.

Members of the association are to be supplied with all of these stickers they can use and they are urged to paste one on the windshield of every car that drives up to the door or into the service station.

The reason for the campaign is stated in a letter sent to members by James Levy, secretary of the association, as follows:

"In the early days a motorist approaching a crossing would pause and let pedestrians cross—he did it with a smile. Today the average motorist assumes the attitude of 'to h—— with the other fellow.' Another thing, courtesy among motorists themselves seems to be on the wane. It used to be the custom if one motorist saw another in trouble, he would stop and lend a helping hand. Not so today—a fellow in trouble might just as well be in the middle of a desert somewhere as on a busy throughfare, because every one drives by with heads in the air."

GOODYEAR HALF YEAR SALES, $51,410,240

NEW YORK, Aug. 14—Net sales of $51,410,240 for the first half of 1922 are reported by the Goodyear Tire & Rubber Co. The surplus account shows a total of $1,915,889. The general balance sheet as of June 30, 1922, shows that the company has no bank loans and that the ratio of quick assets to current liabilities is in excess of ten to one.

The net quick assets totaled $65,511,157, of which $32,756,663 was in the form of inventories; $14,603,402, accounts receivable; $8,500,856, United States Treasury certificates and other marketable securities, and $9,560,136 cash on hand and in banks.

Net current liabilities totaled $6,223,554, of which $4,797,720 consisted of trade acceptance accounts payable; $80,500, notes payable, and $1,345,334, accrued interest and premiums on bonds redeemed. The profit and loss surplus is $5,535,933.

Production and sales for the first half exceeded those of the same period last year, with June a record month for the company. June sales and deliveries totaled 779,590 beating the previous best —734,948 in March, 1920.

Hupp Increased 60 Per Cent

DETROIT, Aug. 14—July sales as reported by the Hupp Motor Car Corp., were 60 per cent greater than any previous July. The company states that no immediate decrease in production is anticipated.

CARLOAD MINIMUMS AROUSE NORTHWEST

Dealers in Oregon and Washington Will Protest Against Discrimination

PORTLAND, ORE., Aug. 14—Automobile dealers of the Pacific Northwest are to seek relief from what they claim to be discriminatory carload minimums, in action before the Interstate Commerce Commission. This decision was reached following meetings at Portland and at Olympia, Wash., where it was shown that California shippers of automobiles are paying as much as $50 less per carload than shippers into Portland, Seattle and Spokane.

The trouble, according to the dealers' committee, lies with the minimum weight restrictions on the average carload used for automobiles. This minimum for cars coming into Oregon and Washington is 11,200 pounds, while into California the minimum is 10,000 pounds. The carload charges are based on this minimum, though the freight may weigh less. The rates per hundred in both districts are practically the same, and the dealers claim that the railroads cannot justify the discrimination, since the rate structure on all but a very few commodities is the same to all points on the Coast.

High Charges for Freight

With the demand for closed cars constantly increasing, this matter is becoming increasingly important, the amount of "dead" space in the car being greater. In some cases this has reached such a proportion that the freight charged on each automobile has reached nearly 20 per cent of its total sales price in Portland.

The Automobile Dealers Association of Portland has appointed a committee, headed by F. W. Vogler, president of the Northwest Auto Co., to co-operate with committees from other Northwest dealer bodies to fight the case.

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CHANGES IN THE TRADE

Irey & Allsup, Monmouth, Ill., has been appointed local territory agents for the Hupmobile.

Float-A-Ford Sales Co., Cincinnati, has changed its name to the Minor & Colby Auto Supply Co.

Franklin Holyoke Corp., Holyoke, Mass., has opened a service station for the Franklin in that city, under the management of **H. L. Carroll.**

F. M. Gibbs has joined the Philadelphia branch of Martin-Parry after spending several years in the factory. Recently he has been in charge of territorial sales in the York region.

Thomas J. Ferguson, connected with the Dean J. Deakyne Co., Wilmington, Del., has taken over the local agency for the Chandler and Cleveland lines.

Hanson-Nash Motor Co. has been organized at Tampa, Fla., by **Charles E. Hanson,** to handle Nash sales, retail and wholesale, in south Florida.

Phil Miler has purchased business of **Hay Brothers,** Kewanee, Ill., tire and accessory dealers and will conduct the business as both wholesale and retail store.

Eldredge F. Shaw supersedes **Frank M. Gibbs** in assuming charge of all territorial sales of the York region excluding Baltimore for the Martin-Parry Corp.

Moon Co. of Georgia has been organized and incorporated in Atlanta to handle the distribution of Moon cars in Georgia. **Larry Grant** is president of the new company.

Charles W. Tway of Atlanta, Haynes distributor in twelve southern states for some years, has been appointed southern district sales manager for this same territory with headquarters in Atlanta.

Willys-Overland, Inc., has turned over the sale of parts and service business for the Willys-Knight and Overland in Springfield, Mass., to **Fred Darnstaedt,** who has taken space in the Forest Park Garage.

T. Harris Smith, formerly general manager of the Packard factory branch at Kansas City, Mo., has joined the factory organization of Mitchell Motors Co., Racine, Wis., as manager of advertising and sales promotion.

International Harvester Co. announces the establishment of a branch at Savannah, Ga., for the handling of International trucks in that territory. A service station is also maintained. **M. A. Mongeua** is manager of the branch.

Smith Motor Sales Co., 6140 Cottage Grove Avenue, Chicago, has acquired a franchise for the sale of Maxwell and Chalmers cars and will handle these lines exclusively **F. H. and L. H. Smith** are at the head of this company.

Backmeier Sales Corp. is the new name of the former Southern Sales Corp., Cincinnati, manufacturers' agent distributing a wide range of automotive lines. Under the new name the company has just issued catalog No. 200 A.

Broadway Motor Sales Co. formally opened its fourth Chicago store this week. Paige, Jewett and Willys-Knight cars are handled at this store which is housed in a new building. **O. H. Bernstine** is president of the company.

Garinger Motor Co. has been formed in Springfield, Mass., to take the agency of the Auburn. **F. D. Garinger,** formerly in charge of distribution of the Buick in that territory, heads the new concern, of which his son, Carlton H. Garinger, is treasurer.

Fred Rawlings, formerly with the Cadillac Co. in Atlanta and well known in the automotive industry in that district, will establish a manufacturers' agency in Shanghai, China, early in 1923, handling business in China and parts of Asia, specializing in automobiles and tractors.

Rolfe C. Spinning has resigned as advertising manager of the Service Motor Truck Co., Wabash, Ind., to become manager of the Detroit office of the Service Corp., Troy, N. Y., which specializes on automotive development, maintaining offices in Troy, Detroit and New York City.

Walter P. Coghlan, recently general sales manager of the American Hammered Piston Ring Co., Baltimore, has been appointed vice-president and director of sales of the Trexler Co., Philadelphia. Coghlan will direct the sales of the Trex air valve lock, which was placed on the market last spring.

J. W. Harris & Co., Cincinnati representative of the Eisemann Magneto Corp. and the Briggs & Stratton Co., has been appointed official representative of the automotive products of the Westinghouse Electric Co. and the Leece-Neville Co. for the Cincinnati district.

McBee Engine & Implement Co., Memphis dealers for Mack trucks, Lee trailers, G. E. motors and other mechanical equipment, has established a sales and service agency for C-T electric motor trucks in the Memphis territory. **John H. McBee,** manager of the company, will have charge of the sales of electrics.

John A. Camm, for twelve years director of sales of the Kearney & Trecker Corp., Milwaukee, a large manufacturer of milling machine and other machine tools, has resigned to become president of the Western Iron Stores Co., Milwaukee, which will develop its machine tool department under his direction.

Clevenger Motor Co. has been organized at Topeka, Kan., to handle sales of the Hupmobile. **R. T. Cowgill,** who has been with the Franklin Motor Co., is in charge. The company now operates in Lawrence under the direction of **J. M. Clevenger,** who has been the Hupp dealer there for a number of years.

F. P. Nusslock has been appointed general sales manager of the Nelson-Mitchell Co., Milwaukee, distributor of the Mitchell in Wisconsin, and retail dealer in Milwaukee. Nusslock in 1912, 1916, and again in 1918 was associated with the distribution of the Mitchell in this territory. For several years he was on duty at the factory in Racine, Wis.

Emerson-Brantingham Tractor Co., Rockford, Ill., has appointed **Shaler G. Smith** manager of the newly created special appliance department. Smith has resigned as president of the Modern Power Appliance Co., distributor of the Delco light products, located at Rockford, Ill., to take charge of his new post. He will be in charge of the sales organization of the new department.

Zell Motor Car Co. has been formed in Baltimore to act as Packard distributor for the greater part of Maryland. The company succeeds **Packard Motor Car Co.** of Baltimore which has acted as Packard distributor in that territory since 1905. **George Miller,** head of the old company, is retiring from business which is the principal reason for the change. **A. Stanley Zell** is president of the company.

Grand Avenue Buick Co. of Milwaukee is a new corporation organized by **John P. Meehan, G. P. Allen** and others. It has been granted a retail dealer franchise, making six Buick dealers in Milwaukee county, including the **South Side Buick Co.,** also a new organization, with **Stanley P. Jack** and **John A. Piszczek** as owners. Both new concerns are headed by men who have been associated with other Buick dealer concerns in Milwaukee for many years.

William C. Small, in charge of the technical service division of the service department of the Franklin Automobile Co., Syracuse, N. Y., has resigned to become service manager for **C. G. Heck,** Franklin dealer at Philadelphia. Small was with the Franklin company for almost thirteen years, during five years of which he acted as Pacific coast engineer. His position at the Franklin factory will be taken over by **L. R. Hodge,** formerly service manager for the Franklin dealership at Cleveland.

James H. Joyner, until recently manager of the **Ohio Valley Motor Car Co.,** Cincinnati distributor of the Premier, has left Cincinnati for Atlanta, where he has been engaged as manager of a branch of Templar Motors. Joyner, after several days spent in studying Templar policies at the company's offices in Cleveland, motored through to Atlanta, taking with him **Floyd Prothero,** who will serve as sales manager of the Atlanta branch.

A. C. Bennett, for the last five years Buick branch manager, at Pittsburgh, has been promoted to the position of district sales manager for the Eastern territory with offices in Pittsburgh. Bennett entered the employ of Buick as salesman at the old Des Moines branch in 1911 and was transferred to Chicago as sales manager, and in 1916 was promoted to the position of manager at Pittsburgh. **R. R. McVicker,** for the past three years sales manager at the Pittsburgh branch, has been promoted to the branch managership.

Del Lang and **Joseph Pender** have joined the sales force of the **Weaver Manufacturing Co.,** Springfield, Ill., maker of garage and shop equipment. For the last five years Lang has been with the Champion Spark Plug Co., representing it in the northwest territory. He will be stationed in Minneapolis and will travel Wisconsin, Minnesota, North Dakota, South Dakota and Illinois, except Quincy. Pender previously was connected for a number of years with the United States Steel Products Co. His territory includes Texas, except El Paso; Oklahoma, Arkansas and Louisiana, except New Orleans. He will make his home in Texas.

LeRoy Hodge has been placed in charge of the technical service division of the service department of the Franklin Automobile Co., succeeding **W. C. Small,** now service manager for **C. G. Heck,** Franklin dealer at Philadelphia. Hodge started with the Franklin organization in 1908 and spent several years working in the shop. In 1912 he took charge of Franklin service in the Southwest with headquarters at Kansas City, and from 1916 to September of last year had charge of Franklin service in Cleveland. Since last September he acted as traveling service man for the factory in Syracuse.

No Successor to Cobb

In the issue of Motor World of July 19, T. B. W. Zumstein was stated to have succeeded W. E. Cobb as New York branch manager of Master Trucks, Inc. A successor to Cobb has not been appointed, Zumstein being in charge of all sales activities of Master Trucks, Inc., and temporarily looking after the company's New York interests.

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ASSOCIATION ACTIVITIES

A. E. A. Meeting at Peoria

PEORIA, ILL., Aug. 14—One of the largest merchandising meetings held in Illinois since the inauguration of the "Shop Profits" campaign of the Automotive Equipment Association, was held at the Jefferson Hotel here. The speakers were E. C. O'Donnell of the A. E. A., Geo. Rickenberger of the Washington Auto Supply Co., Walter G. Hecker of the Curtiss Pneumatic Machinery Co., of St. Louis, and B. W. Ruarck, field secretary of the A. E. A. The meeting was presided over by A. G. Thede, president of the Peoria Automobile Dealers Association.

The two motion pictures of the Automotive Equipment Association, "Ask 'em to Buy" and "Shop Profits," were shown. At a dinner, which followed the showing of these pictures, there were 552 dealers, employees and guests.

The second meeting the following night, attended by about 100 jobbers, was addressed by Ray W. Sherman, merchandising director of the A. E. A., who was not able to attend the earlier meeting. Unusual enthusiasm was shown by dealers and jobbers in attendance at both gatherings.

Taxicab Operators Organize

CHICAGO, Aug. 15—The National Association of Taxicab Operators has been organized, including in its membership more than 80 operators in about 200 cities. More than 5000 cabs are owned by members of the association.

At a convention held here a code was adopted which will be printed and displayed in the garages of the association members. This code points out the necessity for fair dealing and a promise to elevate the moral character and financial condition of the employees. It promises the public that it will take no advantage of a man's ignorance or condition; that it will see that employees are truthful and straightforward and courteous to everyone—passengers, pedestrians and other drivers.

"We will see to it, above all things, that he drives his own vehicle safely," is the promise held out for the driver.

Cleveland Show in September

CLEVELAND, Aug. 14—The Cleveland Automobile Manufacturers & Dealers Association has contracted for the central section of the exhibition hall in Cleveland's new municipal auditorium for a display of closed cars during the merchants and manufacturers exposition which will be held Sept. 18 to 28.

Retail merchants and manufacturers are staging an ambitious fall exposition and style display just prior to the fall season and this has been deemed an opportune time for a concentrated display of closed cars instead of individual displays, therefore the automobile trade organization as a whole contracted for a block of 15,000 sq. ft. which would permit of showing one closed car from each line represented in the association. The exhibit will then be uniform and impressive. The details are being handled by Herbert Buckman, manager of the association.

Changes in Detroit

DETROIT, Aug. 15—A. L. McCormick, manager of the Paige Sales & Service Co., has been elected treasurer of the Detroit Automobile Dealers Association, succeeding Charles W. Hathaway, and H. W. Peters, manager of the Detroit Packard branch, has been named a director succeeding C. A. Triphagen.

Hathaway was formerly manager of the Detroit Lincoln branch which was closed under the new Lincoln sales plan, and he has become connected with the Cleveland Cadillac organization. Triphagen was formerly manager of the Detroit branch of Reo Motor Car Co., having been called to the Reo factory to become one of the sales executives there.

Dayton Has A. E. A. Meeting

DAYTON, OHIO, Aug. 11—Two hundred and twenty-five dealers from Dayton and surrounding towns attended an "Ask 'Em to Buy" meeting at the Gibbons Hotel. Following an address by Ray W. Sherman, merchandising director of the Automotive Equipment Association, and the showing of the "Ask 'Em to Buy" film, many in the audience expressed their intention of establishing better automotive equipment departments. The meeting was arranged by the Dayton Iron & Steel Co., G. W. Shroyer & Co., the local branch of the I. J. Cooper Rubber Co. and the Lewis Motor Mart Co., and was presided over by President Hinkley of the local trade association. C. B. Ozias, president of the Dayton Iron & Steel Co. told of the A. E. A. and its initiation of the "Ask 'Em to Buy" movement.

Elected to Legislature

SAN ANTONIO, TEX., Aug. 12—W. A. Williamson, vice-president and general manager of the Texas Automotive Dealers Association, has been elected as a representative to the Texas legislature from Bexar County (San Antonio).

Williamson is widely known among the trade throughout the states, and the fact that he defeated his opponent by more than 2,000 majority shows the esteem in which he is held.

He had the active support of practically all the car and accessory dealers of San Antonio in his campaign. Williamson said he will work for the best good of the automobile interests of the state and render every aid in his power in behalf of good roads.

Offers Prize for Slogan

HOUSTON, TEX., Aug. 12—The Houston Automobile Trades Association is conducting a contest in which a prize of $20 is to be awarded for the best slogan for the association. The contest will close Sept. 1. The only conditions are that the slogan be short and express the thought that every member of the association is reliable and will satisfy the customer.

Golf at Atlanta Outing

ATLANTA, Aug. 14—Practically the entire membership of the Atlanta Automobile Association, an organization of dealers and equipment merchants, attended the annual outing and frolic the organization held at the Brookhaven Country Club here. A golf tournament featured the event.

Tire Changer at Outing

PHILADELPHIA, Aug. 14—Charles W. Paine of this city, who claims the championship as the fastest tire changer in America, was one of the main attractions in lightning tire-changing feats at the first annual outing of the Automotive Service Association at Betzwood Farms Inn, Betzwood, Pa. The association, with the Automobile Accessories Business Association, whose board of directors were guests at the outing, presented to Paine, at the conclusion of his contest against time, a handsomely engraved silver loving cup trophy, which will be held by him until he has been beaten in a championship contest, open to all comers.

Sherman at Cleveland

CLEVELAND, Aug. 12—Ray W. Sherman, merchandising director of the Automotive Equipment Association, made a talk last week to members of the Cleveland Automobile Manufacturers and Dealers Association and the same day he spoke at a convention of the National Lamp Works salesmen, executives and jobber guests, where he exhibited the "Shop Profits" moving picture.

Battery Men Elect

CINCINNATI, Aug. 15—At a meeting of the newly-organized Cincinnati Battery Association, at which more than fifty battery dealers were the guests of G. Earl Koch of the Auto & Aero Supply Co. at a camp adjacent to Cincinnati, permanent officers were elected as follows: President, Peter Duffy; vice-president, G. Earl Koch; treasurer, John P. Rieley, and secretary, Fred T. Gage.

HIGHWAY COMMITTEES PLAN SECOND MEETING

WASHINGTON, Aug. 10—The second meeting between a committee from the National Automobile Chamber of Commerce and representatives of state highway associations will be held in Seaview, N. J., Sept. 14, 15 and 16.

This joint committee will continue the work of the first meeting in Washington this spring when the subject of highway finances, legislation, regulations of loads and kindred topics affecting good roads, were first taken up and discussed from a national aspect.

One of the most difficult problems in the construction of good roads, is their finances, the committee reported at the conclusion of the Washington conference, and some method of financing highway construction, it is anticipated, will be evolved out of the series of conferences, which will enable states to go ahead with their good roads programs during years of depression.

14,746,370 CASINGS MADE IN SIX MONTHS

NEW YORK, Aug. 15—Figures furnished the Bureau of Foreign and Domestic Commerce by the Rubber Association of America show a total output of pneumatic casings of 14,746,370 for the first six months of 1922 as against 8,752,236 for the same period of last year.

June of this year showed an increase of approximately 100,000 over the May total and shipments increased approximately 500,000. A substantial decrease in inventories is reported for the month of June. A gain in production of more than 100,000 is shown for the month.

Production and shipments of inner tubes increased materially and a large reduction is reported in inventories.

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Calendar of Trade Events

CONVENTIONS

Toledo .....September
Annual Convention of the Ohio Automotive Trades Association.

Buffalo .....Sept. 13-14-15
Annual Fall Convention of the Motor and Accessory Manufacturers Association. Lafayette Hotel.

Chicago .....Sept. 14-15
National used car conference of Trade Association Secretaries, under auspices National Association of Automobile Show and Association Managers.

Santa Barbara.....October
Annual Convention of the California Automobile Trade Association.

Chicago .....Oct. 18-19-20
National Association of Farm Equipment Manufacturers.

Chicago .....Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

SHOWS

Aurora, Ill.....Aug. 18-26
Central States Fair and Exposition.

Toronto, Ont.....Aug. 26-Sept. 1
National Automobile Show held in conjunction with the Canadian National Exhibition.

Columbus .....Aug. 28-Sept. 2
Ohio State Fair.

Minneapolis, Minn.....Sept. 2-9
Minnesota State Fair.

Hartford, Conn.....Sept. 4-9
Connecticut Fair Grounds.

Wilmington, Del.....Sept. 4-9
Delaware State Fair.

Spokane .....Sept. 4-9
Annual Automobile Show held in connection with the Spokane Interstate Fair, B. J. Garnet, manager.

Indianapolis .....Sept. 4-9
Automobile and Accessory Show in conjunction with the Indiana State Fair, Automobile Show Building under the auspices of the Indianapolis Automobile Trade Association, J. B. Orman, manager.

Syracuse, N. Y.....Sept. 11-16
New York State Fair.

Cleveland.....Sept. 18-28
Exhibition of Closed Cars during the merchants and manufacturers exposition, under the auspices of the Cleveland Automobile Manufacturers & Dealers Association, Henry Buckman, manager.

Memphis, Tenn.....Sept. 23-30
Annual Automobile Show held under auspices of the Memphis Automobile Dealers Association, Tri-State Fair Grounds.

New York.....Sept. 23-30
Closed Car Show, under Auspices of Automobile Merchants Association, Grand Central Palace.

Washington, D. C.....Oct. 21-28
Annual Closed Car Salon held under auspices of the Washington Automobile Trade Association, Convention Hall.

Chicago .....Nov. 13-18
Annual Show of Automotive Equipment Association.

Cincinnati .....Nov. 22-29
Second Annual Automobile Accessory and Radio Exposition, Music Hall, under the auspices of the Cincinnati Automotive Trade Association.

New York.....Dec. 3-9
Eighteenth Annual Automobile Salon, Commodore Hotel.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, auspices of the Automobile Body Builders Association.

Chicago .....Jan. 27-Feb. 3
Annual Automobile Salon, Drake Hotel.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Minneapolis .....Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

RACES

Kansas City.....Sept. 16
Opening Meet of New Kansas City Board Speedway.

The New Car and Truck Description Index

Giving the date and page number on which they appeared

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Buick (Special Six-55 Sport).May 17, 1922-22
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Studebaker (1922 changes)...Jan. 11, 1922-21
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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾-1	$1650a	3¾x5	34x5n	34x5n	W
Acason RB	1½	1950	3¾x5¼	36x3½	36x6	W
Acason H	2½	2750	4½x5¾	36x4k	36x8k	W
Acason L	3½	3450	4½x5¾	36x5k	36x10k	W
Acason M	5	4350	5 x6¼	36x6	40x12	W
Ace C	1½	2295	3¾x5½	34x3½k	34x5k	W
Ace A	2½	2795	4¼x5½	36x4k	36x7	W
Acme 20	1	....	3¾x5	35x5n	35x5n	W
Acme 30	1½	....	3¾x5	34x3½	34x5	W
Acme 40	2	....	3¾x5	34x3½	34x5	W
Acme 60	3	....	4½x5¼	36x4	36x7	W
Acme 60L	3	....	4¼x5½	36x4	36x7k	W
Acme 90	4½	....	4½x5½	36x5	40x10	W
Acme 125	6½	....	4¾x6	36x6	40x12	W
American 25	2½	3350	4 x6	36x4k	36x4dk	W
American 40	4	4275	4½x6	36x5k	36x5dk	W
Armleder 20	1	....	3¾x5¼	34x3½k	34x6k	W
Armleder 21	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder 40-B	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder 40-C	1½	....	4½x5¼	34x3½k	34x6k	W
Armleder HW-B	2½	....	4¼x5½	36x4k	38x7k	W
Armleder HW-C	2½	....	4½x5¼	36x4k	36x7k	W
Armleder KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder KW-C	3½	....	4½x5½	36x5k	36x5dk	W
Atlas MD	1	1185	3½x5	32x4½n	32x4½n	W
Atterbury 20R	1½	2475	3¾x5	34x3½	34x5	W
Atterbury 7CX	2½	3175	4¼x5¼	36x4	36x4d	W
Atterbury 22C	2½	3375	4½x5¼	36x4	36x4d	W
Atterbury 7D	3½	3975	4½x5½	36x5	40x5d	W
Atterbury 22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury 8E	5	4975	4¾x6	36x5	40x6d	W
Autocar 21UF	1½-2	1950	4¾x4½t	34x4k	34x5k	D
Autocar 21UG	1½-2	2050	4¾x4½t	34x4k	34x5k	D
Autocar 27H	2	2950	4 x5½	34x5	36x7	D
Autocar 27K2	2	3075	4 x5½	34x5	36x7k	D
Autocar 26Y	5	3950	4¼x5½	34x6	36x12	D
Autocar 26-B	5	4100	4¼x5½	34x6	36x12	D
Available H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available H2	2	2775	4 x5	36x3½k	36x6k	W
Available H2½	2½	3160	4 x5	36x4k	36x8k	W
Available H3½	3½	4175	4½x5½	36x5	40x5d	W
Available H5	5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x4s	34x5n	34x5n	1
Beck A Jr.	1½	1285a	3½x5	34x4½n	34x4½n	1
Beck B-30	1½	1725	3¾x5	34x5	36x6	
Beck C-40	2	1810	3¾x5	36x6	36x6	
Beck D-50	2½	2395	4½x5¼	38x7	40x8	
*Bell (Penn.)	½	1000b	3½x5	31x4n	31x4n	B
Bell M (Iowa)	1	1495	3½x5½	35x5	35x5n	W
Bell E (Iowa)	1½	2100	3¾x5¼	34x3½	34x5	1
Bell O (Iowa)	2½	2550	4½x5½	34x4	34x6	1
Belmont A	½	725	3¾x4¼	31x4	31x4	B
Belmont D	2	2575	4¼x5½	34x3½k	34x6k	1
Belmont F	3	3500	4 x6	36x5k	*36x5dk	1
Bessemer G	1	....	3½x5	35x5n	35x5n	1
Bessemer H-2	1½	....	3¾x5	36x3½	36x5	1
Bessemer J-2	2½	....	4¼x5½	36x4	36x4d	1
Bessemer K-2	4	....	4½x5½	36x5	36x10	1
Bethlehem KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem CN	2	1595	4 x6¼	34x4½k	34x6k	I
Bethlehem HN	3	2195	4 x5¼	36x4k	36x8k	I
Brinton C	1½	150)	3¾x5	34x4	34x5	W
Brinton D	2½	2250	4¼x5¼	36x4	36x7	W
Brockway E	1	....	3¾x5½	35x5n	35x5n	B
Brockway S-5	1½	....	3¾x5	36x4	36x6	W
Brockway SK	1½	....	4¼x5¼	36x4	36x6	W
Brockway KR	2½	....	4½x5½	36x4	36x8	W
Brockway K-5	2½	....	4½x5¼	36x4	36x8	W
Brockway RT	3½	....	4¾x6	36x5	36x10	W
Brockway R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway T-4	5	....	4¾x6	36x6	40x6d	W
*Buick	½	945b	3¾x4¾	31x4n	31x4n	B
Capitol G1½	1½	2975	3¾x5	35x5	38x7	W
Capitol H2½	2½	3700	4¼x6	36x4	38x8	W
Capitol K2½	2½	4250	4¼x6	36x6	42x9	W
Capitol M3½	3½	4425	4½x6	36x5	36x10	W
Case	2	....	4¼x5¾	36x6	38x7	1
*Chevrolet	¼	510b	3⅛x4	30x3½n	30x3½n	B
*Chevrolet G	¾	650	3⅛x4	31x4n	34x4½n	B
*Chevrolet T	1	1095	3⅛x5¼	33x4n	35x5n	W
Chicago C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago C3½	3½	....	4½x5½	36x5	36x10	W
Chicago D5	5	....	4½x5½	36x6	40x12	W
Clydesdale 10	¾-1½	1485	3¾x5	34x5n	34x5n	B
Clydesdale 18	¾-1½	1890	3¾x5	34x5	34x5	W
Clydesdale 20	1-1½	2385	3¾x5	34x5	34x5k	W
Clydesdale 42	1½-2	2475	3¾x5	36x3½	36x6	W
Clydesdale 65X	2½-3	3250	4½x5¼	36x4	36x8	W
Clydesdale 65EX	2½-3	3150	4½x5½	36x4	36x8	W
Clydesdale 90	3½-4½	4100	4½x5½	36x5	36x10	W
Clydesdale 120	5-6	4500	4¾x6	36x6	40x12	W
Columbia H	1½	1995	4 x5	35x5	38x7n	I
Columbia G	2½	2335	4 x5¼	36x4	36x7	I
Comet T	1½	1950	3¾x5	34x4	34x4	W
Commerce T	¾-1½	1450	3¾x5	34x4½n	34x4½n	B
Commerce 12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce 16	2	2150	3¾x5	35x5n	36x6n	I
Commerce 18	2½	2495	4½x5¼	36x6n	40x8n	I
Commerce 25	2½	2425	4½x5¼	36x4	36x7	W
Cook 51	2½	3600	4 x5½	36x6n	40x8n	W
Corbitt E-22	1	1490	3¾x5	34x3½	34x4	W
Corbitt D-22	1½	$2200	3¾x5	34x3½	34x5	W
Corbitt C-22	2	2600	4½x5¼	36x3½	36x7	W
Corbitt B-22	2½	3000	4½x5¼	36x4	36x7	W
Corbitt R-22	¾3	3200	4½x5½	36x4	36x8	W
Corbitt A-22	3½-4	3800	4½x5½	36x5	36x10	W
Corbitt AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn E	1	1600	3½x5¼	35x5n	35x5n	W
Dearborn FX	1½	2300	3¾x5⅛	34x4	34x5	W
Dearborn F	1½	2180	3¾x5⅛	34x4	34x5	W
Dearborn 48	2	2590	3¾x4½n	31x7	W	
Defiance G	1	1605a	3¾x5	35x5n	35x5n	B
Defiance D	1½	2095a	3¾x5	35x5n	36x6n	1
Defiance E	2	2275a	3¾x5	35x5n	38x7n	1
Denby 31	1½	1485	3½x5	35x5n	35x5n	B
Denby 33	1½	2145	3¾x5	35x5n	38x7n	1
Denby 34	2	2395	3¾x5	30x3½	36x6	1
Denby 35	2½-3	2795	4¼x5¼	30x4	36x7	1
Denby 27	4	3895	4½x5½	36x5	36x5d	1
Denby 210	5	4295	4½x6	36x6	40x6d	1
Dependable A	¾-1	1650	3⅝x5⅛	34x5n	36x6n	W
Dependable C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable D	2½	2650	4 x5½	34x5	36x6	W
Dependable E	3	2950	4¼x5½	36x4	36x7	W
Diamond T O-3	1-1½	1075	3¾x5½	36x3½n	36x4n	W
Diamond T T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T U	2-2½	2650	4 x5¼	36x4	36x7	W
Diamond T K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T S	5	4500	4¾x6	36x6	40x6d	W
*Diehl A	1	....	3½x5	34x4½	35x5	1
Diehl B	1½	....	3½x5	36x6	36x6	1
Deane	2½	4100b	4½x5¾	36x5	36x7	C
Deane	3½	5100b	4⅝x5¾	36x5	36x5d	C
Deane	6	6000b	5 x6¼	30x6	40x6d	C
*Dodge Brothers	¾	730	3⅞x4½	32x4n	32x4n	B
Derris K-4	2-2½	3400	4¼x5½	36x4	36x7	W
Derris K-7	3½	4400	4¼x5½	30x5	36x10	W
*Dort 103	½	685a	3½x5	31x4n	31x4n	B
Double Drive B	3	4000	4½x5½	6	6	W
Duplex A	2	2775	4 x5¼	35x5n	38x7n	W
Duplex E	3½	3500	4½x5½	36x8	36x8	1
Duty 22	2	1590	3½x5	34x3½	34x5	1
Eagle 101	1½	1875	3⅝x5⅛	34x5	34x5	1
Eagle 100-2	2	2275	3¾x5¼	34x4k	34x7k	1
F. W. D. B	3	4200	4¾x5½	30x6	36x6	B
Fageol 1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol 2½	2½	3900	4¼x5¼	34x4	36x7	W
Fageol 3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol 5	5	5700	4½x6¼	30x6	40x6d	W
Farge R	2	1700	3¾x5	30x4	36x6	1
*Federal	1½	1375	3¾x5	—x5n	—x5n	
Federal SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal TE	1½	2175	4½x5¼	30x3½	36x5	W
Federal UE	2-2½	2425	4½x5¼	30x4	36x7	W
Federal WE	3½-4	3150	4½x5½	36x5	36x5d	W
Federal X2	5-6	4500	4¾x6	30x6	40x6d	W
*Ford TT	1	430	3¾x4	30x3½n	32x4½n	W
Front Drive C	1½	2800	3¾x5½	5	4	W
G & J** 20	1	2275	3⅝x5⅛	34x5n	34x5n	W
G & J** A	2-2½	3375	4x5¼	36x4	36x7	W
G & J** B	3½-4	4475	4½x5½	36x5	36x10	W
G.M.C. K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C. K-41A	2	2375	4 x5½	30x4k	36x7k	W
G.M.C. K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K41-T	2	2150	4x5½	30x4	36x8	W
G.M.C. K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C. K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C. K71-T	3½	3700	4½x6	36x5	40x12	W
G.M.C. K-101A	5	3950	4½x6	30x5	40x6d	W
G.M.C. K101-T	5	4050	4½x6	30x5	40x14	W
G.M.C. K-101B	5	4050	4½x6	30x5	40x6d	W
G.W.W.	1½	1850	3¾x5½	35x5	35x5	1
*Garford 15	1	1590	3⅝x5⅛	34x5n	34x5n	W
Garford 25-B	1½	1990	3¾x5⅛	30x3½	36x5	W
Garford 70-H	2½	2750	4¼x5½	30x4	36x8	W
Garford 77-D	4	3750	4½x6	36x5	36x5d	W
Garford 68D	5	4500	5 x6½	36x6	40x6d	W
Garford 150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary F	1-1½	1675	3¾x5	30x3½	36x5	W
Gary I	2	2250	4 x5½	30x3½	36x6	W
Gary J	2½	2650	4¼x5½	30x4	36x8	W
Gary K	3½	3650	4½x6	30x5	40x6d	W
Gary M	5	4100	5 x6½	36x6	40x6d	W
Gersix M	1½	3100	4 x5½	30x3½	36x7	W
Gersix K	2½	3500	4½x5½	30x4	36x8	W
Gersix	3½	$4500	4½x6	36x5	40x12	W
Graham Bros.	1	1265	3½x4½	32x4½n	34x5n	B
Graham Bros.	1½	1325	3½x4½	33x4½n	36x6n	B
[1]Gramm-Pion. 10	1	1245	3½x5	33x5n	33x5n	B
[1]Gramm-Pion. 15	1½	1750a	3¾x5	36x3½k	36x5k	I
[1]Gramm-Pion. 65	1½	2250a	3¾x5	36x3½k	36x5	W
[1]Gramm-Pion. 20	2	2475a	4½x5¼	36x4k	36x7k	W
[1]Gramm-Pion. 30	3	3300a	4½x5½	36x4k	36x4dk	W
[1]Gramm-Pion. 75P	3½	4225a	4½x5½	36x6n	42x9n	W
[1]Gramm-Pion. 40	4	3850a	4½x5½	36x5	36x5dk	W
[1]Gramm-Pion. 50	5-6	4450a	4¾x6	36x6	40x6dk	W
Hahn B2	1	1750	3½x5	34x5k	34x5k	W
Hahn O	1½	2150	3¾x5¼	36x3½k	36x6k	W
Hahn K	2	2550	4½x5½	36x4k	36x7k	W
Hahn L	3	3350	4½x5½	36x5k	36x8k	W
Hahn M	5	3850	4½x5½	36x5	36x10	W
Hahn N	6	4250	4¾x6	36x6	40x12	W
Hal-Fer E	1½	2350	4x5¼	34x5n	38x7n	W
Hal-Fer B	2½	3000	4¼x5½	36x6n	36x8	W
Hal-Fer F	3½	4000	4½x5½	36x6n	40x10	W
Hall 1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall 2½	2½	3275	4½x5¼	36x4	36x6	W
Hall 3½	3½	4100	4½x5½	36x5	36x5d	W
Hall 5	5	5100	4½x5½	36x5	40x6d	W
Hall 7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey WOA	2	2650	4¼x5½	34x4	34x7	W
Harvey WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye K	1½	1850	3¾x5½	34x3½k	34x5k	I
Hawkeye M	2	2650	4¼x5	30x4k	36x6k	I
Hawkeye N	3½	3700	4½x6	36x5k	36x10k	I
Hendrickson O	1½	2200	3⅝x5⅛	36x4n	36x5n	W
Hendrickson N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson M	3½	3000	4¼x5	30x5k	36x5dk	W
Hendrickson K	5	4000	5 x6¼	36x6	40x6	W
Huffman B	1½-2	1795	3¾x5	34x3½	34x6	W
Huffman C	1½-2	1695	3¾x5½	36x3½	36x6	I
Huffman D	2-3	2895	4¼x5½	36x4	36x7	
Hurlburt A-A	1-1½	1950	3¾x5	34x5n	34x5n	W
Hurlburt B-B	2-2½	2800	4¼x5½	36x4	36x4d	W
Hurlburt C-C	3-3½	3475	4¼x5½	36x5	36x5d	W
Hurlburt D-D	4-4½	4150	4¼x6	36x5	36x6d	W
Hurlburt E-E	6-6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa), B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa) G	1½	2040	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.) HI	2½	2940	4½x5¼	36x4	36x7	I
Indep'd't(Ohio) F	1½	2385	3¾x5	36x3½	36x5	W
Indep'd't(Ohio) H	2½	3085	4½x5¼	36x4	36x4d	W
Indep'd't(Ohio) K	3½	3985	4½x5½	36x5	36x5d	W
Indiana 12	1½-2	....	3¾x5¼	34x3½k	34x5k	W
Indiana 20	2	....	4½x5½	36x4k	36x7k	W
Indiana 25	2½-3	....	4½x5½	30x4k	36x8k	W
Indiana 35	3½-4	....	4¾x5½	36x5k	36x5dk	W
Indiana 51	5-7	....	5 x6¼	36x5k	40x6dk	W
*International S	1	1250	3½x5	34x5n	34x5n	I
International 21	1	1550	3½x5¼	30x3½	30x3½	I
International 31	1½	1650	3½x5¼	30x3½	36x4	I
International 41	2	2100	3½x5¼	30x3½	36x5	I
International 61	3	2400	4¼x5	30x4	36x6	I
International 101	5	3600	4¼x5	36x5	40x10	I
Jackson 4WD	3½	3850	4½x5½	36x7	36x7	B
Jumbo 15	1½	2295	3¾x5¼	30x3½	36x5	I
Jumbo 20	2	2520	3¾x5¼	35x5n	38x7n	I
Jumbo 25	2½	2660	4½x5½	36x4	36x7	I
Jumbo 30	3	3060	4¼x5½	36x6n	42x9n	I
Jumbo 35	3½	3900	4½x6	30x5	36x10n	I
Jumbo 40	4	4400	4½x6	38x7n	44x10	I
K-Z 1	1	1750	3½x5	34x3½	34x5	W
K-Z 1½	1½	2075	3¾x5	36x4	36x6	W
K-Z 2½	2½	2550	4½x5¼	36x4	36x8	W
K-Z 3½	3½	3350	4½x5½	36x5	40x10	W
K-Z 5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo SK	4	3845	4¼x6	36x5	36x12	W
Kalamazoo OK	5	4350	4½x6	36x6	40x6d	W
[2]Kelly-S. K-31	1½	2700	3¾x5¼	30x3½	36x6	C
[2]Kelly-S. K-34	1½	2700	3¾x5¼	30x3½	36x6	W
[2]Kelly-S. K-38	2½	2900	3¾x5¼	36x4	36x4d	W
[2]Kelly-S. K-35	2½	2900	3¾x5¼	36x4	36x4d	C
[2]Kelly-S. K-40	3½	3900	4½x6½	36x5	40x5d	C
[2]Kelly-S. K-41	3½	3900	4½x6½	36x5	36x10	I
[2]Kelly-S. K-42	3½	3900	4½x6½	36x5	40x5d	W
[2]Kelly-S. K-50	5	4400	4½x6½	36x6	40x6d	C
[2]Kelly-S. K-60	6	4600	4½x6½	36x6	40x7d	C
[2]Kelly-S. K-61	5-7	4800	4½x6½	36x6	36x7d	I
Keystone 40	2	2175	3¾x5½	34x5n	38x7n	I
Kimball AB	2	3075	4 x6	36x4	36x7	W
Kimball AC	2½	3975	4½x6	36x4	36x8	W
Kimball AK	3	4500	4½x6	36x4	36x10	W
Kimball AE	4	5000	4¾x6	36x5	40x12	W
Kimball AF	5	5500	5 x6	36x6	40x7d	W
*Kissel Express	1	1585	3⅞x5½	34x5n	34x5n	W
Kissel Utility	1½	1075	3⅞x5½	30x3½	36x5	W
Kissel Freighter	2½	2875	4¼x5½	36x4	36x7	W
Kissel H. D.	4	3675	4½x5½	36x5	36x5d	W
Kleiber AA	1	2200	4½x5¼	34x3½k	34x5k	W
Kleiber A	1½	3100	4½x5¼	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

1—Gramm-Pioneer. 2—Kelly-Springfield.

(*Passenger car table on page 50. For latest price changes see page 41*)

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5½	36x1k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....D	1½	2150	3½x5	34x3½	34x5	W
Koehler.....M	2½	3175	4 x5½	36x4	36x7	W
Koehler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Koehler.....F	3½	4170	4½x5½	36x5	36x10	W
Koehler.MT. Trac	5	3275	4 x5½	36x4	36x7	W
Krebs.....23	¾	1260	3½x5	34x4½	34x4½	B
Krebs.....24	1	1565	3½x5	34x5	34x5	W
Krebs.....45	1½	2125	4½x5½	36x4	36x7	W
Krebs.....75	2½	2375	4½x5½	36x4	36x8	W
Krebs.....110	3½	2975	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1925	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2400	3½x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3½x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½-3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5-7	4800	4½x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4½x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	J
Mack...AB D.R.	1½	3150	4 x5	36x4	36x3½d	D
Mack...AB Chain	1½	3000	4 x5	36x4	36x3½d	C
Mack...AB Chain	2	3300	4 x5	36x4	36x4d	C
Mack....AB D.R.	2	3750	4 x5	36x4	36x4d	D
Mack....AB D.R	2½	3850	4 x5	36x4	36x4d	D
Mack...AB Chain	2½	3400	4 x5	36x4	36x4d	C
Mack...AC Chain	3½	4950	5 x6	36x5	40x5d	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4 x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Mapleleaf.....**	1½	3000	3½x5½	34x5n	36x6n	W
Mapleleaf...AA**	2	3600	4 x5½	36x4	36x7	W
Mapleleaf...BB**	3	4050	4½x5½	36x4	36x4d	W
Mapleleaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Mapleleaf...DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x5	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4½x5½	34x4	36x7	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x5d	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4½x6½	36x6	40x6d	W
Master.....F	5	5090	4½x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3½x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1½	2000	3½x5	34x3½	36x5	W
Menominee....H	1½	2175	4 x5	36x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4½x6	36x6	40x12	W
Meline.....10	1½	1985	3½x5	34x5n	36x6n	I
*Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-5	4600	4½x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3½x5½	34x3k	34x4k	I
Nash.....3018	2-2½	2150	3½x5½	34x4k	34x7k	I
Nash.....Quad.	2-2½	2750	4½x5½	36x5k	36x5k	I
Nash..3018, LWB	2-2½	2200	3½x5½	34x4k	34x7k	I
Nash.Quad. LWB	2-2½	2800	4½x5½	36x5k	36x5k	I
Nash.....5018	2½	2250	3½x5½	34x4k	34x7k	I
*Nelson.....G2	1½	....	4½x5½	36x3½	36x6	W
*Nelson.....G3	2½	....	4½x5½	36x4	36x7	W
*Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
*Nelson.....G5	5	....	4½x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5½	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5½	36x4k	36x7k	W
Noble.....A21	1¼	1840	3½x5½	34x5	34x5	W
Noble.....B31	1½-2	2480	3½x5½	36x4	36x7	W
Noble.....D51	2½-3	2950	4½x5½	36x4	36x8	W
Noble.....E71	3½-5	3800	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3½x5½	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4½x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4½x5½	34x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E.Spec	1½	2285	3½x5½	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3½x5	36x3½	36x5	W
Ogden.....E	2½	....	4½x5½	36x4	36x8	W
Old Hickory...W	1	$1775	3½x5	36x3½k	36x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4½x6	34x4	36x4d	W
Old Reliable....C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4½x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4½x6½	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5½	35x5n	35x5n	J
Olympic.....A	2½	3200	4½x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5½	36x3½	36x7	
Oneida.....C9	2½	3200	4 x5½	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	3250	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	3400	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3850	4 x5½	38x7n	38x7n	B
Oshkosh.....BB	2½	4000	4 x5½	38x7n	38x7n	B
*Overland.....4	½	450	3½x4	30x3½n	30x3½n	B
Packard.....EC	2-3	3100	4½x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4½x5½	36x6n	40x8n	W
Packard.....ED	3½-4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5½	34x3½	34x5	W
Paige.....54-20	2½	2420	4½x5½	34x4	34x8	W
Paige.....51-15	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3½x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot....Reorg	1	1380	3½x5	35x5n	35x5n	W
Patriot....Lincoln	2	2050	4 x5½	34x3½	34x5	W
Patriot .Washgt'n	3	2900	4½x5½	36x4	36x7	W
Pierce-Arrow....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow....	3½	4350	4½x6½	36x5	36x5d	W
Pierce-Arrow....	5	4850	4½x6½	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3½x5	36x4	36x6	..
Pittsburgher.....	3	3800	4½x5½	36x5k	36x8	W
Power.....F	2	3150	3½x5½	36x5	36x7	W
Power.....C	3½	4250	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier.....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3½x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3½x5	34x3½	34x5	W
Rainier.....R-28	2	....	4½x5½	34x4	34x6	W
Rainier.....R-20	2½-3	....	4½x5½	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-17	5-6	....	4½x6	36x6	40x6d	W
Ranger..TK-20-2	1½	2450	3½x5	36x6n	38x7n	W
*Reo.....F	¾-1½	1245	4½x4½	34x4½n	34x4½n	B
Reliance.....10A	1½	2400	4 x5½	36x3½	36x5	I
Reliance.....20B	2½	3100	4½x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3½x5	34x3	34x4	I
Republic..10 Exp	1	1695	3½x5	34x5n	34x5n	I
Republic.....11X	1½	1795	3½x5	34x4	34x6	I
Republic.....19	2½	2195	4½x5½	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rewo.....CW	1½	3000	3½x5	36x6n	36x6n	W
Rewo....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rewo....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rewo....G.P.W.	3	5250	3½x5r	38x7n	42x9n	W
Rewo.....HW	4	4500	4½x6	36x5	36x6d	W
Rewo.....F. W.	5	5500	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3½x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4-3½x4	32x4n	32x4n	B
Samson.....25	1½	....	4-3½x5½	35x5n	35x5n	B
Sanford....W-15	1½-2	2150b	3½x5	36x3½k	36x5k	..
Sanford.....25	2½-3½	....	4½x5½	36x4	36x4d	W
Sanford.....35	3½-5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5-7	....	4½x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ton	3	3800	4¼x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3½x5¼	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½-2½	2250	3½x5	34x3½	34x5	W
Selden.....31	1½-2½	3350	4½x5¼	34x5n	38x7n	W
Selden.....50	2½-3½	3250	4½x5¼	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4½x6	36x6	40x12	W
Seneca.....M	½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3½x4½	32x4½n	32x4½n	B
*Service.....15	1¼	....	3½x5	31x4½n	35x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4½x5½	35x5n	38x7n	W
Service.....52	3	....	4½x5½	36x4	36x8	W
Service.....72	3½	....	4½x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	$1450	3½x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5½	34x4	36x6	W
Signal.....J	2½	2375	4½x5½	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x5d	W
Signal.....R	5	3900	4½x6	36x6	40x6d	W
Southern.....10	1	2090	3½x5	34x3½	34x4	W
Southern.....15	1½	2590	3½x5½	36x6n	34x4	W
Southern.....20	2	2990	4½x5½	36x6n	40x8k	W
*Standard.....75	1¼	1330	3½x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3½x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5½	36x4k	36x7k	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x10	W
Standard.....5-K	5-7	4400	4½x6	36x6	40x12	W
*Star.....	½	610b	3½x4½	30x3½n	30x3½n	B
Sterling.....1½	1½	2885	4 x5½	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5½	36x4k	36x6k	W
Sterling.....2½	2½	3290	4½x5½	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6½	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6½	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6½	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6½	36x6	40x7d	C
*Stewart...Utility	¼-1½	1245	3½x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3½x5½	35x5n	35x5n	)
Stewart.....9	1½-2	1790	3½x5	34x3½	34x5	I
Stewart.....7	2-2½	2190	4½x5½	34x4	34x7	I
Stewart.....7-X	2½-3	2390	4½x5½	34x4	34x7	I
Stewart.....10	3½-4	3190	4½x5½	36x5	36x5d	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x5d	I
*Stewart.....	1¼	1245	4-3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1240	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3½x5¼	34x5n	34x5n	W
Stoughton.....B	1½	2150	3½x5¼	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....F	3	3150	4½x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4½x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Themart.....	1¼	1795a	4 x5½	34x5	34x5	(
Tiffin.....GW	1½	2100	4½x5½	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5½	36x4	36x3½d	W
Tiffin.....PW	3½	3600	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4½x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4½x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4½x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000a	4½x5½	35x5n	38x7n	W
Tower.....H	2½	2475a	4½x5½	36x4	36x7	W
Tower.....G	3½	3475a	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595	3½x5	35x5n	35x5n	I
Traffic.....C	2	1595	3½x5	34x3½k	34x5k	I
Traffic.....	3	1895n	3½x5	36x4	36x7	I
*Transport.....15	1	1295	3½x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3½x5½	34x3½k	34x4k	I
Transport.....35	2	1895	3½x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5½	36x4k	36x8k	I
Transport.....60	3½	2585	4½x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Trayler.....B	1½	2390	3½x5½	34x3½	34x5	W
Trayler.....C	2-2½	2850	4 x5½	36x4	36x7	W
Trayler.....D	3-3½	2300	4½x5½	36x4	36x8k	W
Trayler.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3½x5	34x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3½x5½	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3½x5½	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5½	36x4k	36x7k	I
Twin City...B.W.	2	2750	4 x5½	36x6	40x8	I
Twin City...A.W.	3½	3950	4½x6	36x5	40x5d	W
*Twin City.....B	3½	....	5½x6	36x6	36x6	I
*Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4½x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4½x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4½x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4½x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
Union.....FW	2½	3190	4 x6	36x5k	36x8k	D
Union.....HW	4	4650	4½x6	36x6	40x12	D
United.....A	1½	2445	3½x5½	36x3½k	34x5k	W
United.....B	2½	3150	4½x5½	36x4k	36x7k	W
United.....C	3½	3975	4½x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States..U	1	1875	3½x5½	34x5n	34x5n	B
UnitedStates,NW	1½	2225	3½x5	36x5	36x3½	W
United States...N	1½	1975	3½x5	36x3½k	36x5k	I
United States...R	3	3075	4 x5½	36x4	36x4d	W
United States...S	4	3875	4½x5½	36x5	36x5d	W
United States...T	6	4850	4½x6½	36x6	40x6d	W
Velie.....46	1½	1585	3½x5	36x3½k	36x5k	I
Veteran.....M**	1½	2699	3½x5½	35x5n	35x5n	W
Veteran.....P**	2	3699	4½x5½	36x4	36x7	W
Veteran.....R**	3	4200	4½x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	½	1050	3½x4½	31x4n	31x4n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. c—express, truck or delivery wagon. **—Canadian Make. trac.—tractor.

8—Moreland Road Runner. 4—Nelson La Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Vim.....30	1½	$1175	3⅛x4½	32x4½	32x4½	W
Vim.....31	1	1975	3¼x5⅛	35x5n	35x5n	W
Vim.....22	2	3150	3¼x5⅛	36x4	36x6	W
Vim.....23	3	3950	4¼x5½	36x5	36x5d	W
Walker-JohnsonA	2	2250	3⅜x5	34x3½	34x6	W
Walker-JohnsonB	3	2750	4¼x5½	36x4	36x8	W
Walter.....M	2½	3350	4½x5¾	36x4	36x8	D
Walter.....S	5	4850	4½x6¼	36x6	40x6d	W
*Watson.....C	1	1465a	3⅝x5⅛	35x5n	35x5n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2550	4⅛x5¼	30x3½k	36x5k	W
Western....L1½	1½	2550	3¾x5	30x3½k	36x5k	W
Western....W2½	2½	3250	4⅛x5¼	36x4	36x7	W
Western....L2½	2½	3250	4¼x6	36x4	36x7	W
Western....W3½	3½	4250	4½x6	36x5	40x5d	W
*White.....15	¾	2400	3¾x5½	34x5n	34x5n	B
White.....20	2	3250	3¾x5⅛	36x4k	36x7k	D
White.....40	3½	$4200	3¾x5¾	36x5	40x5d	D
White.....45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick....E	1	1225	3¾x5	34x5n	34x5n	W
White Hick....H	1½	1375	3¾x5	36x3½	36x5	W
White Hick....K	2½	1675	4⅛x5¼	36x4	36x5	W
Wichita.....K	2	1875	3¾x5¼	36x3½	30x4k	W
Wichita.....M	1	2400	3¾x5¼	36x3½k	36x6k	W
Wichita.....RX	3	3200	4⅜x5¾	30x4k	36x8k	W
Wichita.....O	4	$3500	4½x6½	30x5k	36x5k	W
Wilcox.....AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4¼x5	36x4k	36x3½dk	W
Wilcox.....E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox.....F	5	4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¾x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4½x5¼	36x4	36x7	W
Wilson.....G	3½	3685	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin.....A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin.....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin.....C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin.....D	3½	3000	4¾x5½	36x6n	40x8	W
Wisconsin.....E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin.....F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will.....N	1½	2450	3¾x5	36x3½k	36x5k	W
Witt-Will.....P	2½	2900	4⅛x5¼	36x3½k	36x7k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	LeR.	4-3⅛x4½	Gas.	1
Allis-Chalm...	15-25	1185	4	Midw.	4-4⅛x5¼	Gas.	3
Allis-Chalm...	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm.	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork...2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork.....C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T....	15-30	1900	4	Clim.	4-5 x6½	G,K	4
Aultman-T....	22-45	2800	4	Own	4-5½x8	G,K	6
Aultman-T....	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Automot. B-3.	12-24	1250	4	Herc.	4-4 x5½	Gas.	2-3
Avery,SR.Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery..Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4½x6	G,K,D	3-4
§Avery.....	....	....	*	Own	4-4x5½	G,K,D	3
Avery.....	12-25	....	4	Own	2-6½x7	G,K,D	3-4
Avery.....	14-28	....	4	Own	4-4⅝	G,K,D	3-4
Avery.....	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7¾x8	G,K,D	8-10
Bates Mule.H	15-25	....	4	Midw	4-4½x5¼	Gas.	3
Bates Mule..F	18-25	....	*2	Midw	4-4½x5¼	Gas.	3
‡Bates MuleG	25-35	....	*2	Midw	4-4½x6	Gas.	..
Bear.....	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman...G	2-4	240	4	Own	1-3½x4½	Gas.	....
Best.....	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best.....	60	....	*2	Own	4-6½x8½	G,K,D	8-9
Boring.....	5-10	395	4	LeR.	4-3½x4½	G	..
Boring....1921	.....	1850	3	Wauk	4-4⅜x5¾	GorK	2
Burn-Oil, 1922	15-30	1395	4	Own	2-6¾x7	Ker.	3-4
Capital.....	15-30	1000	2	Own	4-4⅜x6	Gas.	3
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	3
Case.....	12-20	....	....	....	4-4½x5	....	2
Case.....	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case.....	22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case.....	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T35	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar .5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur.....	5-21½	345	2	N Way	2-4½x4½	GorK	1
Chicago....40	40	2500	4	Own	4-4½x6	Gas.	4
Cletrac.....F	9-16	595	*2	Own	4-3¼x4½	G,K,D	2
Cletrac.....W	12-20	1345	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom,	4-4¾x6	Gas.	3
Depue.....A	20-30	2500	4	Buda	4-4½x6	Gas.	4
Dill.....D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dill.....R.W.	20	2980	4	Midw.	4-4½x6	Gas.	3
Do-It-All....A	3-6	495	..	Own	1-4½x5	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B.....AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol.....D	9-18	1525	4	Lyc.	4-3½x5	Gas.	2
Farm Horse.B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Farquhar.....	15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar.....	18-35	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar.....	25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch..4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	$ 395	4	Own	4-4x5	G,K	2
Franklin....G	18-30	4000	*2	Clim.	4-5 x6½	G or K	3-4
Franklin....C	18-30	3350	*2	Clim.	4-5 x6½	G or K	3-4
Franklin...G2	18-30	4350	2	Clim.	4-5 x6½	G or K	3-4
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt,..A	18-36	2150	4	Wauk.	4-4¾x6¾	G or K	4
Gray.....	20-36	1975	3	Wauk.	4-4½x6¼	Gas.	4
Gray.....	22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. Western St	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr..20	20	765	4	Own	2-5¼x6½	K,D.	2
Hart-Parr..30	30	895	4	Own	2-6½x7	K,D.	3
‡Hart-Parr....	....	1695	4	Own	6½x7	K,D.	..
Heider.....D	9-16	870	4	Wauk	4-4¼x6¾	G,K	2
Heider.....C	12-20	995	4	Wauk	4-4½x6¾	G,K	3
Heider...Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4.	12-25	985	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4	15-30	1885	4	Midw.	4-4½x6	Gas	3
Illinois,.....C	15-30	....	4	Clim.	4-5 x6½	G,K	4
Indiana.....F	5-10	665	2	LeR.	4-3⅛x4½	Gas.	1-2
International .	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5¼x8	G,K,D	4
J-T.....N	25-40	3000	*2	Clim.	4-5x6½	G,K,D	3-4
¶Kinkade....	1½	190	1	Own	1-3 x3	Gas.	....
La Crosse.....	12-24	985	2	Own	2-6 x7	G,K	3
Lauson.....5	12-25	1295	4	Midw	4-4½x5¼	Gas.	3
Lauson.....21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lauson Road	15-30	2000	4	Beav.	4-4¾x6	K	..
Leader.....B	12-18	685	4	Own	2-6 x6½	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn.....H4J	40-	4500	*	Cont.	4-4½x5½	Gas	4
Linn.....W	60	5000	*	Wauk	4-5 x6¼	Gas	6
Little Giant,.B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant, A	26-35	3300	4	Own	4-5½x6	K	6
Lombard.1922	85-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2⅝x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Med.D	22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD	35-70	3850	4	Own	4-7½x9	G or K	8-9
Mohawk .1922	8-16	650	2	Light	4-3½x4½	K or G	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch..	9-18	....	2	Own	4-3½x5	Gas.	2-3
Motor Macult.	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	425	4	Own	2-3¾x4	Gas.	1
Nichols-Shep.	20-42	2650	4	Own	8 x10	G or K	3-6
Nichols Shep.	25-50	3000	4	Own	9 x12	G or K	4-7
Nichols-Shep.	35-70	3650	4	Own	-10½x14	G or K	8-10
Nilson Senior..	20-40	1975	5	Wauk	4-5 x6¼	G,K	4
Oil Pull.....K	12-20	....	4	Own	2-6 x8	K,D	3
Oil Pull.....H	16-30	....	4	Own	2-7 x8½	K,D	4
Oil Pull.....G	20-40	....	4	Own	2-8 x10	K,D	5-6
Oil Pull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar ..K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Peoria.....L	12-25	1600	4	Clim.	4-5 x6½	G,K	3
Pioneer.....G	18-36	1750	4	Own	4-5½x6	G,K,D	4
Pioneer.....C	40-75	3550	4	Own	4-7 x8	Gas.	10
Plowman....A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable.....	10-20	390	4	Own	2-6 x7	Ker.	2
Rex.....	12-25	1600	4	Wauk	4-4¼x5¾	G or K	3
Russell.....	12-24	1500	4	Own	4-4¼x5¾	G or K	2-3
Russell.....	15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson....M	....	445	4	Own	4-4 x5½	G,K	2
Sandusky,...J	10-20	1250	4	Own	4-4¼x5½	G,K,D	2
Sandusky...E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
¶Shelby.....	1	150	3	B & S	1-2½x2½	G	..
Shelby.....D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby.....C	9-18	....	4	Wauk	4-3¾x5¼	G or K	2
Steady Pull ..	12-24	1485	4	Own	4-4 x5	Gas.	3
Tioga.....3	18-32	....	4	Wisc.	4-4½x6	Gas.	3-4
Toro Cultivator	6	750	3	LeR.	4-3⅛x4½	Gas.	2
ToroTractor'22	6-10	495	3	LeR.	4-3½x4½	Gas.	2
Townsend....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend....	25-50	2500	2	Own	4-8½x10	Ker.	4-8
Traction Motor	40-50	....	4	....	8-3½x5	Gas.	4-5
Traylor....TB	6-12	500	4	LeR.	4-3⅛x4½	Gas.	1-2
Trundaar....10	25-40	3750	*2	Wauk	4-5 x6¼	G or K	4
Twin City....	12-20	1200	4	Own	4-4¼x6	G,K	3
Twin City....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City....	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle Sam C20	12-20	1295	4	Weid.	4-4 x5½	G	2-3
Uncle Sam B19	20-30	1985	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam D21	20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utilitor....501	2½-4	295	4	Own	1-3½x4½	G	1
Utilitor...501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	....	4	Own	4-4¼x5¾	G,K	3
Waterloo....N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore 21-22	12-25	1185	4	Wauk	4-4 x5¾	G,K	3
Whitney.....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin...E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin...F	20-40	2050	4	Wauk	4-5 x6½	G or K	4
Wisconsin...H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba....12-20	12-20	2400	*2	Wisc.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4¼x6	G,K,D	..
Yuba....20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba.....	$25-40	4750	*2	Yuba	4-5½x7	D	..
Zelle.....	12-25	....	4	Buda	4-4¼x5½	G or K	3

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav. —Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont. —Continental. Dom.—Domas Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows §Track Runner. ‡Industrial Tractor. ¶Garden Tractor.

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Specifications of Current Passenger Car Models

NAME AND MODEL	Engine Make	Cylinders, Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Ace.....F	G-B	4-3½x5	114	32x4	$1295	$1295	....	....	$2295
Ace.....L	H-S	6-3 x5	117	32x4	2260	2260	....	....	3680
Ace.....C	Cont.	6-3⅝x5¼	123	33x4½	2975	2975	....	....	4500
Ambassador.....R	Cont.	6-3⅝x5¼	136	33x5	....	b1500	$4500	....	6500
American.....C	H-S.	6-3½x5	127	33x4½	b1995	1850	1925	....	2695
Anderson...Aluminum 6	Cont.	6-3½x4½	114	32x4	....	1195	....	....	....
Anderson.....Series 40	Cont.	6-3¼x4½	120	33x4	2195	1650	1795	$2150	2550
Apperson.....8-21-S	Own.	8-3¼x5	130	34x4½	....	2620	2645	3625	3695
Auburn.....6-51	Cont.	6-3⅜x4½	121	32x4	1575	1575	1615	2275	2395
Auburn.....6-51	Cont.	6-3⅜x4½	121	32x4½	....	n2195	....	....	....
Bay State.....	Cont.	6-3¼x4½	121	32x4	1800	1800	....	2400	2500
Bell.....4-32	H-S.	4-3½x5	114	31x4	1095	1095	....	....	....
Bell.....6-50	H-S.	6-3¼x5	124	32x4	1545	1545	....	....	....
Biddle.....B1 & B5	Buda.	4-3¾x5½	121	32x4	2950	b2950	....	3950	3950
Brewster.....91	Own.	4-4 x5½	125	32x4½	5000	5000	....	....	7000
Buick..1922-31-5-6-7-38	Own.	4-3⅜x4¾	109	31x4	865	885	u725	1175	{1395 {1325e
Buick...1922-41-4-5-47	Own.	6-3⅜x4½	118	33x4t	1175	1195	u975	1935e	1935
Buick.1922-48-9-50-4-55	Own.	6-3⅜x4½	124	34x4½	n1625v	n1675v	1435	1895	2195
Cadillac.....61	Own.	8-3½x5½	132	33x5	3100	3150	3150	b3875	4100
Case.....X	Cont.	6-3⅜x4½	122	32x4½	1750	1790	....	2550	2640
Case.....W	Cont.	6-3⅜x5¼	129	34x4½	....	2200	2250	2850	3250
Chalmers.....1922	Own.	6-3¼x4½	117	32x4	1185	1185	....	1595	2295
Chalmers.....1922	Own.	6-3¼x4½	122	32x4	....	....	1345	....	....
Chandler.....Six	Own.	6-3½x5	123	33x4	1495	b1495	1645	b1995	2295
Chevrolet.....Superior	Own.	4-3½x4	102	30x3½	510	525	u425	{b840 {k680	860
Chevrolet.....FB	Own.	4-3½x5¼	110	32x4	865	885	....	1325	1395
Cleveland.....41	Own.	6-3 x4½	112	32x4	1085	1095	n1260	1495	1585
Cole.....890	Nort.	8-3½x4½	127¼	33x5	2685	b2685n	2685	b3385	3685
Columbia.....DeLuxe	Cont.	6-3⅜x4¾	115	32x4	1475	1475	b1475n	b1925	1995
Columbia.....Light Six	Cont.	6-3½x4¼	115	31x4	995	985	....	....	1395
Comet.....C-53	Cont.	6-3½x5¼	125	33x4½	....	1985	2085	....	2985
Crawford.....22-6-60	Cont.	6-3⅝x5½	122½	32x4	3000	3000	3000	....	4500
Crawford-Dagmar...6-60	Cont.	6-3⅝x5¼	135	33x5	....	n3500	....	....	....
Daniels.....D-19	Own.	8-3½x5½	132	33x5	a4350	b4350	4350	5250	6000
Davis.....71	Cont.	6-3⅞x4½	114	31x4	....	1295	....	....	....
Davis.....61-67	Cont.	6-3⅜x4½	120	32x4	1595	1595	b1695	2095	2195
Dixie Flyer.....H-S-70	H-S.	4-3½x5	112	32x4	1175	1175	b1295	1545	1595
Dodge Brothers.....	Own.	4-3⅞x4½	114	32x4	850	880	....	980h	1440
Dorris.....6-80	Own.	6-4 x5	132	33x5	....	b39 0	3950	4985b	5750
Dort.....19-14	D-Ly.	4-3½x5	108	31x4	885	885	....	{1265 {1045k	{1385 {1095k
Driggs.....	Own.	4-3⅜x4½	104	30x3½	1275	1275	....	....	1975
Duesenberg...Straight 8	Own.	8-3⅞x5	134	33x5	6500	6500	6750	7800	7800
Du Pont.....A	Own.	4-3⅛x5⅛	124	32x4½	3000	3200	....	3800	4000
Durant.....A-22	Cont.	4-3⅞x4¼	109	31x4	n890	890	....	1365	1365
Durant.....B-22	Anst.	6-3¼x4½	123½	32x4½	1600	1650	....	2250	2400
Earl.....40	Own.	4-3⅞x5¼	112	32x4	1485	1095	950u	b1395	1795
Elcar.....K-4	Lyc.	4-3½x5	118	33x4	1095	1095	n1095	1345	....
Elcar.....7-R	Cont.	6-3¼x4½	118	33x4	1395	1395	n1395	2065	2165
Elgin.....K-1	Falls.	6-3½x4¼	118	33x4	1345	1295	b1345	2195	2195
Essex.....	Own.	4-3⅜x5	108½	32x4	....	1095	....	1195k	{1895 {1295k
Ford.....T	Own.	4-3¾x4	100	30x3½	r319	s348	u285	580	645
Franklin.....9-B	Own	6-3¼x4	115	32x4	1900	1950	u1750	2750	2850
Gardner.....T-R & G	Lyc.	4-3½x5	112	32x4	895	895	....	1095k	{1595 {1345k
Grant.....	Own.	6-3½x4½	116	32x4	1385	1385	....	1895	1945
Gray.....	Own.	4-3⅝x4	100	30x3½	....	490	....	....	760
H.C.S.....Series 3	Weid.	4-3⅝x5½	120	32x4½	2400	2400	....	2850	3150
Halladay.....4	Own.	4-3½x5	115	32x4	1095	1095	....	1990	2085
Halladay.....6	Own.	6-3½x5	115	32x4	1595	1595	....	2295	2395
Handley-Knight.....	Own	4-4½x4½	125	32x4½	....	....	2650	3450	3450
Hanson.....30	Cont.	6-3½x4¼	114	31x4	....	995	....	....	....
Hanson Six.....60	Cont.	6-3⅜x4½	121	32x4	1595	1595	1795	b2475	2585
Hatfield.....A-42	H-S.	4-3½x5	115	32x4	....	1315	b1315	1950	1950
Haynes.....75	Own.	6-3½x5⅞	132	34x4½	2395	b2395	2395	....	3395
Haynes.....55	Own.	6-3½x5	121	32x4½	1545	1495	....	2095	2395
Holmes.....Series 4	Own.	6-3½x4¼	126	34x4½	....	b2500	2500	b3300	3600
Hudson.....Super 6	Own.	6-3½x5	126	34x4½	....	b1645	1695	2570	{2650 {1745k
Huffman.....	Cont.	6-3⅜x4½	120	32x4	1395	1395	....	....	2295
Hupmobile.....Series R	Own.	4-3¼x5½	112	32x4	1150	1150	u1025	{1635 {1335k	1785
Jackson.....638	Cont.	6-3½x4½	121	32x4½	....	1485	b1685	2985	2985
Jewett.....Six	Own.	6-3¼x5	112	31x4	a995	995	....	b1445	1465
Jordan.....MX	Own.	6-3⅛x4¾	120	32x4	1895	1795	....	2785	2785
Kenworthy.....8-90	Own.	8-3 x5¼	130	32x4½	5000	5000	5250	6000	6000
King.....K	Own.	8-3 x5	120	32x4½	1795	1795	b1795	2400	2550
Kissel.....45	Own.	6-3⅛x5½	124	32x4½	n2385	1885	2385	b2975	3075
Kline Kar.....6-55-K	Cont.	6-3⅜x4½	121	33x4	1690	1690	1690	2750	2890
LaFayette.....	Own	8-3½x5½	132	33x5	3985	b4090	4090	5500	5500
Leach.....999	Own	6-3¼x5¼	134	32x4½	5500	5500	5500	5500	5500
Lexington.....23	Anst.	6-3½x4½	128	32x4½	1695	{1695 {2045n	1795	b2345	2545
Liberty.....10-D	Own.	6-3½x5	117	33x4	1575	1395	1575n	{2085 {1095k	2245

NAME AND MODEL	Engine Make	Cylinders, Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Lincoln.....	Own.	8-3⅝x5	130	33x5	....	....	....	$3900	....
Lincoln.....	Own.	8-3⅝x5	136	33x5	$3800	b3800	$3800	....	$4900
Locomobile.....48	Own.	6-4½x5½	142	35x5	....	b7600	7600	10500	11000
Maibohm.....B	Own.	6-3½x4½	116	32x4	1395	1395	b1495	2165	2165
Marmon.....34	Own.	6-3⅜x5½	136	32x4½	3385	b3185	3185	3985	4385
Maxwell.....	Own.	4-3⅝x4½	109	31x4	885	885	....	1385	1485
McFarlan.....1922	Own.	6-4½x6	140	33x5	6300	b6300	6300	7500	7500
Mercer.....Series 5	Own.	4-3¾x6¾	132	32x4½	3950	b3950	c3950	4850	5250
Merit.....	Cont.	6-3¼x4½	119	32x4	1895	1895	....	....	....
Mitchell.....F-50	Own.	6-3½x5	120	33x4	a1490	1490	b1690	2050	2275
Mitchell.....F-50	Own.	6-3½x5	127	32x4½	....	....	1690	....	....
Monroe.....1922-S-9	Own.	4-3¼x4½	115	32x3½	950	950	....	....	....
Moon.....6-40	Cont.	6-3½x4¾	115	31x4	....	1295	....	....	1695
Moon.....6-58	Cont.	6-3⅜x4½	128	33x4½	1785	1785	1785	2785	2785
Nash.....691-96-97	Own.	6-3¼x5	121	33x4	1210	1240	b1395n	....	....
Nash.....692-94-95	Own.	6-3¼x5	127	34x4½	....	....	1390	b1890	2190
Nash Four.....41-4	Own.	4-3⅜x5	112	33x4	915	935	....	{a1385 {1195k	{1545 {1275k
National.....BB	Own.	6-3½x5¼	130	32x4½	a2475	b2475	2375	b3725	3825
Noma.....3C	Cont.	6-3¼x4½	128	32x4½	2000	b2100	c2200	....	3200
Noma.....1D	Bea...	6-3½x5¼	128	32x4½	3000	b3100	c3200	....	5500
Norwalk.....430-KS	Lyc...	4-3½x5	116	32x3½	....	1035	....	....	....
Oakland.....6-44	Own.	6-2⅞x4¾	115	32x4	975	{995 {u795	b1165n	{b1445 {1185k	1545
Ogren.....6 T De Luxe	Cont.	6-3⅝x5¼	134	33x5	b3750	3750	3850	4500	4800
Oldsmobile.....43-A	Own.	4-3½x5¼	115	32x4	1145	1145	b1265	1645	1795
Oldsmobile.....46	Own.	8-2⅞x4¾	122	33x4½	....	b1735	1735	....	2635
Oldsmobile.....47	Own.	8-2⅞x4½	115	32x4	1595	1595	b1595	2145	2295
Overland.....4	Own.	4-3⅜x4	100	30x3½	550	550	....	850	895
Packard.....Single-Six	Own.	6-3⅜x5	126	33x4½	2485	2485	u2250	3175	3275
Packard.....Single-Six	Own.	6-3⅜x5	133	33x4½	....	u2350	2685	....	3525
Packard.....Twin Six	Own.	12-3 x5	136	35x5	3850	3850	3850	5240	5400
Paige.....6-44	Own.	6-3¼x5	119	32x4	1465	1465	u1290	1995	2245
Paige.....6-66	Cont.	6-3⅜x5	131	33x4½	a2495	n2245	2195	3100	3155
Paterson.....22-6-52	Cont.	6-3⅜x4½	120	32x4½	....	1550	1585	2595	2595
Peerless.....56-S-7	Own.	8-3½x5	125	34x4½	....	b2790	2790	3500	3790
Pierce-Arrow.....	Own.	6-4 x5½	138	33x5	5250	b5250	5250	6800	7000
Pilot.....6-50	H-S.	6-3½x5	126	32x4½	2050	2000	2050	2950	3000
Premier.....6-I	Own.	6-3⅜x5½	126¾	33x5	3150	b3100	3250	4300	5100
Premocar.....6-40-A	Falls.	6-3½x4¼	117	32x4	1095	1095	...	1750	1825
R & V Knight.....R	Own.	4-3⅝x5	116	32x4	....	1665	....	2385	2475
R & V Knight.....J	Own.	6-3½x4½	127	32x4½	2475	b2475	2475	3015	3105
Reo Series.....T6 & U6	Own.	6-3⅞x5	120	33x4	1595	n1645	1485	2355	2435
ReVere.....C	Dues.	4-4½x6	131	32x4½	3200	3200	3200	....	4000
Rickenbacker.....A	Own.	6-3½x4¾	117	32x4	....	1485	....	1885	1985
Roamer.....6-54-E	Cont.	6-3½x5¼	128	32x4½	2850	b2585	2785	3850	3850
Roamer.....4-75-E	Dues.	4-4½x6	128	32x4½	3985	b3585	b3750n	....	b4650
Rolls-Royce.....	Own.	6-4½x4¾	143½	33x5	....	10,900	....	....	....
Saxon.....125	Own.	4-3½x5	112	32x4	1195	1195	....	1795	1795
Sayers Six.....DP	Cont.	6-3¼x4½	118	33x4	1645	1645	....	2645	2645
Seneca.....L-2 & O-2	Lyc.	4-3½x5	108	30x3½	875	875	....	....	....
Seneca.....50 & 51	Lyc.	4-3½x5	112	31x4	1095	1095	....	....	....
Sperling.....A	Supr.	4-3⅜x5	114	32x4	980	980	....	1685	1685
Standard.....98	Own.	8-3¼x5	127	34x4½	2150	b2500	2500	2750	3200
Stanley.....	Own.	2-4 x5	130	32x4½	2700	2700	2700	3775	3950
Stanwood Six.....	Cont.	6-3¼x4½	118	33x4	1765	1765	....	2750	....
Star.....	Cont.	4-3½x4¼	102	30x3½	r319	s348	u285	580	645
Stearns-Knight....SKL4	Own.	4-3¾x5⅝	125	34x4½	2250	2250	2450	3150	3450
Stearns-Knight.....6	Own.	6-3⅜x5	130	34x4½	2700	2700	2850	3350	3700
Stephens.....90	Own.	6-3¼x4½	122	33x4½	1575	b1595	c1625	2450	2550
Stevens-Duryea.....E	Own.	6-4⅞x5½	138	35x5	7250	b6900	6800	u5600	b8900
Studebaker...Light Six	Own.	6-3½x4½	112	32x4	975	975	u785	1225	1550
Studebaker...Special Six	Own.	6-3½x5	119	32x4	1250	1275	b1275	1875	2050
Studebaker.....Big Six	Own.	6-3⅞x5	126	33x4½	u1300	1650	n1785	2275	2475
Stutz.....	Own.	4-4⅜x6	130	32x4½	2950	b2990	c2990	3990	4450
Templar.....A-445	Own.	4-3⅜x5½	118	32x4	2025	2125	b2175	2785	2785
Tulsa.....E-1-2-3	H-S.	4-3½x5	117	33x4	1175	1175	....	....	....
Velie.....48	Cont.	6-3¼x4½	115	32x4	1585	1585	b1800	2485	2485
Velie.....31	Falls.	6-3½x4½	112	32x3½	1235	1235	....	1750	2085
Velie.....58	Own.	6-3½x4¼	115	32x4	1275	1275	....	2185	2185
Washington.....C	Cont.	6-3⅜x4½	120	32x4	....	1785	....	....	2285
Westcott.....C-48	Cont.	6-3½x5¼	125	32x4½	....	....	1890	....	2890
Westcott.....A-44	Cont.	6-3¼x4½	120	32x4	....	1690	n1890	....	2690
Wills Sainte Claire..A-68	Own.	8-3¼x4	121	32x4½	2475	2475	....	3275	3475
Willys-Knight.....20	Own.	4-3⅝x4½	118	32x4	1350	1375	....	1875	2095
Winton.....40	Own.	6-3¾x5¼	132	35x5	3400	n3600	3400	b4450	4550

a—3-passenger. b—4-passenger. c—6-passenger. n—Sport. h—All Metal Type. k—Soft Top Type. u—Chassis Price. r—Price without starter and demountable rims. Price with starter and demountable rims $114. s—Price without starter and demountable rims. Price with starter and demountable rims $143. t—Model 47—34x4½ Tires. v—Tire Sizes 32x4½. e—Touring Sedan.

Engine Make: Anst—Ansted. Bea—Beaver. Cont—Continental. Curt—Curtis. D.Ly—Dort Lycoming. G-B—Grey Beal. H-S—Herschell-Spillman. Lyc—Lycoming. Nort—Northway. Roch—Rochester. Rut—Rutenberg. Supr—Supreme. Weid—Weidely. Wisc—Wisconsin.

The following price changes have been announced since the above table was compiled. AUBURN, 5 Pass. Phaeton, $1,475; 5 Pass. Sport, $1,995; 7 Pass. Phaeton, $1,545; Sedan, $2,345. MITCHELL, Roadster, $1,750; 4 Pass. Sport, $1,850; 5 Pass. Phaeton, $1,750; 7 Pass. Phaeton, $1,850; Coupe, $2,325; Sedan, $2,525. STUTZ, Roadster, $2,450; 6 Pass. Phaeton, $2,540; 7 Pass. Phaeton, $2,790; Coupe, $3,490.

(For latest prices see page 41)

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MOSSBERG

ALL STEEL WRENCHES AND TOOLS



No. 612 Speed Brace

Speed Brace Socket Wrenches

No wrench can handle that out-of-the-way nut or bolt like a Speed Brace Socket Wrench. And the Mossberg line contains a complete assortment of these efficient wrenches in all sizes and shapes for all kinds of work.

These are supplied the dealer, together with sales boards—Silent Salesmen—in assortments that correspond with the demand. All live ones. Mossberg all-steel construction, finished in burnished nickel. Rugged, practical wrenches, made for hard work. Popular among your customers.

No. 2400 Salesman

This well balanced display board assortment contains 70 Speed Braces in quantities ranging from four to nine of each wrench. Each number is made of ½ inch steel bar, is 19¼ inches in length, and is finished in burnished nickel. The board itself is made of chestnut with nickeled steel hook. Size, 20 inches by 60 inches. Free with complete assortment.

"L" Salesman

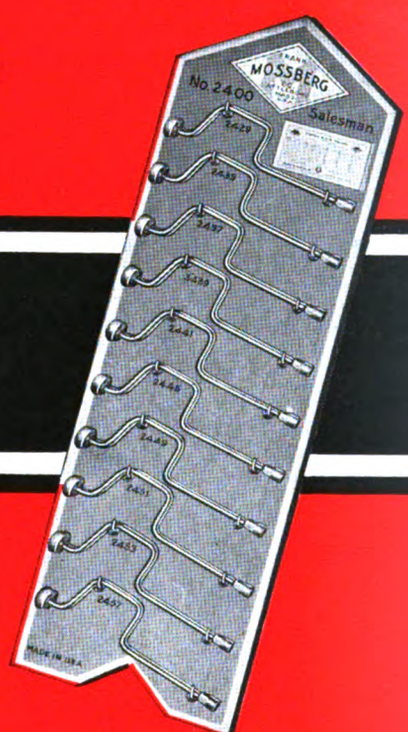
Assortment contains 140 Solid Socket Wrenches—47 6-inch "T" Wrenches—57 12-inch "T" Wrenches, and 36 10-inch Offset Wrenches. All fast sellers. Constructed of ½ inch steel bar, finished in burnished nickel. Board 20 inches by 60 inches—same high quality as "2400" board. Furnished free with complete assortment.

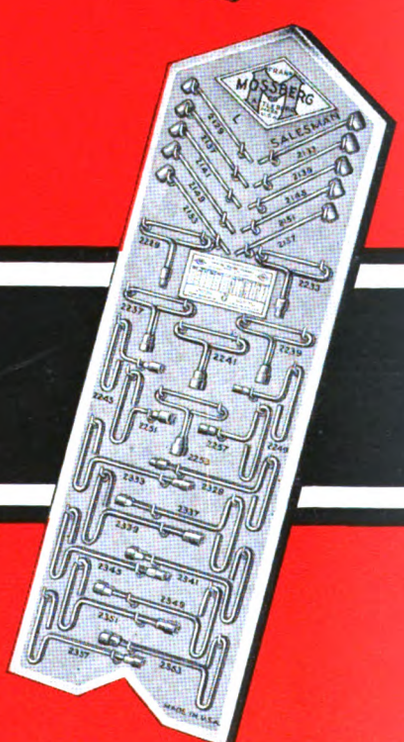
Write for 1922 *catalog and prices*

FRANK MOSSBERG COMPANY
WRENCHSMITHS FOR 20 YEARS
ATTLEBORO, LAMB STREET MASSACHUSETTS

Branch Offices

CHICAGO, ILL. ..... 180 No. Market Street
SAN FRANCISCO, CAL. ..... 626 Underwood Building
LOS ANGELES, CAL. ..... 503 Equitable Building
SEATTLE, WASH. ..... 214 Maritime Building
DALLAS, TEXAS ..... 1129 No. Beckley Avenue
MONTREAL, QUE. ..... 332 Bleury Street
FOREIGN SALES OFFICE ..... 461-475 Eighth Avenue, New York City





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Gill



One-piece Piston Rings

When your Customers ask for Gill Rings

When a car driver asks for Gill Piston Rings, the chances are he knows Gill Rings save gasoline and oil, increase power and add life to the motor. That's why he's going to keep asking for Gill Rings until he gets them.

A few sizes of Gill Rings—as you very well know—will take care of this customer and practically all the piston ring business in your territory. ***Every piston ring customer is a prospect for every accessory you carry.*** Invest a few dollars in Gill Rings now and cash-in on this profitable business. Your jobber has Gill Rings. Order them today.

THE GILL MANUFACTURING COMPANY,
8300 South Chicago Avenue, Chicago, Illinois

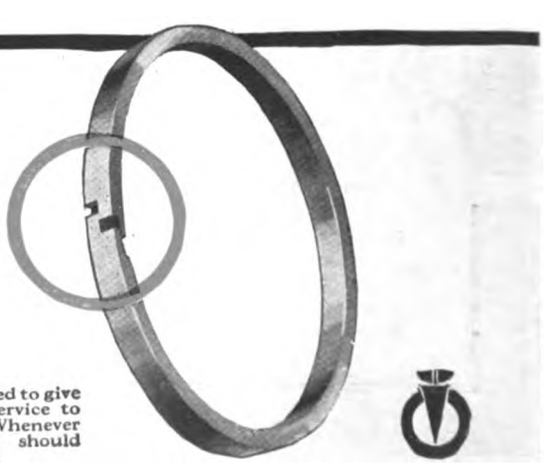
Canadian Manufacturer:
BROWN ENGINEERING CORPORATION, Limited
Toronto, Ontario

Sole Export Agents:
AMERICAN STEEL EXPORT COMPANY
Woolworth Bldg., New York, N. Y.

Price Reduced to

75¢

Identify the Gill One-piece Piston Ring by the joint, but do not measure its merit by the joint *alone*.



36 Branch Offices prepared to give practically 24-hour service to the entire trade. Whenever possible, however, dealers should order through their jobbers.

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MOTOR WORLD

for

DEALERS, JOBBERS AND GARAGEMEN

Volume LXXII
Number 8

PUBLISHED WEEKLY AT 239 WEST 39th STREET
NEW YORK, AUGUST 23, 1922

Thirty-five cents a copy
Three dollars a year





Installed in five minutes no adjustments necessary

THE Boyce Moto-Meter can be installed on *any* car in *five minutes* – no adjustments are necessary. In fact, it is the most easily installed instrument on a car, and one of the most useful.

The Boyce Moto-Meter never fails to give its warning of an overheated motor. The jars and shocks of the roughest road *cannot* affect it – it has no delicate mechanism —it is a rugged, reliable, simple instrument which gives honest service 365 days in the year. That is why three million car owners are satisfied Boyce Moto-Meter users—they *know* that it is indispensable —always on guard.

Boyce Moto-Meters are building tremendous good-will for dealers everywhere—giving absolute and unfailing satisfaction.

DEALERS

Write or wire for details of the new Boyce Moto-Meter Service Station Appointment.

"Ask 'em to buy"—

BOYCE MOTOMETER

"Your car deserves one"

Entered as second-class matter Jan. 2, 1903, at the post office at New York, N. Y., under Act of March 3, 1879.

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The "Service Tax" on Your Profits

HAVE you ever stopped to figure it?

Maybe you have never looked at it from this angle—perhaps you never consider this important feature when choosing the line of products you carry.

When a customer leaves your store with the assurance that immediate repair service is available, should anything go wrong with the product he has just purchased, he will come back to buy from you again. Satisfied customers return. Failure to give such service eventually turns business from your doors to those of your competitors.

The ruling god of your business is SERVICE. It levies a tax on the profits of every dealer. You pay tribute to it every time you make a sale, for every customer demands it.

However, this tax on profits can be reduced to a minimum. To assist dealers in this pursuit was the motive in the establishment of the Stewart system of distribution and service. Wide-awake dealers were quick to see the advantage of it—that is why they handle Stewart Products.

Coupled with the nation-wide distribution of Stewart equipment thru 120 Authorized Distributors, is the system of Stewart Service Stations, located in 53 principal cities thruout the United States. These stations were established for the exclusive sale and repair of Stewart Products. Each is equipped with a corps of factory-trained expert mechanics, thoroughly familiar with Stewart Necessities.

This method of distribution and service brings right into your district a complete line of Stewart Products, and places at your disposal an unequaled specialized, Same-Day Service. It nets you a large saving in time and in transportation charges.

Dealers who choose to handle Stewart Products find the Service Tax on their profits automatically reduced to a minimum. It's an easy method of gaining prestige, cutting overhead and adding to your profits.

Stewart

PRODUCTS

USED ON SEVEN MILLION CARS

STEWART-WARNER SPEEDOMETER CORP., Chicago, U. S. A.

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MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

Reg. U. S. Pat. Off.
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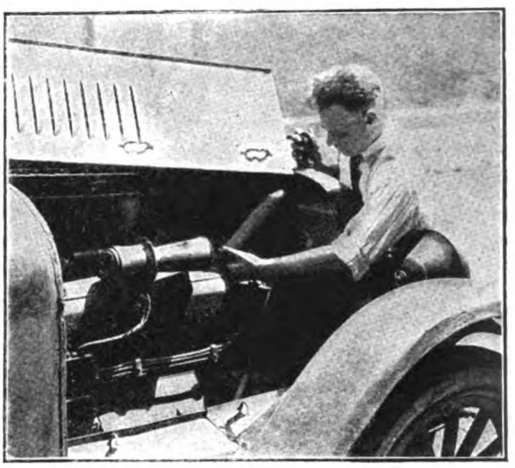
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What kind of radiator hose are you buying?

IF you're buying Goodrich Radiator Hose you're buying the best.

You are installing satisfaction, service, economy and reliability.

You are building a reputation as a dealer in first-class, reliable, service-giving materials *plus* increasing profits and trade. Radiator hose must have Goodrich Quality to give service. It must have the stamina and first grade materials to withstand the terrific heat from the engine, boiling hot water, splashing oil and abuse. Goodrich hose has these qualities —that's why you find it on the finest cars.

And that's why garage, tire and radiator dealers who value the car owner's good will buy and install it. For prices, etc., consult your nearest Goodrich Branch.

THE B. F. GOODRICH RUBBER COMPANY
Akron, Ohio

Goodrich
RADIATOR HOSE

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No "Snaky" Grooves

Because the ring grooves are absolutely true—finished to size—Spencer-Smith Piston grooves have none of the "snaky" characteristics which result in lost compression and leakage of oil behind the piston rings. Piston rings fit Spencer-Smith grooves perfectly all the way around.

SPENCER-SMITH MACHINE COMPANY
HOWELL, MICHIGAN

Largest Manufacturers of Pistons Exclusively



SPENCER-SMITH PISTONS

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXII New York, U. S. A., Wednesday, August 23, 1922 No. 8

Rip Van Winkle Up to Date



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How Shall the Industry Pay Its Salesmen?

One Dealer Makes Them Share Profits or Losses on Used Car Deals—Another Has Sliding Commission Plan, but Puts Limit on Trading

BOTH the dealer and his salesman are interested in profits. To the dealer profits mean what he has left of his income from sales after all expenses have been paid. To the salesman, profits mean his compensation for selling cars. Each is primarily interested in his own profits, yet neither can afford to be selfish in the matter. The dealer must allow the salesman a compensation that will be satisfactory to him. And the salesman must operate with a view of making profits for the dealer.

The point at which the interests of the dealer and his salesmen are most likely to conflict is in the matter of new car sales involving the trade-in of used cars. The dealer wants to buy the used car at a figure that will allow him a profit. On the other hand, the salesman can increase his volume of sales materially if he offers his prospects high appraisal values on their used cars.

If the salesman is paid on a straight commission on new car sales basis, there is a perfectly natural tendency for him to make excessive allowances, or to induce the dealer to make such allowances, in order to increase his new car sales. This will be true even if his commissions are based on the difference between the new car selling price and the used car allowance.

Every dealer has this problem to solve. He must develop a plan of compensating his salesmen that is fair to them and at the same time gives them a definite interest in making user car deals that will allow the dealer a profit. Plans used by two dealers to secure these ends are described on this and the suceeding pages.

How Do You Pay Your Salesmen?

THIS is Motor World's second discussion, within a few weeks, of methods of compensating salesmen, with particular reference to the relation of used car profits and losses to the work and pay of the sales force. The compensation plans of two dealers are described in this story.

The subject is commanding more and more attention in the trade. Dealers everywhere are seeking ways of getting more intelligent and more aggressive work out of their salesmen by making them more directly interested in the profits of the business.

What do you think of the plans outlined here? Have you a better plan? If you have—

Write to Motor World About It

THE plan used by the Ostendorf Motor Car Corp., Franklin distributor in Buffalo, N. Y., gives the salesmen a twofold interest in making used car allowances that will be profitable to the company. This plan makes each salesman share in any losses incurred on the used cars he accepts in trade, which naturally makes the salesman cautious regarding over-allowances. Furthermore, he cannot collect any commission on the sale of a new car on which a used car is accepted as part payment until the used car has been sold. As a result, it is to his advantage to appraise used cars at a figure that will permit a selling price that will move the car quickly.

The plan is simple and easy to apply. Suppose a salesman sells a car listing at $2,000. The factory discount to the dealer is 20 per cent, so the gross profit on this sale would be $400. This gross profit is distributed as follows: $200, or 10 per cent of the list price, is credited to the company; $100, or 5 per cent of the list price, is credited to the salesman's commission account. The remaining $100 is credited to the sinking fund account of the salesman making the sale.

If a used car is accepted as part payment on the new car, payment of the $100 credited to the salesman's commission account is deferred until the used car has been sold. A 5 per cent commission on the used car selling price is paid to the salesman who sells it. This commission is charged to the sinking fund account of the salesman who took the used car in trade. Of course, when a salesman sells a used car that he traded in himself, his commission account is credited with the 5 per cent on the used car selling price.

Any losses incurred in selling a used car are charged to the sinking fund account of the salesman who took it in. If these losses exceed the balance in the salesmen's sinking fund account, the excess is charged to his commission account. The commission accounts are settled quarterly. The salesman has liberal drawing account.

The sinking fund accounts are settled at the end of the year. Any salesman having a balance in his sinking fund at that time receives one-half of this balance, the other half going to the company.

To illustrate the workings of the plan, assume that salesman Smith sells $100,000 worth of new cars during the year. His commissions at 5 per cent would be $5,000. Smith's sinking fund account would also receive a credit of $5,000. In making these sales, assume that he takes in used cars that sell for a total of $30,000. The selling commissions on these cars at 5 per cent total $1,500. This amount would be charged to his sinking fund account, leaving a balance of $3,500. If Smith's used car sales during the year total $30,000, the $1,500 commissions on these sales would be added to his commission account, making the total $6,500. Continuing, if no losses are sustained on the used cars Smith takes in, he gets half of the

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balance in the sinking fund account, which amounts, in this case, to $1,750. This brings his commission account up to $8,250, or about 6⅓ per cent on sales of $130,000.

If Smith takes in used cars that sell for $30,000 but only sells $10,000 worth of used cars during the year, the commission on the difference of $20,000, which amounts to $1,000, goes to the salesmen selling the cars and is deducted from Smith's sinking fund account. On the other hand, if he takes in $30,000 worth of used cars and sells $40,000 worth, his used car commissions amount to $2,000. Five hundred dollars of this amount comes from the sinking fund accounts of the salesmen responsible for the extra cars he sold.

If some or all of the used cars taken in by Smith are sold at a loss, the deficit is charged to his sinking fund account. Assume, for the moment, that the loss on Smith's used cars for the year is $2,000. This amount is deducted from the balance remaining in his sinking fund account after commissions on his used cars have been deducted. This balance is assumed to be $3,500, so after the loss is deducted, there remains $1,500 at the end of the year to be divided between Smith and the company. Under these circumstances, the company shares equally with Smith in his used car losses.



In the ideal business the salesmen will be as much interested in the firm's profits as in their own commissions. How can automotive merchants reach this ideal?

However, if Smith lost $4,000 on his used cars, he would exceed the balance of $3,500 remaining in his sinking fund, after deducting used car commissions, by $500. This would be charged to his commission account. In this case his earnings for the year would be 5 per cent on his new and used car sales less $500. In other words, if his losses exceed the balance in his sinking fund, Smith has to make the excess good entirely out of his own pocket. Under these particular conditions, the company stands about 44 per cent of the loss and Smith 56 per cent.

The sinking fund gives the salesman a definite margin to work on in making allowances. So long as he keeps his over-allowances within the limits of this account he gets the customary 5 per cent on the new car sale. Furthermore, by minimizing the losses on his used car deals, he can increase his compensation. The amount of money the company can lose on any used car sale is limited to one-half the amount of money in the sinking fund accounts. Inasmuch as the totals of these accounts cannot exceed 5 per cent of the total new car sales, less 5 per cent on used car sales, this loss cannot be very large.

THE plan used by another dealer gives the salesman a definite pecuniary interest in each used car he takes in, and provides an incentive for selling the car quickly.

This dealer expects each used car to be sold for appraisal price, plus the cost of reconditioning, plus a selling commission of 5 per cent. The car is held at this price for three months. If it is unsold at the end of this period, 10 per cent of the appraisal price is deducted from the sale price. This loss is charged to the commission account of the salesman who took the car in. Each succeeding month that the car remains unsold, 10 per cent of the appraisal value is deducted from the selling price and charged to the salesman's commission account. It is consequently very much to the salesman's interest to appraise used cars that he takes in trade at a figure that will allow their sale without loss.

Another part of the plan provides that a salesman can have but one used car on hand at a time. This limits the dealer's investment in used cars definitely. As a result, the salesman's ability to make money selling new cars depends to a considerable extent on his appraising used cars at a figure that will permit a quick sale.

Any salesman may sell any used car in stock and he receives a 5 per cent commission for making the sale. If Smith sells a car taken in by Jones, Jones is relieved of the responsibility for it and may trade in another car.

To secure the co-operation of the sales force, a sliding scale of commissions is in force. Inasmuch as this distributor receives a factory discount of 25 per cent, he is able to be rather generous in the matter of commissions. On the first car delivered each month by a salesman, a 6 per cent commission is paid. The salesman receives a commission of 9 per cent on the second car he delivers during the month, 11 per cent on the third car, 12 per cent on the fourth and 13 per cent on the fifth and succeeding cars. In order to earn the 11 per cent commission, however, the salesman must have delivered one car during the preceding month. For the 12 per cent commission to be effective, he must have two deliveries during the preceding month and, to earn the 13 per cent commission, three deliveries during the preceding month are required.

For example, if Smith delivered one car in May, he would receive 6 per cent on the first car he delivered in June, 9 per cent on the second, and 11 per cent on the third, fourth, fifth and succeeding cars delivered in June.

The sliding scale of commissions provides a strong incentive for the salesman to make high monthly sales records. To make such records, however, the salesmen are likely to find it necessary to make several trades. If a salesman has an unsold used car charged against him, he cannot trade until it is disposed of. Consequently, his chances of earning the larger commissions are very much diminished. As a result, he is very much interested in accepting only such used cars as have a ready market and in appraising them at a price that will insure a quick sale.

The sliding scale of commissions also gives him an opportunity to cover any losses he might be charged with as the result of an excessive appraisal.

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Doing "Something Different" in Tire Advertising

Distinctive Copy the Secret of This Los Angeles Dealer's Success—How He Invests $1,000 a Month and Makes It Bring Results

IN searching for "something different" to use as a basis for an extensive advertising campaign, E. Richard Just, tire dealer of Los Angeles, went back through the history of American printing and finally came to Poor Richard's Almanack. In Benjamin Franklin's publication, Just believed he had found the foundation for his appeal, and set his advertising man to work out the campaign.

Using the quaint type and set-up of Poor Richard's Almanack, Just has been conducting a vigorous advertising drive in Los Angeles daily newspapers during the past few months that has brought substantial returns. The distinctive character of his printed messages stand out prominently on the newspaper page and it is almost impossible to escape reading them.

JUST features the words "Richard's Almanack" in bold type at the top of all his display ads. The fact that his middle name is Richard is justification for his use of Franklin's product. Each "page" from the "Almanack" contains "words of tire sense, being a guide to the art of buying tires and prolonging their service."

Typical of the "advice" contained in the advertisements is the following:

"Richard says: He who waits upon Fortune is never sure of a dinner, even as he whoever fears a blowout rides not with much comfort. And further, as Richard says, great modesty often hides great merit, and though big bargains and cheap prices are not noisily proclaimed in this Almanack, yet know you that the standard tires that Richard Just sells are marked quite low indeed, and giving long mileage, make for a great saving withal."

Just is a firm believer in the pulling power of advertising. While not a particularly large establishment, Just's institution is one of the most widely known tire sales and service shops in the entire West, and he has a remarkable turnover considering the size of his place. The six space stalls in the service department, with an area of 3200 square feet, are nearly always filled with automobiles and trucks obtaining tire service during the business hours.

"My advertising bill since I started the Richard Almanack campaign has been running around $1,000 a month," said Just. "Some dealers may think that I go in too strong for advertising for an establishment of my size, but I find that it pays. No business man will go wrong on advertising if he creates, or has created, the proper kind of copy, and he does not expect overwhelming returns immediately. I have found that advertising to be productive, must be continuous and consistent. The day after my first twelve inch advertisement appeared in the paper in the first shot of my new campaign did not find me waiting to be swamped with business, and my expectations were not misdirected. I did find, however, a gradual increase of a substantial nature in business, just as I figured on, and this increase is keeping up as the advertising campaign goes on.

"I don't know just how long I will spend $1,000 a month on advertising, but when arriving at a permanent policy I plan to set aside a minimum of 5 per cent of my gross receipts for this form of sales promotion."

Mr. Just started in the tire business about eleven years ago in a small way. Most of his service was done out in the street, but the way he greeted his customers and the efficiency of his work soon won a following that demanded expansion. He has moved several times. Today he is quartered in a new building that represents the last word in the modern tire service and sales shop.

Just also employs direct-by-mail circular matter to good advantage. Most of his circular matter appeals to individual or fleet truck operators and for the most part centers around "satisfied customers."

From a recent piece of circular matter, the following introduction is quoted:

"Nothing 'sentimental' about truck tire service. Your own brother might be in the tire business, say, and yourself the owner of a dozen trucks. You know mighty well you wouldn't bring your business even to him—couldn't afford to—unless he could actually deliver to you a real service.

"Truck tire service means something more than good standard tires, solid or pneumatic, at right prices. Every time you tie up a truck, even for a few hours, it costs you good money and adds to the operating cost of that particular unit. You've got to get in, get fixed and get out—get the wheels to rolling again—on tire repairs and renewals—that's a big element in service.

The testimonial, Just finds, is one of the most effective appeals that can be employed in circular matter.

This Is the Home of "Just" Service



Not large as buildings go, but "big" in tire sales and service is this establishment of E. Richard Just, Los Angeles tire dealer, whose distinctive advertising is an outstanding feature of his merchandising

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Wouldn't You Read These Distinctive Tire Ads?

Read about them on the opposite page.



THERE'S evidence that Los Angeles is reading them and is being impressed by the merchandising messages they contain. They are used by E. Richard Just, whose tire sales and service business has become widely known on the Pacific Coast through his distinctive advertising. Just invests $1,000 a month in this type of advertising and says it pays handsomely. He also uses a direct mail selling appeal based on testimonials of satisfied customers.

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Universal Flat Rate Plan Pays Mechanics on a Job Basis

More Jobs, More Profits and More Pay for Mechanics Are Some Advantages of This Novel Application of Flat Rates in Kentucky Service Station

By DONALD D. BLANCHARD

"HOW much will the job cost?" gets a definite answer from the service department of the O. K. Motors Co., Louisville, Ky. No matter what make of car is brought in for repair, this company makes a flat rate charge for the labor required at the time the order is taken. The customer knows definitely when he signs the repair order what he will pay for the completed job.

O. K. Motors not only makes a definite price contract with the customer for the labor required but it also *buys this labor at a definite price.* The mechanic who does the work receives one-third of the flat rate charge made the customer. In accepting employment with this company, every mechanic agrees to be bound by the flat rate charges made by the service department and to accept these charges as the basis on which his pay is computed.

THE O. K. Motors Co. is the Studebaker distributor in the Louisville territory. Until a few months ago the company handled the Hupmobile. The schedule of flat rate operations in use was originally worked out for the Hupmobile. The same schedule is now being applied to the Studebaker and other cars. Naturally the majority of the work handled in the shop is on these two makes of cars. But the company does a general service business on all makes.

On Studebaker cars, in addition to the flat rate labor charge, the company makes a maximum estimate on the parts required for the job. These maximum estimates are based on the schedules printed in Motor World in connection with the Studebaker flat rates.

The Hupmobile flat rates were developed by Frank T. Sullivan, general manager of the company, and he is responsible for the extension of their use to all makes of cars. In justification of this action, he says that the time required to perform the same operation on two different makes of cars is practically identical. He believes that automobile construction is sufficiently well standardized so that the operations required to make a repair on one will not differ materially from the operations required to make the same repair on another make. He has worked on this theory in making flat rate charges on any make of car and he has found that it is justified by practical experience.

The system works out profitably both from the standpoint of the company and of the employee. The company gets two-thirds of the labor charge to cover its overhead and margin of profit. Even if the flat rate charge is considerably under what it should be, the company is not likely to lose with this margin of gross profit. In such a case the workman would suffer as his cut of one-third would not be large enough to pay for the time spent on the work.



Basic Flat Rate for All Cars?—Sure!

HERE it is at last! A basic flat rate plan that is being used on ALL makes of cars.

It quotes the customer a definite price

It gets the job done in a definite time

It pays the mechanic a definite price for each job, and

It is making more money for both the dealer and his mechanics.

Every dealer and every service manager will want to read every word of this interesting story of how the O.K. Motors Co., Louisville Studebaker distributor, has worked out and is operating successfully a basic flat rate plan that may be applied to repairs on any make of car.

Such cases seldom arise, however. The mechanics in the O. K. shops make more money than do the men in many of the other shops in the city. The first class mechanics average about $50 a week and on occasions their pay amounts to $70. The highest rate paid an automobile mechanic in Louisville is 60 cents an hour. On the basis of a 54-hour week, the maximum weekly wage is $32.40. The flat rate system of buying and selling labor in use in the O. K. shops is obviously advantageous to the men. The company must sell its service in competition with other shops in the city, and to do this its prices must compare with those offered by competitive service stations. The fact that nine men are kept busy in the shop indicates that owners are satisfied with the charge.

Sullivan regards the purchase of labor on a piece work basis as essential to the success of a flat rate system. If the mechanics are paid on an hourly basis there is no incentive to work fast to complete the work in the time allowed by the flat rate. Shops selling on the flat rate basis and buying on the hourly basis keep record of the time the mechanics spend and compare it with the flat rates. If the mechanic spends more than the allotted time on an operation, the service station must stand the loss or increase the rate to cover such contingencies.

By paying the mechanics a definite percentage of the flat rate charge, if a mechanic spends more than the estimated time on a job, he loses along with the service station. He works faster than he ordinarily would so as not to incur such losses. His earnings are determined by his own productivity. If he

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does a job in less than the estimated time, he can apply the time saved to another job. The more jobs he completes the more money he makes.

The natural objection to paying mechanics on the piece work basis is that they will not make the repairs properly in their efforts to make more money. This difficulty is avoided by having each mechanic guarantee his own work. If a job comes back unsatisfactory, the mechanic who made the repair must do it over on his own time. This condition insures first class workmanship.

Schedule Divided According to Units

The flat rate schedule is completely worked out. The operations are divided into groups in accordance with the units in the car. Each group is represented by a letter and each operation in each group is numbered. The individual operation is given a short name such as "Overhaul Engine" or "Grind Valves and Clean Carbon." These are indefinite terms and are further explained by a complete listing of all the work that will be done for the flat rate charge.

In making out the repair order, the service salesman lists the operations by group number and name. A copy of the order goes with the car to the shop. The shop superintendent has a copy of the flat rate schedule in card index form. Each operation is set down on its own card and these cards are filed in numerical order by groups. The superintendent takes the cards out of the file corresponding to the operations indicated on the repair order. These cards are placed in an open face envelope together with the repair order.

How Jobs Are Assigned

There are nine mechanics in the shop and each one has a numbered box in a wall rack. The boxes are assigned after the ability and seniority of the employees have been considered. Assuming that all the boxes are empty, the first order to come to the shop goes in the first box, the second order in the second box, etc. The shop superintendent endeavors to keep all of the men busy all the time, but if there are two men idle and there is only one order to be given out the man with the lower numbered box gets the preference.

When a mechanic completes a job he goes to the rack and gets his instructions for his next job. The repair order tells him what operations are to be performed and the cards give him the details of what these operations include. This feature insures the customer getting just what he pays for. If the mechanic does not carry out the instructions given on the cards, there is quite likely to be a come-back, in which case he has to do the work over at his own expense.

Each mechanic has his own shop. After getting his instructions from the rack he rolls the car into his shop and proceeds to work. His shop is equipped with bench, vise, hand tools and a set of speed wrenches. The mechanic is expected to keep his personal equipment complete and in good condition. The shop superintendent inspects it weekly to see that it is in good shape. Various special tools are kept in the toolroom, from which they may be withdrawn by the mechanic.

After the work is completed the job is tested by a service salesman, these men acting as inspectors. If it is satisfactory it is placed on the floor awaiting the customer's call. If not, it goes back to the mechanic who did the work.

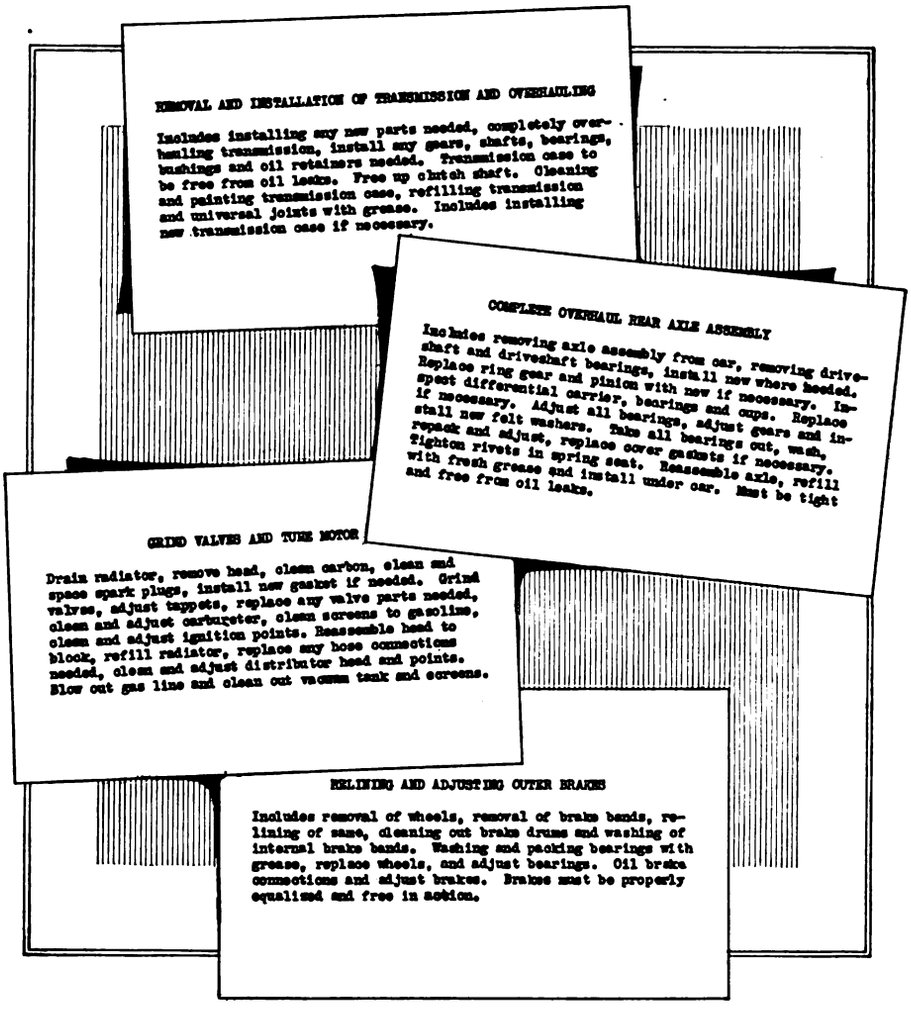
Making Flat Rate Universal

Each job is recorded in the payroll under the name of the man doing the work. An entry is made of the total sale and also of the mechanic's one-third. If a mechanic is paid for any portion of his time on the hourly basis, this is also credited. It is sometimes necessary to take a man out of the shop to work in the quick service department and he is paid for this time on an hourly basis. However, if he spends all his time on piece work his pay for the week equals one-third of the total sales of his work as shown by the payroll.

On an unusual job such as a wreck or on a car which the service salesman does not think the standard flat rate charge will be correct, he makes a careful estimate of the cost and then makes a flat rate. If he is not sure of his estimate, he will call a mechanic from the shop and ask him what he will do the job for. The mechanic makes an estimate and, if it is acceptable to the customer, the mechanic agrees to do the work for that price.

In making the flat rate applicable to all makes, the four-cylinder car is used as a basis. Where the amount of time required to perform an operation on an engine is influenced by the number of cylinders, the charge for it is in proportion to the number of cylinders. For example, grinding valves, cleaning carbon and tuning engine carries a flat rate price of $8 or $1 per valve. On the Stutz engine, which has 16 valves, the charge for this operation would be $16. The charge for a six-cylinder engine is $12, for an eight $16 and for a 12, $22.10. Working on the basis of $1 a valve, the charge for a 12-cylinder engine would be

How Universal Flat Rate Plan Groups Some Operations



Here are a few samples of operations that have been worked out in the flat rate plan, applicable to all cars, which is being used by the O. K. Motors Co., Studebaker dealer in Louisville, Ky. The company gets two-thirds the labor charge and the mechanic receives one-third. The system works out profitably for both the company and the employee

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$24. The difference is accounted for in the fact that but two gaskets have to be installed instead of three as would be the case if the 12 cylinders were divided between three four-cylinder engines. The charge for installing a gasket is $1 90.

The following are some typical operations and prices taken from this company's flat rate schedule:

Grind valves and tune engine (4-cylinder engine)	$8.00
Overhaul engine without removal from frame (4-cylinder engine)	50.00
Removal and installation of clutch assembly or release, bearing or any other repairs to clutch	12.00
Removal and installation of transmission and overhauling	15.00
Completely overhauling rear axle assembly	15.00
Removal and installation of front spring	1.50
Removal and installation of rear spring	2.00
Relining and adjusting outer brakes	5.25
Relining and adjusting inner brakes	5.25
Relining and adjusting both brakes	10.00

The details of some of these operations are listed on the cards shown in the illustration.

In the winter months, when work is slack, the force is cut to six men. In the operation of a system of this character it is, of course, necessary to keep the men busy as they only earn when they are working. However, the O. K. company goes after service aggressively in winter with advertising, sales letters and personal solicitations.

Shop Work Paid Same Rate

Sullivan has kept careful record of the work done by the shop for other departments of the business. He finds, on the average, that more than one-third of the employees' time is spent on jobs for other parts of the business. These departments are charged for this work at the full retail price. On repair operations the shop is paid the same rate that a customer would be charged and the man doing the work receives his one-third. This applies to the reconditioning of used cars as well as to the repair of company cars and free service.

Sullivan has found the extension of his basic flat rate, which he developed for the Hupmobile, to all makes of cars to work out satisfactorily. He is able to quote the customer a definite price at the time the job is accepted. The price he makes meets competition. His men earn more money than do the men in other shops in Louisville. They guarantee their work which removes this labor charge from the overhead. Lastly, the shop is operating at a profit.

A Rancher Buys a Limousine

The Dealer's Part in the Transaction Wasn't Exactly Ethical But the Yarn Makes Interesting Reading

TO listen in on the conversation of a group of automobile dealers who have been in the business since its infancy is to hear methods of salesmanship which would hardly fit the code of modern salesmanship, but which, for their resourcefulness, may be chronicled before they are lost in the memory of a new generation.

Some of these old-time salesmen were great believers in "what they don't know won't hurt them," and were adept at converting their greatest weakness into their greatest strength.

"Somewhere in the western plains," an old timer recently told his cronies at one of these reminiscent conferences, "are the remains of a beautiful chauffeur-driven limousine. I've always been curious to know what became of that particular car." The facts, as he recounted them, were about as follows:

It seems that the factory whose line he sold was over-produced one year on limousines and those which were left over after the eastern market had been supplied were forced on dealers in towns where a limousine and much less a chauffeur had never even been heard of.

This dealer, who did business in a small western city, was one of the victims.

After unloading the car he put it on display in his salesroom. It was a magnificent sight, high and imposing, with lights which hung out from the body above the doors, and profuse in nickel and brass—everything on it, as this dealer expressed it, "but the kitchen sink." The interior was upholstered in rich material with a satinlike finish in a sort of checkerboard pattern, set off with heavy braid and tassels. The front compartment, of course, was upholstered in leather for the chauffeur. It was a sight for kings.

This car stood on the salesroom floor for more than a month without a nibble. Realizing that the people must be getting tired of seeing it there, the dealer hid it away among the used cars on the second floor of the building. He kept it there a month, then put it back on the salesroom floor for another try. Thus he alternated for nearly a year and he was getting pretty discouraged about it.

One night just as he was closing up a sheep rancher whom the dealer had never seen before came into the showroom and said, "I want to buy the best damned car you've got in the place."

At that particular time the beautiful limousine was off duty, reposing on the second floor. Of course the dealer instantly thought of this car, but he knew well enough that the average sheep rancher is likely to be a pretty crafty fellow. It would be one thing to sell him a car which he could drive himself and another to send him away with a limousine which was permanently divided into two compartments and with no means of communication between the two except a horn. But this man had the money in his pocket; the dealer could see it bulging out. It was an opportunity that might never come again. So he led the rancher upstairs, thinking hard as he did so and explaining to his would-be victim that he wanted to show him a car which had just been received from the factory which would be just the thing for him.

It was dark on the second floor. Instead of lighting the room he switched on the lights inside the car, and the dealer himself admits that as it stood there, radiantly aglow amid the surrounding gloom, it was a beautiful sight.

"There," he announced, pointing proudly to the car, "is the finest automobile you can buy."

The rancher was obviously impressed, but entered into a minute examination of his proposed purchase. He looked it over carefully for fully five minutes.

"Nice car, all right, but what's the two parts for?" he asked at length, with all the humility in the world.

"Well, I'll tell you," answered the dealer, summoning his courage, "that's the big advantage of this car. At home I suppose you have one room that you keep looking nice and have it shut off from the rest of the house for company and special occasions. Then you have another room that you ain't so particular about, where you live most of the time. Well, that's the idea of this car. This back part is separate from the rest so it won't get dusty or mussed up, and up here in front where you do your driving it's plainer and upholstered in leather. You couldn't beat it if you went a thousand miles. It's rich. It's the last word."

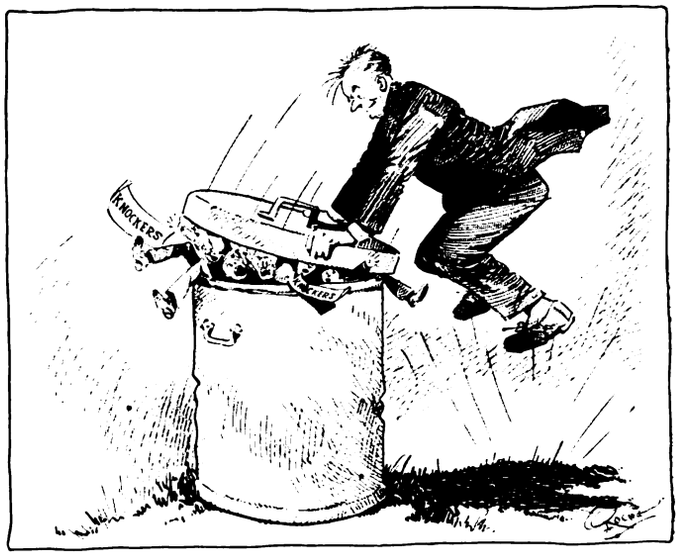
As he proceeded with his argument understanding dawned over the rancher's countenance.

"That is a good idea, ain't it?" he said. "I just believe I'll take it."

He paid for it in cash and, obviously happy over his purchase and the two-room idea, drove the luxurious limousine away over the plains. The dealer never saw or heard of him again.—LEO N. BURNETT.

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Forever and Ever—



By NEAL G. ADAIR

HENRY BENNETT Redman dealer in Callawassa, was always agitated about something. Usually he had to turn to the weather in August, for lack of any other cause of woe, but this year a succession of price reductions on competing cars opened the way for an orgy of agitation which reached a climax when three weeks had passed and the Redman still stood pat on its old prices. Factory officials having refused to get agitated over Bennett's letters and telegrams, the Redman dealer hot-footed it down the street to the establishment where Cornelius J. Reilly dealt in Sennett cars and a brand of common sense that during many years of business and personal friendship had withstood the onslaughts of Bennett's agitation.

"Cornelius," Bennett demanded, as he plumped his 200 pounds of agitated anatomy down into the visitor's chair in the Sennett distributor's office, "what about this price thing?"

"Well, what about it?" Reilly retorted.

"Is the Sennett going to cut?" Bennett demanded.

"How do I know? I'm not the factory," Reilly answered. "But I don't believe they are."

"Looks like that for the Redman, too," Bennett declared. "Wonder whatinell they expect us to do?"

"Sell cars, I suppose," Reilly replied drily.

"Don't want much, do they?" Bennett said.

"Don't want any more than I do," Reilly observed. "I want to sell cars, too. Expect to sell 'em, too."

"But how—" the Redman dealer began.

"On their merits—just as I always have," the Sennett distributor shot back.

"Well, maybe it can be done," Bennett said, somewhat calmed down. "Good car, good price; cheap car, cheap price—maybe we can take a fall out of these 'rock bottom' shouters yet."

"You mean—knock 'em?" Reilly asked, rather pointedly, Bennett thought.

"Not exactly knock 'em, maybe, but they're shoving 'em out pretty fast, you know, and it might help us some to warn some people that—"

"—that they may get stung if they buy an Empire or a Brighton or some other car that's cut its price," Reilly finished, taking the sentence out of Bennett's mouth. "Is that what you mean, try to sell the Redman and Sennett by hinting around that some other cars had to cut their quality when they cut their prices?"

"Not exactly, but—" Bennett began again and was again interrupted.

"Henry, I'm ashamed of you," Reilly said indignantly. "You know and I know that nearly every one of these cars is just as good as it was before the price was cut and some are better. You'll dig your own grave if you try to fool even some of the people some of the time with all the motorwisdom that's scattered around nowadays. Don't you know that?"

"But we've got to do something—say something," Bennett persisted.

"And we've got to do something—say something—sensible," Reilly retorted. "And it isn't sensible, or even decent, to roast your competitor.

"Politicians may do it and get away with it, though I notice that even in politics the slam-bang artists aren't as popular as they used to be, but in business—

"We're business men—or supposed to be—you and I, Henry. We can't be wigwagging the factory for help every time the sales manager out there shifts his eating tobacco from one cheek to the other. And we can't go boiling over like a teapot or hollering that the world's all wrong every time the factory can't see things just the way we do. We've got to stand on our own feet as business men, get the factory to think our way if we can—and often we can—and go ahead and sell our cars instead of spending our time worrying about the other fellow's.

"And knocking—why, Henry, I thought we had agreed that there was no place for it in business. Years ago we said the other fellow's car wouldn't run, then when he proved it would we said it wouldn't run all the time. Then we said it was noisy or had a bum rear end or wouldn't climb hills or some other thing. And last year we whispered around that the company that made the other fellow's car was on its last legs and 'You'd hardly want to own an orphan, would you, Mr. Prospect?'

"And so it has gone on. We've hurt our own business by trying to help it by hurting the other fellow's. At the same time we've hurt the whole automobile business, encouraging people to be suspicious of it and of the men in it; prompting people to play one dealer against another when they want to palm off an old car for more than it's worth; making our own business and all our competitors' just a little harder than they need be—all because we use boys' tricks instead of men's methods

"Henry, I've been gossiping with owners about their cars a lot lately. Some were Sennett owners, some had cars that compete with ours. And I noticed one thing about all of them. They were all proud of their cars. Every one, except for an occasional disgruntled individual, insisted that his car was the best car on the market for the money, yet perhaps he paid a hundred or two or three hundred dollars more than his neighbor paid for his car, which the neighbor thinks is just as good.

"That's the thing we've got to cash in on now—we fellows whose cars haven't been cut. We've got to turn to our advantage the fact that it takes all kinds of people to make a world, that they will never agree about what kind of car is the best car and that they are willing to go down into their pockets for the privilege of disagreeing."

"But some of them aren't willing and most of the prospects we've been working on seem to be the unwilling kind," Bennett objected.

"Naturally—to-day and possibly to-morrow, but hardly after the story of the price reductions gets stale," Reilly replied. "After that people will just drop back into the old familiar groove of human nature, wanting what they want and insisting on having it. And you and your salesmen and I and mine are good enough salesmen to make a fair share of them want what we want—without knocking what the other fellow wants them to want—aren't we?"

"But I didn't mean—" the Redman dealer protested.

"Of course you didn't, Henry, you were just—just—a little bit agitated," Reilly assured him. "But while we are on the subject let's agree that there's only one way to sell our cars and that's to sell *our* cars. Let's cut out all kinds of knocking and see that our salesmen cut it out—forever."

"And ever," Bennett added solemnly.

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Peerless Has a Brand New Body and Chassis Refinements

Nine Models Make Up the 1923 Line—Changes Include New Radiator, Lengthened Wheelbase and Lower Bodies —Semi-Elliptic Springs Replace Platform Type

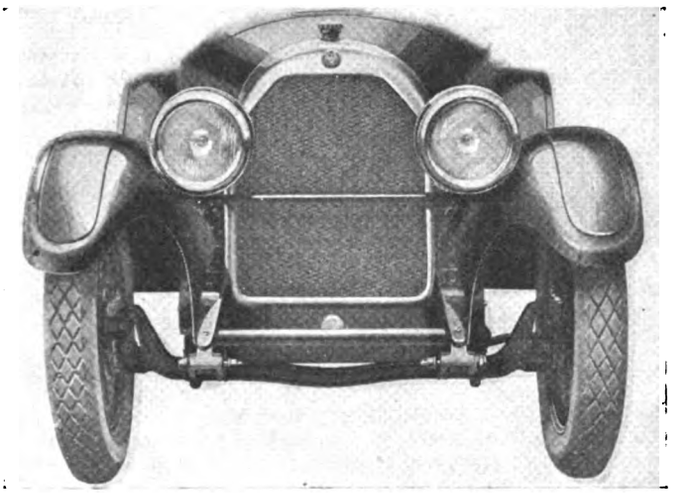
NINE body models of improved appearance on a chassis that has been thoroughly refined mechanically, constitute the Peerless line for 1923. The old familiar Peerless radiator has been replaced by one with a rounded top. The car has been lengthened by increasing the wheelbase from 125 to 128 in., and is lower in appearance due to the redesigned straight line type of bodies, underslung springs and smaller wheels.

The use of semi-elliptic springs is another new departure for Peerless. This make of car has long been known for its use of the platform type of suspension and was one of two makes of American cars to use this type of spring. This change in the springs, together with a line of bodies that are so radically different from their predecessors, is particularly striking in view of the length of time that the platform spring and rather high bodies have been Peerless earmarks.

Practically every unit from one end of the chassis to the other has been altered in some detail to either increase its accessibility, to render it more sturdy in construction, or better in appearance. While the engine has not been materially changed as far as the fundamental specifications are concerned, there are, nevertheless, a number of alterations of importance. By removing the tire pump from the front end of the engine, it has been possible to shorten the fan shaft, allowing the engine to be moved forward in the frame, thus giving a larger space in the front body compartment and greater accessibility to the steering gear and connections. A larger oil strainer screen has been installed as an independent unit in the lower half of the crankcase. This screen can be removed for the purpose of cleaning without taking down the lower half of the crankcase. An oil drain plug has been installed on the lower left side of the crankcase, this plug being removable for the purpose of draining oil with a special wrench furnished with the tool kit which obviates the necessity of getting under the car to drain the oil reservoir.

The front gear case has been altered to suit the new method of front engine support, as well as because of the transfer of the tire pump from this point to the gearset housing. The front engine support has now been installed on the frame cross-member in a universal socket. Lubrication of this is obtained from an Alemite oiler. The water pump has been redesigned, the important features of the new pump being its larger capacity and the double bearings, one on each side of the rotor. This, in connection with a larger packing nut, increases the life of the pump and makes it more accessible in taking up wear. The capacity of the new Fedders honeycomb radiator is 7½ gal. In recent tests the temperature maintained was not over 178 degrees while ascending the Uniontown hill. The radiator shell is of brass with several coats of nickel plate.

New Peerless Radiator Design



The shape of the opening in the radiator shell is suggestive of the old Peerless radiator shape but in all other respects the appearance is entirely changed. Even the name plate is different. This picture also shows the tubular front frame cross member and the Alemite oilers on the spring shackles

A slight alteration has been made in the exhaust line, the pipes now being carried down at the front end of the engine, instead of the rear, to permit of cleaner engine design, as well as to keep the heat from the front compartment of the car.

The former electrical units have been supplanted by the Delco system for starting, lighting and ignition. The distributor has been placed at the front end of the engine, now being bolted to the rear side of the timing gear housing and driven from the fan shaft gear. This location is more convenient when making adjustments. All wires have been placed in conduits. The distributor is an automatic type with double breaker contact points.

Practically no alterations have been made in the clutch with the exception of a somewhat lower compression rate on the clutch spring to give a softer pedal action. Oilless bushings have been installed for the clutch release parts. To take care of the installation of the tire pump, the gearset housing has been altered. A hose connection has been provided at the left dust shield to facilitate the operations of the pump which is now started by inserting a screw driver in the slotted head, that protrudes through the floorboard. A quarter-turn is sufficient to engage the pump gears. Another alteration in the gearset is due to the installation of a transmission lock immediately back of the shifting lever. A 250 key change lock has been supplied to comply with the standard of the National Insurance Association, thereby giving the owner the benefit of a reduced premium on his policy. Both the clutch and service brake pedals have been altered from adjustable to permanent type. The gearshift lever has also been redesigned, and the foot and emergency brake levers have been changed in regard to length and shape for the purpose of rendering less pressure necessary when applying the brakes.

Heavier construction is used for the

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propeller shaft. This embodies a tubular shaft equipped with Spicer universal joints protected by metal housings and lubricated by Alemite oiler. New type Timken axles, both front and rear, are employed, the front axle being drop forged from special alloy steel with integral yokes and spring perches. The steering knuckle is fitted with roller thrust bearings at the upper end, to promote ease in steering.

The rear axle incorporates the straddle mounted pinion shaft in which there are two Timken bearings with the pinion gear in the center instead of the two bearings on one end and the gear in the outer position. The rear axle has been provided with a pressed steel torque arm having a fabric connection at the front end instead of the usual spring type of connection, thus eliminating any necessity for adjustment or any possibility of rattle at this point. The rear end is fastened to the rear axle housing by a pin encased in brass bushings, lubricated by the Alemite system. This same system is employed for lubrication of the axle shaft bearings and the spring shackles through tubes which are connected on each side of the rear axle near the brake drum. The brakes are 15½ inches in diameter and 2½ inches wide. The internal brake is a new design having no adjustments other than the brake rod, which takes up wear on the lining.

An entirely new design of frame is incorporated, this being more rigid and a better production job than the previous model. The side members are straight and have a maximum depth of 7½ inches, thus eliminating truss rods to support the frame. Among the new features are tubular cross members, front and rear, pressed into the frame to take care of frame twist. In addition, there are also a radiator and engine front support cross member, a cross member which takes care of the brake rocker shaft and also the front end of the torque arm and a rear cross member for the front gasoline tank support. The new frame, due to the added cross members, is lighter, but stiffer than the previous design. The springs are carried directly underneath the side members and in this way eliminate the side member twist due to offset brackets, etc.

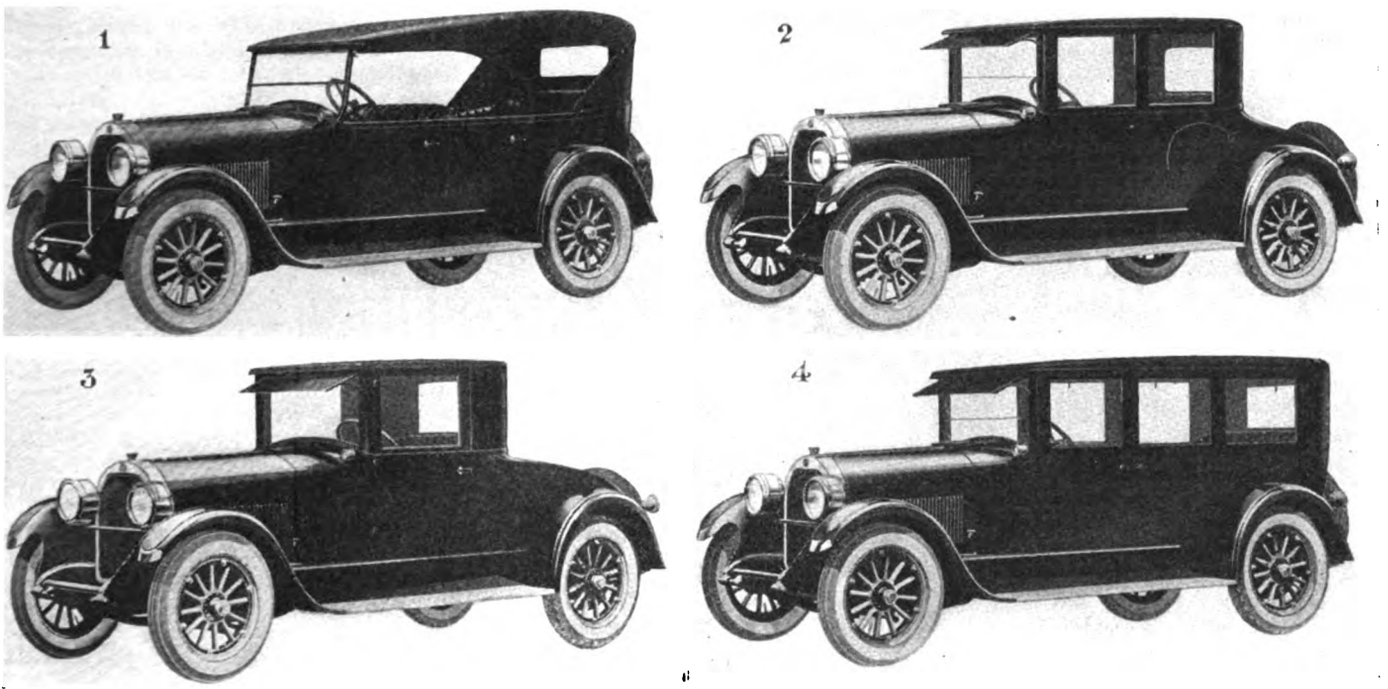
Smaller wheels are used, the rims being 32 by 4½ inches, permitting the use of 33 by 5 inch tires. The former size was 33 by 4½ front and 34 by 4½ rear. The wheels are of the Kelsey metal felloe type with twelve hickory spokes for both the front and rear wheels. The springs are semi-elliptical front and rear. The front springs are 41 inches long and 2¼ inches wide, containing nine leaves for all body types. The rear springs are 60 inches long and 2¼ inches wide, containing eight leaves for the lighter bodies and nine leaves for the heavier types. The spring shackles are adjustable to compensate for wear. The size of the spring bolts is ⅞ inch and are designed for adjustment without the use of spacers or cotter pins for locking them when making the adjustment.

A Gemmer steering gear with 9½ to 1 ratio is used in these models. The steering gear is equipped with a solid walnut corrugated wheel 18 inches in diameter. The spark and throttle control levers are mounted on the upper portion just above the wheel proper. With the 9½ to 1 ratio, a turning radius of 41 feet to the right and 44 feet to the left is provided.

The chassis equipment has been improved throughout. The battery is an Exide, 6 volt, 120 ampere type carried in a special compartment on the right side of the frame, access being had by removal of the cover which is set flush with the dust shield. This new location is, of course, quite accessible. The horn is a Kellogg, motor driven type, mounted on the right rear engine frame. The horn button is located on the steering column. The head and cowl lamps are of Guide design and manufacture. The rear lamp provides a combination tail light and stop signal. The stop signal switch is connected with the service brake pedal. The tail light also illuminates the dial on the gasoline tank and a trouble lamp of the reel type is mounted on the front face of the dash under the hood on the right side. The tire carrier is of the ring type and supported by the rear cross-member. It is designed to carry two extra tires, which are protected against theft by locks, the barrel of which is integral with the carrier.

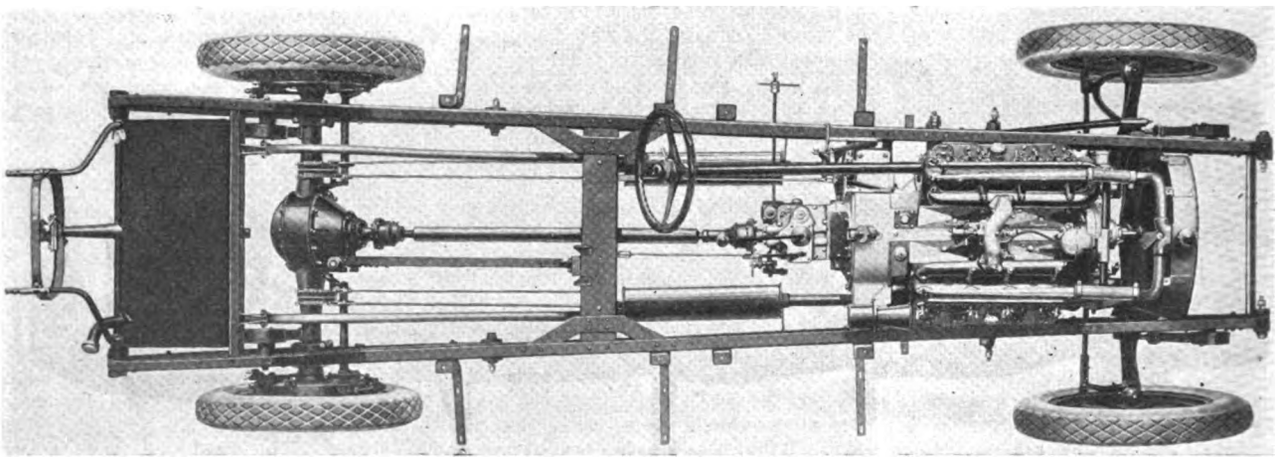
Nine types of bodies are mounted on the standard 128 inch wheelbase. These include a four-passenger touring, phaeton, seven-passenger touring, phaeton, two-passenger roadster coupe, four-passenger Victoria coupe, four-passenger suburban coupe, five-passenger town

Peerless Bodies for 1923 Have Improved Appearance



1—The seven-passenger phaeton has a permanent top. The side curtains fit well and open with the doors. 2—This model is called a four-passenger town coupe. 3—Two-passenger roadster coupe. 4—Seven-passenger suburban sedan, a new body type for Peerless. All closed models are regularly equipped with sunshields. The tops of the closed cars are of the soft type and no metal is used in their construction

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Plan view of the new Peerless chassis. The frame is lighter and stiffer. The tubular cross members and straight side rails are departures from previous practice. The power tire pump is now located at the rear of the gearset on the left side

sedan, seven-passenger suburban sedan, five-passenger Berline limousine, four-passenger opera brougham. All of these bodies are new, not only in appearance, but in construction. The open cars have several unique points of construction which may be mentioned.

The four and seven-passenger phaetons are equipped with a permanent type of top constructed of steel tubing, with white ash strips, heavily padded and provided with the usual weatherproof top material. Although this is somewhat along the lines of the regular folding top, it presents an unbroken surface to the eye. At the rear, the top is fashioned in the shape of the gypsy quarter curtain and a bevel plate glass window is provided. The rather solid construction of the top permits of good fitting for the curtains. These open with the doors and give an enclosed body which is substantially weather-proof.

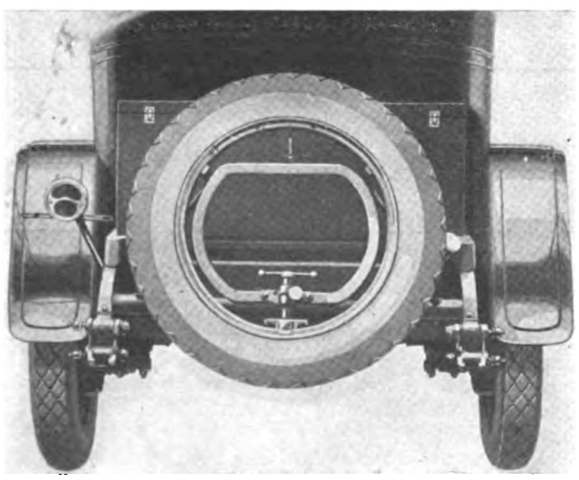
The open bodies are equipped with a ventilator made integral with the top of the cowl and operated by a lever located just beneath the instrument board. The use of the ventilator makes possible a windshield of special design, the lower panel of which is unusually narrow in order that the intersection of the two glass panels will not come within the direct range of the driver's vision. The lower panel is removable and the upper panel is adjustable in or out. The mounting on the instrument board incorporates all of the units in three symmetrical ovals, two of glass and one of metal. The first oval houses the ammeter and oil gage, the center, somewhat larger than the other two, contains the speedometer and the eight day clock and the third oval is of metal and is the switch terminal for the ignition and lighting system. All of the smaller tools such as are used for changing tires and making minor adjustments are carried in a pocket in the left front door. If it is desired, the tools can be taken from the door as one unit, for they are fitted to a removable panel. The larger tools are carried under the front seat.

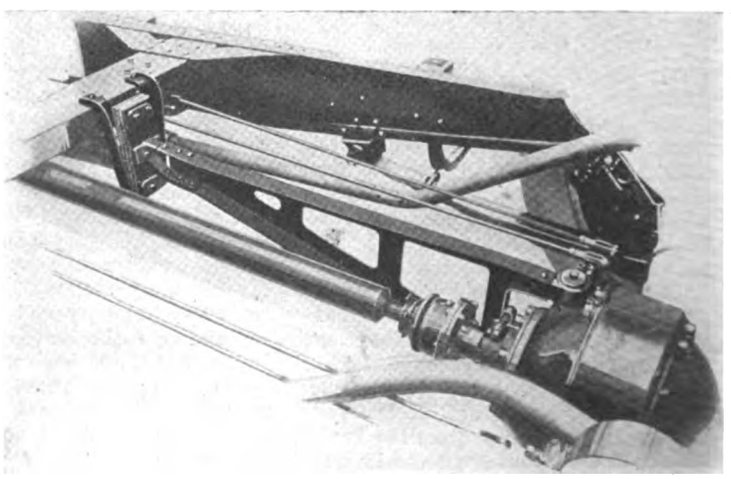
Additional equipment on these cars includes a rear vision mirror and a windshield wiper, hand operated. The four-passenger phaeton is equipped with a weather-proof trunk mounted on the rear. The open cars have the following optional paint colors: maroon, suburban blue, dust-proof gray. The body, hood and wheels are in colors and suitably striped to accentuate the lines of the body. The running gear and fenders are black. Special color combinations are available at additional cost.

The closed cars are all of the soft top variety, no metal being used in their construction, but in its place a covering of wood strips padded and finished with a glazed top material. The upholstery

1923 *Peerless Specifications*

Engine—8 cylinders, 3¼ x 5 in.
Electrical System—Delco
Battery—Exide
Axles—Timken
Springs—Semi-elliptic
Steering Gear—Gemmer
Wheelbase—128 in.
Tires—33 x 5 in.





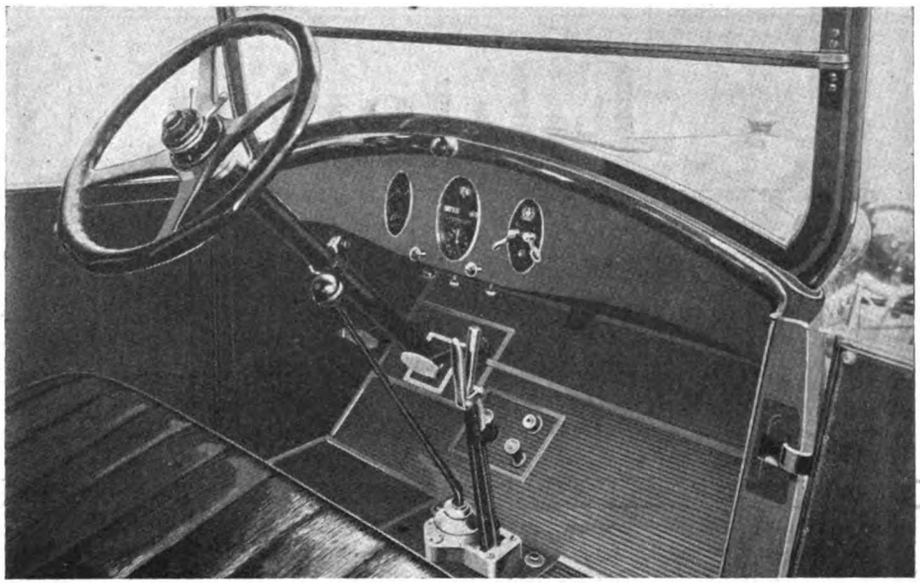
Left—Rear view showing trunk regular equipment on Peerless four-passenger phaeton, four-passenger suburban coupe and five-passenger town sedan. The change in the rear spring construction, the combination tail and stop light, and the spare tire carrier are also shown. Right—The pressed steel torque arm has a fabric connection at the forward end instead of the usual spring type of attachment. This will eliminate the necessity for adjustment and the possibility of rattles at this point

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used in the five-passenger sedan is a mohair velour offered in a variety of patterns. The coupe, limousine and brougham are upholstered in cloth. The ceilings and walls above the belt line are covered with materials that harmonize in texture and color with the upholstery. The carpets used in the closed car interiors are of wool and match the upholstery. The driving compartment of the limousine and the brougham is finished in bright enamel leather with corrugated linoleum on the floor.

Dome Lamps Standard

Dome lamps are standard equipment and the sedan, limousine and brougham carry corner lamps in addition. In place of the standard cowl lamp, the brougham is equipped with distinctive designed coach lamps on either side of the body just back of the driving compartment. The windshields differ from those furnished on the phaeton in that both the upper and lower glass panels are adjustable. A leather covered glass visor is fitted as standard equipment and the finishing colors are the same as those mentioned in connection with the open car.



The driver's compartment is more comfortable and better looking on the new Peerless. The instrument board carries three ovals. The left oval contains ammeter and oil gage, the center one combines the clock, speedometer and odometer, and the switches are located on the right oval. A lock is fitted on the gearset. The open models have cowl ventilators and windshields the upper portion of which is adjustable and the lower half removable

Important Mechanical Changes in Series IV H. C. S.

SEVERAL important mechanical changes and numerous body improvements have been made in the new Series IV H. C. S. The standard line of bodies includes the phaeton at $2,475, the roadster at $2,475, the sport sedan at $3,250 and the standard sedan at $3,475.

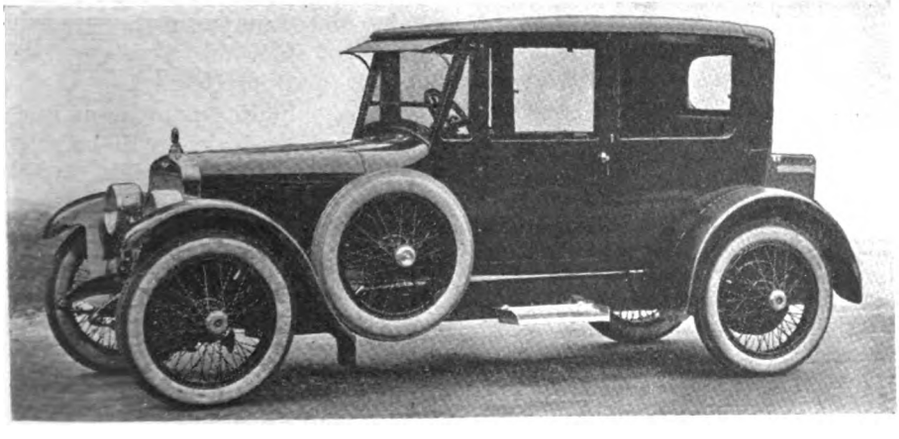
The bore of the cylinders has been increased from 3⅝ to 3¾ inches. The pistons are lighter, the location of the piston pin has been raised one-half inch and the connecting rod has been lengthened by the same amount. The lubrication of the overhead valve mechanism is now regulated so that the flow of oil is proportioned to the speed of the engine. The generator is more accessible and an automatic spark advance has been added to the ignition system.

A change has been made in the clutch and gearset, Brown-Lipe units being used in the new car. The new rear axle is stronger than the one it displaces. The torque tube has been strengthened and two double rows of annular ball bearings are now used in back of the driving pinion instead of one. The gear reduction has been changed from 4 to 1 to 4.375 to 1.

The steering wheel is larger and has an all-wood spider. The windshield and the front of the top is 1½ inch higher, thus providing better vision forward for passengers in the rear seat. The height of the radiator has also been increased by an inch. The radiator shell, drumhead lamps and windshield frame are of solid nickel silver. A rear stop light is incorporated with the tail lamp. Anti-rattle collars have been added to the foot pedals in the toe board. Rubber bumpers have been placed on the frame over the rear axle. A stronger and more effective muffler is being used.

All the seats are wider and the backs are higher. The upholstery is deeper and a new type of Marshall upholstery spring is used. The floor boards of the tonneau have been leveled, thus adding leg room. An option of black enameled or dual tone, hand buffed leather on the open models and mohair or broadcloth on the closed models is offered. Numerous paint options are also offered.

Sport Sedan on New H. C. S. Chassis



This body model lists at $3250. It is mounted on the new Series IV chassis in which numerous mechanical improvements have been made. An option of mohair or broadcloth upholstery is offered

Standard Produces Special Bus Body

DETROIT, Aug. 17—The Standard Motor Truck Co. has brought out a special ten-passenger bus body. The bus is designed to meet the demand for an inter-city or sight-seeing bus.

The new body is mounted on the standard model 75 chassis and will sell for approximately $2,500, f.o.b. Detroit. The body contains a number of innovations, particularly in the rigid top construction, side curtains with glass lights, three full size doors on each side and provision for storing side curtains when not in use.

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Editorial Notes

Window Display

ONE of the General Motors units—Chevrolet—has taken an interesting step in deciding to provide window display information for its dealer organization. It is planned to dress a window in the General Motors building in Detroit every month and to show all Chevrolet dealers how it is done, by distribution of photographs and detailed descriptions of the display.

The experiment is one which will be watched with much interest. There have been manufacturers, particularly of such products as tires, who have undertaken a regular window display service for their dealers, but most of the efforts along this line have been spasmodic. There has been no general attempt to disseminate display suggestions among the retail trade.

It is said that Chevrolet will advertise the utility of the car as a means of promoting outdoor recreation. It can hardly be expected that all dealers in this car will be able to make use of all the window display suggestions brought forth, but at least something should be accomplished by a persistent campaign encouraging better display, with frequent suggestions of a practical nature.

There is hardly a dealer, except those who sell cars from repairshops, but can do something in the way of display of the product he sells. Even some garagemen with car agencies have found it possible to build half partitions around their street front windows and to show one or two cars in an attractive setting.

The industry will progress and dealers themselves will profit more rapidly as the display idea takes stronger hold on the dealer community. The right kind of display fosters desire of ownership and also strengthens the dealer's standing. It is a logical impression that an establishment where a neat, clean, attractive display is made is one where other things are done well and where the interest of customers will be fairly and adequately served.

The Bus Business

THERE are accumulating indications that the bus business is to be a growing and substantial branch of the motor truck business of the future. There is gradually being created a network of passenger-carrying buses both in city and rural service throughout the country. In addition, there is ample evidence that the bus business is becoming more and more substantial, which promises more satisfactory business for dealers and manufacturers selling to this type of customer.

In the early days a good many bus lines were started on a "shoe string" and dealings with bus purchasers with little or no financial responsibility caused many dealers to suffer losses and turned them against the bus business. There are still bus operators and would-be bus operators in this class, whom dealers must avoid if they are going to maintain their bus sales on a profitable business, but it is encouraging to note that the number of responsible individuals and corporations going into the bus field is increasing every day and the business is on the way to stabilization in the fairly near future.

Some excellent merchandising work has already been done by distributors and dealers in selling buses for long distance passenger carrying, including transportation of students to and from schools and the so-called jitney work in cities. Some distributors have given dealers excellent co-operation in helping them to make sales of this sort. There is plenty of room for this sort of co-operation and also for close co-operation on the part of truck manufacturers with distributors and dealers in handling the intricacies of bus installation, which will exist in a degree until there is further progress toward standardization of bus types.

The present status of the bus business suggests that no truck dealer can afford to regard it as something not worth going after. It can be made profitable both from a sales and service standpoint and particularly in the latter phase of the work is there opportunity for a progressive dealer with good service facilities to make profits maintaining buses, which must be kept continuously in operation and whose owners are willing to pay good prices for service work which will accomplish this result.

The truck dealer, or the passenger car dealer with a truck department, who will build his motor truck business on the basis of selling vehicles both for passenger and freight haulage and providing adequate maintenance facilities, will find his business one which will grow rapidly as the use of trucks for highway transport inevitably increases.

CLEVELAND automobile dealers are taking advantage of a Merchants and Manufacturers' Exposition to be held in September to stage an exhibit of closed cars. They have combined and purchased a unit section of the exposition in which a limited number of models of cars sold by the co-operating dealers will be shown. This is just one way of promoting fall sales. Is there an exposition or a fair or some other public occasion to be held in your community at which you could promote fall business?

SOME tire dealers are openly advertising that they don't cut prices, but that they stand back of the goods they sell with their reputations as merchants and with service facilities. They are getting business, too, which suggests that there is more than one way to combat the "gyp."

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How They Get Rid of Used Cars in China

A Shanghai Dealer Says They Sell Them to Men in the Hire Car Business

Dealers have an interesting method of disposing of used cars in China. There may be a suggestion in the story for some towns in this country where jitney and rental service is not well developed. At any rate, we think readers will enjoy the following letter:

Editor, MOTOR WORLD: In Shanghai, in addition to the eight "legitimate" garages (if I may borrow a stage term) there are approximately 100 of these more or less hole-in-the-wall garages, ranging all the way from very small one car outfits to somewhat pretentious establishments.

Their genesis is this: The owner, usually a former chauffeur or mechanic of one of the larger garages, manages to get hold of one used car. With this he establishes himself in a hole-in-the-wall and begins the operation of a hire car business. He takes Chinese out for joy rides. In many instances he induces his patrons to club together to pay for the ride, which accounts for the fact that every day you can see these cars literally packed with Chinese, honking about the city. As his business grows he buys another car, and then another, until in some instances he has a whole fleet. Then, morning, noon and night they operate what is known here as "tiffin" cars for taking a load of people back and forth at tiffin, or lunch time, and home at night for a contract monthly price. These customers are recruited from the ranks of those who do not own cars themselves but who are willing to pay a little more in order to escape the discomforts of street car riding.

You will have guessed from this that they must wear out a lot of used cars.

They do. They wear them out so rapidly and in such numbers that in this town there is practically no used car problem.

No used car problem. Get that?

Now it occurs to me that this institution could be transplanted to America, and that if fostered by both the manufacturers and the large retail motor car merchants it would, in time, relieve the used car situation by what after all is said and done remains the only method for real and lasting benefit, namely, by creating a new army of car users to wear out the used cars. That is simple and elemental. The best solution of the used car problem is to destroy the used cars through increased use.

You will ask: How could this plan be applied in America?

Picture me, for instance, a large dealer in an American city, distracted by the use of the used car problem. I am talking to one of my employees whom I have called into the office. The talk runs about as follows:

"Bill, I've got a scheme that will help both of us. You have been with me a long time. You are a good man, a good mechanic, a good driver. Now I'm going to set you up in business for yourself. Over here on ———— street I have rented a small building, and I also have had some letterheads printed, with your name at the top as proprietor, and giving the address and telephone number. Now I want you to take that Honk Honk Special out there—the one we got stung on so badly on that trade-in the other day—and take it out to this place and go into the hire car business. With these letterheads, on which we will have suitable letters typed, I suggest that you circularize every person in the neighborhood who does not own a car, telling them you have this car, and that you want to take them out riding. Try to get two families to club together, so that the cost to each one will be nominal. Use the telephone. Tell one man that you have another who is willing to go 50-50 with a neighbor. Suggest weekly, or bi-weekly, or tri-weekly, or even daily rides on a time schedule—a certain hour for the Brown and Robinson couples, and a certain hour for the Smith and Jones families.

"Approach four or five men who do not own cars with a proposition to take them to their offices, four trips daily. You will be able to find men who are willing to pay more than what it costs them to ride on street cars because of the saving of time and greater comfort. Make arrangements with mothers to take their children to school. You can pile a flock of them into the car, and argue safety. Solicit the women for afternoon shopping tours. Solicit the hospitals to send their convalescents out with you on bright afternoons. Make up your mind that you are going to devise ways and means to keep the car going. You can do it. It only requires a little thinking, a little ingenuity.

"All the time you will be building a clientele from which you will get calls for hurry trips.

"The big idea, Bill, is to make motor car users out of non-users, to induce more people to ride in motor cars. Primarily, it is a selling proposition. Bear in mind that many, many factors are in your favor. Everybody wants to ride in a motor car. Very well, let's give them rides at the lowest cost at which that pleasure can be had. Remember this, that America is becoming more and more an outdoor nation, which is in your favor.

"Motoring for the masses, Bill! Let that be your slogan. Now what do you say to that?"

Wear the cars out. Make users out of non-users. That's the answer if there is an answer. There is a limit to the number of cars, used or new, that can be sold, but the number of people that can be made to use cars is limited only by the number of people, men, women and children in the country able to pay for a ride.—Arthur West, Editor, The Oriental Motor; News Editor, The China Press, Shanghai.

Write to Motor World About It

This page every week is devoted to discussions of topics of the trade by Motor World readers. Have you a suggestion to overcome a difficulty or improve some condition within the industry? Write to Motor World about it.

Are Used Cars Merchandise?

Editor Motor World: Read the announcement of the coming National Used Car Conference with interest and I am sure that some good will be accomplished. It has occurred to me repeatedly that if the automobile is merchandise, it must be sold according to the well established practices of successful merchandisers in other lines.

If the used automobile is merchandise, why is not a suit of clothes or a pair of shoes? You say they are. Well, if they are, why does not the shoe merchant or the clothier establish a used department and increase his volume of sales?

Is not the answer that new and used merchandise cannot be handled successfully in the same establishment? There is no other answer to the problem, is there, speaking from a strictly merchandising standpoint?

Finally, if 2,000,000 cars wear out every year, is there any need from a production standpoint of the dealer attempting to handle used cars? Why not let the used car find its way into the channels of trade where it belongs, along with other used merchandise?—Pacific Coast Dealer.

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Open Service Court Increases Business

Making It Easy for Motorist to Have Minor Adjustments Made Quickly a Profitable Feature

THE open court service station, which provides quick service for the motorist, is appreciated and often results in an appreciable increase of service work.

One of the strongest arguments in favor of the open court service station in connection with the dealer's service station is the effect it has in convincing the owner that he can have his car cared for promptly and delivered when wanted.

The owner is attracted by the open service court and he finds it easy to drive in. With an adequate force of testers and mechanics at work in the court, the motorist is encouraged to drive in to have minor adjustments made and squeaks removed. Such work when promptly attended to creates a good feeling on the part of the service customer.

One firm which has used the open service court idea with considerable success is the Hudson-Brace Motor Co., in Kansas City. This dealer has a service court which occupies a plot of ground 97 by 92 feet adjoining its service station. One wall of the court has a shed roof. Four employees were added to the force to care for the business that developed here and a steady increase of patronage was observed from the beginning.

Providing a place where the motorists may get immediate attention to small jobs without the bother of driving in has succeeded in putting the service station in direct touch with more than 80 per cent of the Hudson and Essex owners of the territory. They stop in at short intervals now not only to have squeaks removed and small adjustments made, but for gasoline and oil and this constant contact is responsible for a large number of resales and tips from owners on which additional car sales are made.

Ideas On Selling and Management

You will find them on this and the opposite page—ideas that will make dollars or save dollars for the

Car Dealer Truck Dealer
Equipment and Tire Dealer
Tractor Dealer Repairman

Some of our readers are contributors to this section of Motor World. Have you developed a plan that might help some other men? If you have, will you write it out and send it in?

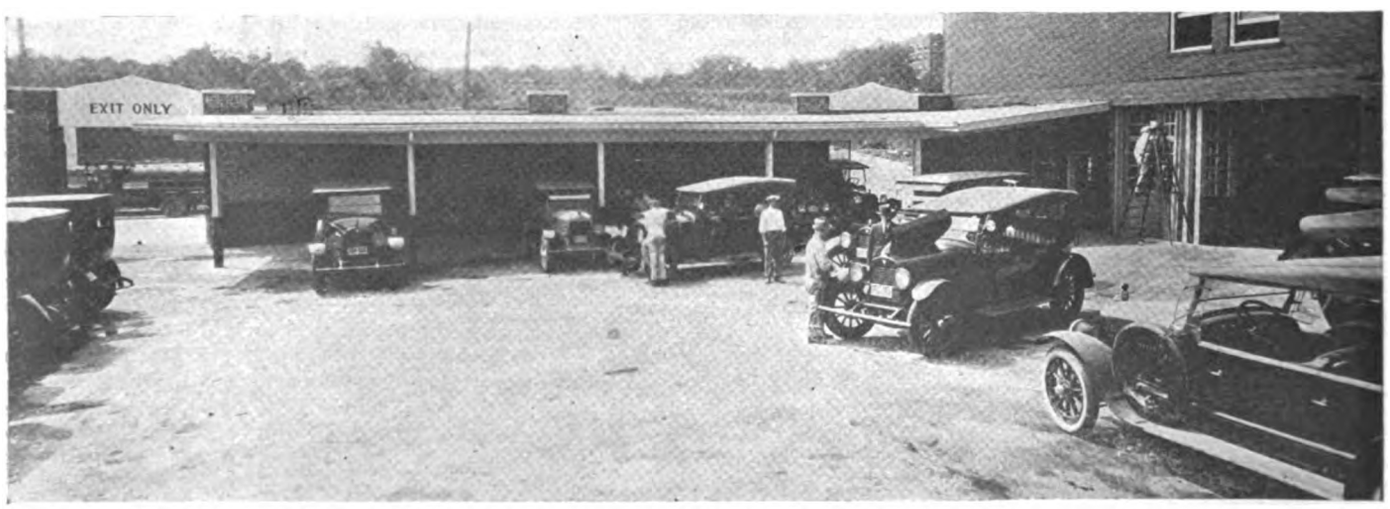
A Sales Campaign Idea

CRAWFORD'S Auto Shop of Birmingham has on a sales campaign that is scored by using a large cardboard representation of a race track. Every salesman is represented by a miniature automobile, with his name tag on it. The track is divided into sections representing fifty miles each. The sale of a second hand car is indicated by an advance of thirty miles; touring cars and roadsters advance a car forty miles; coupes and sedans fifty miles; trucks seventy-five miles; tractors 100 miles. The winner of the race will get a prize of $50. In order to qualify for the prize, however, it is necessary to sell eighteen cars.

Introducing a New Model to the Salesmen

THE arrival of a new model in the salesroom may very properly be made the occasion for a special meeting of the salesmen and a means of working up new sales energy and enthusiasm. One idea for such a meeting, which worked out very successfully when staged recently by H. O. Harrison Co., Hudson and Essex distributor of San Francisco, consisted of passing slips of paper to the salesmen, who were asked to write down what they thought a new model displayed should sell for in San Francisco. The guesses were placed on a blackboard and averaged, showing a figure of $2,900, while the actual San Francisco price was $2,595. The comparison of what the salesmen thought the car would sell for, with the very much lower price announced by the firm, was one means of inspiring enthusiasm of the sales force.

Open Service Court for Quick Repairs



This is the open service court used by the Hudson-Brace Motor Co. in Kansas City. It proved a popular feature of the business and brought many owners into frequent contact with the service station

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How to Sell Accessories to Clock Watchers

Signs on the Garage Timepiece Make Time Fly and Customers Buy

HAVE you ever thought of using the merchandising opportunity your garage clock offers? You know, probably only too well, that the waiting customer is mighty interested in the clock, and it usually is the object of his gaze several times in the course of a fifteen-minute wait. Why not set the customer thinking about something you have to sell while he's watching the clock by placing a selling sign just above or just below the timepiece.

Here are some signs that are used by one garageman—and he says they are responsible for a large number of sales and considerable good-will on the part of his customers each week:

IT'S TIME YOU KNEW
why we boost the ——— spotlight.
Ask to see it.

FROM TIME TO TIME
you need little accessories and supplies.
We'll appreciate that business.

NOT FOR AN HOUR
would you do without ——— shock absorbers after you've used them once.

IT'S CORRECT
The ——— lens we sell is legal everywhere.

TIME IS TELLING
The number of our patrons is growing —must be good service.

IN GOOD TIME
Have your car inspected
and trouble *prevented.*

THIS TIME
May be your first here—
Come back again.

JUST A SECOND
Buy a good tire bargain
at ———

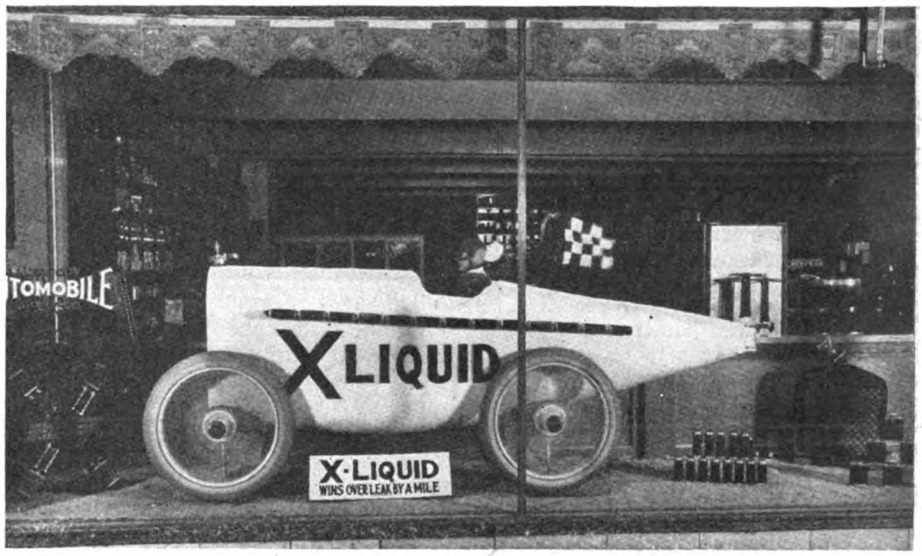
KILLING TIME?
Does your engine loaf on the job at times? Better be fixed now.

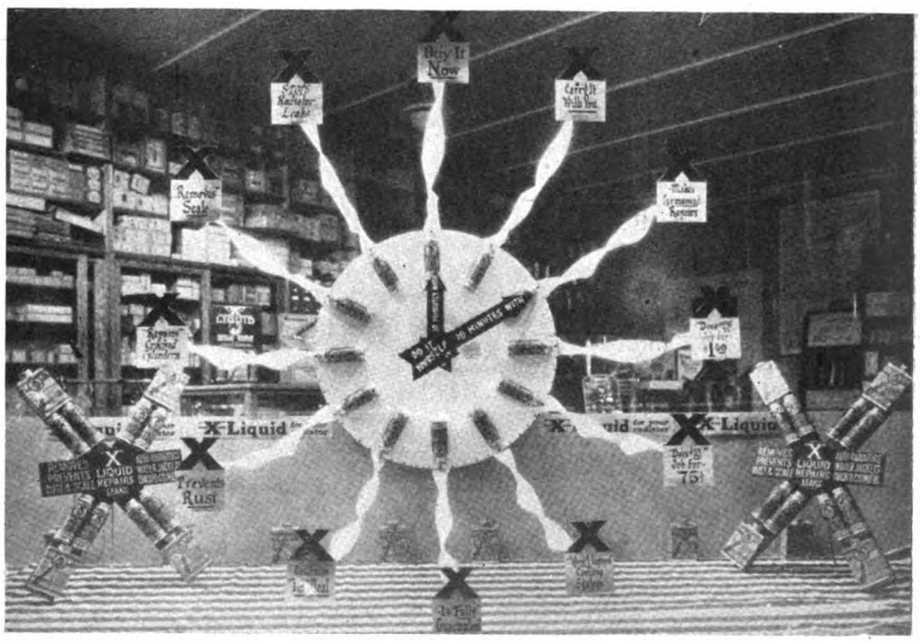
ABOUT TIME
Have you seen the dash-board clock we sell?

EARLY AND LATE
Always somebody on the job here to give you service.

Many Forms of Service at This Station

THE Sun-Ray Service Station at Elkhart, Ind., fairly radiates service to the motoring public. Here are some of the things this station does for the public: Drains crank cases free of charge, puts water in radiator free of charge, inspects differential free of charge, has cool drinking water for motorists, wash rooms for motorists and touring information with location of nearby camps for all motorists.





Prize Winning Windows

Among the many striking displays of "X" Liquid, made by jobbers and dealers throughout the country in the recent contest conducted by X Laboratories, Brooklyn, N. Y., were the two shown. The upper one was done by the Kansas City Auto Supply Co., jobber, and the lower by Glen St. Service Station, Glens Falls, N. Y., dealer. The upper window shows the effective use of a large object in a window to attract attention to the merchandise displayed and put across a selling message. The lower window differs in that the product itself occupies the center of attention with the selling message contributory in the display. In this window the signs carrying the selling messages were attached to the window, the streamers running to the clock arrangement on which the merchandise was displayed

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Power and Economy Depend on Carbureter Adjustment

General Principles of Adjustment Applying to All Carbureters and Detailed Instructions for Some Widely Used Models

(*Continued from August 16 issue*)

Hupmobile

The Hupmobile carbureter is a Stromberg which is provided with two gasoline adjustments, an auxiliary air adjustment, and a butterfly valve adjustment. The main adjustment controls the gasoline supply from the float chamber and regulates the mixture through the whole driving range. Turning the main adjustment nut anti-clockwise, or to the left, raises the needle and gives more gas. Turning it in a clockwise direction gives less gas. If an entirely new adjustment is necessary, the main adjusting nut is turned clockwise, until the needle seats. It is then opened three complete turns to the left, which will give a mixture considerably rich. The mixture is then regulated for the best driving. The gasoline for idling is taken in above the throttle and controlled by dilution with air from the outside of the carbureter, as regulated by the idling adjusting screw, which should be between one-half and one and one-half turns to the left, or anti-clockwise from the seating position. The idling adjustment is effected only when the throttle is nearly closed. In order to obtain maximum power during the extremely hot months, it is advisable to place a steel gasket, with a ⅜ in. hole in the center, assembled with copper asbestos gasket on either side between the exhaust manifold and intake manifold heater. The small hole in the gasket reduces the amount of exhaust gas which passes around the intake manifold, thereby cooling the charge to secure maximum power.

Studebaker

Studebaker uses two carbureter types, a Ball & Ball on the Big Six and a Stromberg plain tube type on the Special Six. The Ball & Ball carbureter is of the two-stage type. Through a given range of throttle opening, all the gas is drawn through the first stage throat. The capacity of the first stage is sufficient to take care of all level road speeds up to approximately 40 m. p. h. The cam arm integral with the main throttle shaft coming into contact with the roller on the arm of the second stage throttle shaft, causes the second stage throttle to open under additional pressure. The resultant action is to draw an additional or secondary supply of gas mixture through the second stage throat. The gasoline drawn through the first stage throat, after leaving the first stage jet, passes through a tube, which is adjustable in height and is known as the idling adjustment screw. By raising this screw, the idling mixture becomes leaner and by lowering the screw the mixture is made richer. This is the only adjustment on the carbureter, aside from the throttle stop.

The Stromberg plain tube carbureter, used on the special Six, has fixed air and gasoline passages which cannot be adjusted. It is impossible to enrich the mixture with high speed adjustment, beyond the quantity, as regulated by the high speed jets. It is, however, possible to reduce this quantity by means of the high speed adjustment, to any leanness desired. When the high speed adjusting screw is out five turns from a position, the amount of gasoline supplied by the carbureter is entirely controlled by the jet. Turning the high speed adjustment screw down, in a clockwise direction, makes the mixture leaner. To adjust the idling adjustment, the low speed or idling adjusting screw should be turned in until it stops. It is then screwed out in a counter clockwise direction ten notches, which is the approximate normal adjustment. To make the idling mixture leaner, screw out counter clockwise, and to make the mixture richer, screw in clockwise. The idling adjustment does not affect the mixture at about 8 to 10 miles per hour. When the engine is idling properly, there should be a steady hiss in the carbureter. If there is a weak cylinder, a manifold leak, or if the idling adjustment is too rich, the hiss will be unsteady.

Buick

In adjusting the Buick carbureter, the gasoline adjustment is turned to the

Better Mechanics

ARTICLE No. 254

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.

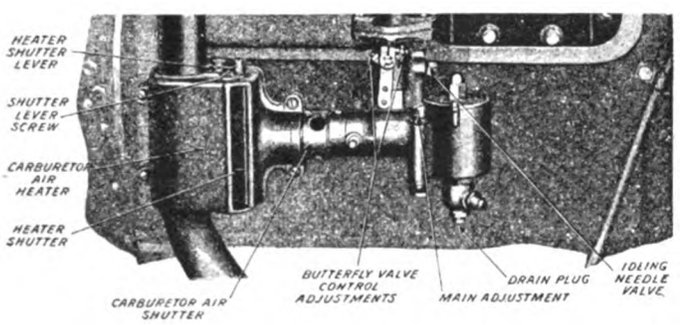


Fig. 5—Stromberg carbureter on Hupmobile

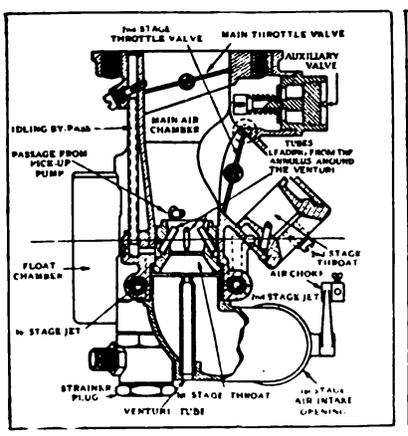


Fig. 6—Ball & Ball carbureter on Studebaker Big Six

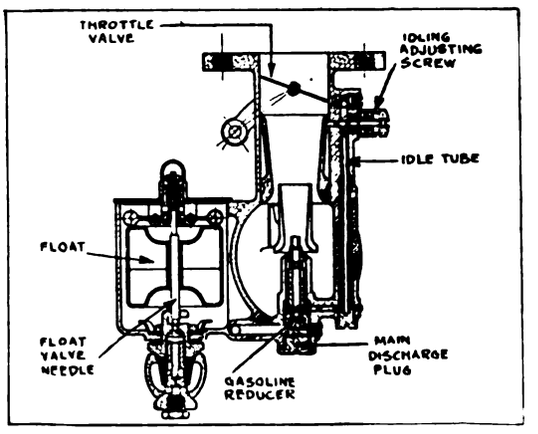


Fig. 7—Stromberg carbureter on Studebaker Special Six

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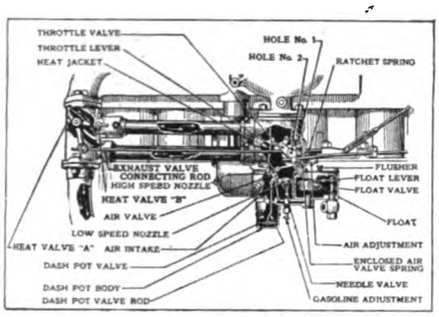


Fig. 8—Buick carbureter

right until the needle valve is closed gently against the seat. It is then opened from seven-eighths to one full turn. Set the air adjusting screw so that the end of the screw is even with the end of the ratchet set spring above it. Start the engine and allow it to warm up. With the spark lever fully retarded, turn the gasoline adjustment to the right, closing the needle valve until the engine idles smoothly. The normal adjustment of the needle valve is about three-fourths of a turn. Advance the spark lever and turn the air adjustment screw to the left, a little at a time, until the engine begins to slow down or skip, indicating too much air. Then turn it to the right until the engine idles smoothly. If the engine idles too fast with the throttle fully closed, change the closed position of the throttle by means of the throttle lever set screw.

To test the adjustment, leave the spark lever advanced and open the throttle lever quickly. The engine should accelerate instantly. If it skips or pops back, open the gasoline adjustment slightly by turning the needle valve to the left. Do not change the air adjustment unless it appears necessary. The best adjustment is obtained with the gasoline set at about three-fourths of a turn open, and the air adjustment carried as light as possible for quick acceleration.

The position at the end of the air screw should be about even with the ratchet set spring above it.

In addition to the setting of the carbureter itself, there are three settings of the heat setting that will affect the running of the engine.

Velie

The Velie uses a Zenith carbureter, the adjustment of which is controlled by the size of the four following fixed parts: choke, main jet, compensating jet, and idling jet, which regulates the mixture of gas and air. The idling mixture is regulated by means of the knurled nut on top of the cylindrical tube on the inner side of the float chamber. Screwing up the nut shuts off the air and thus enriches the mixture. Screwing down admits more air, which makes the mixture leaner. The adjustment of the idling speed has no bearing whatever on the high speed adjustment.

Paige

The Paige uses a Rayfield carbureter. There is no air valve adjustment, but there are two gasoline adjustments. Both of these are turned to the right for a richer mixture and to the left for a leaner mixture. The low speed adjustment is completed before adjusting for high speed. To adjust for low speeds, close the throttle and with the dash control down, the nozzle needle should be closed by turning the low speed adjustment to the left, until the box slightly leaves contact with the cam. It should then be turned to the right about three complete turns. The throttle hand lever is then advanced about 1 in. on the quadrant. If the spark hand lever has been advanced, it should now be fully retarded and the throttle should be closed until the engine runs slowly without stopping. The final low speed adjustment may be made by turning the low speed screw to the left, until the engine slows down. It should then be turned to the right a notch at a time, until the engine idles smoothly. If the engine does not throttle low enough, the screw on the stop arm, on the lever end of the throttle valve stem, should be turned to the left until the engine runs at the lowest number of revolutions desired. To adjust for high speed, the spark control hand lever should be advanced about one-third of its traveled distance on the sector, and the throttle opened rather quickly. Should the engine back fire,

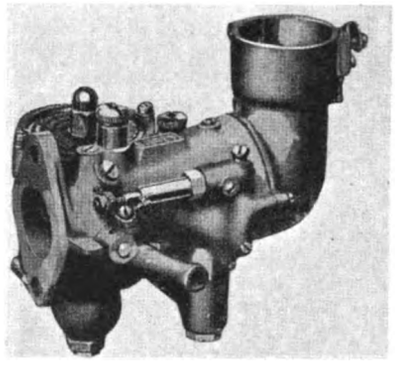


Fig. 9—Zenith carbureter on Velie

Carbureter Equipment on Some 1922 Passenger Cars

Buick 6	Marvel, Special
Buick 4	Marvel, Special
Chandler	Rayfield
Cadillac	Own
Chevrolet FB	Zenith, O-4
Chevrolet Superior	Zenith, T-4
Dodge	Stewart, I
Dort	Carter, N
Ford	Own
Franklin	Own
Haynes 55	Rayfield, M-3
Haynes 75	Stromberg, OU-3
Hudson	Own
Hupmobile	Stromberg, O
Nash 4	Schebler, AX-84
Nash 6	Marvel
Maxwell	Eagle
Oakland	Marvel
Oldsmobile 43a	Zenith, T-4
Oldsmobile 46	Ball & Ball, Double
Oldsmobile 47	Johnson B
Overland	Tillotson
Paige 6-66	Rayfield, G-4P
Paige 6-44	Stromberg
Packard S.6	Own
Packard T.6	Own
Studebaker L.6	Stromberg
Studebaker S.6	Stromberg
Studebaker B.6	Ball & Ball
Velie 48	Stromberg
Velie 58	Stromberg
Velie 34	Stromberg

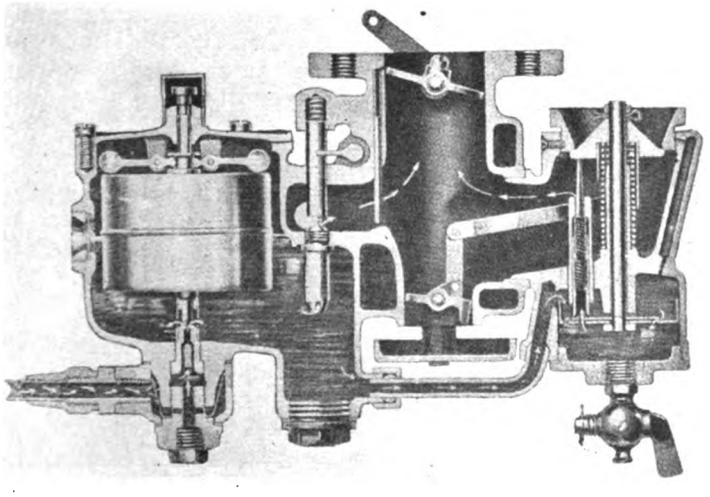


Fig. 10—Rayfield carbureter on Paige

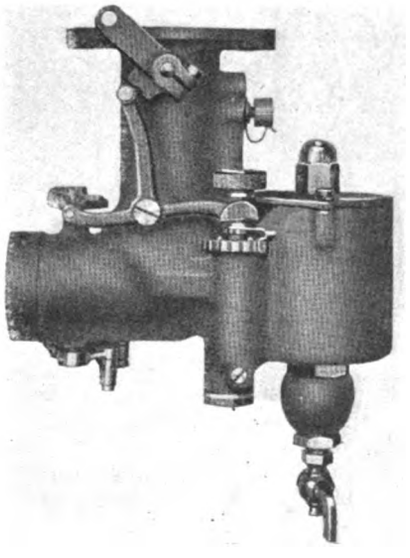


Fig. 11—Chalmers carbureter

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this indicates a lean mixture which may be corrected by turning the high speed adjusting screw to the right, about one notch at a time, until the throttle can be opened quickly, without causing the engine to back fire.

Chalmers

The Chalmers 630 has a dash adjustment of the carbureter, to give a lean or rich mixture, by turning the dash adjustment button to reach or lean, if desired. To secure an entirely new adjustment to the carbureter, with the engine stopped, fully advance the throttle, and press the choke valve on the dash at the extreme lean position. Verify this by putting the finger on the butterfly valve in the air horn to see that the butterfly valve is fully opened. With the choke valve in the lean position, the economizer adjustment at the extreme right, turn the high speed adjustment to the left, until there is a small amount of play in the economizer lever. Turn the high low speed adjusting screw to the right, until this play is taken up, or the lever cannot be moved without raising the needle valve. Continue to turn the high speed adjustment through two complete turns to the right and one notch. Turn the economizer adjustment to the left,

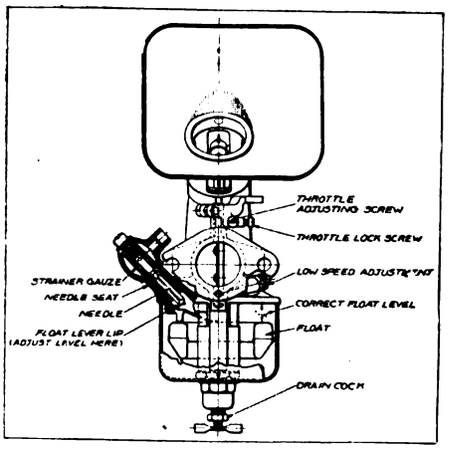


Fig. 12—Carter carbureter on Dort

so there will be approximately 1/64 in. clearance between the high speed and the economizer nut. This is the approximate high speed adjustment. Turn the low speed adjusting screw to the right, until it seats, then open by turning to the left one complete turn. This is the approximate low speed adjustment. Final adjustment is obtained by running the engine and refining the adjustment.

Dort

The Dort engine has a model N Carter carbureter. A low speed adjustment is provided to regulate the strength of the mixture at idle engine speed. Turning the screw in makes the mixture richer, and turning the screw out makes it leaner. To adjust properly, close the throttle lever, retard the spark lever, and turn the screw out until the engine misses on account of the mixture being too lean. Then turn the screw in, just enough to get the engine hitting properly. The float level should be exactly one-half in. from the carbureter body. If the float is removed from this position, it should be restored by bending the float lever lip where it touches the needle. Only a slight bend is necessary. If either of the jets becomes clogged, the engine will operate all right at low speed, but will tend to stall when the throttle is open. If the low speed jet is clogged, the engine will operate satisfactory above 15 or 18 m.p.h. but will stall at lower speeds. The main gasoline nozzle may be removed with a short, heavy screw driver, after taking off the body and bowl connecting nut. The low speed jet may be cleaned by taking off the carbureter bowl, unscrewing the assembly, and removing the jet plug.

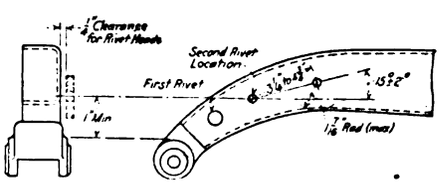
Bumper Attachment Standardized by S. A. E.

THE Society of Automotive Engineers at its recent summer meeting made numerous modifications in its standards, some of which are of interest to the dealer and service man. In order to facilitate the mounting of bumpers on passenger cars, a standard method of frame drilling has been provided. The previous bumper standard stated that the overall bumper length should be from 59 to 60 in. and the face of the bumper should be flat. It further provided that the height from the center of the bumper face to the ground should be 21 in. in the case of a front bumper and 22 in. for a rear bumper, and that the minimum width of face of a front bumper should be 2 in. and 2½ in. for a rear bumper.

The old standard is incorporated in the new standard, which further specifies how bolt holes required for the attachment of the bumper shall be drilled in the frame. The illustration gives the location of the holes. The two bolt holes are 33/64 in. in diameter and must be located on or near the center line of the frame. The first bolt hole back from the spring eye may coincide with first or second rivet hole. If a second bolt hole is to be used for mounting a shock absorbing device, it must not be nearer than 1 7/16 in. from the bottom of the frame channel at the nearest point.

Changes were also made in the standards covering incandescent lamp voltages and sizes. The S. A. E. standard lamp voltages are now 6-8 and 12-16. The 8-10 and 18-24 volt ratings are no longer included in the standard. Only focusing type lamps G8 and S11 are now listed in the Society standard, types G8, G12 and G16½ having been eliminated. The changes in the voltage rating standard and in the focusing lamp type standard were made because the ratings and types discontinued are no longer used.

In order to eliminate the trouble that



The proper position for the holes required for bumper attachment are shown in this drawing

manufacturers of gasoline pumps are experiencing in providing suitable nozzles because of the lack of uniformity of gasoline tank filler-pipe openings on cars and trucks, the Society adopted a standard to cover this difficulty. Gasoline tank filler openings on cars, trucks and tractors must have a minimum clear opening 2 in. in diameter to comply with this standard.

A Truck Sales Letter to Contractors

HERE is a truck sales letter that was particularly successful when used by several Reo dealers in canvassing contractors in their territories. The letter is good because it begins with an idea that is uppermost in every contractor's mind and leads that idea around and connects it with the purchase of a truck. Maybe it contains an idea for a letter to contractors that will sell trucks for you:

Dear Sir:

In bidding on a job the contractor's greatest worry is the cost of hauling the material.

During rainy weather he knows that he does not have to pay his crew but with transportation cost an uncertainty, many a contractor has lost a good job by bidding "high enough to be safe" while some other fellow with accurate records gets the job at a profit.

We can tell you almost to the cent what it will cost you to operate REO SPEED WAGONS on your next job and we will appreciate an opportunity of figuring with you.

After you have arrived at your lowest figure with your present equipment, let us go over our SPEED WAGON cost sheets with you and show you how much cheaper the work can be done with a SPEED WAGON.

Inclosed is a folder showing a comparatively new use for the REO SPEED WAGON.

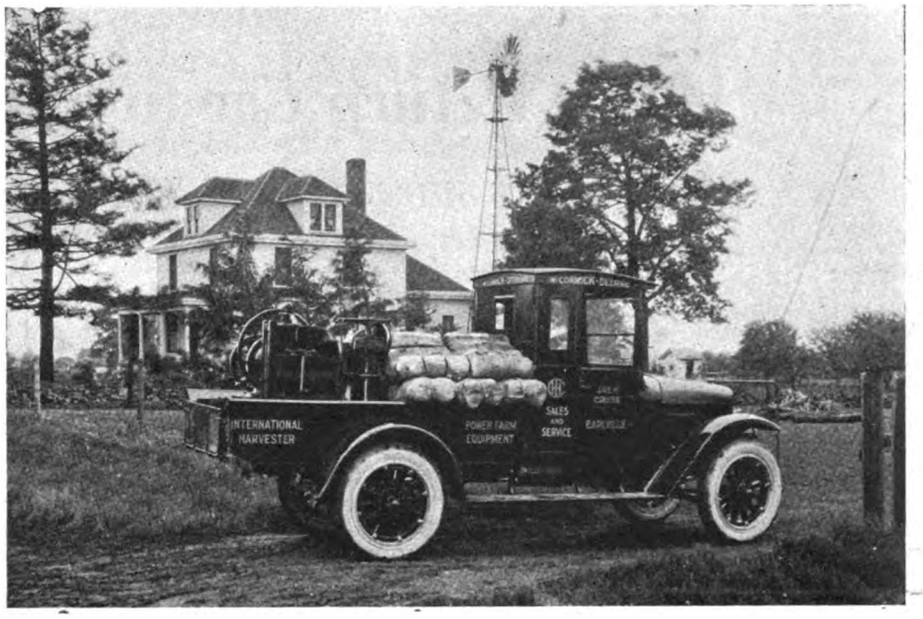
It is with surprise that contractors and county officials learn that when fitted with the road floater it cuts the cost of maintaining gravel highways in some cases as high as 80 per cent.

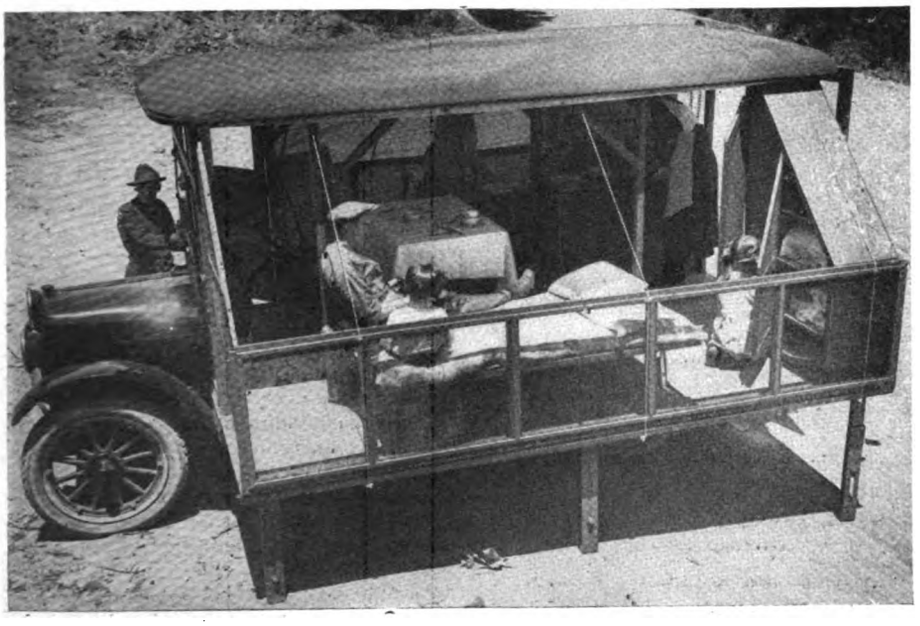
Very truly yours,

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Demonstrating Truck Gives Farm Equipment Service

A demonstrating truck carrying a load of farm operating equipment is proving a successful means of finding prospects and selling for James S. Cruise, an International dealer in Carlville. While the farmer is being canvassed for the sale of a truck, the dealer's salesman, at the same time, checks over the farmer's power equipment and offers suggestions and supplies parts to put the equipment into first-class condition. The above photograph shows the truck at the entrance to one of the farms in its territory





All (or Nearly All) the Comforts of Home

This Reo truck has been fitted with a special camping body which when closed up for running does not look greatly unlike a conventional moving body. When the sides are let down there is considerable floor space available for cots, a table, and other conveniences. The equipment includes two beds, a kitchen sink, a 40-gal. water tank, clothes lockers, cook stove, ice box and cabinets. The Dumas Folding Auto Home Co., Los Angeles, Cal., has recently been organized to build these bodies in quantities. The body with all equipment except chinaware and linen sells for $700

Street Frontage Sells for This Equipment Dealer

Two large display windows are selling automotive equipment for the Beck & Corbitt Iron Co., equipment dealers in St. Louis, Mo. The sign, extending up the front of the building, stands out, yet it is at the same time neat and dignified



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Must Return Car to Rescind Sale

Missouri Court Holds That Buyer Must Return or Offer to Return to Get Back Purchase Price

WHEN a buyer of a motor car seeks to rescind the sale and get back the purchase price, he must first return or offer to return the car, was the decision in a late Missouri case.

The car was sold for part cash and a forged check. The court held that the seller could not recover the car back from a third party to whom the buyer sold it, as the contract could only be rescinded by the buyer in the way set out above, and if he did not choose to rescind, the third party, if he had title, might keep the car.—Sellner vs. Meyer, 240 S. W. pg. 247.

Cannot Recover for Baggage Lost in Unlicensed Vehicle

That in the absence of any statute or ordinance requiring a license for persons furnishing automobiles and chauffeurs for hire, persons hiring a car and chauffeur from a company which did not solicit business on the streets or other public places, could not recover for the loss of hand baggage intrusted to the chauffeur while they were at luncheon, on the theory that defendant was a common carrier; it being under no obligation and not holding itself out as being ready and willing to furnish such services to the public at fixed charges, was the decision in the New York case of Tract vs. Grand Concourse Service Co., 192 N. Y. S. 88.

"Hold the Car and Consult Counsel"

Editor Motor World: I notice in Motor World of April 12, 1922, and May 17, 1922, mention is made of the fact that repairman's lien is not superior in New York on car held for repair bill over lien of the holder of a chattle mortgage, or installment contract on said car. In the June 7, 1922, Motor World, you printed that the garageman's is superior over a chattle mortgage. Now which is right?

I am holding a car that was brought in to me for repair. The fellow who brought the car in said he had money to pay the repair bill before I started to repair it. After it was practically finished, he told me that he would leave it with me until he got the money to pay for it. Later on I found out he had bought the car on the installment plan of a Ford agent. I had a talk later on with the Ford agent, and he claimed that if the first party failed to make payments on contract the Ford agent could come and take the car away from me, without paying the repair bill; and if I got anything I would have to look to the one that brought the car here for repairs. Where do I come in under the New York lien law, or go out?—A Reader, Preston Hollow, N. Y.

Answer.—The two cases you mention are confusing. The one which held that the repairman's lien was inferior in New York was printed merely as a news item. The general rule which is well established in New York by many decisions is that a repairman's lien comes first—before the lien of a chattel mortgage or conditional bill of sale. Consult local counsel if necessary, but by all means hold on to the car.

Co-Insurance Clause Defined

Editor Motor World: The attached is respectfully submitted referring to Motor World, April 26:

The co-insurance clause in a policy is no more or less than an agreement between the assured and the company to the effect that at the rate written the assured will at all times carry insurance to value according to the percentage defined in the policy.

The 80 per cent or 100 per cent co-insurance clauses that you find in a policy become *inoperative* if an assured carries 80 per cent or 100 per cent of insurance to value at time of loss, and failing to do so, an assured is penalized *only* in the proportion that the insurance is short according to the agreement. If he is, say, 1/6 short, the loss paid is 5/6, the assured standing 1/6.

Your example is all right, but you cannot say the 80 per cent is a much better clause, except in the case of partial loss.

The clause in either instance does not apply in case of *total loss*, or if the amount of loss is beyond the percentage limit.

There is generally a reduction in rate for the application of the 100 per cent clause.—E. C. Cary, Newark, N. J.

Answer.—It is a pleasure to receive letters like the above from subscribers, as they show how carefully the legal page is being read. The subscriber in this instance points out a fact on which sufficient stress was not laid in the article he refers to. That is, that in case of total loss the clause used is immaterial. Still, isn't it true that only in a minority of cases is there a total loss?

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

Burden on Person Suing in This Vermont Case

THAT the burden is on a person suing, for damages which he claims he sustained by reason of the negligence of another person in leaving his motor car unattended on a public highway with its lights shut off, to show that the fact that the lights were turned off was the proximate cause of the accident, was the decision in a lately decided Vermont case.

The court pointed out that when a person is confronted with a sudden peril, such as coming upon an unattended vehicle without lights in the dark, he is not bound to use the same degree of care as when he has time for reflection, as the law recognizes that a prudent man, brought face to face with unexpected dangers, may fail to use his best judgment.—Hatch vs. Daniels, 117 A. pg. 105.

THAT a person who sells a business and agrees not to engage in a similar business in or adjacent to the town to which the business sold is located, is only bound not to engage in such a business within a "competing distance," was the decision in the lately decided Delaware case of Scotton vs. Wright, 117 A. pg. 131.

That a jury holding, that an automobile owner who attempted to protect his car by seizing hold of the bumper of a truck moving toward his car, whereupon he was injured, was not guilty of contributory negligence, was valid, was the decision in a recent New York case.—Wardrop vs. Santi 134 N. E. pg. 272.

An automobile tax is not a property tax but a privilege tax, according to the decision of the Supreme Court of Arkansas in a recent case.—Whaley vs. Northern Road Improvement Dist. of Arkansas Co., 240 S. W. pg. 2.

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Open Driveway Gives Light and Display

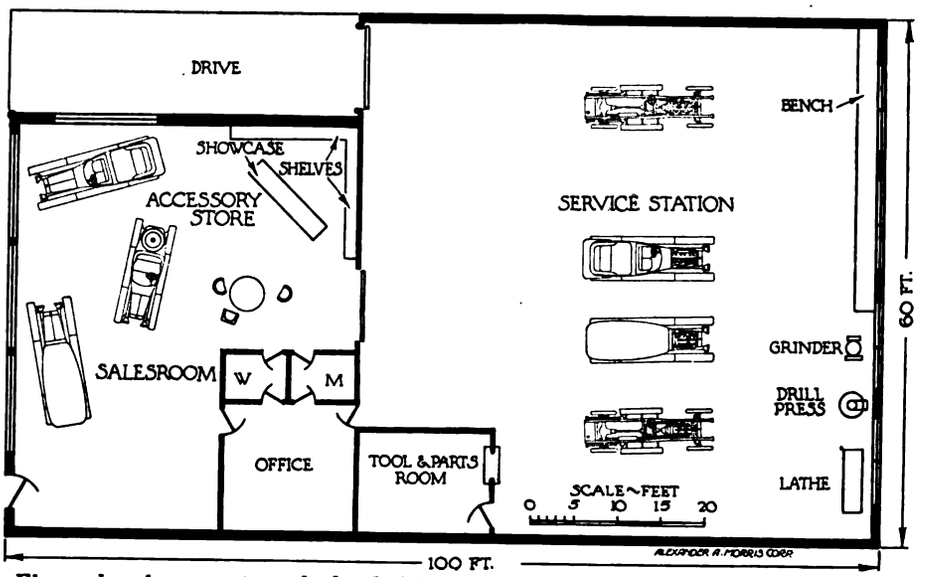
Sales and Service Provided for in Dealer Building on Lot 60 x 100 Ft.—Salesroom and Accessory Store Combined

Motor World's Department of

Better Business Buildings

Is a weekly feature of the paper.

Size of plot, with rough sketch showing shape and its relation to adjoining plots; name and number of departments operated; number of cars to be shown in salesroom; number of cars in garage should be given when making inquiries.



Floor plan for one-story dealer building on interior lot 60 x 100 ft. Over half the floor space is devoted to service

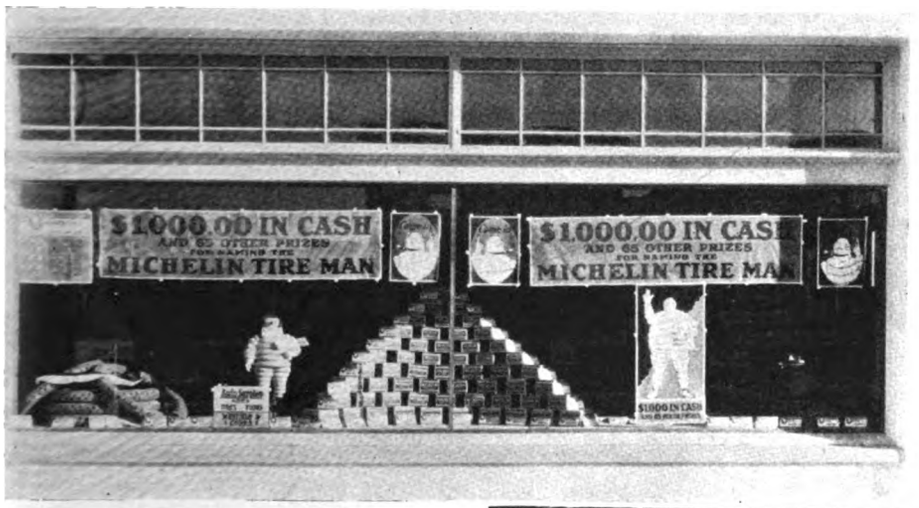
SALES and service facilities are provided in the plan shown on this page. The building is to be erected on an interior lot 100 feet deep with 60 feet of street frontage.

The driveway to the service station at the rear is of the open type. This construction allows windows to be placed in the wall facing this driveway, thus providing natural light for this side of the salesroom. This arrangement also adds something to the value of the salesroom from the display standpoint as a person coming along the street can look across the driveway into the salesroom before the building is reached.

The front of the building contains car salesroom, accessory store, office and toilets. There is plenty of room for the display of three cars. A small table with a few comfortable chairs might well be placed back of the car display for the convenience of patrons. The accessory store is located in one of the rear corners of the salesroom. The offices and toilets are located in the opposite corner.

The service station is approximately 60 ft. square. The machine equipment should be located along the rear wall and, as far as possible, all fine work should be done here as the light is best. The combined tool and parts room is located directly in back of the office.

The roof over the service station should be supported by trusses. The interior portions of the shop will be lighted with skylights.



Prize Windows in Tire Display Contest

The Michelin Tire contest for naming the Michelin tire man was just concluded recently. Michelin Tire Co. offered prizes to dealers for the best window displays. There were a number of prizes for the dealers in each branch territory. Herewith are shown two of the prize windows. One was made by Horst & Wilkinson, dealer in Davenport, Iowa, and the other by Mayfield & Cordo, dealer in San Luis Obispo, Cal.



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Equipment to Sell

New Devices for the Car and Truck

Hayes Pathfinder

Hayes Motor Truck Wheel Co., Jackson, Mich.

Price $8.50



This light is provided with an inside control, reflector is coated with silver and the shell with black enamel. Any adjustment of the light can be made from the driver's seat without lowering the windows of a closed car or without reaching through the curtains of an open car.

HusKee Gasolarm

HusKee Tool Mfg. Co., 586 Public Street, Providence, R. I.

Price $2.50.

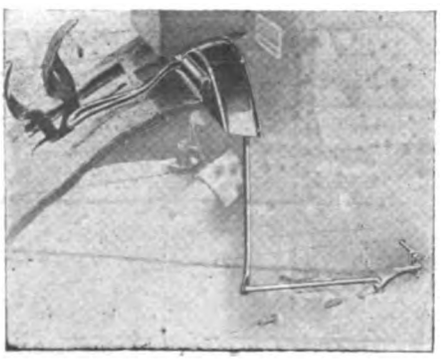


The device replaces the cap in the gasoline tank and gives a warning signal when the gasoline reaches the depth for which it is set. The bell inside the tank makes sufficient noise to be heard from the driver's seat. After the alarm has been sounded and the tank filled it is wound up for action the next time.

Farco Foot Accelerator for Fords

Farco Mfg. Co., 30 Church Street, New York.

Price $2.75.

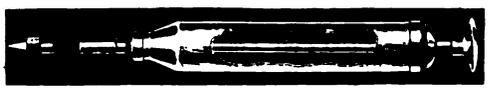


The principal feature of this device is that it mounts on the dash entirely independent of the floorboards. The construction and installation is illustrated in the accompanying cut.

Saal Oil Shooter

H. G. Saal Co., Chicago.

Price $8.



This is a high pressure lubricating system for using heavy oil exclusively. The metal gun is 12 in. long with a diameter of 1½ to 2 in. This will force heavy oil under a pressure of 2,000 lbs. With the pump are supplied a forty-two solid brass fitting which is more than sufficient for the largest car. Attached to the oil shooter is a steel nickel plated holster to be fastened on the dash under the hood.

Ensign Stop Signal

Spengler-Loomis Mfg. Co., 58 East Washington Street, Chicago.

Price $7.50.

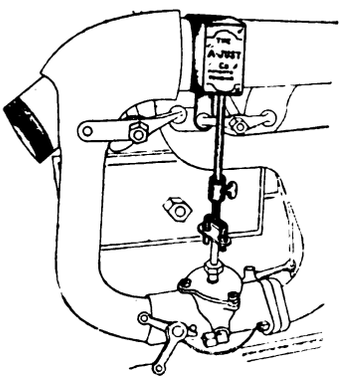


The momentum of the car operates this signal. When the car slows down the signal flashes. The frame is cast aluminum and heavily enamelled. The reflector is silver plated. The signal is designed so that it does not operate when going down hill or over bumps.

A-Just for Fords

Grundy Mfg. Co., 2900 Meldrum Avenue, Detroit

Price $2.

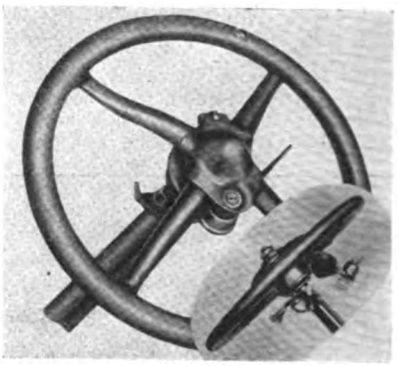


This device admits more gasoline automatically when the engine is cool and reduces the supply when the engine has warmed up. It is operated by a thermostat which actuates a rod, one end of which is attached to the control lever of a needle valve. The heating chamber is finished with polished nickel and the rods are also nickel. The installation is said to be simple.

Motoright Lock for Fords

The Packard Engineering Co., Cleveland, Ohio.

Price $4.90. With wheel $9.49.



This lock screws on in place of the steering gear cover and can be installed with wrench and hammer in five minutes. It does not interfere with the arrangement of the standard Ford parts. The key slot is above the wheel and in front of the driver. The lock has the approval of the Underwriter's Laboratory.

New Firestone Dipped Cord Tire

Firestone Tire & Rubber Co., Akron, Ohio.

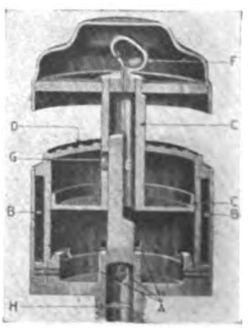
Price $13.75 for 30 x 3½ in.

A new gum dipped cord tire has been added to the Firestone line. The process is said to be an old one originally perfected by Firestone and recently revived. It consists of dipping the fabric for the tires in a special gum to add strength and resiliency to the tire carcass. It is made in sizes from 30 x 3½ to 34 x 5.

Sentree Alert Alarm Co.

609 N. La Salle Street, Chicago.

Price $8.50.



This is a cooling water temperature indicating device. It is mounted in place of the radiator cap. Vapors arising from the radiator pass through the port A and circulate the chamber B, where they are condensed and returned to the cooling system. In case of overheating the increased pressure will raise the piston C and expose the surface D, which is red. More pressure will send the piston higher and blow the whistle F. In case the water in the radiator boils the piston will be raised still higher and steam escapes through the opening G.

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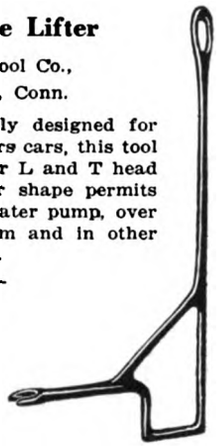
Equipment for the Shop

New Machinery and Tools

Roy's Valve Lifter

J. D. Roy Tool Co.,
Willimantic, Conn.

Although specifically designed for use on Dodge Brothers cars, this tool may be used on other L and T head engines. Its peculiar shape permits its use around the water pump, over top of ignition system and in other inaccessible positions.



Luther Electric Bench Grinder

Luther Grinder Mfg. Co., Milwaukee



The bench grinder is operated by a 1 hp. single phase 110 volt motor which runs at 1750 r.p.m. It is of the ventilator type with bronze bearings and wick filled oil wells. The switch is a Cutler-Hammer and the work rest is adjustable. The wheel size is 5 x 1. The weight is 37 lbs. and the grinder is furnished with 10 ft. of cord and attaching plugs.

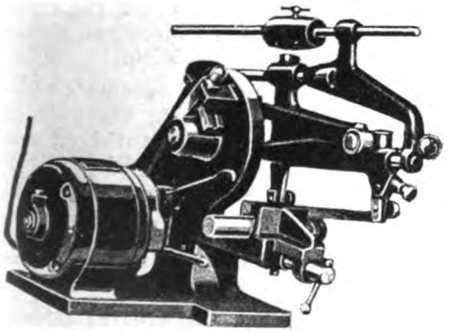
G. M. C. Metallic Grease

Gearo Mfg. Co., Quincy, Ill.
Price 30 cents per 1 lb. can.

The grease has been developed for the lubrication of gearsets, differential, ball and roller bearings, etc. It contains an anti-friction metallic composition which is said to increase the lubricating qualities.

Edlund Portable Bench Hack Saw

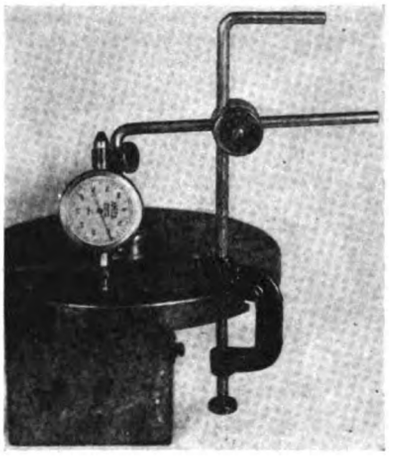
Edlund Machinery Co., Inc.
Cortland, N. Y.



This portable hack saw cuts stock up to 1¾ x 2⅝ in. It is driven by 110 volt universal motor operating at 1750 r.p.m. The complete weight of the device, including motor, is 80 lb. It is provided with an adjustable vise for holding the stock being cut. It is also built for belt operation.

Ames Junior Universal Attachment

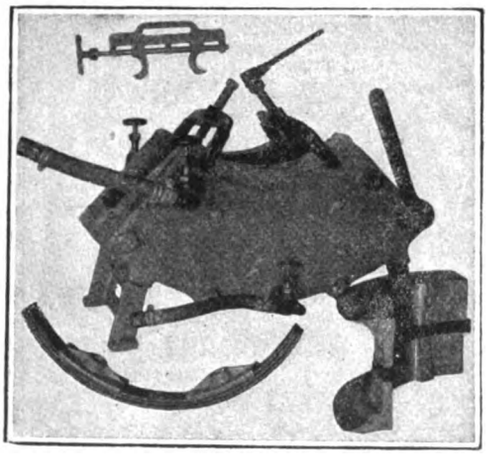
B. C. Ames Co., Waltham, Mass.
Price $5 for attachment; dial gage $10; Gage Mount, $5



The junior universal attachment is made to go with the Ames junior dial cylinder gage outfit or can be purchased separately. It makes use of the junior dial gage head and is a universal testing outfit. It clamps in any position and permits gaging at any angle. It will clamp to any object that will go between the jaws of the clamp. Can be used for showing straightness of crankshafts, camshafts, and valve stems and will check the lift of valves and valve cams. It will show thickness of piston rings, shims, bearing liners, etc.

Western Single Cavity Truck Tire Mold

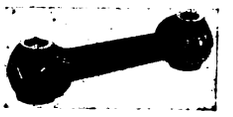
Western Rubber Mold Co.,
321 North Crawford Avenue, Chicago



The single cavity truck tire mold is adjustable to fit 5, 6, 7, 8 and 9 in. tires. This is accomplished by means of a split mold with spacers and reducing shells. The mold is constructed in both semi flat and round cavity type and is used for both resetting and repairing all nature of injuries.

Fits-All Socket Wrench

Fits-All Wrench Co., Providence, R. I.
Price $1.



The wrench has ten different size openings which are not adjustable and cannot slip or spread. It fits hexagon sizes ⅛ to 1⅛ and square sizes ⅛ and ⅜. It also has spark plug sizes.

Reed Height Gage Round Base Attachment No. 7

Reed Small Tool Works
Worcester, Mass.



The round base attachment is intended for height gage purposes and has a large base area. The reamed hole fits the measuring rod and the upper end of the support is split vertically at right angles to afford a sliding friction as the rod is inserted. It holds the base and micrometer measuring rod intact when the tool is lifted from one surface to another.

Branford Water Nozzle

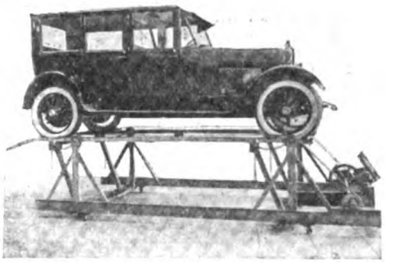
Malleable Iron Fittings Co., Branford, Conn.
Price $5.



This water nozzle has a spray adjustment. It is provided with a quick acting lever shut-off which operates without changing the spray adjustment. When the pressure on this lever is released the water is cut off.

Davis Auto Lifting Device

Davis Auto Lifting Co., 500 Auzerais Ave., San Jose, Cal.



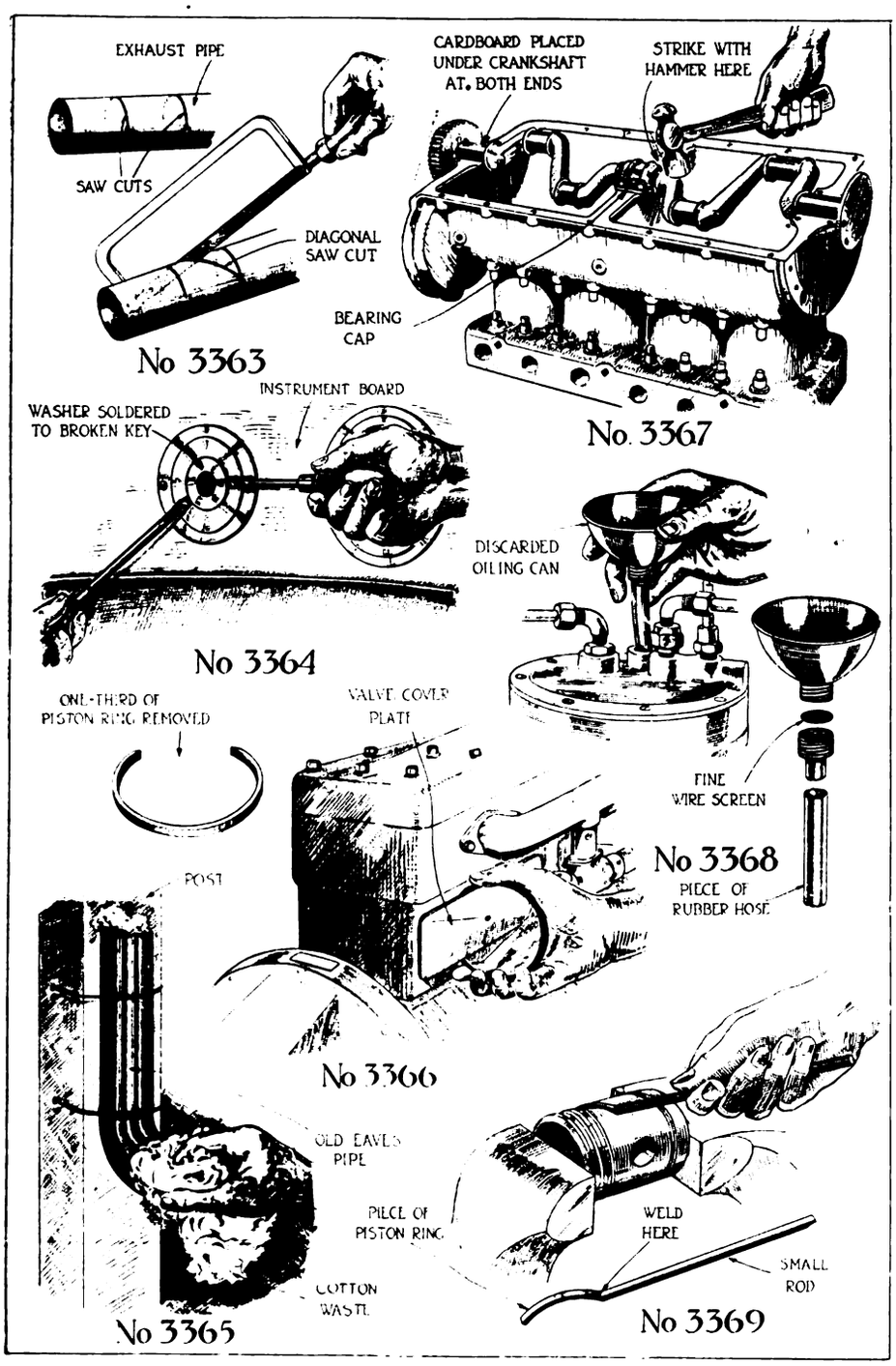
The automobile is run on two U-shaped steel runways which are raised by means of a gear and pulley arrangement to any height up to 4 ft. The lift is operated by turning a crank. This places the car in a position where it may be conveniently worked on from underneath.

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Repairshop Shortcuts

Why Not a Complete Suit?

A SUBSCRIBER in Cortland, N. Y., contributes a shortcut which we are not able to illustrate, our fashion artist being on his vacation. Our subscriber suggests that a tube bag folded down makes a fine mechanic's hat, and that the right size can be obtained by tightening the draw string. We counter with the suggestion that such a changeable size hat would be a fine thing for fellows with swelled heads. Furthermore, a 36 x 6 tube might make a fine pair of trousers if you have thin legs. Send in some more clothing suggestions. We won't pay a dollar each for them but we will pay for ideas accepted for the column below. How about cotter pins for suspender buttons, or don't you wear suspenders?



No. 3363—Cutting a Slot in an Exhaust Pipe—An oblong slot is cut in an exhaust pipe for installing a cut out, whistle or heater by making two cuts across the pipe with a hacksaw and a diagonal cut. The triangular flaps are then bent outward and sawed off.—A. C. Knicht, Service Garage, Warrentown, Va.

No. 3364—Removing a broken key—A key which has broken off in a switch or lock can often be removed by soldering a plain washer at right angles across the break and prying the washer with small screw drivers.—Donald McClean, Cleveland.

No. 3365—Container for waste—Pieces of waste for cleaning finished jobs are kept in a long narrow tin chute made from rain spouting. This is wired to a post.—Donald McClean, Cleveland.

No. 3366—Removing valve covers—About one-third of an old piston ring is cut out and the ends of the remainder ground or filed to a sharp point. The ends are strung apart to catch the edges of the valve cover plates.—Donald McClean, Cleveland.

No. 3367—Straightening a Crankshaft—A three bearing crankshaft can be straightened with a hammer if a press is not available. The engine block is removed and turned bottom side up and pieces of leather or thick pasteboard placed in the end bearing. The shaft is laid with the bend up, and the center bearing cap drawn down and the cheek of the cranks struck with a hammer.—Arthur Ansley, Blennie, Mich.

No. 3368—Funnel for vacuum tank—A small funnel for filling the vacuum tank is made from a discarded oil can by removing the bottom and filing a light groove around the nozzle, breaking it off at the desired length. A disconfined wire screen is placed between the nozzle and body where they screw together.—Floyd D. Elmore, Bethesta, Md.

No. 3369—Piston ring groove tool—A tool for cleaning piston ring grooves is made from a small rod and pieces of piston ring which are welded together. The end of the piston ring is sharpened to a chisel point to easily remove the carbon.—Reader.

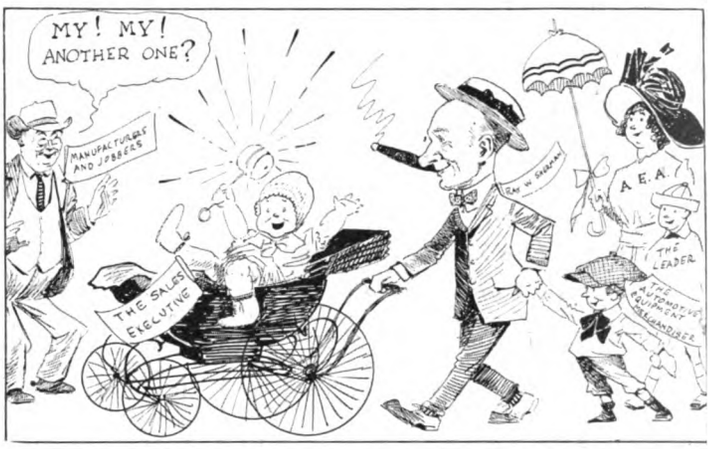
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Along the Automotive Newsway

By Leo Roche



BRITISH ENDEAVORING TO GET LARGER SHARE OF THE WORLD'S AUTOMOBILE EXPORT TRADE, OF WHICH THE LION'S SHARE NOW IS COMING TO THE UNITED STATES



THE AUTOMOTIVE EQUIPMENT ASSOCIATION HAS BROUGH OUT ITS THIRD PUBLICATION AND HAS NAMED IT THE SALES EXECUTIVE



ON COTATI, CAL., TRACK, FRANK ELLIOTT NOT ONLY WINS THE 50 AND 100 MILE RACES, BUT SETS NEW WORLD'S RECORD IN THE 50 MILE RACE, AVERAGING 117.5 M.P.H.



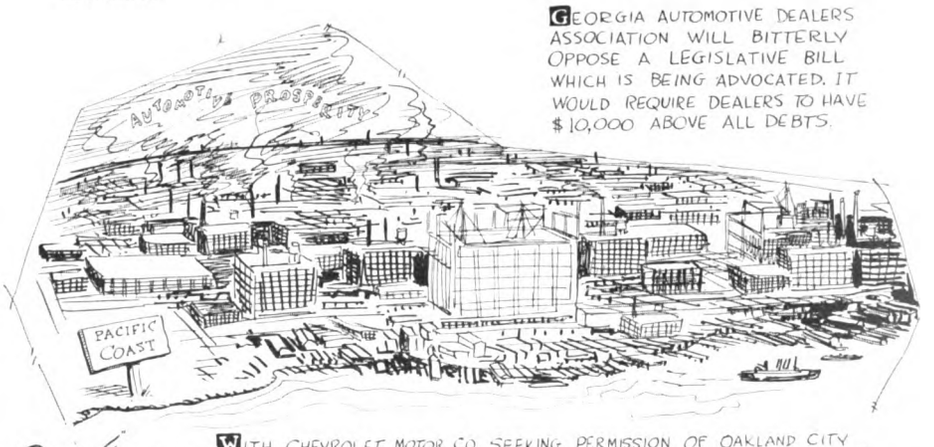
DENVER, COL., AUG. 14 — BUSINESS IS BETTER NOW THAN IT HAS BEEN AT ANY TIME WITHIN A YEAR. GLOOM AND STAGNATION GONE. HARD WORK, SLOGAN IN ROCKY MOUNTAINS



GEORGIA AUTOMOTIVE DEALERS ASSOCIATION WILL BITTERLY OPPOSE A LEGISLATIVE BILL WHICH IS BEING ADVOCATED. IT WOULD REQUIRE DEALERS TO HAVE $10,000 ABOVE ALL DEBTS.



EVERY CLOUD HAS A SILVER LINING. EVEN THE COAL AND RAIL STRIKE SEEMS TO HAVE ONE FOR THE TRUCK MANUFACTURERS



WITH CHEVROLET MOTOR CO. SEEKING PERMISSION OF OAKLAND CITY COUNCIL TO CLOSE CERTAIN STREETS TO PROVIDE MORE GROUND FOR EXTENSIVE ADDITIONS TO ITS ASSEMBLY PLANT, AND THE MANY OTHER COMPANIES EITHER BUILDING OR ABOUT TO BUILD NEW PLANTS AND ADDITIONS, IT LOOKS LIKE GOOD TIMES AHEAD FOR THE WHOLE INDUSTRY

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Optimism Follows Tire Conference

MAKERS SHOW DESIRE TO ASSIST DEALERS

Price Question Not Discussed —Many Questions Brought Up for Consideration

NEW YORK, Aug. 18—Out of the meeting of the committee of the National Tire Dealers' Association and executives of the Rubber Association which has been held here will grow a spirit of co-operation that will result in the ultimate solution of the mutual problems of both, according to a statement made by R. F. Valentine, president of the National Tire Dealers' Association.

"We feel gratified that the opportunity was given us to present directly to the manufacturers the aims and objects of the National Tire Dealers' Association," said Valentine. "The reception accorded us and the consideration and discussion which was given the various merchandising problems was such as to indicate a sincere desire upon the part of the manufacturers to help dealers solve their problems."

Valentine would not at this time give any details of the progress that was made. Arrangements were made, however, for future meetings to which both organizations will send representatives to discuss problems that arise.

The tire dealers were represented at the conference by R. F. Valentine, R. J. Walters of Baltimore, George J. Berger, New York City, and Frank Zeman, Chicago. The manufacturers had at the meeting, Messrs. Shugart of the United States Tire Co., Mowe of Kelly-Springfield, Broadwell of Fisk, Miller of Goodrich, Plumbe of Madison, Duncan of Hood, Phelps of Kenyon, DeLisser of Ajax, O'Neil of the General, Waddell of Goodyear and Fairbanks of Firestone.

Dealers Make Requests

The price question was not discussed at the meeting.

The dealers made these requests:

That the national and commercial accounts be eliminated;

Car agencies be compelled to sell all change-overs at regular list prices or turn the tires into the nearest branch at cost;

The price of tires be increased to the car manufacturers to a basis that will insure a reasonable profit and take away incentive for resale at retail;

Publication be discontinued of all lists other than consumers' price list;

Retail distributing agencies be classified and the discounts proportioned in the ratio of the value of each classification;

Retail hardware, drug, confectionery and grocery stores be put in one class; wholesale groceries, hardware and department stores be put in another class and the legitimate tire dealer in a third class;

Purchasers of equipment be held to actual requirements and such an arrangement be effected that will prohibit absolutely these same car manufacturers and their agencies from disposing of any stocks at less that regular prices.

The dealers' program provides for the elimination of every tire whose quality is not proved, or where there is any question of the policy and methods of the manufacturer; an appropriation of not less than 2 per cent of gross business for advertising purposes and absolute loyalty to the manufacturer whose goods are sold.

ONE REEL ROAD FILMS ARE NOW OBTAINABLE

WASHINGTON, Aug. 18—A series of one reel motion picture films illustrating modern practice in the construction of the various types of highways, as being best adaptable to automotive use, has been prepared under the direction of the Bureau of Public Roads and is now available for free distribution upon application to the United States Department of Commerce.

The films are intended for use in engineering colleges, road meetings and other public gatherings and are issued for the purpose of fomenting greater interest in the problem of good roads throughout the United States.

FORD DEALERS PLAN MEETINGS IN SOUTH

ATLANTA, Aug. 18—Ford dealers in Georgia, Florida and the Carolinas are planning to hold co-operative shows during the coming month featuring industrial power and equipment and principally the Fordson tractor.

The first of these shows will be held at Jacksonville, Fla., Aug. 21 to 23; the second wll be in Atlanta, Aug. 29 to 31, and there will be a third at Charlotte, N. C., Sept. 6 to 8.

The various dealers in the states named are issuing thousands of invitations by mail to heads of industrial enterprises to attend these shows, as it is principally the industrial end of the tractor that will be demonstrated.

Monitor Plant Sold

COLUMBUS, Aug. 18—The plant of the Monitor Motor Car Co., which has been in the hands of E. W. Pavey as receiver for more than a year, has been sold to the Clark Grave Vault Co., which will soon occupy it. The transaction includes two and a half acres and a two-story building with a floor space of 50,000 square feet.

BRIGHT FUTURE SEEN BY MERGER OFFICIALS

On Return from Visit to Three Plants They Forecast Quantity Production

CHICAGO, Aug. 18—Quantity production at the National motor car plant at Indianapolis, the Traffic truck plant at St. Louis and the Kentucky wagon manufacturing plant at Louisville, where the Dixie Flyer automobile is made, was forecast by the visit just made to these plants by a group of officials of the Associated Motor Industries who have returned to Chicago.

Will I. Ohmer, chairman of the board, and Louis Ruthenburg, president of Associated Motors, with technical assistants, spent a week at these plants outlining their part in the production plan of the merger and making the preliminary arrangements for them to produce their quotas.

"We are more than pleased with the progress that has been made," Ohmer said. "All the plants we visited were in splendid condition, and arrangements necessary to fit them into the co-ordination plan of the merger were well under way. An assembly unit of Associated Motors is to be operated in connection with each of these three plants, and we gave some time to preliminary planning of these buildings."

Other plants in the merger probably will be visited by the officials within the next week or 10 days.

NEW WILLS BUILDINGS TO COST HALF MILLION

PHILADELPHIA, Aug. 17 — The Wills Sainte Claire Co. of Pennsylvania has completed negotiations for two large buildings, one for sales and the other for service, to be erected at a combined cost of upward of $500,000.

The salesroom and general offices will be in a structure containing six stories and a basement. The showroom will measure twenty-two feet from the floor to the ceiling, and there will be a mezzanine for offices in the rear. The building will have both passenger and freight elevators.

The new service station will contain 2500 sq. ft. of floor space on the ground floor. W. J. Foss is president of the company, and associated with him as vice-president is A. F. C. Keleher of Pittsburgh.

Finance Body Moves

CHICAGO, Aug. 16—The Central Automobile Finance Association has moved its offices to 20 West Jackson Boulevard.

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DISTRIBUTORS TAKE 1923 STAR OUTPUT

Start on Manufacture at Lansing Plant Will Be Made on Sept. 15

DETROIT, Aug. 18—Contracts signed with distributors this week will take practically the entire output of Star cars by the Durant factory, Lansing, for the entire year of 1923, according to a statement issued by factory officials following a two days sales session. The Lansing plant will manufacture Stars for the entire territory between the Alleghenies and the Rockies and its plant capacity is 400 cars daily.

A start on the manufacture of the Star will be made at the Lansing plant on Sept. 15, but it is not expected to get into capacity operation much before the first of the year. Two assembly tracks are now completed at the plant and there remains only the installation of minor machinery. Delays in material and parts shipments will hold back operations temporarily, officials said, but this situation will be overcome rapidly.

Downes Addresses Dealers

Carroll Downes, president and general manager of the Star corporation, addressed the meeting of dealers. No statement on the proposed method of distribution of the product was forthcoming from the meeting, it being said that Downes would make a statement on this within a short time. It is reported in Detroit that the plans involve the financing of the cars until sold by the dealer.

Most of the middle western territory was reported represented at the meeting, though there remains some territory yet to be assigned. Among the distributors represented were the following:

Teter McGregor Co., Minneapolis; K. T. Wiedmann Co., St. Paul; H. A. White Auto Co., Memphis; Chidester-Frint Co., Milwaukee; Conant Automobile Co., Houston; Baker-McDowell Hardware Co., Oklahoma City; Inter-Mountain Motor Car Co., Salt Lake City; San Antonio Cadillac Co., San Antonio; S. B. Hicks Motor Co., Shreveport. W. J. Cart, Hot Sulphur Springs, Col.; Herchede Motor Car Co., Cincinnati; Peiter Automobile Co., Grand Rapids; Mosher Motor Sales Co., Cleveland; Lostre Auto Sales Co., Columbus; D. A. O'Dell Motor Car Co., Duluth; Heison & Tyler, Webster City, Iowa; Bozer-Patten Automobile Co., Indianapolis; Hathaway Motor Co., Kansas City; Hawry Motor Co., Louisville; F. G. Stroop, Dayton; A. Murphy & Son, Omaha; Spalding Motor Co., St. Louis; S. Y. Brigham Motor Co., Toledo; A. G. Graben Motor Co., Des Moines; Hutchings Motor Co., Cedar Rapids.

Anderson Dealers to Convene

ROCK HILL, S. C., Aug. 21—Anderson dealers will assemble at the factory here on Thursday and Friday to witness the unveiling of the new Anderson light aluminum six. Both the phaeton and the coach models will be on exhibition. Among the speakers on the first day will be Mayor J. B. Johnson; J. G. Anderson, president of the Anderson company; J. W. Anderson, vice-president and general manager; D. K. Roberts, assistant sales manager, and H. M. Kiesewetter, vice-president of the Wales Advertising Co. Many of the Anderson dealers have promised to attend and drive cars home.

GEORGIA BUS BILL TABLED BY SENATE

ATLANTA, Aug. 21—The bill introduced before the Georgia State Legislature by the short line railroads seeking to have the motor bus declared a common carrier subject to the rules and regulations of the State Railroad Commission, will not become a law this year.

It came up for a final hearing before the senate this week, and by an overwhelming vote was tabled.

This means that it will not again be considered this year at least, and that the automotive industry has won a complete victory in the campaign to accomplish the defeat of the measure.

BUMPERS LEAD SALES, IS REPORT OF JOBBER

NEW YORK, Aug. 22—An eastern jobber, whose business is quite typical of a good many along the Atlantic seaboard, states that his best business of the current season has been on bumpers, shop equipment, stop lights, luggage carriers, monogram radiator caps and motometers. He states that bumpers have had a tremendous sale, shop equipment is going remarkably well and the other items are selling rapidly. Business in general lines is a little better than fair.

HUDSON-ESSEX SEE BETTER HALF YEAR

DETROIT, Aug. 18—Sales of Hudson and Essex cars for the last six months of 1922 are expected to run from 20 to 25 per cent heavier than in the first six months. Reports received at the factory from dealers in all parts of the country indicate ready demand for cars, in some sections the dealers being considerably behind on deliveries. Closed car sales are reported increasing.

Shipments of Hudson-Essex for the first fifteen days of August were higher than for any similar number of days in the company's history. The demand for cars has resulted in the factory increasing its tentative schedules for the later months of the year three separate times. Orders now on hand assure capacity operation for several weeks. No let up in production due to the coal or rail strikes is anticipated.

"ASK 'EM TO BUY" TO SELL TRACTORS

State Fairs Will Be Used by Exhibitors to Carry Message to Farmers

CHICAGO, Aug. 21—The "Ask 'Em to Buy" policy, so vigorously pushed by the Automotive Equipment Association has been adopted by the tractor folk, who hope to stimulate a year-round buying of farm machinery in this way through the medium of the countless state fairs now in progress.

Propaganda to this end has been prepared by the National Institute of Progressive Farming of Chicago, which points out that the state fairs will attract at least 20,000,000 people, mostly farmers, who can be surprised out of their non-buying lethargy by means of intelligent displays of farm machinery. Suggestions are made as to the proper methods of display and exhibitors are urged to "say it with pigs and sheep" in driving home the fact that the farm tractor has been cut in half as to price since the pre-war days of 1913.

Comparison of Figures

A most convincing argument is offered in a comparison of figures in that the price of tractors has been materially lowered while the value of hogs and lambs has gone up amazingly. "Not only has the farm tractor been cut in half as to price since 1913 but hogs are nearly 50 per cent higher than then and fat lambs more than double," says the Institute. "Where we could talk the cash difference to the farmers on a tractor to start them to buy and show a 50 per cent advantage in price, not to mention a better power plant, we can translate it into hogs and show 150 per cent advantage, or into sheep and show more than 200 per cent in favor of buying a tractor now."

Talking in language the farmer can understand, it is pointed out that whereas it took 80 hogs to buy a tractor in 1913, 34 will buy it now. Before the war it required 260 sheep; now only 64 are needed.

Demand for A. E. A. Space

CHICAGO, Aug. 22—Upwards of 200 applications for space at the annual business exhibit of the Automotive Equipment Association have been received by the show committee which had a meeting here last week.

Applications are running far ahead of the number received at this time last year.

The show will be held in the Coliseum coincidentally with the annual convention of the association November 13-18. The show this year, unlike previous shows, will be open only to members and their accredited representatives. Exhibit space at previous shows has been restricted to manufacturing members but representatives of manufacturers and jobbers outside the association membership have had the privilege of attending.

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NO CHANGE PLANNED IN STUTZ PERSONNEL

Schwab Visits Plant—Program of Expansion and Enlargement Assured

INDIANAPOLIS, Aug. 17—Charles M. Schwab, president of the Bethlehem Steel Corp., who obtained control of Stutz Motor Car Co. of America, has announced that he will be actively interested in the Stutz management, but that the personnel of the Stutz organization will not be changed. A program of enlargement and expansion is said to be assured.

William N. Thompson, president and general manager will be continued, Schwab said, as will the entire factory organization. Schwab stated that the men who have guided the company through the recent uncertainty of the motor car industry are best qualified to handle the new control. "It is farthest from my thoughts to change the personnel," he added. "I hope the relations will be as happy as in all the industries and corporations with which I am associated.

Schwab Issues Statement

In his statement Schwab said:

It is not as if my associates and myself were acquiring a new property in the automotive field, and making our début in the motor car industry by acquiring control of the Stutz. We have long been interested in the company in a substantial way. What is more natural that under the circumstances we should desire to control the property as we do in the case of all the other properties with which we are identified.

Our plans for the Stutz simply embrace a continuation of the business on a basis that will permit it to proceed as it deserves to progress—to make the most of the possibilities which lie within its range of ability. We regard the Stutz as a valuable property—one that has potential possibilities that recommend it as deserving of the best thought and effort that can be put forward in its behalf. We are going to develop the Stutz along sound, substantial lines. We intend to make it attractive to the trade.

Although the Stutz company has never been embarrassed so far as its finances are concerned, and at present is in one of the healthiest conditions of any company in the business, in order to enable it to go forward at once with the development that we have planned for it, substantial finances have been provided which will be placed at the disposal of its executives to carry on their work.

Though I have been associated in my career with some motor car enterprises from a different angle, this is the first time that I have applied myself actively to the management of a company. I have been here many times and have studied the Stutz. I know the men who are with the Stutz. I have been in a position to watch them proceed.

I have the sincerest admiration for their work, and I am convinced that if these Indianapolis men cannot put the Stutz where it belongs, there is not a group of men in the country who can do it. Mr. Thompson will continue in full control of the policies of the company and will have the entire suport of my associates and myself in all that he does, just as every other man entrusted with the development of the company will have our co-operation in every possible way.

FARMING EQUIPMENT WILL FORM PAGEANT

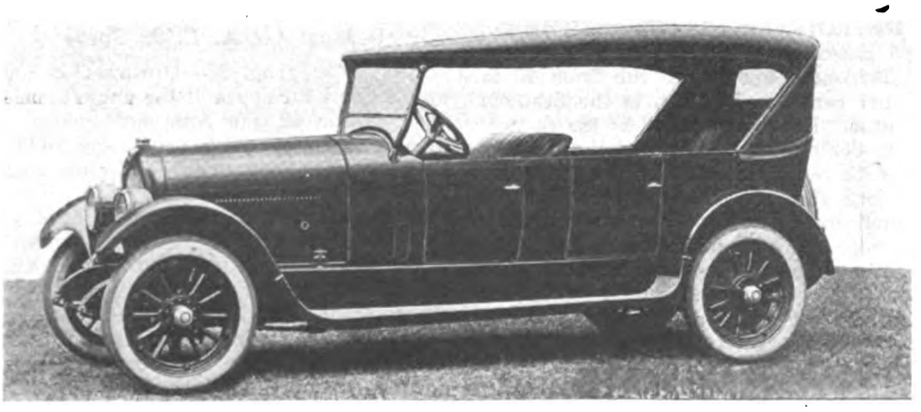
MINNEAPOLIS, Aug. 19—The Northwest Tractor Trade Association has arranged with the board of managers of the Minnesota State Fair for a power farming equipment day to be held Friday, Sept. 8. The principal feature of the day will be a parade, entitled "Pageant of Progress in Power Farming," on the fair grounds and the race track in the afternoon.

The parade will be open to all power farming exhibitors at the fair who observe the rules of the committee.

Powe Gives Full Time to A. E. A.

CHICAGO, Aug. 18—The Automotive Equipment Association announces that W. R. Powe has discontinued his connections with all other organizations and will hereafter give full time as general traffic manager of the association.

Marmon Seven-Passenger Phaeton Has Stationary Top



The hood on this new Marmon model has been lowered, the lines from front to rear have been straightened, the body has been lengthened an inch and the over-all height has been reduced four inches. The "panorama" top is of the stationary type and is featured by the absence of supporting bows. The price is $3185

NEW TRUCKS BUT OLD PARTS, IS CHARGED

Complaint Issued Against Lease Motor Co. by Federal Trade Commission

WASHINGTON, Aug. 21—Charging that in the assembling of automobile trucks it used worn or second-hand parts and sold the completed product as new trucks without disclosing the true origin and facts concerning the building of the trucks, the Federal Trade Commission has issued a complaint against the Lease Motor Co., Inc. The complaint also is directed against its subsidiary the Acoma Motors Co., Inc. Both companies are located in Long Island City.

The Lease company is engaged in the business of repairing motor cars and trucks and in the rebuilding and selling of automobile trucks. The Acoma concern is principally a sales agent for the Lease company in the distribution of the latter's trucks. In the advertisement and sale of these trucks, the complaint alleges, the public was misled and deceived and it is charged that the practice was an unfair method of competition as against competing concerns.

The respondents are given 30 days in which to answer, after which the case will be tried on its merits.

Denies Charges

NEW YORK, Aug 21—"The Lease company will put in a defense on Sept. 28," says Robert Lease, president of the Lease Motors Co., against which the Federal Trade Commission has issued a complaint, charging the use of worn or second hand parts in the assembling of trucks which later were sold as new. "We deny the charges. I feel that they originated with a couple of export houses with which we have had some friction. We build trucks and we never have used worn or second hand parts in their construction, as charged.

"The Lease company has been in bankruptcy since April 1, with Eli Newman as the receiver. It is about to be sold to a new concern, the Panther Motor Truck Co., which will manufacture trucks in the Long Island plant. The matter has been brought to the attention of the court which yesterday signed the order permitting of the sale."

"ELITE" REPLACES COLUMBIA "DE LUXE"

DETROIT, Aug. 22—The Columbia Motors Co. has replaced the de luxe series of six-cylinder cars with the Elite line. The principal mechanical change consists of the substitution of the Continental 8 R engine for the 7 R engine used formerly. Five body models are included in the series—five passenger phaeton, two passenger roadster, four passenger sport, four passenger coupe and five passenger sedan.

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CHEVROLET UNVEILS WINDOW IN NEW PLAN

Will Be Changed Monthly and Serve as Suggestion to Dealers

DETROIT, Aug. 22—The first window dressed by the retail sales branch of the Chevrolet Motor Car Co., as part of its plan of making monthly display suggestions to dealers, was unveiled in the salesroom in the General Motors building.

In the windows of the branch the automobile will be shown in a different setting each month—a setting based upon seasonable conditions, in which the car is the important factor in making possible for its owners a trip to the scene shown.

The window will be suggested as a key for displays throughout the entire Chevrolet retail sales organization. Through its sales department, the company will send photographs and complete descriptions of the scene depicted in the central windows. It is expected that replicas of the display can be used effectively by all dealers in cities of 50,000 upward.

Cost Need Not Be $1,000

On the scale to be employed in the Detroit windows the display will cost about $1,000 a month. Reproductions of the scene can be put on at lower cost, as all showrooms will not have the window space that is available in the General Motors Building, and even if they have, the cost of reproducing can be made lower than the cost including original design.

The scene for August represents a midsummer scene, where the automobile, a Chevrolet sedan in this instance, has enabled its occupants to seek out a sequestered beach, where bathing and its attendant pleasures might be enjoyed away from the usual summer crowds.

The cost of this scene was about $3,000, but it included the purchase of the wax figures, all the bathing paraphernalia and the various properties used, as well as the cost of originating and designing. The cost will be less hereafter, as the plan is to use the same figures and obtain the use of costumes and properties required from stores dealing in these goods, and give credit for their loan by cards displayed with the scene.

Part of Sales Effort

George E. Merkle, manager of the Detroit Chevrolet sales branch is the originator of the plan for stronger appeal in the display of cars. By showing the part that a car may play in bringing variety into life, he declares the attention of persons who have never owned one may be better centered upon purchase.

Displays of this kind are expected to lend themselves to showing the particular advantages of certain models, including the utility of the coupe in business, the convenience of closed cars in all sorts of weather conditions and for all occasions, and the comfort of the open models for ordinary uses. Though the trend of buying is steadily toward closed cars, approaching 50 per cent of all Chevrolet sales, the open models will always be favorites with many buyers.

Harry K. Shockley Dead

CINCINNATI, Aug. 18—Harry K. Shockley, manager of the Cincinnati Automobile Dealers Association, died at his home here. He was one of the best known men in the trade in Cincinnati and had long guided the destinies of the dealers' association.

Winton Branch Dividend

BALTIMORE, Aug. 17—The board of directors of the Winton Co. of Baltimore, Inc., has authorized the payment of dividends at the rate of 8 per cent per annum to June 30, 1922 on the preferred stock, to stockholders of record as of July 31, 1922.

Franklin Stockholders Exceed 6000

SYRACUSE, Aug. 14—Franklin stockholders now number more than 6000, according to F. A. Barton, secretary and treasurer of the H. H. Franklin Manufacturing Co. This represents an increase of 20 per cent since the first of the year.

Ohio Tire Changes Name

PORT CLINTON, O., Aug. 18—Purchasers of the Ohio State Rubber Tire Co., which was sold recently at receiver's sale for $150,000, have changed its name to the Wildman Tire & Rubber Co.

SALES OF TRACTORS AHEAD OF LAST YEAR

Increase Is Also Noted in Farm Lighting Plant Business

CHICAGO, Aug. 17—The monthly trade review issued by the National Association of Farm Equipment Manufacturers notes that up to July 15 tractors were moving fairly well and that the sale of general farm equipment, including gas engines, was at least equal in volume to the corresponding period of last year. Speaking of the business done by jobbers in the equipment lines, the review says:

> Generally speaking, it is reported from 50 to 75 per cent of normal, although a few of the firms whose goods they handle are doing a normal business. During July and August a slowing up of trade is not unexpected due to the seasonal character of the goods sold, but jobbers anticipate that the period will show an improvement over last year unless the railroad and coal situations complicate matters unduly.

Sale of farm lighting plants is reported far ahead of last year, although still below normal. Production is said to be at a low point, shipments being made out of stock to a great extent. The eastern and central states are said to be showing the most interest in lighting plants.

A majority of manufacturers reported tractor and thresher shipment ahead of those for last year. Production, the report says, has been increasing since the first of the year, and would be greater were it not for the difficulty of securing labor. Tractor sales are said to have been well scattered throughout the agricultural states.

First Window Dressed for Chevrolet Dealers



This job cost $3,000, including purchase of the figures, which will be used in other displays, expected to cost about $1,000 each. Photographs and descriptions of this and later displays will be sent to Chevrolet dealers. A new window, fitting the motor car into the people's convenience and recreation, will be dressed each month

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ADVOCATE GASOLINE TAX FOR ROAD WORK

Bureau of Public Roads Would Put Most Burden on Motorists

WASHINGTON, Aug. 17—A readjustment of taxes for good road construction, so that a larger proportion will be paid by the automobilist road user and a lesser percentage from state and local taxes will be advocated by the Bureau of Public Roads. The equitable method of raising good roads funds, the Bureau advocates, should be on a gasoline tax basis.

"Approximately $40,000,000 annually could be raised for road building and maintenance by a tax of one cent a gallon on gasoline," Thomas H. MacDonald, chief of the bureau, estimates.

As evidence that the gasoline tax method is growing popular with state and federal legislators as a means of securing funds for good roads, the bureau cites the fact that the method is already employed in seventeen states.

OAKLAND PREPARING FOR BIG SEPTEMBER

PONTIAC, MICH,. Aug. 19—With a temporary lull during August while shifts are made in manufacturing arrangements at the plant here, the Oakland Motor Car Co. is preparing to have in September the biggest production and sales month of the year, according to W. R. Tracy, assistant general sales manager.

The only difficulty confronting the factory is means of getting material into the shops during the railway tie-up.

RADIO NOW EMBRACES PAIR OF MOVING CARS

RACINE, WIS.. Aug. 21—Incident to the various spectacular activities in exploiting the new "F-50" motor, the Mitchell Motors Co., Inc., has successfully experimented along a new line, namely, the application of radio-telephony to mobile motor cars. Starting with a single car, one of the "White Streaks," now running in various parts of the country, which was equipped with a three-tube amplifier, which gave street corner concerts and provided other forms of entertainment, the idea met with such instantaneous response that it has been developed to embrace a pair of cars.

C. P. Robinson, during the war an expert radio operator, conceived the idea of inter-car wireless communication. By adding a microphone to each radio outfit, he was able to build up individual sending stations, each able to transmit messages over distances ranging from one to two miles. The apparatus is rugged enough to withstand the hazards of all ordinary road travel, and the occupants of the two cars are able to carry on an uninterrupted conversation within the distance limit.

A Correction

Through an error an advertisement in Motor World of August 16, page 105, listed the Roamer car as equipped with Zenith carburetor. The Romer is the car that should have been listed.

The Widest Street in America. Next!



Keene, N. H., was claimed to have the widest paved street, 140 feet, by a native son and a picture of that thoroughfare was printed in the July 26 issue of Motor World. Lo, here comes Onawa, Iowa, with a street that also is claimed to be the widest—150 feet. Well, let's get the yardsticks out, maybe there's a wider one whose fame is yet unsung. Send in a picture

ACTIVITY ON COAST IN PLANT ERECTION

Associated Motor Industries Planning to Establish Assembling Factory

SAN FRANCISCO, Aug. 18—The automotive manufacturing and assembling industry is more active in the cities around San Francisco Bay than it has been at any time within the past five years. The Chevrolet Motor Co. of California has applied to the city council of Oakland for permission to close certain streets in order to provide more ground on which to erect extensive additions to its assembly plant.

Announcement also is made that the Associated Motors Industries, of which W. I. Ohmer, of Dayton, Ohio, is chairman of the board of directors, will establish one of five assembling plants for automobiles and motor trucks at Oakland. The other cities at which similar plants are to be established are given as Indianapolis, Boston, Louisville and St. Louis.

The plant of the Durant Motors Co. at Oakland, construction work on which was started last November, and which has cost to date approximately $1,000,000, is ready to start production of cars, according to announcement by George R. Scott, factory manager. Associated with Scott in the program of construction was L. R. Holm, resident engineer for the company. R. C. Durant, resident of the company, will maintain headquarters in the administration building, as will also Manager Scott, C. M. Steves, sales manager, and A. L. Warmington, comptroller.

Truck Assembling Plant

The Indiana-Pacific Motor Truck Co. will erect an assembling plant in San Francisco this year, according to C. M. Menzies, of this city, who has charge of all territory west of Denver for that corporation, and who has just returned from a trip to the eastern headquarters of the company.

The Walter M. Murphy Motor Co., which has been handling the Lincoln in San Francisco, Oakland, Los Angeles, Pasadena and Fresno since the Leland-built car first came on the market, has been named authorized sales representative in these cities for Ford products.

The Joseph Mulvihill Co. has been organized in San Francisco to distribute Marathon oils and greases throughout northern California. Joseph Mulvihill, member of the San Francisco County Board of Supervisors, is president of the company and Thomas Keough is secretary and treasurer.

Herbert Kayser, of San Francisco, has sold his interest in the firm of Kayser & Hannay, Ford dealers, and has joined the sales organization of Chester N. Weaver Company, Studebaker distributors in San Francisco, with which firm he was affiliated up to about one year ago.

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SALES IN CHICAGO FALL OFF SLIGHTLY

No Evidence of Slump, However—New Kind of Salesmanship Developing

CHICAGO, Aug. 21—It is the general opinion of close observers of retail automobile sales in and around Chicago that whatever effect the recent price reductions of a number of lines had it was to slow up sales and that in the slowing the lines reduced suffered as much or more than other lines. Sales have fallen off so slightly, however, that it is doubtful whether any of the decline should be attributed to the price reductions. Certainly a seasonal decline of some degree was due after the unusual selling of June and July, and all things considered the decline in sales has been less than was expected and by no means great enough to be called a slump.

Behind on Deliveries

Some of the more popular medium-priced cars are selling as well as at any time this season. The Chicago agency for a well established make selling under $1,000 is just as far behind with deliveries as at any time this summer and is now booking orders for delivery in 60 days. This company has lost many sales this summer because of this situation. A popular car in the high price class which was announced this summer is now being sold in Chicago for delivery in December at the earliest.

Some of the agencies for popular cars are catching up with deliveries and the ability of buyers to get fairly prompt delivery on the established lines has caused the cars not so well established to suffer some loss of sales.

The record of time sales compiled by the Central Automobile Finance Association shows that sales thus far in August have been about on the same level as July. For the first two weeks of July the time sales numbered 1,973 and in the first two weeks of August the number was 1,892.

Closed Cars Sell Well

Sales of closed cars have been running unusually heavy. A dealer with a large number of orders on hand for delivery as soon as possible finds that the orders for open cars exceed those for closed cars by only 20 per cent. Another dealer in a position to make deliveries within two or three weeks is making 80 per cent of his sales on the closed models.

Salesmen, spurred on by the unusual buying spurt of the last few months, are working hard all the time and a new kind of salesmanship is the result. Few dealers are experiencing hard times selling their trade-ins, "because," explains one, "we are able to dispose of them at a price that does not startle the average used car buyer and because there is a better kind of used cars being sold."

Medium-priced cars are leading the field in sales, with low priced cars running a close second. Many dealers are already at work on a winter merchandising plan, and it is a safe prediction that closed car sales this winter will eclipse previous records.

Accessory dealers and tire merchants report "wonderful times" with sales at the same high level that has prevailed since the opening of the season.

BUFFALO SATISFIED WITH 1922 BUSINESS

BUFFALO, Aug. 15—Buffalo's automobile dealers are well satisfied with the business done so far this year, and are correspondingly pleased with the fall trade outlook

July's business ran ahead of June, which had showed some falling off compared with May, when sales were slightly less in volume than in April, the banner month of the year.

Some of Buffalo's retailers in the medium priced field complain of being unable to get deliveries from their factories on certain models, and say the volume of their sales during July would have been considerably greater if their factories had been able to supply their demands.

Dealers say they have no complaint to make on the present condition of the used car market. They have been able to sell most of the used cars which they had in stock at the beginning of the year, and they state the demand is preventing accumulation of used cars on their hands. Buffalo's street railway strike, which has been in progress since July 2, has stimulated slightly the demand for the lower priced used cars.

CONDITIONS IN WEST FORECAST GOOD TRADE

DETROIT, Aug. 21—Reports on conditions brought in by executives of prominent automobile companies who have been traveling through the West are encouraging. Corn, they say, is in good condition and promises a profitable crop. When the corn money comes in, the farmers will be in a better financial condition than they have been for some time and this will help in the sale of cars.

Conditions, too, are improving in Utah, where the copper smelter works were closed for some time.

New Miller Tire

AKRON, Aug. 21—A new line of cord tires, called the Wedge Tread, in sizes ranging from 30 x 3½ to 35 x 5, is announced by the Miller Rubber Co. The 30 x 3½ clincher lists at $12.50; the 30 x 3½ straight side at $13.50; the 32x 3½ at $19.25; 31 x 4, $22.20; 32 x 4, $24.50; 33 x 4, $25.25; 34 x 4, $25.90; 32 x 4½, $31.45; 33 x 4½, $32.15; 33 x 5, $39.10; 35 x 5, $41.05. The new Rellim fabric sells at $9 for the 30 x 3 and the 30 x 3½ at $10.

USED CAR ALLOWANCE DROPS IN MILWAUKEE

Price Cuts on New Automobiles Result in Flooding Market There

MILWAUKEE, Aug. 21—While reports of retail trade following the formal announcements of 1923 models and new prices are conflicting, on the whole dealer trade has undergone a very respectable stimulation, in the past week especially. As a rule those who have not felt this betterment in demand are dealers representing cars that have not been reduced.

A good many people who did not buy passenger cars last spring during the big rush find eminent satisfaction in new models and prices and are beginning to place orders. Trade, however, probably will not get into a real swing until dealers are better able to place cars into the hands of purchasers at the time of closing the deal.

At the same time the demand for closed cars is relatively much heavier than at any time in the history of the business. It is a matter of much favorable comment among buyers that manufacturers have succeeded in bringing the cost of closed types closer to the price of open cars, and many people are buying coupes and sedans who felt they could not afford them when the difference was so great as it has been up to a short time ago.

Prospects Holding Off

As might be expected, dealers in cars that have not been reduced in price encounter constantly the expression of a conviction on the part of their prospects that they will be able to buy more cheaply later. And, as usual in the case of general reductions by large quantity producers of the best known cars, some people insist that the "end is not yet," and they intend to hold off a little longer to see if the price of their favorite is actually reduced further.

The used car situation has been aggravated further by the new buying movement, and the market is virtually flooded. However, allowances made by dealers have dropped sharply with the trend of new car prices, encouraging the market to some extent. Almost every vacant lot at advantageous intersections is being used as a curb market, prejudicing to some measure the more orderly and substantial effort of legitimate dealers to merchandise their large stocks of used cars.

Garage Sold for $1,200,000

PHILADELPHIA, Aug. 18—The ten-story Pennsylvania Garage & Service Co. building at 329 South Broad Street, brought $1,200,000 at auction, following a $219,000 judgment of the Atlantic Refining Co. The purchaser is Harry Weitzenhoffer. The property is assessed at $700,000.

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LOUISIANA LEADING IN ROADS UNDER WAY

State's Program Is 89 Per Cent Complete, Federal Report Indicates

WASHINGTON, Aug. 17—Progress report on the Federal aid highway construction program shows that on July 31, last, 14,348 miles of highways had been completed and paid for; 3951 miles completed and not yet paid for, and that 14,912 miles are under construction.

Reports made to the United States Bureau of Roads show that the states completed 600 additional miles of good roads during July. Including projects not yet under construction but authorized under Federal aid, approximately 40,000 miles of road building comprise the Federal-states' program for the fiscal year ending July, 1925.

Louisiana ranks first in the progress made on good roads under construction, her program having been 89 per cent completed. Her program contemplates the construction of 254 miles of good roads during the fiscal year ending July 31, 1923. Maryland, the figures show, is at the bottom, with a program of 29.7 miles, of which but 15 per cent is completed.

The largest amount of construction on roads is being done in Texas, where 1484 miles are under construction. Iowa comes next with 1043 miles, and Nebraska is a close third with 985 miles. In Rhode Island but 6.6 miles are under construction for the year, of which 55 per cent have been completed.

Haynes Promotes Radoye

KOKOMO, IND., Aug. 18—Gilbert U. Radoye, who for the last three and a half years has been director of advertising and sales promotion for the Haynes Automobile Co. has been appointed director of sales and advertising for that company. He will continue to direct the advertising and sales promotion divisions in addition to his new duties. Before becoming associated with the Haynes company, Radoye held important positions in the sales and advertising departments of other automobile manufacturing concerns. He is a member of the advertising committee of the National Automobile Chamber of Commerce.

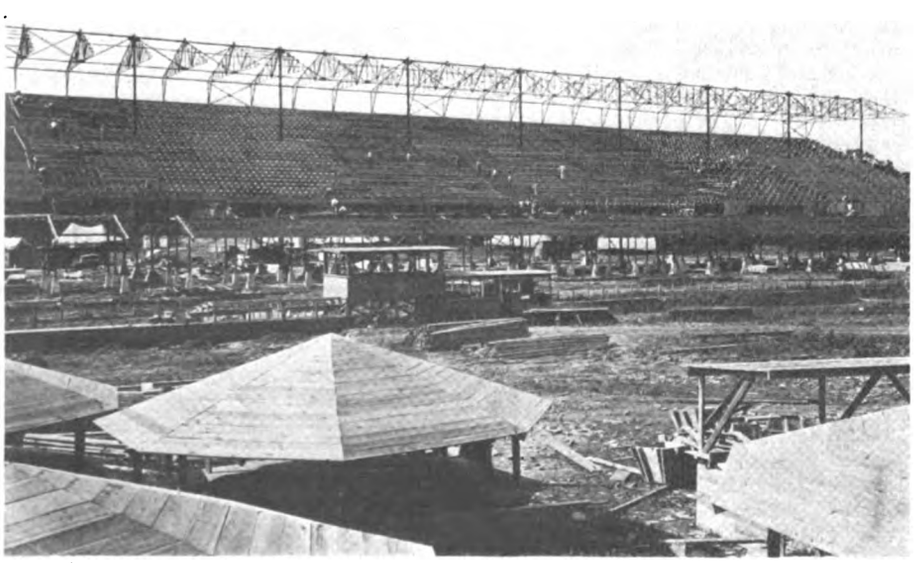
MASSACHUSETTS PUTS LIMIT ON WEIGHTS

BOSTON, Aug. 19 — Massachusetts will have a law in effect next month that will bar from the highways, at the discretion of local officials, all trucks of five tons or more, and limit the capacity carried by three and four ton trucks. While the law does not state specifically what tonnage trucks are affected by the law, the wording limits the weight to 10,000 pounds for vehicle and load.

Out of all the 50 odd laws put into the legislature for consideration this year, but five were passed. The truck law was a compromise. After the big fight on motor truck fees and a tax of one cent a gallon on gasoline ended in the defeat of these measures, the Department of Public Works centered its efforts on a bill to lower the weight limit, which now allows 14 tons, inclusive of vehicle and load.

A bill was under consideration to cut this down to 20,000 pounds, which would mean limiting the capacity of the large trucks very materially. The new law fixes the 10,000 pound limit in making it discretionary with local officials to prohibit such a total weight when it is apparent roads are being injured because of it.

Building Steel Grandstand at Kansas City Speedway



One of the two steel grandstands at the new Kansas City Speedway, now under construction. Each will seat 17,500 people. They are 800 feet long and 80 feet high, giving a remarkably fine view of the 1¼-mile track

KANSAS CITY READY FOR SEPTEMBER RACE

Attendance of More Than 100,000 Is Expected at Opening Classic

KANSAS CITY, Aug. 17—The completion of the new $500,000 Kansas City Speedway in time for the opening with a 300 mile International Speed Race on Sept. 16 is now assured. The widespread interest throughout the Middle West indicates an attendance of more than 100,000 at the opening classic. The list of drivers who have already entered includes: Murphy, Milton, Sarles, Wonderlich, Bennett Hill, Joe Thomas, Al Melcher, Harry Hartz and others well known in speedway events.

E. E. Peake, secretary and general manager of the Kansas City Speedway Association, points to the fact that John S. "Jack" Prince, veteran speedway builder who is constructing the Kansas City bowl, has promised a product that will be the fastest circular track in existence. As an example of the effort of Prince to attain this end, he is banking the turns to an angle of 40 degrees. Prince believes this will permit a speed of 120 miles an hour.

Another innovation is the steel grandstands, of which there are two. They are more than 800 feet in length and have a combined seating capacity of 35,000. The highest point in the seating arrangement is 80 feet above the track level, affording an exceptionally fine bird's-eye view of the track.

Peake has arranged with the American Legion to provide them a liberal allowance of the receipts, and the men in turn are conducting an active ticket selling campaign throughout Missouri and Kansas.

Receivers for Hydro-United

PHILADELPHIA, Aug. 19—Receivers for the Hydro-United Tire Co., of Pottstown, Pa., have been appointed by the United States District Court of the Eastern District of Pennsylvania, which has named John P. Hall and Ephraim Lederer. The receivership was applied for, it is stated, for the purpose of conserving the assets of the corporation and working out its affairs for the best interests of all the parties concerned.

Burnett Joins Homer McKee

INDIANAPOLIS, Aug. 19—Leo N. Burnett has resigned as advertising manager of the Lafayette Motors Corp. and will join the copy and planning department of the Homer McKee Co., Inc., advertising agents, Indianapolis, early in September. Burnett has directed Lafayette advertising since the inception of the company three years ago and was previously advertising manager of the Cadillac Motor Car Co. of Detroit.

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TARIFF BILL HALTS GASOLINE INQUIRY

R. L. Welch of Petroleum Institute Only Witness Heard So Far

WASHINGTON, Aug. 15—The Senate gasoline probe which has been under way for more than two months has been temporarily halted, pending the passage of the tariff bill. Members of the Committee on Manufactures, who are conducting the probe, state that the investigation will be resumed as soon as possible.

An offer to testify in the probe has been received from W. C. Teagle, president of the Standard Oil Co. of New Jersey by Senator McNary, acting chairman of the committee. Teagle's invitation will be accepted according to Gilbert E. Roe, in charge of the probe, who states that the Standard's head leads the list of those who would be subpoenaed. The only witness that has been heard to date is R. L. Welch, secretary of the Petroleum Institute.

"In the aggregate the automobile users of the United States have already profited by the investigation, but it is the expectation that before the committee shall have finished its investigation gasoline prices will not only be lower but will be more stable," Roe said.

INDUSTRIAL PICKS BOULDEN FOR SALES

ROCHESTER, N. Y., Aug. 19—The Selden-Atlas merger is considered to be of far-reaching significance in the automotive world, and men of recognized commercial and industrial standing are its sponsors. At the sales conference of the field men of both the Selden and Atlas corporations, Allan Cosgrove, vice-president of the Atlas Truck Corp. and also of Industrial Motors, formally placed entire charge of the Atlas trucks and Atlas field men in the hands of H. T. Boulden, vice-president of the Selden Corp. and sales director of Industrial Motors.

The policy of the Industrial Motor Corp., the holding company, so far as it concerns the advertising, sale, manufacture and service of Selden and Atlas trucks, will be controlled by a committee composed of Frederick M. Small, president of the Martin-Parry Co. and president of Industrial Motors; George C. Gordon, president of the Selden Truck Corp. and vice-president of Industrial; Allen Cosgrove, vice-president of both Atlas and Industrial corporations, and H. T. Boulden, R. H. Salmons, vice-president of the Selden Truck Corp., is another of the Selden officials who will act as vice-president of Industrial Motors.

Receivers for World Tire Corp.

CHICAGO, Aug. 18—A petition in bankruptcy has been filed against the World Tire Corp., in the U. S. District Court by the Columbia Tire & Rubber Co., chief creditor, claiming $12,000 due it on goods delivered to the World company, the Seaman Paper Co., $200 and F. E. Scott, $216.

The Columbia company claims that the World firm, realizing its insolvency, undertook to pay off its creditors by favoring the Tire Co. of America with a shipment of goods amounting to $10,000. E. D. Buell has been appointed receiver. The World Tire Corp. controls a number of retail stores throughout various parts of the country.

"THE SALES EXECUTIVE" ISSUED BY A. E. A. IN ITS MERCHANDISING CAMPAIGN

Chicago, Aug. 15.

THE Automotive Equipment Association has undertaken the publication of a second periodical to assist in carrying out the merchandising campaign. The new publication, which contains four pages, is The Sales Executive, which, as its name indicates, will be sent to sales executives of both manufacturing and jobbing members. The Automotive Equipment Merchandiser, another four-page issue which is brought out occasionally and addressed to the salesmen of the manufacturing and jobbing members, will be continued.

Both these little periodicals will be edited by Ray W. Sherman, merchandising director of the A. E. A. The Sales Executive will disseminate information which can be used by sales managers, both of manufacturing and jobbing houses, in promoting the A. E. A. campaign. The Merchandiser, as in the past, will devote itself to presenting ideas for co-operation in the campaign by salesmen of both manufacturing and jobbing members.

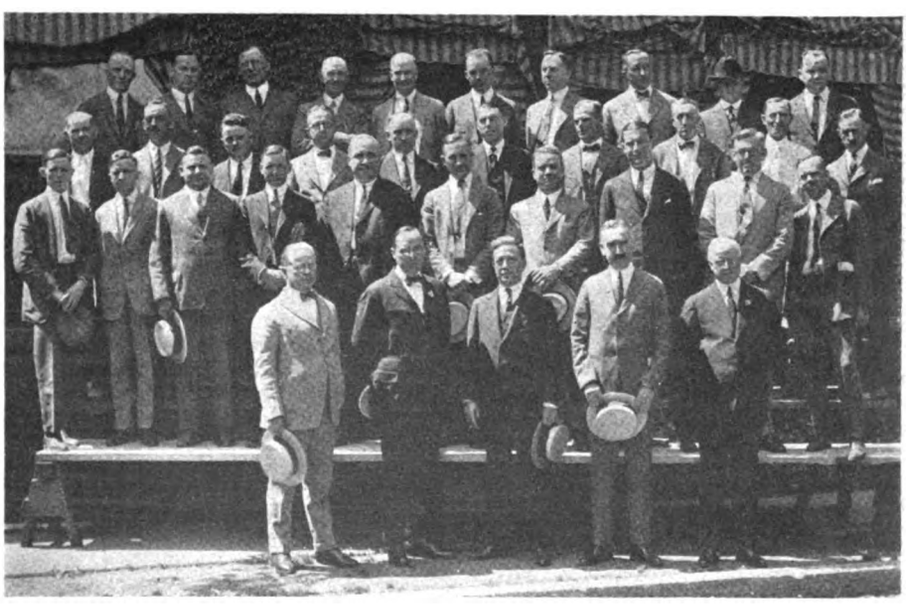
The A. E. A. will continue its distribution of sales promotion literature to retailers in the automotive equipment field through the 32-page books, "A Greater Business and Greater Profits" and "Shop Profits," which supplement, respectively, the "Ask 'Em to Buy" and "Shop Profits" films, and which dealers and garagemen can have for the asking.

NEW WORKING CAPITAL FURNISHED REPUBLIC

NEW YORK, Aug. 15—Following a conference between C. H. Poppenhusen, representing the bankers committee, and M. N. Buckner, representing the note holders' committee, it is announced that ample working capital has been secured for the Republic Motor Truck Co., Alma, Mich., which will permit of the carrying on of the business.

Details of the plan providing for a readjustment of the company's capitalization and indebtedness are now being worked out.

Selden and Atlas Managers Confer



When the division sales managers and branch managers of the Atlas Truck Corp. met with the Selden field and home office organization at Rochester, N. Y., for a three-day conference the control of the Atlas organization was turned over to H. T. Boulden, Selden vice-president, who is the sales director of the Industrial Motors Corp., an organization formed by the merger of the two companies. The officers in the front row are, left to right: H. T. Boulden, George C. Gordon, Selden president; Allan Cosgrove, Atlas vice-president; William C. Barry and R. H. Salmon, Selden vice-presidents

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CHANGES IN THE TRADE

Stephen Haas has taken over for eastern Pennsylvania, New Jersey and Delaware the distribution of Ames bodies for Ford cars.

Carleton Brothers, Davenport, Iowa, has taken over the Jewett and Paige agencies, formerly handled by the **Mohl Motor Truck Co.**

R. Hallan recently became manager of the Chicago branch of Mack Trucks, having been transferred from the Cincinnati branch, of which he was manager.

A. S. Johnston of Atlanta will open an agency in Columbus, Ga., for the sale of Willard batteries, the firm to be known as the **Johnston Battery Co.**

Milwaukee Automobile Service Co., Milwaukee, Velie dealer, has changed its corporate title to the **Velie Sales Corp. of Milwaukee.** E. B. Deffer is secretary.

Corcoran & Meadows has established a store at Columbus, Ga., for the handling of automobile equipment. The members of the firm are **E. M. Corcoran** and **J. T. Meadows.**

Sheboygan (Wis.) Auto Parts Co. has been organized by **George Regh** of Milwaukee and on Sept. 1 will open for business as a jobber of and dealer in general automotive equipment.

Cruse-Crawford Co. of Birmingham will open up a branch of their sales business in Bessemer, Ala., where they will carry a stock of Willys-Knights, Overlands and Hupmobiles.

Valley Inn Buick Co., Neenah, Wis., has been organized by **L. H. Bleecker**, formelry Ford dealer, to handle the Buick line in Neenah-Menasha and vicinity. **Carl Achtenhagen** is associated with Bleeker.

Midland Garage, Davenport, Iowa, formerly Koepke Bros., has been taken over by **Edward C. Stokes**, Davenport, and **M. W. Stokes**, Chicago. The latter has been with the Baker-Franklin agency, Chicago.

Chicago-Lexington Co., of which O. T. Mitchell is president, has opened its third branch outside of "motor row." The new store is at 4006 Washington Boulevard, where both Lexington and Gardner cars will be sold.

Neel-Cadillac Co., Philadelphia, has appointed the **F. W. Peters Motor Car Co.**, Bordentown, N. J., and Burlington, N. J., and **Branson & Doerr**, with territory including Vineland and Millville, as Cadillac dealers.

Overland-Piedmont Co., handling the Overland at Spartanburg, S. C., has been taken over by the Asheville branch of the Overland-Knight Co., headed by M. O. Jackson. P. B. Foster of Spartanburg is in temporary charge.

F. Earl Richardson, for 10 years a leading figure in Cleveland retail and wholesale motor car circles, has been elected as president and general manager of the **Avenue Motor Co.**, Maxwell-Chalmers dealers in Cleveland.

Darling Motor Co. has been organized and has established a Ford agency and service station at Buckhead, Ga. **Southerland Motor Co.**, another recent organization, has established a Ford agency and service station at East Point, Ga.

General Motors Truck Co. has opened a branch in Louisville to serve that territory. **E. W. Boyes** has been appointed branch manager. The branch covers not only Kentucky but sections of southern Indiana, West Virginia, Ohio and Illinois.

Harry W. Cassleman, president of the West Side Nash and Stearns Co., Chicago, who recently purchased the D. & W. Motor Sales Co., 4700 Madison St., Chicago, announces that the latter company will continue to handle the Hupmobile.

Latex Tire Co., Fond du Lac, Wis., manufacturer of tires and tubes under the brands of Latex, Ranger and Winnebago, has opened the first of a series of factory branches at Milwaukee, under the management of **Walter F. McDowell.** The branch will handle all of the southern part of Wisconsin.

B. B. Burns, president of the Illinois Automobile Trade Association, has disposed of his used car business, in which he was exclusively engaged at Decatur, Ill., and will take a vacation before announcing his future business plans. He sold his lease and part of his equipment to **Porter & Watkins**, Hupmobile and Oakland dealers, and closed out his stock of used cars.

H. P. Carter, for three years manager of the Buick branch in Chicago, has been appointed district sales manager with headquarters in Chicago. His territory embraces the Chicago, Milwaukee, Battle Creek and Minneapolis branches and the Minneapolis distributors. **C. F. Yonkers**, sales manager of the Chicago branch for the last three years, succeeds Carter as branch manager.

R. T. C. Motor Co., recently incorporated at Marshalltown, Iowa, will be direct district factory agency for the Studebaker lines. Territory includes Marshall and Hardin counties and parts of Story, Tama and Franklin counties. **W. R. Thomas** is president of the company, but the agency will be under personal direction of **John F. Risewick**, formerly sales manager for Sheriff-Blair Motor Co., Des Moines.

Black & Maffett, Dodge Brothers distributor in Atlanta has been dissolved, **D. C. Black** retiring, and **F. E. Maffett** taking over the business under the new name of the **F. E. Maffett Motor Co.** Both Black and Maffett are among the best known automobile men in the South, each having served in an executive capacity at some time or other on the state dealer association and the Atlanta dealer association. Black has been appointed Buick dealer for South Atlanta.

NEW STEPHENS FIRM FORMED IN NEW YORK

NEW YORK, Aug. 21—The formation of the Stephens New York Motor Car Co. marks a change in representation of the Stephens in the Metropolitan district. An entirely new company has been formed of which Rufus S. Cole is president. New quarters have been opened at 1853 Broadway. Territory awarded covers the Metropolitan district, takes in all of Connecticut, except Tolland, New London and Windan counties; New York state up to and including Columbia county; all of northern New Jersey and the entire foreign representation for Stephens. The company is incorporated for $100,000, with Cole the controlling factor.

In taking up this agency Cole retires from the exporting house, the Robertson-Cole Co., with which he was identified for six years and in which time that company exported nearly 18,000 cars. Previous to that time Cole was Oriental sales manager for the Hupmobile. His long experience in the exporting business caused President Peek of the Stephens to ask him to take over the foreign representation of this car in addition to the Metropolitan territory.

J. Fred Hunter will continue to represent the Stephens factory in this territory as district manager. A. J. Higgins, former Metropolitan distributor for the Stephens, has become a sub agent for Maxwell.

BRUNSWICK SELECTS NEW BRANCH HEADS

CHICAGO, Aug. 19—The following changes in the personnel of the Brunswick Balke Collender Co., manufacturer of Brunswick tires and tubes, have been announced by Joseph F. Rosenberg, general manager:

Walter F. Higgins, formerly at Baltimore, is now district manager for the southeast with headquarters at the Atlanta branch. **A. I. Butler**, district manager for New York, takes over also the district of Philadelphia and Baltimore. **Dr. Burnett Tower**, formerly district manager at Kansas City, has been transferred to West of New York district with the Buffalo branch as headquarters.

Richard E. Cameron, for many years district sales manager of the Ajax Rubber Co. operating out of Pittsburgh, takes over the Brunswick-Cincinnati district, which includes Tennessee, Kentucky and West Virginia, as well as Southern Ohio. His headquarters will be in Cincinnati. **James K. Beach**, formerly with the Federal Rubber Co. of Texas, is now in charge of the Texas division with the Dallas branch as his headquarters.

Howard W. Makley, formerly with the Ajax Rubber Co. at St. Louis, has been made Brunswick district manager for the St. Louis district with headquarters in that city. His territory includes southern Illinois, Missouri, Arkansas, western Tennessee, Louisiana and western Alabama.

E. H. Brandt, assistant general manager, has entire charge of the field operations of the company with 23 branch houses throughout the country.

M. A. M. A. To Move

NEW YORK, Aug. 19—The Motor and Accessories Manufacturers Association will move its headquarters on Oct. 1, having leased office room on the twentieth floor of the new Fisk building, Broadway and 57th Street. The association will have 50 per cent more space than it at present occupies in Aeolian Hall, 33 West 42d Street, where it has been located for the past 10 years.

Ask Metz Bankruptcy

BOSTON, Aug. 19—The Metz Company of Waltham, Mass., makers of the Metz Master Six, was petitioned into bankruptcy here yesterday by three creditors. A hearing will be granted on the petition next week. Two of the creditors brought the proceedings as a result of judgments received against the company last June and a third has an assigned claim.

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ASSOCIATION ACTIVITIES

Birmingham Dealers Convene

BIRMINGHAM, Ala., Aug. 17—At the semi-annual meeting of the Alabama Automobile Dealers' Association there were more than 100 visiting and local dealers in attendance.

The business session was held in the forenoon at the Tutwiler hotel, when a number of short addresses were delivered by local men and visiting delegates. During the afternoon the dealers enjoyed a barbecue on Little Cahaba river, tendered by Birmingham members of the association to their out-of-town guests.

Freight rates were discussed by O. L. Bunn, manager of the Birmingham Chamber of Commerce, who declared that thousands of dollars in freight have been saved to the automobile dealers of Birmingham by the Chamber of Commerce.

Walter Brower, in an address before the meeting, advocated a standard form of sales contract for automobiles and suggested that abstracts be required for automobiles the same as for real estate. Stricter laws for the protection of automobile owners were urged by Mr. Brower.

A strong plea for a committee to investigate the present dealers' license fees, which he declared excessive, was made by Sterling Edwards, local dealer. L. G. Adams, of Mobile, maintained that factory discounts should be given only to legitimate agents, while Joe Lyons, also of Mobile, spoke in behalf of closer unity among the dealers of the State.

The association accepted an invitation extended by the Montgomery Chamber of Commerce to hold its next convention in the capital. The next meeting will be held in January, when new officers will be named.

Service Association Grows

DETROIT, Aug. 16—The Automotive Electrical Service Association, composed of electrical service stations in various parts of the country, has built its membership from 62 to 250 during the past year, according to reports read at a meeting of the board of governors here.

The governors discussed plans for furthering the work of the association, whose object is to make specialized electrical service work available both for dealers and owners.

Mechanics to Organize

ATLANTA, Aug. 18—Mechanics employed by the garages and service stations at Augusta, are planning to form a city organization there this month to include in its membership bonafide automobile mechanics only.

The idea is being sponsored by C. M. Hill, head of the shop department of the Buick agency of that city, the purpose of the organization being to place the mechanics on a higher plane along with other professions, and not being at all in the nature of a union.

The plan is to establish club rooms where reading matter will be provided and the members can gather for a social evening occasionally, and to hold regular meetings for the exchange of ideas in regard to mechanical work and the problems the automobile workers come in contact with in the shops and service stations.

Montreal Closed Car Salon

MONTREAL, Aug. 16—Applications are now being received for the Montreal closed car salon which is now being organized by the Montreal Automobile Trade Association, Ltd. It is reported that applications are coming in very rapidly and that those intending to exhibit should make application immediately as all space available is practically taken up at present. The date for holding the show, sometime this fall, has not been fixed. Only closed cars will be shown. There will be no accessory exhibits.

Acting in Car Thefts

HOUSTON, Aug. 21—The Houston Automobile Trades Association has perfected a new plan for aiding in suppressing the traffic in stolen cars. The association has long been receiving reports of its members on used cars bought and sold, especially sold, and now the association will receive instant reports through its members to its secretary of any used cars being offered at ridiculously low prices or any suspicious action shown by the persons offering cars for sale or visiting shops. These reports will be made to the police immediately. In case the police get on the scene too late the association has a description of the car offered, and furnishes this to all members. The association believes it will soon reduce the car thefts and stolen car traffic in Houston and South Texas to the minimum.

Timken Stock Offered Public

NEW YORK, Aug. 23—For the first time in the history of the Timken Roller Bearing Co. the public is being given an opportunity to buy into its ownership. Members of the Timken family, now sole owners of the corporation, have decided to sell one-third of their holdings and 400,000 shares of stock of no par value are offered at $30 each. Hornblower & Weeks, New York brokers, are directing the sale of the stock, aggregating $1,200,000.

The sale has no elements of refinancing for the Timken company. It is stated by officials that the corporation has ample working capital and that the proceeds of the stock sale will not go to the company.

There will be no additional members of the board of directors and no change in policy or management.

MOTO-METER WIDENS SERVICE UNDER PLAN

NEW YORK, Aug. 21—More than 5000 authorized service stations have been appointed in four months, since the Moto-Meter Co. announced a service station policy. News from the factory indicates that the number is being increased rapidly in all parts of the country.

The service station policy, inaugurated to accommodate Moto-Meter users, has as its object the prompt replacement of damaged Moto-Meters with new instruments. Under the plan a car owner whose Moto-Meter has become damaged by breakage of a part can go to any dealer operating under the service station plan, turn in the damaged instrument and get a new one for half price. The dealer is credited with the 50 per cent allowance and also with an additional service allowance.

The company also has a list of prices on parts applying to cases where replacement of an easily installed part is all that is necessary to put the instrument in working condition.

The new policy makes it possible for owners to keep Moto-Meters on their cars at slight additional expense instead of having to drive around with a cork in the radiator cap for two or three weeks while the damaged instrument is being sent to the factory, repaired and returned.

In connection with the service plan, the company is furnishing dealers with service station signs, display materials and window transparencies.

Louisville Dealers at Annual Frolic



The Louisville (Ky.) Automobile Dealers Association held its outing on July 27 at Bauer's Park. The burlesque figure near the center is W. A. Thomas, Grant dealer, who acted as umpire of the ball game which was a feature of the outing

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Calendar of Trade Events

CONVENTIONS

Toledo .....September
Annual Convention of the Ohio Automotive Trades Association.

Buffalo .....Sept. 13-14-15
Annual Fall Convention of the Motor and Accessory Manufacturers Association. Lafayette Hotel.

Chicago .....Sept. 14-15
National used car conference of Trade Association Secretaries, under auspices National Association of Automobile Show and Association Managers.

Santa Barbara.....October
Annual Convention of the California Automobile Trade Association.

Chicago .....Oct 18-19-20
National Association of Farm Equipment Manufacturers.

Chicago .....Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

SHOWS

Aurora, Ill.....Aug. 18-26
Central States Fair and Exposition.

Toronto, Ont.....Aug. 26-Sept. 1
National Automobile Show held in conjunction with the Canadian National Exhibition.

Columbus .....Aug. 28-Sept. 2
Ohio State Fair.

Minneapolis, Minn.....Sept. 2-9
Minnesota State Fair.

Hartford, Conn.....Sept. 4-9
Connecticut Fair Grounds.

Wilmington, Del.....Sept. 4-9
Delaware State Fair.

Spokane .....Sept. 4-9
Annual Automobile Show held in connection with the Spokane Interstate Fair, B. J. Garnet, manager.

Indianapolis .....Sept. 4-9
Automobile and Accessory Show in conjunction with the Indiana State Fair, Automobile Show Building under the auspices of the Indianapolis Automobile Trade Association, J. B. Orman, manager.

Syracuse, N. Y.....Sept. 11-16
New York State Fair.

Cleveland.....Sept. 18-28
Exhibition of Closed Cars during the merchants and manufacturers exposition, under the auspices of the Cleveland Automobile Manufacturers & Dealers Association. Herbert Buckman, manager.

Memphis, Tenn.....Sept. 23-30
Annual Automobile Show held under auspices of the Memphis Automobile Dealers Association, Tri-State Fair Grounds.

New York.....Sept. 23-30
Closed Car Show, under Auspices of Automobile Merchants Association, Grand Central Palace.

Washington, D. C.....Oct. 21-28
Annual Closed Car Salon held under auspices of the Washington Automobile Trade Association, Convention Hall.

Chicago .....Nov. 13-18
Annual Show of Automotive Equipment Association.

Cincinnati .....Nov. 22-29
Second Annual Automobile Accessory and Radio Exposition, Music Hall, under the auspices of the Cincinnati Automotive Trade Association.

New York.....Dec. 3-9
Eighteenth Annual Automobile Salon, Commodore Hotel.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, auspices of the Automobile Body Builders Association.

Chicago .....Jan. 27-Feb. 3
Annual Automobile Salon, Drake Hotel.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Minneapolis .....Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

RACES

Kansas City.....Sept. 16
Opening Meet of New Kansas City Board Speedway.

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Hudson Coach .....Feb. 1, 1922-12
Hudson Sedan .....Aug. 2, 1922-40
Hupmobile (Utility Body)....Jan. 11, 1922-22
Jewett .....Jan. 11, 1922-17
Jewett (Roadster).....June 14, 1922-38
Jewett (Sedan).....May 15, 1922-36
Jewett (Coupe) .....July 19, 1922-38
Kissel (Phaeton).....Mar. 24, 1922-32
Lafayette (Coupe).....Jan. 11, 1922-23
Lexington Series U.....Jan. 11, 1922-22
Lexington
7-passenger Phaeton.....May 3, 1922-41
Lexington
(Supreme 7-pass. Phaeton).May 3, 1922-41
Liberty Coupe.....July 19, 1922-26
Liberty (New body).....Jan. 11, 1922-16
Liberty (Special Roadster)...Apr. 19, 1922-39
Locomobile
(Detailed changes).....Jan. 11, 1922-26
Mack (New Bus Body).....June 21, 1922-42
Marmon (4-pass. Speedster).Mar. 15, 1922-19
Maxwell (New fuel feed)....Jan. 11, 1922-27
Mercer
(Increased equipment).....Jan. 11, 1922-25
Merit .....Feb. 1, 1922-33
Milburn, Model 27-L.....Jan. 11, 1922-24
Mitchell (5-pass. Phaeton)..Aug. 16, 1922-25
Mitchell
(De Luxe Sport Model)....Mar. 29, 1922-31
Moon (7-pass. Phaeton).....Aug. 16, 1922-25
Moon 6-40.....Feb. 1, 1922-11
Moon 6-40 (details).....Feb. 8, 1922-31
Moon 6-40 (Chassis).....June 28, 1922-28
Nash Carriole .....Feb. 1, 1922-12
Nash Four and Six.....Jan. 11, 1922-16
National (Newport bodies)...Jan. 11, 1922-23
Neracar .....Jan. 18, 1922-42
Noma (Sedan) .....Jan. 11, 1922-24
Oakland 2-pass. Coupe)....June 28, 1922-28
Oakland 6-44.....Jan. 11, 1922-14
Oldsmobile Light Eight.....July 19, 1922-26
Oldsmobile Model 47
(Phaeton) .....Mar. 15, 1922-37
Oldsmobile (New Body).....July 26, 1922-17
Ogren .....Jan. 11, 1922-26
Packard (New single six)....May 3, 1922-23
Paterson .....Jan. 11, 1922-23
Peerless .....Aug. 23, 1922-18
Pierce-Arrow (Changes).....Jan. 11, 1922-27
Pilot (Sport Model).....Jan. 11, 1922-22
Premier 6D.....Jan. 4, 1922-34
Premier Model 6D.....Jan. 11, 1922-24
Rauch & Lang.....Jan. 11, 1922-24
Reo .....Aug. 9, 1922-31
Reo Taxicab.....Jan. 4, 1922-35
Rickenbacker .....Jan. 4, 1922-32
Rotary Six.....Jan. 11, 1922-26
Seneca
(Phaeton and Roadster)...June 28, 1922-29
Star (Details).....June 28, 1922-28
Star .....Mar. 15, 1922-14
Standard (Sterling model)...Jan. 11, 1922-26
Stearns (Frame changes)....Jan. 11, 1922-25
Stearns-Knight Six.....July 12, 1922-29
Studebaker (1922 changes)...Jan. 11, 1922-21
Studebaker
(Big Six Speedster).....May 24, 1922-43
Stutz (Left side drive).....Jan. 11, 1922-26
Stutz (1922 model).....Apr. 5, 1922-32
Sun .....Jan. 11, 1922-26
Vauxhall .....Jan. 18, 1922-12
Velie Model 58.....Jan. 11, 1922-18
Westcott 7-pass. Phaeton....Aug. 9, 1922-30
Westcott (Changes).....Jan. 11, 1922-27
Wills Sainte Claire
(Sedan and Town Car)....Mar. 8, 1922-36

TRUCKS

Autocar (2-ton heavy duty)..Jan. 25, 1922-30
Commerce (Bus).....Mar. 8, 1922-19
Duplex (Bus).....Feb. 22, 1922-36
F W D (3-ton Roadbuilder)...Mar. 8, 1922-41
Federal Express Chassis.....July 19, 1922-26
G. M. C. (Bus).....Mar. 8, 1922-30
Mack .....June 21, 1922-42
Milburn Electric
(1 and 1½-ton).....Mar. 8, 1922-31
Overland .....Apr. 19, 1922-41
Schacht (2, 3, 4 and 5-ton)..Feb. 8, 1922-31
Steinmetz (¾-ton electric)...Feb. 22, 1922-30
Stewart Utility Wagon.....July 12, 1922-30
Transport
(1, 1½, 2, 3, 3½ and 5-ton).May 17, 1922-22
United States (1¼-ton).....Mar. 8, 1922-37
Walker-Johnson (2-ton elec.).Feb. 15, 1922-31
White (Bus).....Feb. 22, 1922-36

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾-1	$1650a	3¼x5	34x5n	34x5n	W
Acason RB	1½	1950	3¾x5¼	36x3½	36x6	W
Acason H	2½	2750	4⅜x5¾	36x4k	36x8k	W
Acason L	3½	3450	4⅜x5¾	36x5k	36x10k	W
Acason M	5	4350	5 x6½	36x6	40x12	W
Ace C	1½	2295	3¾x5½	34x3½k	34x5k	W
Ace A	2½	2795	4¼x5½	36x4k	36x7	W
Acme 20	1	....	3¼x5	35x5n	35x5n	W
Acme 30	1½	....	3¾x5	34x3½	34x5	W
Acme 40	2	....	3¾x5	34x3½	34x5	W
Acme 60	3	....	4⅛x5½	36x4	36x7	W
Acme 60L	3	....	4½x5½	36x4	36x7k	W
Acme 90	4½	....	4½x5½	36x5	40x10	W
Acme 125	6½	....	4¾x6	36x6	40x12	W
American 25	2½	3350	4 x6	36x4k	36x4dk	W
American 40	4	4275	4½x6	36x5k	36x5dk	W
Armleder 20	1	....	3¾x5½	34x3½k	34x6k	W
Armleder 21	1½	....	3¾x5½	34x3½k	34x6k	W
Armleder 40-B	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder 40-C	1½	....	4½x5¼	34x3½k	34x6k	W
Armleder HW-B	2½	....	4¾x5½	36x4k	38x7k	W
Armleder HW-C	2½	....	4½x5¼	36x4k	36x7k	W
Armleder KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder KW-C	3½	....	4½x5½	36x5k	36x5dk	W
Atlas MD	1	1185	3½x5	32x4½n	32x4½n	W
Atterbury 20R	1½	2475	3¼x5	34x3½	34x5	W
Atterbury 22C	2½	3375	4½x5½	36x4	36x4d	W
Atterbury 22C	2½	3375	4½x5¼	36x4	36x4d	W
Atterbury 22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury 22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury 8E	5	4975	4½x6	36x5	40x6d	W
Atterbury 8E	5	5125	4¾x6	36x5	40x6	W
Autocar 21UF	1½-2	1950	4¼x4½t	34x4k	34x5k	D
Autocar 21UG	1½-2	2050	4¼x4½t	34x4k	34x5k	D
Autocar 27H	2	2950	4 x5½	34x5	36x7	D
Autocar 27K2	2	3075	4 x5½	34x5	36x7k	D
Autocar 26Y	5	3950	4¼x5½	34x6	36x12	D
Autocar 26-B	5	4100	4¼x5½	34x6	36x12	D
Available H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available H2	2	2775	4 x5	36x3½k	36x6k	W
Available H2½	2½	3160	4 x5	36x4k	36x8k	W
Available H3½	3½	4175	4½x5½	36x5	40x5d	W
Available H5	5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x4	34x5n	34x5n	I
Beck A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	I
Beck B-30	1½	1725	3¾x5	34x5	36x6	
Beck C-40	2	1810	3¾x5	36x6	36x6	
Beck D-50	2½	2395	4¼x5½	38x7	40x8	
*Bell (Penn.)	½	1000b	3½x5	31x4n	31x4n	B
Bell M (Iowa)	1	1495	3½x5½	35x5	35x5n	W
Bell E (Iowa)	1½	2100	3¼x5½	34x3½	34x5	I
Bell O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Belmont A	½	725	3¼x4½	31x4	31x4	B
Belmont D	2	2575	4¼x5½	34x3½k	34x6k	I
Belmont F	3	3500	4 x6	36x5k	36x5dk	I
Bessemer G	1	....	3½x5	35x5n	35x5n	I
Bessemer H-2	1½	....	3¼x5	36x3½	36x5	I
Bessemer J-2	2½	....	4½x5½	36x4	36x4d	I
Bessemer K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem CN	2	1595	4 x6½	34x4½k	34x6k	I
Bethlehem HN	3	2195	4 x5½	36x4k	36x8k	I
Brinton C	2	2500	3¾x5	34x4	34x5	W
Brinton D	3	2975	4½x5½	36x4	36x7	W
Brockway E	1	....	3¾x5½	35x5n	35x5n	B
Brockway S-5	1½	....	3¾x5	36x4	36x6	W
Brockway SK	1½	....	4½x5½	36x4	36x6	W
Brockway KR	2½	....	4½x5½	36x4	36x8	W
Brockway K-5	2½	....	4½x5½	36x4	36x8	W
Brockway RT	3½	....	4¾x6	36x5	36x10	W
Brockway R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway T-4	5	....	4¾x6	36x6	40x6d	W
*Buick	½	945b	3½x4¾	31x4n	31x4n	B
Capitol G	1½	2975	3¾x5	35x5	38x7	W
Capitol H2	2½	3700	4¼x6	36x4	36x8	W
Capitol K2	2½	4250	4¼x6	36x6	42x9	W
Capitol M3	3½	4425	4½x6	36x5	36x10	W
Case	2	....	4½x5¾	36x6	38x7	I
1Chevrolet	¼	510b	3¼x4	30x3½n	30x3½n	B
*Chevrolet G	¾	650	3¼x4	31x4n	31x4½n	B
*Chevrolet T	1	1095	3¼x5½	33x4n	35x5n	W
Chicago C1	1½	....	4 x5	36x3½k	36x5k	W
Chicago C2	2½	....	4 x5	36x4k	36x7k	W
Chicago C3	3½	....	4½x5½	36x5	36x10	W
Chicago D5	5	....	4½x5½	36x6	40x12	W
Clydesdale 10	¾-1¼	1485	3¾x5	34x5n	34x5n	B
Clydesdale 18	¼-1½	1890	3¾x5	34x5	34x5	W
Clydesdale 20	1-1½	2385	3¾x5	34x5	34x5k	W
Clydesdale 42	1½-2	2175	3¾x5	36x3½	36x6	W
Clydesdale 65X	2½-3	3250	4½x5¼	36x4	36x8	W
Clydesdale 65EX	2½-3	3150	4½x5½	36x4	36x8	W
Clydesdale 90	3½-4½	4100	4½x5½	36x5	36x10	W
Clydesdale 120	5-6	4500	4¾x6	36x6	40x12	W
Columbia H	1½	1995	4 x5	35x5	38x7n	I
Columbia G	2½	2335	4 x5¼	36x4	36x7	I
Comet T	1½	1950	3¾x5	34x4	34x4	W
Commerce T	¾-1½	1450	3¾x5	34x4½n	34x4½n	B
Commerce 12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce 16	2	2150	3¾x5	35x5n	36x6n	I
Commerce 18	2½	2195	4¼x5½	36x6n	40x8n	I
Commerce 25	2½	2425	4¼x5½	36x4	36x7	W
Cook 51	2½	3600	4 x5½	36x6n	40x8n	W
Corbitt E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt D-22	1½	$2200	3¾x5	34x3½	34x5	W
Corbitt C-22	2	2600	4½x5¼	36x3½	36x7	W
Corbitt B-22	2½	3000	4½x5¼	36x4	36x7	W
Corbitt R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt A-22	3¼-4	3800	4½x5½	36x5	36x10	W
Corbitt AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn E	1	1600	3¾x5½	35x5n	35x5n	W
Dearborn FX	1½	2300	3¾x5½	34x4	34x5	W
Dearborn F	1½	2180	3¾x5½	34x4	34x5	W
Daarborn 46	2	2500	3¾x5½	34x4½n	34x7	W
Defiance G	1	1095a	3¾x5	35x5n	35x5n	B
Defiance D	1½	2095a	3¾x5	35x5n	36x6n	I
Defiance E	2	2275a	3¾x5	35x5n	38x7n	I
Denby 31	1¼	1485	3½x5	35x5n	35x5n	B
Denby 33	1½	2145	3¾x5	35x5n	38x7n	I
Denby 34	2	2395	3¾x5	30x3½	36x6	I
Denby 35	2½-3	2795	4½x5¼	36x4	36x7	I
Denby 27	4	3895	4½x5½	36x5	36x5d	I
Denby 210	5	4295	4½x5½	36x6	40x6d	I
Dependable A	¾-1	1650	3¾x5½	34x5n	36x6n	W
Dependable C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable D	2½	2650	4 x5½	31x5	30x6	W
Dependable E	3	2950	4¼x5½	36x4	36x7	W
Diamond T O-3	1-1½	1975	3¾x5¼	30x3½n	36x4n	W
Diamond T T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T U	2-2½	2650	4 x5¼	36x4	36x7	W
Diamond T K	3½	3750	4½x5½	36x5	36x5d	W
Diamond T EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T S	5	4500	4¾x6	36x6	40x6d	W
*Diehl A	1	....	3½x5	31x4½	35x5	I
Diehl B	1½	....	3½x5	30x6	36x6	I
Doane 21	2½	4100b	4¼x5¾	36x5	38x7	C
Doane 31	3½	5100b	4⅜x5¾	36x5	36x5d	C
Doane C		6000b	5 x6½	36x6	40x6d	C
*Dodge Brothers	¾	730	3¾x4½	32x4n	32x4n	B
Derris K-4	2-2½	3100	4¼x5½	30x4	36x7	W
Derris K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort 103	½	685a	3½x5	31x4n	31x4n	B
Double Drive B	3	4000	4¼x5½	6	6	W
Duplex A	2	2775	4 x5½	35x6n	38x7n	W
Duplex E	3½	3500	4¼x5½	36x8	36x8	I
Duty 22	2	1590	3½x5	31x3½	34x5	I
Eagle 101	1½	1875	3⅝x5½	31x5	31x5	I
Eagle 100-2	2	2275	3⅝x5¼	31x4k	31x7k	I
F. W. D. B	3	4200	4⅜x5½	36x6	36x6	B
Fageol 1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol 2½	2½	3900	4½x5¾	34x4	36x7	W
Fageol 3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol 5	5	5700	4½x6¼	36x6	40x6d	W
Fargo R	2	1700	3¾x5	36x1	36x6	I
*Federal 1½	1½	1375	3¾x5	—x5n	—x5n	
Federal SD	1½	1800	3¼x5	35x5n	36x6n	W
Federal TE	1½	2175	4 x5½	36x3½	36x5	W
Federal UE	2-2½	2425	4 x5½	30x4	36x7	W
Federal WE	3½-4	3150	4½x5½	36x5	36x5d	W
Federal X2	5-6	4500	4¾x6	36x6	40x6d	W
*Ford TT	1	430	3¾x4	30x3½n	32x4½n	W
Front Drive C	1½	2800	3¼x5½	5	4	W
G & J 20	1	2275	3⅝x5½	34x5n	34x5n	W
G & J A	2-2½	3375	4x5¼	30x4	36x7	W
G & J B	3½-4	4475	4½x5½	36x5	36x10	W
G.M.C. K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C. K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K41-T	2	2150	4x5½	36x4	36x8	W
G.M.C. K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C. K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C. K71-T	3½	3700	4½x6	36x5	40x12	W
G.M.C. K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C. K101-T	5	4050	4½x6	36x5	40x14	W
G.M.C. K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W.	1½	1850	3¾x5½	35x5	35x5	I
*Garford 15	1	1590	3⅜x5½	34x5n	34x5n	W
Garford 25-B	1½	1990	3¾x5½	30x3½	36x5	W
Garford 70-H	2½	2750	4¼x5½	36x4	36x8	W
Garford 77-D	4	3750	4½x6	36x5	36x5d	W
Garford 68D	5	4500	5 x6½	36x6	40x6d	W
Garford 150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary F	1-1½	1675	3¾x5	30x3½	36x5	W
Gary I	2	2250	4 x5½	30x3½	36x6	W
Gary J	2½	2650	4¼x5½	36x4	36x8	W
Gary K	3½	3650	4½x6	36x5	40x5d	W
Gary M	5	4100	5 x6½	36x6	40x6d	W
Gersix M	1½	3100	4 x5½	36x3½	36x7	W
Gersix K	2½	3500	4½x5½	36x4	36x8	W
Gersix	3½	$4500	4½x6	36x5	40x12	W
Graham Bros.	1	1265	3¾x4½	33x4½n	34x5n	B
Graham Bros.	1½	1325	3¾x4½	33x4½n	36x6n	B
1Gramm-Pion. 10	1	1245	3½x5	33x5n	33x5n	B
1Gramm-Pion. 15	1½	1750a	3¾x5	36x3½k	36x5k	I
1Gramm-Pion. 65	1¾	2250a	3¾x5	36x3½k	36x5	W
1Gramm-Pion. 20	2	2475a	4½x5½	36x4k	36x7k	W
1Gramm-Pion. 30	3	3300a	4½x5½	36x4k	36x4dk	W
1Gramm-Pion. 75P	3½	4225a	4½x5½	36x6n	42x9n	W
1Gramm-Pion. 40	4	3850a	4½x5½	36x5	36x5dk	W
1Gramm-Pion. 50	5-6	4450a	4¾x6	36x6	40x6dk	W
Hahn B2	1	1750	3½x5	34x5k	34x5k	W
Hahn O	1½	2150	3¾x5¼	36x3½k	36x6k	W
Hahn K	2	2550	4½x5½	36x4k	36x7k	W
Hahn L	3	3350	4½x5½	36x5k	36x8k	W
Hahn M	5	3850	4½x5½	36x5	36x10	W
Hahn N	6	4250	4¾x6	36x6	40x12	W
Hal-Fer E	1½	2350	4x5½	34x5n	38x7n	W
Hal-Fer B	2½	3000	4¼x5½	36x6n	36x8	W
Hal-Fer F	3½	4000	4½x5½	36x6n	40x10	W
Hall 1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall 2½	2½	3275	4½x5¼	36x4	36x6	W
Hall 3½	3½	4100	4½x5½	30x5	36x5d	W
Hall 5	5	5100	4½x5½	36x5	40x6d	W
Hall 7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey WOA	2	2650	4¼x5½	34x4	34x7	W
Harvey WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye K	1½	1850	3¾x5½	34x3½k	34x5k	I
Hawkeye M	2	2650	4½x5	36x4k	36x6k	I
Hawkeye N	3½	3700	4½x6¼	30x5k	36x10k	I
Hendrickson O	1½	2200	3¾x5½	36x4n	36x5n	W
Hendrickson N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson M	3½	3000	4¼x5	36x5k	36x5dk	W
Hendrickson K	5	4000	5 x6¼	36x6	40x6	W
Huffman B	1½-2	1795	3¾x5	34x3½	34x6	W
Huffman C	1½-2	1695	3¾x5½	36x3½	36x6	I
Huffman D	2-3	2895	4¼x5½	36x4	36x7	
Hurlburt A-A	1-1½	1950	3¾x5	34x5n	34x5n	W
Hurlburt B-B	2-2½	2800	4¼x5½	36x4	36x4d	W
Hurlburt C-C	3-3½	3475	4½x5½	30x5	36x5d	W
Hurlburt D-D	4-4½	4150	4¾x6	36x5	36x6d	W
Hurlburt E-E	6-6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa), B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa), G	1½	2040	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.) HI	2½	2940	4¼x5¼	36x4	36x7	I
Indep'd't(Ohio), F	1½	2385	3¾x5	36x3½	36x5	W
Indep'd't(Ohio) H	2½	3085	4¼x5¼	30x4	36x4d	W
Indep'd't(Ohio) K	3½	3985	4½x5½	30x5	36x5d	W
Indiana 12	1½-2	....	3¾x5¼	34x3½k	34x5k	W
Indiana 20	2	....	4½x5½	36x4k	36x7k	W
Indiana 25	2½-3	....	4¼x5½	30x4k	36x8k	W
Indiana 35	3½-4	....	4½x5½	36x5k	36x5dk	W
Indiana 51	5-7	....	5 x6¼	30x5k	40x6dk	W
*International S	1	1250	3½x5	31x5n	34x5n	I
International 21	1	1550	3½x5½	36x3½	36x3½	I
International 31	1½	1650	3½x5½	36x3½	36x4	I
International 41	2	2100	3½x5½	36x3½	36x5	I
International 61	3	2400	4½x5	36x4	36x6	I
International 101	5	3600	4¾x5	36x5	40x10	I
Jackson 4WD	3½	3850	4½x5½	36x7	36x7	B
Jumbo 15	1½	2295	3¾x5¼	36x3½	36x5	I
Jumbo 20	2	2520	3¾x5½	35x5n	38x7n	I
Jumbo 25	2½	2660	4½x5½	30x4	36x7	I
Jumbo 30	3	3060	4½x5½	36x6n	42x9n	I
Jumbo 35	3½	3900	4½x6	30x5	36x10n	I
Jumbo 40	4	4400	4½x6	38x7n	44x10	I
K-Z 1	1	1750	3½x5	34x3½	34x5	W
K-Z 1½	1½	2075	3¾x5	36x4	36x6	W
K-Z 2½	2½	2550	4½x5¼	36x4	36x8	W
K-Z 3½	3½	3350	4½x5½	30x5	40x10	W
K-Z 5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo G-1	1½	1800	3¾x5	31x4	34x5	W
Kalamazoo LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo NH	3	3145	4 x6	30x5	36x10	W
Kalamazoo HD	3	3350	4¼x6	30x5	36x10	W
Kalamazoo SK	4	3845	4¼x6	36x5	36x12	W
Kalamazoo OK	5	4350	4½x6	30x6	40x6d	W
²Kelly-S K-31	1½	2700	3¾x5¼	30x3½	36x6	C
²Kelly-S K-34	1½	2700	3¾x5¼	30x3½	36x6	W
²Kelly-S K-38	2½	2900	3¾x5¼	36x4	36x4d	W
²Kelly-S K-35	2½	2900	3¾x5¼	36x4	36x4d	C
²Kelly-S K-40	3½	3900	4½x6½	30x5	40x5d	C
²Kelly-S K-41	3½	3900	4½x6½	36x5	36x10	I
²Kelly-S K-42	3½	3900	4½x6½	36x5	40x5d	W
²Kelly-S K-50	5	4400	4½x6½	30x6	40x6d	C
²Kelly-S K-60	6	4600	4½x6½	36x6	40x7d	C
²Kelly-S K-61	5-7	4800	4½x6½	36x6	36x7d	I
Keystone 40	2	2175	3¾x5⅛	34x5n	38x7n	I
Kimball AB	2	3675	4 x6	36x4	36x7	W
Kimball AC	2½	3975	4¼x6	36x4	36x8	W
Kimball AK	3	4500	4½x6	36x4	36x10	W
Kimball AE	4	5000	4¾x6	36x5	40x12	W
Kimball AF	5	5500	5 x6	36x6	40x7d	W
*Kissel Express	1	1545	3¾x5½	34x5n	34x5n	W
Kissel Utility	1½	1975	3¾x5½	36x3½	36x5	W
Kissel Freigtner	2½	2875	4¼x5½	36x4	36x7	W
Kissel H. D.	4	3675	4¼x5½	36x5	36x5d	W
Kleiber AA	1	2200	4¼x5¼	34x3½k	34x5k	W
Kleiber A	1½	3100	4½x5¼	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

1—Gramm-Pioneer. 2—Kelly-Springfield.

(For specifications of passenger cars see page 50)

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5½	36x4k	36x7k	W
Kleiber.....A	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....D	1½	2150	3½x5	34x3½	34x6	W
Koehler.....M	2½	3175	4 x5½	36x4	36x7	W
Koehler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Koehler.....F	3½	4470	4½x5½	36x5	36x10	W
Koehler,MT. Trac	5	3275	4 x5½	36x4	36x7	W
Krebs.....23	¾	1260	3¾x5	34x4½	34x4½	B
Krebs.....24	1	1565	3¾x5	34x5	34x5	W
Krebs.....45	1½	2125	4½x5½	36x4	36x7	W
Krebs.....75	2½	2375	4½x5½	36x4	36x8	W
Krebs.....110	3½	2975	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1925	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2400	3½x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3½x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½-3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5-7	4800	4½x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	5½x6	40x7	40x14	J
Mack...AB D.R.	1½	3450	4 x5	36x4	36x3½d	D
Mack...AB Chain	1½	3000	4 x5	36x4	36x3½d	C
Mack...AB Chain	2	3300	4 x5	36x4	36x4d	C
Mack....AB D.R.	2	3750	4 x5	36x4	36x4d	D
Mack....AB D.R	2½	3850	4 x5	36x4	36x4d	D
Mack...AB Chain	2½	3400	4 x5	36x4	36x4d	C
Mack...AC Chain	3½	4950	5 x6	30x5	40x5d	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4 x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	30x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Maplesaf....**	1½	3000	3¾x5½	34x5n	36x6n	W
Maplesaf...AA**	2	3600	4 x5½	36x4	36x7	W
Maplesaf...BB**	3	4050	4½x5½	36x4	36x4d	W
Maplesaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Maplesaf...DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x5	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4½x5½	34x4	36x7	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3900	4½x6	36x5	40x5d	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4½x6½	36x6	40x6d	W
Master.....F	5	5090	4½x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	912	3⅝x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1¼	2000	3¾x5	34x3½	36x5	W
Menominee....H	1½	2175	4 x5	36x3½	30x5	W
Menominee....D	2-2½	2875	4 x6	36x4	30x8	W
Menominee....G	3½	3800	4½x6	36x5	30x10	W
Menominee...J-3	5	4250	4¾x6	36x6	40x12	W
Moline.....10	1½	1985	3½x5	34x5n	36x6n	J
*Moreland...R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3500	4½x6½	36x5	36x10k	W
Moreland.....RX	4½-5	4600	4¾x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3¾x5½	34x3k	34x4k	J
Nash.....3018	2-2½	2150	3¾x5½	34x4k	34x7k	J
Nash..Quad.	2-2½	2750	4½x5½	36x5k	36x5k	J
Nash..3018, LWB	2-2½	2200	3¾x5¾	34x4k	34x7k	J
Nash.Quad. LWB	2-2½	2800	4½x5½	36x5k	36x5k	J
Nash.....5018	2½	2250	3¾x5½	34x4k	34x7k	J
*Nelson.....G2	1½	....	4½x5½	36x3½	36x6	W
*Nelson.....G3	2½	....	4½x5½	34x4	36x7	W
*Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
*Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5½	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5½	36xfk	36x7k	W
Noble.....A21	1¼	1840	3½x5½	34x5	34x5	W
Noble.....B31	1½-2	2480	3¾x5½	36x4	36x7	W
Noble.....D51	2½-3	2950	4¼x5½	36x4	36x8	W
Noble.....E71	3½-5	3800	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3¾x5¼	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4¼x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4¼x5¼	34x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E.Spec	1½	2285	3¾x5¼	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	36x3½	36x5	W
Ogden.....E	2½	....	4⅛x5¼	36x4	36x8	W
Old Hickory...W	1	$1775	3¾x5	36x3½k	36x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4¼x6	34x4	36x4d	W
Old Reliable....C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6½	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5½	35x5n	35x5n	J
Olympic.....A	2½	3200	4¼x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5½	36x3½	36x7	
Oneida.....C9	2½	3900	4 x5½	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	3250	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	3400	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3850	4 x5½	38x7n	38x7n	B
Oshkosh.....BB	2½	4000	4 x5½	38x7n	38x7n	B
*Overland.....4	1½	450	3½x4	30x3½n	30x3½n	B
Packard.....EC	2-3	3100	4¼x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4¼x5½	36x6n	40x8n	W
Packard.....ED	3½-4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1960	4 x5½	34x3½	34x5	W
Paige.....54-20	2½	2420	4¼x5½	34x4	34x8	W
Paige.....51-13	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot...Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot...Lincoln	2	2050	4 x5½	34x3½	34x5	W
Patriot .Washgt'n	3	2900	4½x5½	36x4	36x7	W
Pierce-Arrow....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow....	3½	4350	4½x6½	36x5	36x5d	W
Pierce-Arrow....	5	4850	4½x6½	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3¾x5	36x4	36x6	
Pittsburgher.....	3	3800	4½x5½	36x5k	36x8	W
Power.....F	2	3150	3¾x5½	36x5	36x7	W
Power.....C	3½	4250	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier.....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4½x5½	34x4	34x6	W
Rainier.....R-20	2½-3	....	4½x5½	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	36x6	40x6d	W
Ranger...TK-20-2	1½	2450	3¾x5	36x6n	38x7n	W
*Reo.....F	¾-1½	1245	4½x4½	34x4½n	34x4½n	B
Reliance.....10A	1½	2400	4 x5½	36x3½	36x5	J
Reliance.....20B	2½	3100	4½x5½	36x4	36x4d	J
Republic.....75	¾	1305b	3½x5	32x4½n	32x4½n	J
Republic.....13	1	1395	3¾x5	34x3	34x4	J
Republic..10 Exp	1	1695	3¾x5	34x5n	34x5n	J
Republic.....11X	1½	1795	3¾x5	34x4	34x6	J
Republic.....19	2½	2195	4½x5½	36x4	36x7	J
Republic.....20	3½	3095	4½x5½	36x5	36x10	J
Rowe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rowe....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rowe....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rowe....G.P.W.	3	5250	3¼x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4½x6	36x5	36x6d	W
Rowe.....F. W.	5	5500	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4-3½x4	32x4n	32x4n	B
Samson.....25	1¼	....	4-3½x5½	35x5n	35x5n	B
Sanford.....W-15	1½-2	2150b	3¾x5	36x3½k	36x5k	..
Sanford.....25	2½-3½	....	4½x5½	36x4	36x4d	W
Sanford.....35	3½-5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5-7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ton	3	3800	4¼x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5½	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Seldan.....30	1½-2½	2250	3¾x5	34x3½	34x5	W
Seldan.....31	1½-2½	3350	4¼x5¼	34x5n	38x7n	W
Seldan.....50	2½-3½	3250	4¼x5½	36x4	36x7	W
Seldan.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Seldan.....70	3½-5	3750	4½x5½	36x5	36x10	W
Seldan.....90	5-7	4950	4¾x6	30x6	40x12	W
Seneca.....M	1½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3¼x4½	32x4½n	32x4½n	B
*Service.....15	1¼	....	3½x5	34x4½n	35x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4¼x5½	35x5n	38x7n	W
Service.....52	3	....	4¼x5½	36x4	36x8	W
Service.....72	3½	....	4¼x5½	36x5	36x5d	W
Service.....77	4	....	4¼x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	$1450	3¾x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5½	34x4	36x6	W
Signal.....J	2½	2375	4½x5½	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x5d	W
Signal.....R	5	3900	4¾x6	36x6	40x6d	W
Southern.....10	1	2090	3¾x5	34x3½	34x4	W
Southern.....15	1½	2590	3¾x5½	36x6n	34x4	W
Southern.....20	2	2090	4¾x5½	36x6n	40x8k	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5½	36x4k	36x7k	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x10	W
Standard.....5-K	5-7	4400	4¾x6	36x6	40x12	W
*Star.....	½	610b	3½x4½	30x3½n	30x3½n	B
Sterling.....1½	1½	2885	4 x5½	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5½	36x4k	36x6k	W
Sterling.....2½	2½	3290	4¾x5½	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6½	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6½	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6½	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6½	36x6	40x7d	C
*Stewart...Utility	¼-1½	1245	3½x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3¾x5½	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3¾x5	34x3½	34x5	I
Stewart.....7	2-2½	2190	4¼x5½	34x4	34x7	I
Stewart.....7-X	2½-3	2390	4½x5½	34x4	34x7	I
Stewart.....10	3½-4	3190	4½x5½	36x5	36x5d	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x5d	I
*Stewart.....	1¼	1245	4-3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1240	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3¾x5¼	34x5n	34x5n	W
Stoughton.....B	1½	2150	3¾x5½	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....F	3	3150	4½x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4½x5½	30x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Thomart.....	1½	1795a	4 x5½	34x5	34x5	
Tiffin.....GW	1½	2100	4½x5½	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5½	36x4	36x3½d	W
Tiffin.....PW	3½	3600	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4½x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000a	4½x5½	35x5n	38x7n	W
Tower.....H	2½	2475a	4½x5½	34x4	36x7	W
Tower.....G	3½	3475a	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895n	3¾x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5½	34x3½k	34x4k	I
Transport.....35	2	1895	3¾x5	34x3½k	36x6k	I
Transport.....55	3	2385	4½x5½	36x4k	36x8k	I
Transport.....60	3½	2585	4¼x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Traylor.....B	1½	2390	3¾x5½	34x3½	34x5	W
Traylor.....C	2-2½	2850	4 x5½	36x4	36x7	W
Traylor.....D	3-3½	2300	4½x5½	36x4	36x8k	W
Traylor.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3½x5	34x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3¾x5½	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5½	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5½	36x4k	36x7k	I
Twin City...B.W.	2	2750	4 x5½	36x6	40x8	I
Twin City...AW.	3½	3950	4½x6	36x5	40x5d	W
*Twin City.....B	3½	....	5½x6	36x6	36x6	I
*Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4½x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4½x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4½x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4¼x5½	36x4	30x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
Union.....FW	2½	3490	4 x6	36x5k	36x8k	D
Union.....HW	4	4650	4½x6	36x6	40x12	D
United.....A	1½	2445	3¾x5½	36x3½k	34x5k	W
United.....B	2½	3150	4¼x5½	36x4k	36x7k	W
United.....C	3½	3975	4½x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States..U	1	1875	3½x5½	34x5n	34x5n	B
UnitedStates,NW	1½	2225	3¾x5	36x5	36x3½	W
United States...N	1½	1975	3¾x5	36x3½k	36x5k	I
United States...R	3	3075	4 x5½	36x4	36x4d	W
United States...S	4	3875	4½x5½	36x5	36x5d	W
United States...T	6	4850	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Veteran.....M**	1½	2699	3¾x5¼	35x5n	35x5n	W
Veteran.....P**	2	3699	4¼x5½	36x4	36x7	W
Veteran.....R**	3	4200	4¼x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	½	1050	3½x4½	31x4n	31x4n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express, truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Vim.....30	1½	$1175	3½x4½	32x4½	32x4½	W
Vim.....31	1	1975	3¾x5½	35x5n	35x5n	W
Vim.....22	2	3150	3¾x5⅛	36x4	36x6	W
Vim.....23	3	3950	4¼x5½	36x5	36x5d	W
Walker-JohnsenA	2	2250	3¾x5	34x3½	34x6	W
Walker-JohnsenB	3	2750	4¼x5½	36x4	36x8	W
Walter.....M	2½	3850	4½x5¾	36x4	36x8	D
Walter.....S	5	4850	4½x6¼	36x6	40x6d	W
*Watson.....C	1	1465a	3⅝x5½	35x5n	35x5n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2550	4⅛x5¼	36x3½k	36x5k	W
Western....L1½	1½	2550	3¼x5	36x3½k	36x5k	W
Western....W2½	2½	3250	4⅛x5¼	36x4	36x7	W
Western....L2½	2½	3250	4¼x6	36x4	36x7	W
Western....W3½	3½	4250	4½x6	36x5	40x5d	W
*White.....15	3/4	2400	3¾x5½	34x5n	34x5n	B
White.....20	2	3250	3¾x5½	36x4k	36x7k	D
White.....40	3½	$4200	3¾x5¾	36x5	40x5d	D
White.....45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick....E	1	1225	3¾x5	34x5n	34x5n	W
White Hick....H	1½	1375	3¾x5	36x3½	36x5	W
White Hick....K	2½	1675	4⅛x5½	36x4	36x5	W
Wichita.....K	2	1875	3¾x5½	36x3½	36x4k	W
Wichita.....M	1	2400	3¾x5½	36x3½k	36x0k	W
Wichita.....RX	3	3200	4⅜x5¾	36x4k	36x8k	W
Wichita.....O	4	$3500	4½x6¼	36x5k	36x5k	W
Wilcox.....AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4¼x5	36x4k	36x3½dk	W
Wilcox.....E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox.....F	5	4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¾x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4½x5¼	36x4	36x7	W
Wilson.....G	3½	3685	4½x5⅛	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin....A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin....C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin....D	3½	3000	4⅜x5¾	36x6n	40x8	W
Wisconsin....E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin....F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will.....N	1½	2450	3¾x5	36x3½k	36x5k	W
Witt-Will.....P	2½	2900	4½x5¼	36x3½k	36x7k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	Lelt.	4-3½x4½	Gas.	1
Allis-Chalm...	15-25	1185	4	Midw.	4-4½x5½	Gas.	3
Allis-Chalm...	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm..	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork ..2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork.....C	14-28	1395	4	Own	4-5 x6	GorK	3
†ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T....	15-30	1900	4	Clim.	4-5 x6½	G,K	4
Aultman-T....	22-45	2800	4	Own	4-5½x8	G,K	6
Aultman-T....	30-60	4000	4	Own	4-7 x9	G,K,D	9-10
Automot. B-3.	12-24	1250	4	Herc.	4-4 x5½	Gas.	2-3
Avery,SR.Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery..Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4½x6	G,K,D	3-4
‡Avery.....	....	....	*	Own	4-4x5½	G,K,D	3
Avery.....	12-25	....	4	Own	2-6½x7	G,K,D	3-4
Avery.....	14-28	....	4	Own	4-4½	G,K,D	3-4
Avery.....	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7¾x8	G,K,D	8-10
Bates Mule .H	15-25	....	4	Midw	4-4½x5½	Gas.	3
Bates Mule..F	18-25	....	*2	Midw	4-4½x5½	Gas.	3
‡Bates MuleG	25-35	....	*2	Midw	4-4½x6	Gas.	..
Bear.....	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
*Beeman....G	2-4	240	4	Own	1-3½x4½	Gas.	....
Best.....	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best.....	60	....	*2	Own	4-6½x8½	G,K,D	8-9
Bering.....	5-10	395	4	LeR.	4-3½x4½	G	..
Bering....1921	....	1850	3	Wauk	4-4¾x5¼	GorK	2
Bers-Oil. 1922	15-30	1395	4	Own	2-6¾x7	Ker.	3-4
Capital.....	15-30	1000	2	Own	4-4¼x6	Gas.	3
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	3
Case.....	12-20	.....	.....	.....	4-4½x5	.....	2
Case.....	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case.....	22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case.....	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T35	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar .5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur.....	5-21½	315	2	N Way	2-4½x4½	GorK	1
Chicago....40	40	2500	4	Own	4-4½x6	Gas.	4
Cletrac.....F	9-16	595	*2	Own	4-3¼x4½	G,K,D	2
Cletrac.....W	12-20	1315	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Dayne.....A	20-30	2500	4	Buda	4-4½x6	Gas.	4
Dil.....D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dil.....R.W.	20	2980	4	Midw.	4-4½x6	Gas.	3
Do-it-All....A	3-6	495	..	Own	1-4½x5	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B.....AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol.....D	9-18	1525	4	Lyc.	4-3½x5	Gas.	2
Farm Horse..B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Farquhar....	15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar.....	18-35	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar.....	25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch..4 Drive	20-35	1950	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	$ 395	4	Own	4-4x5	G,K	2
Franklin....G	18-30	4000	*2	Clim.	4-5 x6½	G or K	3-4
Franklin....C	18-30	3350	*2	Clim.	4-5 x6½	G or K	3 4
Franklin...G2	18-30	4350	2	Clim.	4-5 x6½	G or K	3-4
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt,..A	18-36	2150	4	Wauk.	4-4¾x6¾	G or K	4
Gray.....	20-36	1975	3	Wauk.	4-4½x6¾	Gas.	4
Gray.....	22-44	2165	3	Wauk.	4-5 x6¾	Gas.	4-5
Gt. Western St	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr..20	20	765	4	Own	2-5¼x6½	K,D.	2
Hart-Parr..30	30	895	4	Own	2-6½x7	K,D.	3
‡Hart-Parr...	....	1695	4	Own	6½x7	K,D.	..
Heider.....D	9-16	870	4	Wauk	4-4¼x5¼	G,K	2
Heider.....C	12-20	995	4	Wauk	4-4½x6¾	G,K	3
Heider ...Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4.	12-25	985	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4	15-30	1885	4	Midw.	4-4½x6	Gas	3
Illinois,.....C	15-30	....	4	Clim.	4-5 x6½	G,K	4
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International .	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5¼x8	G,K,D	4
J-T.....N	25-40	3000	*2	Clim.	4-5x6¼	G,K,D	3-4
¶Kinkade....	1½	190	1	Own	1-3 x3	Gas.	....
La Crosse.....	12-24	985	2	Own	2-6 x7	G,K	3
Lauson.....5	12-25	1295	4	Midw.	4-4½x5¼	Gas.	3
Lauson.....21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lauson Road	15-30	2000	4	Beav.	4-4¾x6	K	....
Leader.....B	12-18	685	4	Own	2-6 x6½	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn.....H4J	40-	4500	*	Cont.	4-4½x5½	Gas	4
Linn.....W	60	5000	*	Wauk	4-5 x6¼	Gas	6
Little Giant,.B	16-22	2200	4	Own	1-4½x5	K	4
Little Giant,.A	26-35	3300	4	Own	1-5½x6	K	6
Lombard.1922	85-150	6950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2¾x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Med.D	22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD	35-70	3850	4	Own	4-7½x9	G or K	8-9
Mohawk .1922	8-16	650	2	Light	4-3¼x4½	K or G	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch..	9-18	....	2	Own	4-3½x5	Gas.	2-3
Motor Macult,	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	425	4	Own	2-3¾x4	Gas.	1
Nichols-Shep.	20-42	2650	4	Own	8 x10	G or K	3-6
Nichols Shep.	25-50	3000	4	Own	9 x12	G or K	4-7
Nichols-Shep.	35-70	3650	4	Own	10½x14	G or K	8-10
Nilson Senior..	20-40	1975	5	Wauk	4-5 x6¼	G,K	4
Oil Pull.....K	12-20	....	4	Own	2-6 x8	K,D	3
Oil Pull.....H	16-30	....	4	Own	2-7 x8½	K,D	4
Oil Pull.....G	20-40	....	4	Own	2-8 x10	K,D	5-6
Oil Pull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar ..K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Peoria.....L	12-25	1600	4	Clim.	4-5 x6½	G,K	3
Pioneer.....G	18-36	1750	4	Own	4-5½x6	G,K,D	4
Pioneer.....C	40-75	3550	4	Own	4-7 x8	Gas.	10
Plowman....A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable.....	10-20	390	4	Own	2-6 x7	Ker.	2
Rex.....	12-25	1600	4	Wauk	4-4¼x5¾	G or K	3
Russell.....	12-24	1500	4	Own	4-4¼x5¾	G or K	2-3
Russell.....	15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson....M	....	445	4	Own	4-4 x5½	G,K	2
Sandusky,....J	10-20	1250	4	Own	4-4¼x5¼	G,K,D	2
Sandusky...E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
¶Shelby.....	1	150	3	B & S	1-2½x2½	G	..
Shelby.....D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby.....C	9-18	....	4	Wauk	4-3¾x5¼	G or K	2
Steady Pull ..	12-24	1485	4	Own	4-4 x5	Gas.	3
Tioga.....3	18-32	....	4	Wisc.	4-4½x6	Gas.	3-4
ToroCultivator	6	750	3	LeR	4-3½x4½	Gas.	2
ToroTractor'22	6-10	495	3	LeR	4-3½x4½	Gas.	2
Townsend....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend....	25-50	2500	2	Own	4-8½x10	Ker.	4-8
Traction Motor	40-50	....	4	....	8-3½x5	Gas.	4 5
Traylor....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar...10	25-40	3750	*2	Wauk	4-5 x6¼	G or K	4
Twin City....	12-20	1200	4	Own	4-4½x6	G,K	3
Twin City....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City....	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle Sam C20	12-20	1095	4	Weid.	4-4 x5½	G	2-3
Uncle Sam B19	20-30	1985	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam D21	20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utiliter....501	2½-4	295	4	Own	1-3½x4½	G	1
Utiliter...501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	....	4	Own	4-4½x5¾	G,K	3
Waterloo ...N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore 21-22	12-25	1185	4	Wauk	4-4 x5¾	G,K	3
Whitney ....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin...E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin...F	20-40	2050	4	Wauk	4-5 x6¼	G or K	4
Wisconsin...H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba....12-20	12-20	2400	*2	Wisc.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4¼x6	G,K,D	..
Yuba....20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba.....	25-40	4750	*2	Yuba	4-5½x7	D	..
Zelle.....	12-25	....	4	Buda	4-4¼x5½	G or K	3

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont.—Continental. Dom.—Domas Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows ‡Track Runner. ‡Industrial Tractor. ¶Garden Tractor.

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Specifications of Current Passenger Car Models

NAME AND MODEL	Engine Make	Cylinders Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Ace.....F	G-B..	4-3½x5	114	32x4	$1295	$1295	....	....	$2295
Ace.....L	H-S..	6-3½x5	117	32x4	2230	2230	....	....	3080
Ace.....C	Cont..	6-3⅝x5¼	123	33x4½	2975	2975	....	....	4500
Ambassador.....R	Cont..	6-3⅝x5¼	136	33x5	....	b4500	$4500	....	6500
American.....C	H-S..	6-3¼x5	127	33x4½	b1995	1850	1925	....	2695
Anderson...Aluminum 6	Cont..	6-3½x4¼	114	32x4	....	1195	....	....	....
Anderson.....Series 40	Cont..	6-3½x4½	120	33x4	2195	1650	1795	$2450	2550
Apperson.....8-21-S	Own..	8-3½x5	130	34x4½	....	2620	2645	3625	3695
Auburn.....6-51	Cont..	6-3⅜x4½	121	32x4	1575	1475	....	2275	2345
Auburn.....6-51	Cont..	6-3⅜x4½	121	32x4½	....	n1995	1545	....	....
Bay State.....	Cont..	6-3¼x4½	121	32x4	1800	1800	....	2400	2500
Bell.....4-32	H-S..	4-3½x5	114	31x4	1095	1095	....	....	....
Bell.....6-50	H-S..	6-3½x5	124	32x4	1545	1545	....	....	....
Biddle.....B1 & B5	Buda..	4-3¾x5¼	121	32x4	2950	b2950	....	3950	3950
Brewster.....91	Own..	4-4 x5½	125	32x4½	5000	5000	....	....	7000
Buick..1922-34-5-6-7-38	Own..	4-3⅜x3¾	109	31x4	865	885	u 725	1175	{1395 {1325e
Buick....1922-41-4-5-47	Own..	6-3⅜x4½	118	33x4t	1175	1195	u975	1935e	1985
Buick..1922-48-9-50-4-55	Own..	6-3⅜x4½	124	34x4½	n1625v	n1675v	1435	1895	2195
Cadillac.....61	Own..	8-3½x5½	132	33x5	3100	3150	3150	b3875	4100
Case.....X	Cont..	6-3⅜x4½	122	32x4½	1750	1790	....	2550	2690
Case.....W	Cont..	6-3⅝x5¼	129	34x4½	....	2200	2250	2850	3250
Chalmers.....1922	Own..	6-3¼x4½	117	32x4	1185	1185	....	1595	2295
Chalmers.....1922	Own..	6-3¼x4½	122	32x4	....	....	1345	....	....
Chandler.....Six	Own..	6-3½x5	123	33x4	1495	b1495	1645	b1995	2295
Chevrolet.....Superior	Own..	4-3⅛x4	102	30x3½	510	525	u425	{b840 {k680	860
Chevrolet.....FB	Own..	4-3⅛x5¼	110	32x4	865	885	....	1325	1395
Cleveland.....41	Own..	6-3 x4½	112	32x4	1085	1095	n1260	1495	1585
Cole.....890	Nort..	8-3½x4½	127¼	33x5	2685	b2685n	2685	b3385	3685
Columbia.....De Luxe	Cont..	6-3⅜x4¼	115	32x4	1475	1475	b1475n	b1925	1995
Columbia.....Light Six	Cont..	6-3⅛x4¼	115	31x4	995	985	....	....	1395
Comet.....C-53	Cont..	6-3½x5¼	125	33x4½	....	1985	2085	....	2985
Crawford.....22-6-60	Cont..	6-3⅝x5¼	122½	32x1	3000	3000	3000	....	4500
Crawford-Dagmar...6-60	Cont..	6-3⅝x5¼	135	33x5	....	n3500	....	....	....
Daniels.....D-19	Own..	8-3½x5¼	132	33x5	a4350	b4350	4350	5250	6000
Davis.....71	Cont..	6-3⅛x4¼	114	31x4	....	1295	....	....	....
Davis.....61-67	Cont..	6-3⅝x4½	120	32x4	1595	1595	b1695	2095	2195
Dixie Flyer.....H-S-70	H-S..	4-3½x5	112	32x4	1175	1175	b1295	1515	1595
Dodge Brothers.....	Own..	4-3⅞x4½	114	32x4	850	880	....	980h	1440
Dorris.....6-60	Own..	6-4 x5	132	33x5	....	b3900	3950	4985b	5750
Dort.....19-14	D-Ly..	4-3½x5	108	31x4	885	885	....	{1265 {1045k	{1385 {1095k
Driggs.....	Own..	4-2⅝x4½	104	30x3½	1275	1275	....	....	1975
Duesenberg...Straight 8	Own..	8-2⅞x5	134	33x5	6500	6500	6750	7800	7800
Du Pont.....A	Own..	4-3⅛x5½	124	32x4½	3000	3200	....	3800	4000
Durant.....A-22	Cont..	4-3⅞x4¼	109	31x4	n890	890	....	1365	1365
Durant.....B-22	Anst..	6-3¼x4½	123½	32x4½	1600	1650	....	2250	2400
Earl.....40	Own..	4-3 x5¼	112	32x4	1485	1095	950u	b1395	1795
Elcar.....K-4	Lyc...	4-3½x5	118	33x4	1095	1095	n1095	1345	....
Elcar.....7-R	Cont..	6-3¼x4½	118	33x4	1395	1395	n1395	2065	2165
Elgin.....K-1	Falls..	6-3⅛x4¼	118	33x4	1345	1295	b1345	2195	2195
Essex.....	Own..	4-3⅜x5	108½	32x4	....	1095	....	1195k	{1895 {1295k
Ford.....T	Own..	4-3⅜x4	100	30x3½	r319	s348	u285	580	645
Franklin.....9-B	Own..	6-3¼x4	115	32x4	1900	1950	u1750	2750	2850
Gardner.....T-R & G	Lyc...	4-3½x5	112	32x4	895	895	....	1095k	{1595 {1345k
Grant.....	Own..	6-3⅛x4½	116	32x4	1385	1385	....	1895	1945
Gray.....	Own..	4-3⅝x4	100	30x3½	....	490	....	....	760
H.C.S.....Series 3	Weid..	4-3⅝x5½	120	32x4½	2475	2475	....	3250	3475
Halladay.....4	Own..	4-3½x5	115	32x4	1095	1095	....	1990	2085
Halladay.....6	Own..	6-3½x5	115	32x4	1595	1595	....	2295	2395
Handley-Knight.....	Own..	4-4½x4½	125	32x4½	....	....	2650	3450	3450
Hanson.....30	Cont..	6-3⅛x3¼	114	31x4	....	995	....	....	....
Hanson Six.....60	Cont..	6-3⅜x4½	121	32x4	1595	1595	1795	b2475	2585
Hatfield.....A-42	H-S..	4-3½x5	115	32x4	....	1345	b1315	1950	1950
Haynes.....75	Own..	6-3½x5..	132	34x4½	2395	b2395	2395	....	3395
Haynes.....55	Own..	6-3½x5	121	32x4½	1545	1495	....	2095	2395
Holmes.....Series 4	Own..	6-3⅛x3¼	126	34x4½	....	b2500	2500	b3300	3600
Hudson.....Super 6	Own..	6-3½x5	126	34x4½	....	b1645	1695	2570	{2650 {1795k
Huffman.....	Cont..	6-3⅜x4½	120	32x4	1395	1395	....	....	2295
Hupmobile.....Series R	Own..	4-3¼x5½	112	32x4	1150	1150	u1025	{1635 {1335k	1785
Jackson.....638	Cont..	6-3⅛x4½	121	32x4½	....	1485	b1685	2985	2985
Jewett.....Six	Own..	6-3⅛x5	112	31x4	a995	995	....	b1445	1465
Jordan.....MX	Own..	6-3⅛x4¾	120	32x4	1895	1795	....	2785	2785
Kelsey.....4	Grav..	4-3⅛x5	111	32x3½	....	985	....	....	1450
Kelsey.....6	Walk'r	4-3½x4½	118	32x4	....	1525	....	....	2175
Kenworthy.....8-90	Own..	8-3 x5¼	130	32x4½	5000	5000	5250	6000	6000
King.....K	Own..	8-3 x5	120	32x4½	1795	1795	b1795	2400	2550
Kissel.....45	Own..	6-3⅜x5½	124	32x4½	n2385	1885	2385	b2975	3075
Kline Kar.....6-55-K	Cont..	6-3⅜x4½	121	33x4	1690	1690	1690	2750	2890
LaFayette.....	Own..	8-3¼x5¼	132	33x5	3985	b4090	4090	5500	5500
Leach.....999	Own..	6-3½x5¼	134	32x4½	5500	5500	5500	5500	5500
Lexington.....23	Anst..	6-3½x4½	128	32x4½	1695	{1695 {2045n	1795	b2345	2545
Liberty.....10-D	Own..	6-3½x5	117	32x4	1575	1395	r1575n	{2085 {1695k	2245

NAME AND MODEL	Engine Make	Cylinders Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Lincoln.....	Own..	8-3⅜x5	130	33x5					$3900
Lincoln.....	Own..	8-3⅜x5	136	33x5	$3800	b3800	$3800	....	$4900
Locomobile.....48	Own..	6-4½x5½	142	35x5	....	b7600	7600	10500	11000
Maibohm.....B	Own..	6-3½x4½	116	32x4	1395	1395	b1495	2165	2165
Marmon.....34	Own..	6-3⅝x5⅛	136	32x4½	3385	b3185	3185	3985	4385
Maxwell.....	Own..	4-3⅝x4½	109	31x4	885	885	....	1365	1485
McFarlan.....1922	Own..	6-4½x6	140	33x5	6300	b6300	6300	7500	7500
Mercer.....Series 5	Own..	4-3¾x6¾	132	32x4½	3950	b3950	c3950	4850	5250
Merit.....	Cont..	6-3¼x4½	119	32x4	1895	1895	....	....	....
Mitchell.....F-50	Own..	6-3½x5	120	33x4	a1750	1750	b1850	b2325	2525
Mitchell.....F-50	Own..	6-3½x5	127	32x4½	....	....	1850	....	....
Monroe.....1922-S-9	Own..	4-3¼x4½	115	32x3½	950	950	....	....	....
Moon.....6-49	Cont..	6-3½x4¼	115	31x4	....	1295	....	....	1695
Moon.....6-58	Cont..	6-3⅝x4½	128	33x4½	1785	1785	1785	2785	2785
Nash.....691-96-97	Own..	6-3¼x5	121	33x4	1210	1240	b1395n	....	....
Nash.....692-94-95	Own..	6-3¼x5	127	34x4½	....	....	1390	b1890	2190
Nash Four.....41-4	Own..	4-3⅝x5	112	33x4	915	935	....	{a1385 {1195k	{1545 {1275k
National.....BB	Own..	6-3½x5¼	130	32x4½	a2475	b2475	2375	b3725	3825
Noma.....3C	Cont..	6-3¼x4½	128	32x4½	2500	b2500	c2600	....	3500
Noma.....1D	Bea...	6-3½x5¼	128	32x4½	3000	b3100	c3200	....	5500
Norwalk.....430-KS	Lyc...	4-3½x5	116	32x3½	....	1135	....	....	....
Oakland.....6-44	Own..	6-2¾x4¾	115	32x4	975	{995 {u795	b1165n	{b1445 {1185k	1545
Ogren.....6 T D Luxe	Cont..	6-3⅝x5¼	134	33x5	b3750	3750	3850	4500	4800
Oldsmobile.....43-A	Own..	4-3⅛x5¼	115	32x4	1145	1145	b1265	1645	1795
Oldsmobile.....46	Own..	8-2⅞x4¾	122	33x4½	....	b1735	1735	....	2635
Oldsmobile.....47	Own..	8-2⅞x4½	115	32x4	1595	1595	b1595	2145	2295
Overland.....4	Own..	4-3⅝x4	100	30x3½	550	550	....	850	895
Packard.....Single-Six	Own..	6-3⅜x5	126	33x4½	2485	2485	u2250	3175	3275
Packard.....Single-Six	Own..	6-3⅜x5	133	33x4½	....	u2350	2685	....	3525
Packard.....Twin-Six	Own..	12-3 x5	136	35x5	3850	3850	3850	5240	5400
Paige.....6-44	Own..	6-3¼x5	119	32x4	1465	1465	u1290	1995	2245
Paige.....6-66	Cont..	6-3¾x5	131	33x4½	a2495	n2245	2195	3100	3155
Paterson.....22-6-52	Cont..	6-3⅜x4½	120	32x4½	....	1550	1585	2565	2595
Peerless.....56-S-7	Own..	8-3¼x5	125	34x4½	....	b2790	2790	3500	3790
Pierce-Arrow.....	Own..	6-4 x5½	138	33x5	5250	b5250	5250	6800	7000
Pilot.....6-50	H-S..	6-3½x5	126	32x4½	2050	2000	2050	2950	3000
Premier.....6-D	Own..	6-3⅜x5½	126¾	33x5	3150	b3100	3250	4300	5100
Premecar.....6-40-A	Falls..	6-3⅜x4¼	117	32x4	1095	1095	....	1750	1825
R & V Knight.....R	Own..	4-3¾x5	116	32x4	....	1665	....	2385	2475
R & V Knight.....J	Own..	6-3½x4½	127	32x4½	2475	b2475	2475	3015	3105
Ree Series.....T6 & U6	Own..	6-3⅛x5	120	33x4	1595	n1645	1485	b2355	2435
ReVere.....C	Dues..	4-4¼x6	131	32x4½	3200	3200	3200	....	4000
Rickenbacker.....A	Own..	6-3½x4¾	117	32x4	....	1485	....	1885	1985
Reamer.....6-54-E	Cont..	6-3½x5¼	128	32x4½	2850	b2585	2785	3850	3850
Reamer.....4-75-E	Dues..	4-4¼x6	128	32x4½	3985	b3585	b3750n	....	b4650
Rolls-Royce.....	Own..	6-4½x4¾	143½	33x5	....	10,900	....	....	....
Saxon.....125	Own..	4-3½x5	112	32x4	1195	1195	....	1795	1795
Sayers Six.....DP	Cont..	6-3¼x4½	118	33x4	1645	1645	....	2645	2645
Seneca.....L-2 & O-2	Lyc...	4-3½x5	108	30x3½	875	875	....	....	....
Seneca.....50 & 51	Lyc...	4-3½x5	112	31x4	1095	1095	....	....	....
Sperling.....A	Supr..	4-3⅜x5	114	32x4	980	980	....	1685	1685
Standard.....98	Own..	8-3¼x5	127	34x4½	2150	b2500	2500	2750	3200
Stanley.....	Own..	2-4 x5	130	32x4½	2700	2700	2700	3775	3950
Stanwood Six.....	Cont..	6-3¼x4½	118	33x4	1765	1765	....	2750	....
Star.....	Cont..	4-3⅛x4¼	102	30x3½	r319	s348	u285	580	645
Stearns-Knight....SKL4	Own..	4-3¾x5⅝	125	34x4½	2250	2250	2450	3150	3450
Stearns-Knight.....6	Own..	6-3⅜x5	130	34x4½	2700	2700	2850	3350	3700
Stephens.....90	Own..	6-3½x4½	122	33x4½	1575	b1595	c1625	2450	2550
Stevens-Duryea.....E	Own..	6-4¼x5½	138	35x5	7250	b6900	6800	u5600	b8900
Studebaker....Light Six	Own..	6-3½x4½	112	32x4	975	975	u785	1225	1550
Studebaker..Special Six	Own..	6-3½x5	119	32x4	1250	1275	b1275	1875	2050
Studebaker.....Big Six	Own..	6-3⅞x5	126	33x4½	u1300	1650	n1785	2275	2475
Stutz.....	Own..	4-4½x6	130	32x4½	2450	b2790	c2640	3490	4450
Templar.....A-445	Own..	4-3⅜x5½	118	32x4	2025	2125	b2175	2785	2785
Tulsa.....E-1-2-3	H-S..	4-3½x5	117	33x4	1175	1175	....	....	....
Velie.....48	Cont..	6-3¼x4½	115	32x4	1585	1585	b1800	2485	2485
Velie.....34	Falls..	6-3½x4½	122	32x3½	1235	1235	....	1750	2085
Velie.....58	Own..	6-3⅝x4¼	115	32x4	1275	1275	....	2185	2185
Washington.....C	Cont..	6-3⅜x4½	120	32x4	....	1785	....	....	2285
Westcott.....C-48	Cont..	6-3½x5¼	125	32x4½	....	....	1890	....	2890
Westcott.....A-44	Cont..	6-3¼x4½	120	32x4	....	1690	n1890	....	2690
Wills Sainte Claire..A-68	Own..	8-3¼x4	121	32x4½	2475	2475	....	3275	3475
Willys-Knight.....20	Own..	4-3⅝x4½	118	32x4	1350	1375	....	1875	2095
Winton.....40	Own..	6-3¾x5½	132	35x5	3400	n3600	3400	b4450	5550

a—3-passenger. b—4-passenger. c—6-passenger. n—Sport. h—All Metal Type. k—Soft Top Type. u—Chassis Price. r—Price without starter and demountable rims. Price with starter and demountable rims $414. s—Price without starter and demountable rims. Price with starter and demountable rims $443. t—Model 47-34x4½ Tires. v—Tire Sizes 32x4½. e—Touring Sedan.

Engine Make: Anst—Ansted. Bea—Beaver. Cont—Continental. Curt—Curtis. D.Ly—Dort Lycoming. G-B—Grey Beal. H-S—Herschell-Spillman. Lyc—Lycoming. Nort—Northway. Roch—Rochester. Rut—Rutenberg. Supr—Supreme. Weid—Weidely. Wisc—Wisconsin

For latest price changes see page 40

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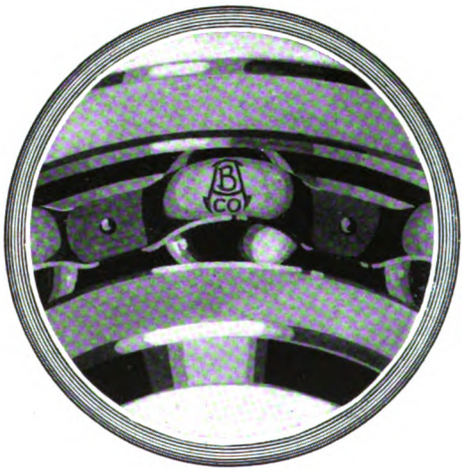


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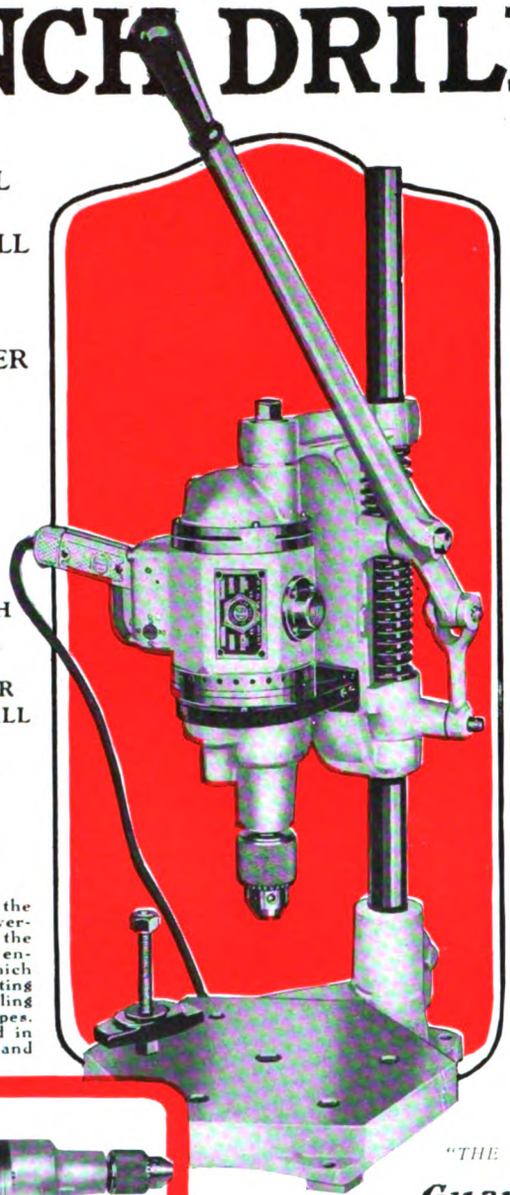
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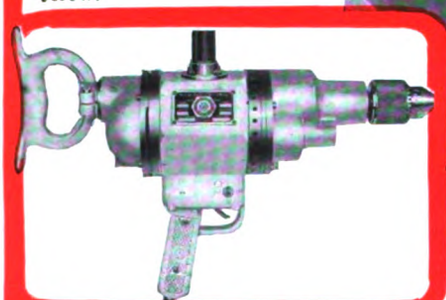
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COMPLETE AS SHOWN

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The bracket supporting the drill may be raised or lowered to suit the height of the work and may be swung entirely around the post, which is a big advantage in locating the hole and for handling large jobs and odd shapes. The bracket is secured in position by means of a hand screw.





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MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

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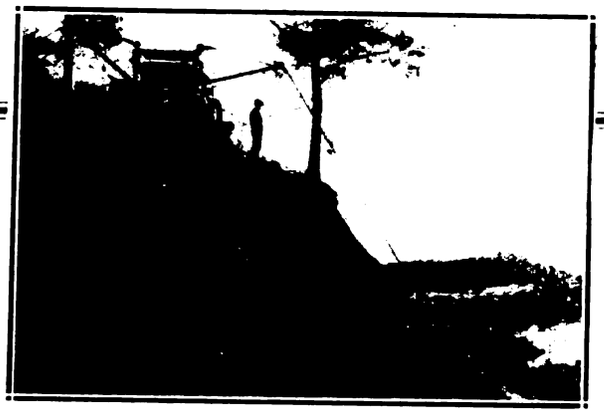
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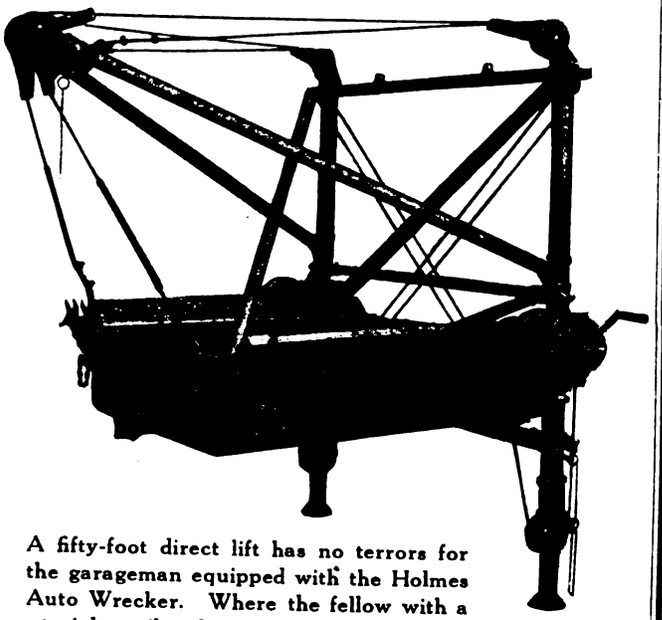
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You Can Do It
with a
HOLMES AUTO WRECKER



A fifty-foot direct lift has no terrors for the garageman equipped with the Holmes Auto Wrecker. Where the fellow with a straight tail-end crane is out of luck, the Holmes-equipped man comes home with the bacon.

Pretty fat bacon, too, on a job like this.

It's the Holmes bridge-idea that does it. You run the cable of the opposite winch to a tree or pole, and lower the foot of the crane that's to do the lifting. Then there's no strain on the chassis.

Turn the handle, and up she comes. Hook her on with the Holmes V tow-bar that prevents accidents, and away you go. If she won't roll pick her up bodily.

Holmes Wrecker fits any large car or light truck chassis. Shipped complete, ready for work on the day of arrival. Ask now for full specifications. There's coin in it.

ERNEST HOLMES CO.

Chattanooga, Tenn.

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Saves Customers,
and Profits.

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and Statement Writing.

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Ask About The Cash System That Adds

Find Out How The Business Recorder Keeps Every Total

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At least 25c a day thrown into adjustments on disputed accounts;
The 50c and more a day which it costs you to try to keep your books posted and balanced;
Innumerable other losses and wastes which can be stopped to the extent of adding to your income, increasing your collections and sales and completing your record knowledge of the business.

You can make such a saving with the use of the McCaskey System for your business; you can obtain these advantages either in handling your credit business, your cash business or both through the McCaskey Complete System equipment. The system is a better investment than merchandise. You can afford to buy less, next time, and install a McCaskey. It will place money in your pocket!

Send the coupon today! It will not obligate you! It can tell you about the safest investment you can make for your business success.

Name.....*St. and No*.....

City.....*State*.....

Credit or Cash Business?.....*Number of Accounts*.....

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXII New York, U. S. A., Wednesday, August 30, 1922 No. 9

Nobody Expects the Cop to Annihilate Him But Maybe He Can Induce Him to Quit Blocking the Traffic



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National Conference Called on Used Cars

Trade Association Secretaries and Dealers Will Meet in Chicago in September to Study Latest Co-operative Plans—Practical Used Car Men on Program

SOME dealer associations have tried co-operative used car plans and have given them up as unworkable. Some other dealer associations have such plans in successful operation, with the result that used car losses have been eliminated or reduced to a negligible figure.

Why will used car co-operation work in one city and not in another?

Are the various co-operative plans so different that some are doomed to failure at the start while others have gone on for many months, in some cases years?

Automobile trade association secretaries of the country, with some of the dealers their associations serve, are going to search for answers to these questions at a conference in September.

The National Association of Automobile Show and Association Managers, with membership in most of the States, has called a National Used Car Conference, to be held at the Congress Hotel, Chicago, Thursday and Friday, Sept. 14 and 15. Trade association secretaries and dealers throughout the country are invited to attend. Many have already signified their intention of being present to take part in a discussion of one of the trade's serious questions, a discussion which promises to turn the light particularly on association effort to minimize used car losses. Time will also be given to used car merchandising by the individual dealer and to suggestions for improving the selling power of the automobile shows.

Some men in the trade call the used car situation a menace to the industry. Others say it is the chief obstacle to continuously profitable business for distributors and dealers. On all sides it is conceded that the dealer's lot would be much more pleasant and his future more assured if buying and selling of used cars could be put on a substantial business basis in every community and every dealer organization.

Chairman of Conference



ROBERT E. LEE

Secretary, St. Louis Automobile Dealers Association

The National Used Car Conference does not expect to discover a "cure" for the used car ailments of the trade. It does expect to bring out the good and bad features of various co-operative plans, assisting dealers and trade association secretaries in improving conditions in their own communities.

Robert E. Lee, veteran secretary of the St. Louis Automobile Dealers' Association and acting president of the association secretaries' organization, will preside over the conference. All sessions will have a period for general discussions, when delegates will be encouraged to ask questions and tell about practical used car methods followed in their cities and towns.

In order to get the discussions started along the several channels contemplated, the association has arranged for the presence of men from the trade, well informed on used car merchandising, as speakers.

One speaker will be L. B. Sanders, secretary of the Used Car Statistical Bureau operated by the dealers in Boston. Sanders will give the details of the Boston plan, one of the few that has been a success in a large city. Boston dealers claim that they have virtually eliminated losses on used cars, that they have been able to educate both the trade and the public to valuations of used cars based on their worth in the market and that the tone of the Boston trade has been elevated by the co-operated plan, which has been in operation since February.

Another speaker will be Ginder Abbott, head of the Abbott Automobile Co., Ltd., Packard and Franklin distributor in New Orleans. Abbott is the author of the New Orleans plan, whfch informs dealers not only of the reasonable re-sale value of a used car but also of its salability, as the information exchanged in the co-operative plan shows the makes and models of used cars in dealer's hands and indicates how long they have been in stock. The New Orleans plan has

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other details which go farther along the line of dealer co-operation than most of its contemporaries.

A representative of the Saginaw, Mich., Automobile Dealers' Association, which has had a used car co-operative plan in operation since 1917, will be another speaker.

It is also the plan to set forth the results accomplished by association exchanges of used car sale price records and the association secretaries in Detroit, St. Louis and Kansas City, where such plans are in operation, will give brief reports of the experiences of their members.

To call attention to progressive methods of handling the used car question within an individual dealer organization two speakers have been arranged for, B. B. Burns, used car dealer in Decatur, Ill., and president of the Illinois Automotive Trade Association, will be one of these speakers. Burns is the only used car dealer in the country holding office in a State trade association. The big city dealer's used car problem will be discussed by S. E. Comstock, vice-president of Williams & Hastings, Hupmobile distributor in Detroit. A round table discussion will follow these addresses.

The final afternoon of the conference will lay aside the used car question to bring about an exchange of association secretaries' ideas on shows. The question, "What Can Be Done to Make the Automobile Shows Sell More Cars?" is expected to start this discussion. The discussion will be more or less informal, but some additional questions will be stated by the chair to assist in getting ideas on the floor for discussion:

1—Can the shows be laid out so that there will be an opportunity, at least for a fair percentage of the people attending, to sit down part of the time instead of having to mill around for hours and go out more or less exhausted?

2—Would it pay to have historical exhibits showing the progress of transportation and particularly automotive transportation?

3—Would it pay to have highway exhibits, in some cases to arouse public interest in better highways and in other cases to sell the non-car-owning public on the allurements of fine highways in the vicinity already built?

4—Would it pay to have educational exhibits along traffic and safety lines?

The association holding the conference has sent invitations to all automobile trade association secretaries throughout the country. If any have been overlooked, because of incomplete records of association names and addresses, the officers would like to have them accept this article as an invitation to attend. As the association is an organization of trade association secretaries it was decided not to send invitations to individual members of local associations, that is, to dealers, but all dealers will be welcome as guests of the conference and participants in the discussion.

The National Association of Automobile Show and Association Managers is an organization of several years' standing. Its members come both from large and small cities. Its meetings have developed many of the most progressive ideas employed in the conduct and promotion of the automobile shows. It has also investigated other association and dealer activities and generally has been a clearing house of ideas for its membership.

The members decided upon a used car conference for the September meeting because the heavy trading of the past few months, followed by the present tapering off in both new and used car sales, is expected to bring dealers' used car annoyances forcibly to the front again. It was decided to open the meeting to non-members so that all interested secretaries and dealers might have the benefit of the information brought out.

The conference room will be in the Congress Hotel and the first session, Thursday morning, Sept. 14, will be called to order at 10.30 a. m., Chicago daylight time. The conference is expected to conclude late Friday afternoon.

Officers of the association have asked Motor World to extend through its columns a general invitation to association secretaries and dealers to attend. Persons accepting it should notify Neal G. Adair, secretary, 239 West Thirty-ninth Street, New York.

Program—National Used Car Conference

THURSDAY, SEPT. 14

Morning and Afternoon

How Boston Dealers, Through Co-Operation and Education Determine Actual Used Car Values
By L. B. Sanders, Secretary, Boston Used Car Statistical Bureau

Eight Months of Used Car Co-Operation in New Orleans
By Ginder Abbott, Member, Automobile Dealers' Association of New Orleans

The Saginaw Plan
By a Representative of the Saginaw, Mich., Automobile Dealers' Association

What Used Car Sale Price Bulletins Have Done for the Trade
By Representatives of the Detroit, St. Louis and Kansas City Automobile Dealers' Associations

Round Table Discussion

FRIDAY, SEPT. 15

Morning

Buying and Selling Used Cars at a Profit
By B. B. Burns, Decatur, Ill., Used Car Dealer; President, Illinois Automotive Trade Association

Used Car Merchandising
By S. E. Comstock, Vice-President, Williams & Hastings, Detroit distributor

Round Table Discussion

Afternoon

How Can We Make the Automobile Shows Sell More Cars?

Round Table Discussion

Dealers and Trade Association Secretaries Invited. Can You Afford Not to Attend?

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Industrial Tractor Market Still a Field Barely Scratched

Dealers Who Want to Get Into It Will Have to Make Close Study of Economies Tractors Can Perform in Particular Industries

By E. A. WHITE

THE industrial market for tractors is attracting keen interest. Ever since its introduction the tractor has been sold to a limited extent in industry but it was not until the agricultural market fell off so markedly two years ago that attention was turned with renewed vigor to the industrial market. When the agricultural slump came some tractor manufacturers immediately concentrated selling efforts in the industrial field, with the result that a large percentage of their output during the past two years has been taken by industry while others who paid practically no attention to this market were agreeably surprised to find that dealers representing them had developed substantial outlets in this field.

The result is that the tractor is already successfully used in a large number of industries. The problem to-day is to explore this field and develop its maximum possibilities.

To a greater extent even than the farmer, the manager of an industrial plant or operation demands to be shown just what economies the use of the tractor will produce in his own particular case. Successful salesmen in this field report that the men directing industrial plants and operations, as a rule, have little conception of the possibilities of this form of power generator; in fact, many of them have never thought of it and others are already more or less prejudiced against it because of failures resulting from injudicious attempts to use the tractor for various industrial purposes.

It may as well be frankly admitted that in some industries the tractor has failed because salesmen did not familiarize themselves with conditions to be met and unwisely attempted to oversell the tractor. It was simply impossible for the performance of the machine to come up to the pictures painted. This served to unsettle the prospect regarding the value of the tractor and to convince him and others to whom the report drifted that the salesmen knew nothing of the problems to be met or the possibilities of the product being sold.

One example will illustrate this point. A fuel company had a problem of moving coke. The motive power in use was pulling three coke wagons about the yard. The tractor salesman painted a glowing picture and promised to haul ten of these coke wagons at one time. The customer did not attempt to dispute the claim but demanded a demonstration. On the first trip with the ten wagons the tractor stalled for lack of traction and the salesman was laughed out of court. The sale was not made and the door was closed against further demonstrations. There was a chance to have made the sale if the tractor had pulled four or five wagons, which it could have done, and showed even a slight reduction in the cost of operation. However, opportunity was not offered to demonstrate this because confidence had been undermined by the failure of performance to approach claims made in sales talk. Overzealous salesmen can defeat their own ends.

Contrast this result with the methods and results of another salesman. This man became convinced that the tractor could be used efficiently in large lumber yards. He went to various yards and studied their problems. Finally he was able to get a prospect interested to the extent of allowing a demonstration. In order to meet the demands of this particular job it was necessary to develop a new type of trailer. This the dealer did at his own expense. The first attempt was a failure for the trailer broke down but the way was kept open for further demonstrations. After repairs had been made with some changes in the design of the trailer a two-day demonstration resulted in a sale. The use of this outfit has resulted in cutting in half the cost of unloading and handling lumber for this firm. Of course the profits from the sale of this outfit did not cover the expense incurred but an effective entry was made into the field. Now other lumber yards can be approached on the basis of this experience. The right start has been made.

These experiences illustrate how the industrial market must be approached. Constructive salesmanship is required. In industrial fields such as road building, where the tractor is established, the dealer can look for immediate business, but in other cases the field must be investigated, problems analyzed and sometimes new equipment developed to permit the tractor to be used to the best advantage. In the latter case it is logical for the manufacturer to take the intiative except in case of the larger dealers, who believe that the possibilities warrant the outlay required by pioneer work.

A CONSIDERABLE number of tractors have already been sold for road construction and maintenance, oil field uses, lumbering, care of golf grounds and to a more limited extent for municipal uses, but outside of these fields the industrial tractor market is still virgin territory. Here and there possibilities have been opened up, just enough to indicate where the dealer may wisely look for business. In 1921 one large tractor company conducted an investigation and found that without any direction from the company's home office approximately eight per cent of dealers' sales had been for other than agricultural purposes. Now the officials of this company are convinced that there is a large industrial market awaiting development and active steps are being taken in this direction.

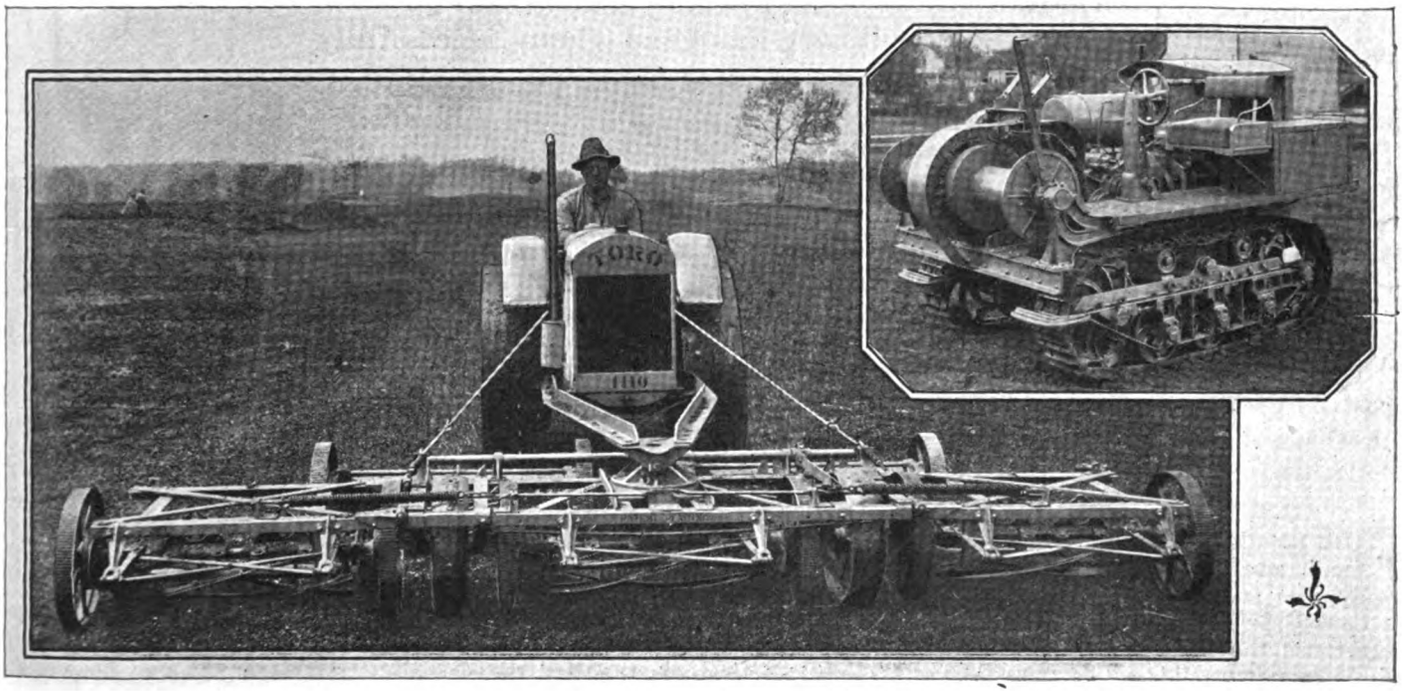
As many fields of the industrial market are virgin territory from the standpoint of tractor sales it is desirable to indicate where the tractor has been used to advantage. Highway construction and maintenance is perhaps the best

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developed field as far as the sale of tractors is concerned and promises to continue to be an important outlet on account of the ever increasing interest in good roads. The various sizes of tractors will operate tractive road machines and equipment from the smallest to the largest sizes. In addition to these classes of operations there are the driving of belt machines, such as rock crushers and pumps, for which the tractor is admirably adapted. In some cases the tractor has been used in the hauling of road building materials with marked success. A number of manufacturers are putting out special road building cars and for numerous odd jobs. One packing plant in Chicago keeps a small tractor busy doing nothing else than odd jobs. Lumber yards are using the tractor to take lumber from the car to the pile. One lumber yard in Chicago operates its pick-up wagon with a tractor. These are drawn about the yard and the orders filled from the various piles. In this way five trucks are kept busy delivering. In many instances golf courses are now kept in condition with tractor-driven mowers.

Enough has already been done to indicate that there are big possibilities for the sale of tractors in the indus-

Two Interesting Suggestions of Industrial Tractor Uses



The larger picture shows a Toro with a mower attachment at work on a golf course. In the insert is a Monarch with a winch attachment

tractors with features which make them especially well adapted to meet the requirements of this particular kind of work.

IN the oil fields the tractor is used for hauling, especially in opening up new fields, and with winch attachments for pulling pipes and casings. In the lumber fields it is used for pulling logs out of the woods, loading and hauling. Winch attachments are also used in this industry. Municipalities have purchased tractors for use in cleaning streets of snow and dirt, maintaining dirt streets, operating plows and scrapers and the disposal of garbage and refuse. One city is using a tractor to push refuse over the edge of a dump at a considerable saving over hand methods. Contractors are using this mechanical motor for excavating, driving drills and hoists, hauling raw materials and moving from job to job. The mover of buildings needs a more efficient prime mover than he has used in the past. Sometimes the building is small enough to permit the tractor to be attached direct. Where larger units are moved a winch is used and the tractor anchored to hold it in place. In addition to this the tractor furnishes power for placing heavy timbers and moving from one job to the next. Manufacturing plants are using the tractor to move raw and finished materials, spot freight trial field. This market is just opening up. It is a field where wise planning and constructive salesmanship are necessary. While considerable effort may be necessary to develop some industrial fields this is compensated for by the prospect of relatively large sales, as the tractor will be used in fleets. In other cases the field is ready for sales effort which makes the first work the finding of prospects. There is an opportunity for the dealer to capture this market and hold it for his own.

THE first step of the dealer who has not previously canvassed his territory for industrial tractor sales may very properly be a census of the industries in the territory and the classification of them according to the type of work that the tractor may be expected to do.

Then, with this list as a basis, the selling effort, including direct mail and canvassing, may be planned to appeal to the individual groups intelligently and effectively.

An important phase of the presentation of the tractor in the industrial field undoubtedly is the economies that may be effected by its use. Observance particularly of the use of tractors by firms that have been successful with them will provide the dealer with the kind of selling ammunition that presents the tractor in a practical way.

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Delivering the Selling Punch with Small Daily Advertisements

A Discussion of the Advantages of the Small Space Ad and How a Boston Dealer Has Used Them Successfully for Several Years

SOME dealers are finding it economical and decidedly effective to use small, daily, high powered ads in local papers instead of less frequently appearing quarter, half and full page insertions.

The practice has several distinct advantages and these advantages are sometimes enhanced by an occasional half-page or page "spread" when special conditions such as the arrival of a number of new models, a price change, the addition of equipment or some new refinement present themselves.

One of the strongest arguments in favor of the small advertisement is that it may be used daily at a cost no greater than a large ad used weekly would be. Another is that the consistent and continual appearance of the ad in a newspaper has a strong accumulative selling force that is lost in less frequent plan of insertions.

STILL another advantage in the small advertisement is that it usually gets much better position on the newspaper page than the larger ad, because the printer, in "making up" his page, pyramids his ads on one side or the other, and the small ads generally fill in in the "stepping" of the ads next to the reading matter.

However, a fact to be considered in connection with the small space ad is that its smaller dimensions demand so much greater selling power in the use of the space to get results. Compressing into nine to twelve square inches what the ordinary dealer ad consumes 100 to 150 square inches to tell, calls for judicious use of type and white space. It means making every word count.

In order to insure attracting attention the small ad used daily should have a certain similarity in appearance and at the same time a power, once the reader's eye is caught, to fasten onto his interest and make him read to the bottom.

One of the pitfalls that the dealer using small space ads is very liable to fall into is making the copy too fat. That is, writing more words than will fit into the space and still leave enough white paper to make them attractive and easily readable.

A series of ads that is particularly attractive and has been eminently successful is used by the Beacon Motor Car Co. of Boston. It is an interesting fact that this dealer was one of the pioneers in this practice in advertising in the automotive trade, using as far back as 1916 ads that are remarkably similar in appearance with those used to-day. This, in itself, may be regarded as proof of the value of this type of advertising.

The collection of Beacon Motor Car Co. ads shown on the next page is typical of the ads that have been appearing in Boston papers since 1916.

In commenting upon them, John L. Snow, president of the company, says: "The principal value of this small advertising is: First, we display conspicuously something that is always identified with the Peerless car; second, the story we tell is always a short one and easily read in a glance; third, small-sized ads, if properly set up, catch the eye just as quickly as larger ones. There are some objections to large ads, particularly if they have a great deal of reading matter, and besides a small ad can be run more often at the same expense, and this feature is a distinct advantage."

Snow tells many interesting stories about this form of advertising, but one of the most interesting, perhaps, came from an advertising agency back in 1917. Snow was writing most of the ads himself in those days, but occasionally the advertising man would submit one.

None of those suggested by the ad man, however, appealed to Snow and he continued to write his own copy. Finally the advertising man bought a Peerless, and after he owned the car for a couple of weeks he sent in another ad, unknowingly. He wrote in a letter: "It does all you say and more." In fact, many of the most effective are just sentences taken out of letters from customers and friends.

For a while Snow used a cut of a Peerless radiator showing a license number. These numbers were not "faked" but were actually the numbers of Peerless owners. This feature gave the ads a strong personal twist that was effective. Peerless owners and friends of Peerless owners noticed when a familiar license number appeared, and they talked about it, which, of course, increased the circulation of the ad.

The text of the advertisements usually is confined to one subject and the size, which averages two columns, three inches deep, naturally limits the number of words to about twenty. After using these ads for about two years on inside pages daily they were shifted to the front page and used every other day. Snow believes that every other day on the front page is equally as effective as daily.

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Small Space Ads with High-Power Selling Appeal



THESE are some samples of the small advertisements that have been used for several years by the Beacon Motor Car Co., Peerless distributor in Boston. Note the character in all of the ads which makes them stand out, also the force with which the selling punch is delivered in a very few words. Daily appearance of these ads gives them the advantage of their cumulative effect, which so often is lost in larger space ads used infrequently

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"We Must Keep It Easy and Pleasant to Drive a Car"

A Story About Traffic and Traffic Problems That Every Automotive Man Should Read

By HERBERT BUCKMAN

Manager, Cleveland Automobile Manufacturers and Dealers Association

TRAFFIC conditions are growing to a point of sales resistance. Therefore, it behooves people in the motor car business to take a greater interest in this kind of automobile legislation.

The point of sales resistance has been reached in some places right now. In other places it is less than three years away. The time to act, therefore, is now. Traffic conditions affect the automobile business from two principal angles—congestion and hysterical prosecution of owners and drivers.

The fundamental fact is that we must keep it easy and pleasant to drive a motor car. As soon as the use of a car becomes unpleasant or odious, just that soon will sales be affected adversely. There is the dollar and cents reason for the interest of the dealer. I mention dealer rather than factory, because traffic is a local problem. Just remember that. Traffic is a local problem. It is all fine to talk about uniform traffic regulations, about interstate touring under one set of traffic laws, but it is not a practicability because our cities are too dissimilar. The problem in Detroit with broad, flat boulevards is not the same as in Pittsburgh, with narrow streets along the hillsides. Therefore, traffic is a local problem and must be viewed in the light of *your* city and the councilman from your ward.

Not long ago in Chicago I asked some friends of mine who can well afford automobiles, why they do not own cars. The answer was nearly always the same: "What good would an automobile do me in Chicago? The congestion is too great to make it worth while. For short business trips I use a taxi, and why should I put a couple of thousand dollars into an automobile to use one day a week, and then you ought to see our roads on Sundays!"

There is definite sales resistance, and Chicago's problem to-day is the problem of a hundred or more cities to-morrow morning.

Chicago's trouble is that it has developed into a one street town. They have built marvelous Michigan Boulevard, but by the time it is completed two or three parallel thoroughfares are needed to give motor traffic that freedom of movement which is deserves and which the growth and development of the community demand.

Congestion is our chief foe. There are two principal causes of congestion—physical limitations, such as narrow streets or lack of through thoroughfares; and legal restrictions on operating cars.

When we find a city beginning to think about its traffic problems, we must turn the destructive thinking along the lines of more severe speed regulations into the constructive process of new and



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better streets. Let a city find itself standing unduly prominent in accident statistics and what happens? Newspapers, politicians and a lot of other folks indulge in hysterical razzing of the automobilist. "Send him to jail!" "Cut down the speed limit!" "Make them travel single file!" Those are some of the cries echoed in the daily papers and eagerly made the rallying cry of notoriety-seeking politicians or reformers. It gets people's names in the paper, but it does not help the automobile business.

And then too often we find the automobile interests of the community sitting back afraid to raise their voices to say in understandable terms, "What we need is better traffic facilities, to relieve congestion, to prevent accidents and *liberate, not restrict* motor traffic."

Now some well-meaning brethren are going to wax indignant that the automobile interests would be put in a position of defending the reckless and careless driver. Nothing of the kind. Let's not be mealy mouthed about this.

For a community to grow and develop it must have proper facilities for motor travel. Transportation by rail is no longer adequate. We must have the freedom, the speed, the flexibility, the wide range afforded by the automobile. Instead of passing laws against speed and sending people to jail who drive faster than 20 miles an hour, our cities should be constructing thoroughfares where motor cars can be safely driven at 30 miles an hour or better. We have not begun to use the automobile in the full sense in which it can serve the transportation needs of our communities; we have not scratched the surface. When cities have thoroughfares on which motor cars can be more completely utilized, then the automobile business will be even better than it is now. Every time a new boulevard is opened or new country roads built, the sales possibilities of motor cars are increased.

Now just a few concrete examples of legal restrictions and their causing congestion.

We have a good state law on speed in Ohio. It's pretty pliable and makes exceeding certain limits merely presumptive evidence of reckless driving. Now what did they propose to do, after a typical speed crusade by the police and a municipal judge? The chief justice of the municipal court proposed this ordinance.

"Section 2271. No person shall operate * * * *a motor vehicle or motorcycle on the public roads, streets or highways of said city* at a rate of speed greater than is reasonable or proper, having regard for the width, traffic, use and general and usual rules of such road, *street* or highway. * * * *A rate of* speed greater than fifteen miles per hour in the *business* or congested district *of said city* * * * or *more than* twenty miles per hour in other portions thereof, shall *be presumptive evidence of a rate of speed greater than is reasonable or proper.*

"The foregoing presumptive shall be conclusive unless it can be shown that there were no intersecting streets crossed or to be crossed by a vehicle exceeding

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the rate of speed provided for aforesaid, to wit: fifteen miles per hour in the business or congested district, and twenty miles per hour in the other portions of said city, and that such rate of speed should be indulged in at the time and place in question with absolute safety to the occupants of such vehicle and all other persons and property lawfully upon such highway."

Ridiculous Policies

What indescribable conditions would be brought about if such a 20-mile limit were enforced throughout the city, coupled with a police judge who announces in advance a policy of sending to the workhouse every person convicted of exceeding the speed limit!

Then the Safety Council proposed to strengthen the prohibition against reckless driving by making these three offenses reckless driving punishable by jail sentences:

"Passing another vehicle going in the same direction in front of a school or public playground on such days as they are open."

"Passing or *attempting to pass* two other moving vehicles going in the same direction, which are abreast or *nearly abreast*, except when directed by the department of police or one of its officers."

"Driving at more than half the legal speed when passing within six feet of a standing street car headed in the *opposite direction.*"

Roll your own conclusions of the traffic conditions if such ordinances were enforced.

Do you think they would cause congestion of the kind to injure the sale of motor cars?

Untrained Thinking

There is only one answer.

A chief trouble is that there is too much untrained thinking on the subject of traffic, which is an involved and difficult problem demanding expert knowledge. Just because a man is a good lawyer, or has walked a police beat for ten years, or is a civil engineer, he is not necessarily a traffic expert, nor competent to lay out traffic regulations. But if there happens to be a series of accidents, some politicians will get on the platform and rant about reckless driving, and some newspaper will make a sensation out of it, and the result will be conditions making the operation and use of an automobile less popular and more difficult.

Those are the conditions to be avoided, and it must be part of the automobile interests in the respective towns to help avoid them.

One of the worst features of the spasms of traffic hysteria that periodically afflict communities is that as a result there is often enacted regulatory legislation that hampers traffic, causes congestion and so in turn retards the sale of cars.

Dealers must be ready to fight the battle of their own business on these grounds.

Selling An Association to Its Membership

Is There a Suggestion for You, Mr. Secretary, in the Montreal Idea?

MEMBERSHIP in an association is helpful to just the extent that a dealer uses the facilities that the association provides for helping him. One of the big jobs of the fellows who run associations is selling its members on the advantages that membership offers. This presentation of its benefits was made recently by the Montreal Automobile Trade Association, Ltd., in the association's official organ, *Auto Meter*. It contains a hint for other secretaries who may wish to use the idea in a bulletin or otherwise.

Looking over the list of 20 activities of the Montreal association it looks as though the secretary and his staff are pretty busy people. Also it looks as though they are perfectly willing to be busier. There is a suggestion here for the secretary who complains that after he has wound up the show season it is hard to find something to do the rest of the year.

"WHY WORRY OVER THESE THINGS?"

Business conceals enough troubles without having to lose time with details that can be handled by the Association's experts. Each one of our departments is the hook you can always drape with the mantle of worry.

It is becoming old-fashioned to worry over details. The modern business man passes them to his Association

While the members of the Montreal Automobile Trade Association, Ltd., are pretty well versed on the regular departments of services, there are short ways of doing things through the Association's facilities and the extent of its organization, that do not always occur to the member, and the following table has been compiled for your own personal reference.

Every member of our Association is urged to avail himself of the Service that we are in a position to render to him. If you are not a member, but, are of the opinion that we might be able to help you, give us the opportunity to prove that we can be of real service to you or your organization.

"LEGAL DEPARTMENT." The most influential and competent Lawyers, we know of, are at your disposal to help you solve your business problems, as Legal Advisers of this Association.	**"CAR REGISTRATION BUREAU."** For the Province of Quebec, this department has the address of all car owners, sub-divided according to make of car. Service open to members for circularizing at cost.	**"CATALOGUES" SERVICE DEPARTMENT.** Any member can obtain catalogues or list price of any automotive product, Manufacturer or Jobber, by writing to this department.	**"DISTRIBUTING DEPARTMENT."** Names of Local or Canadian distributors for any make of cars, trucks, tractors, or parts will be furnished to you upon request to this department.
"TRADE MAILING LIST DEPARTMENT." This department which takes care of the circulation of the "Auto-Meter" possesses a very complete and up-to-date list of all those who are engaged in the Automobile industry in the Province of Quebec. Service open to members for circularizing at cost.	**"TRAFFIC & GOOD ROADS BUREAU."** The Board of Directors and Executives of the different sub-sections continually make representation on your behalf to the proper authorities concerning the above mentioned subjects with a view to bettering the automobile traveling conditions and therefore helping to increase the business of every one of us.	**"TRAVELLING DEPARTMENT"** We will make reservations for your business or pleasure trips. This service includes, railroad or steamship information, and reservations; full data concerning motor trips, including in many cases road cards, supplied free upon request.	**"PRINTING DEPARTMENT."** This department positively guarantees to print anything you want at a cheaper price than what you pay, as the result of co-operative organization. **TRY IT.** **IT WILL SAVE YOU MONEY** Quality guaranteed.
"EMPLOYMENT SERVICE." Applications taken for benefit of members who want help of any kind. Service works both ways in aiding employers and applicants. We guarantee to give you the kind of help you need—Live wires—no dead weight. There are no charges.	**"BETTER BUSINESS BUREAU."** Operated for stoppage of all fake advertising schemes, and providing the truth in advertising. Investigates the soundness of any proposition at instance of a member	**DEPARTMENT."** **"INTERIOR** Committees operating under this department promptly investigate grievances among the members. Every effort is made to adjust difficulties and arrive at an amicable understanding.	**"PUBLICITY BUREAU."** Publicity of general character, showing soundness and enormity of industry emanates from this department. Regular monthly publication the "Auto Meter" published in the interest of members of industry.
"BETTER BUSINESS BUILDINGS DEPARTMENT." This department will be glad to receive and answer inquiries for Salesroom or garage plans. To avoid delay kindly give following information: Size of plot, with rough sketch showing shape and its relation to adjoining plots; name and number of departments operated; Number of cars to be shown in Salesroom; Number of cars in garage; any other pertinent details.	**"MANUFACTURING DEPARTMENT."** This department will absolutely give you the name and address of the manufacturers of any automobile, truck, tractor, or spare parts Anything that goes on or in an automobile, you can find where to buy from the maker by writing or calling this department Parts for orphan cars can also be secured through this service department	**"ADVERTISING DEPARTMENT."** Whether you spend a dollar or a million in advertising, this department composed of men who have the experience, and who know, will help you get the benefit of your advertising by planning, writing, correcting and placing your copy This is one of our most important departments, and you are at liberty to use it PERFECT—French or English.	**"LEGISLATIVE BUREAU."** The executives of the Association who are in charge of this bureau, keep in touch every day with all proposed legislation, municipal, provincial or federal. With the large memberships which they represent they are very powerful in stopping all unreasonable legislation which might cause hardship upon our industry and its members.
"USED CAR VALUE BUREAU." Will honestly tell you how much the other fellow is offering for that trade-in car or truck. Don't get stung by believing anybody that can talk, but avail yourself of this information.	**"GROUP AND GENERAL MEETINGS."** Group meetings of each branch of industry held regularly, from time to time. General meetings of all branches also held on call of President.	**"AUTOMOTIVE EXHIBITS DEPARTMENT."** All Automotive shows, special demonstrations and tours are held under the auspices of this department	**"GENERAL INFORMATION BUREAU."** If you require certain information and do not know—how or where to get it—Phone or write this department, nine out of ten times it can help you.

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Strikes the Only Real Black Cloud on Business Horizon

Summer-end Quiet Prevails in Many Lines in Many Sections but Fall Outlook Is Good Unless Coal and Transportation Difficulties Continue

THE automotive business man looking for indications of fall business finds himself confronted with uncertainties caused largely by the coal and railroad strikes and their effects upon industry, commerce and agriculture. On all sides are indications that the country would have had a decidedly prosperous fall and winter, but for the depressing influence of the fuel and transportation difficulties. Even with these obstacles there is still promise of brisk business ahead, unless the coal deadlock, partially broken, and the railroad shopmen's strike, which has affected without demoralizing transportation, are long continued.

A review of conditions throughout the country shows wholesale and retail trade in all lines considered in combination running from quiet to fair in different sections. Except in the centers of the automotive industry, where production is still running high, manufacturing is not rated better than fair anywhere. Collections are slow to fair. Crops, which more than anything else are pointers to the condition of future business, are good in 30 out of 40 districts and fair in the others. From no section are poor crops reported.

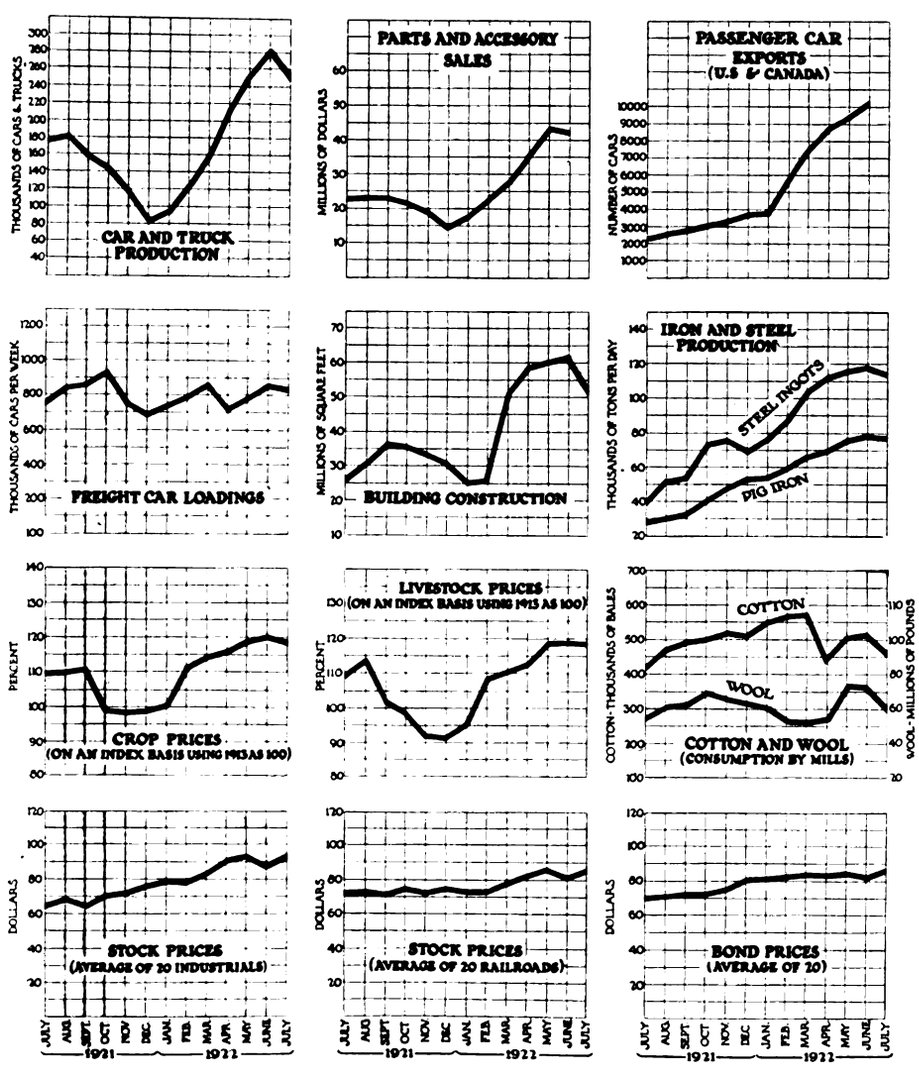
Students of business generally forecast a virtually immediate upturn in production and sales if coal mining is put back on a full-time basis and the railroads, either by settlement of the shopmen's strike or in spite of it, are able to meet the transportation demands of the country, particularly to move the crops now being harvested, and the fuel supplies which must be moved in extraordinary volume from now until cold weather, if winter needs are to be met. The uncertainty in the fuel and transportation situations is creating hesitation in other lines of business. This naturally makes the future market of the automotive dealer somewhat uncertain, but he has the advantage of dealing in a prime essential—transportation and its maintenance—and his outlook consequently is brighter than in many other lines.

Referring to the curves plotted on this page, the tremendous strides made by the automotive industry in recovering from the dullness of a year ago are emphasized by reference to what has happened in other lines. Yet there is nothing but encouragement in the other curves. Despite the railroad strike and the falling off in coal shipments, freight car loading in July showed only a slight falling off from June and were more than 60,0000 cars a week ahead of the same period last year. Building construction has had a seasonal decline and has suffered also from labor troubles and from transportation delays, but it is so far ahead of last year as to make a comparison decidedly encouraging. Iron and steel, backbone of industry, climbed steadily until coal and railroad difficulties began seriously to affect them in the past two months.

The farmer will have no boom prices, but they are far enough above last year's to promise considerable in agricultural territory buying.

Cotton and wool consumption, that is, manufacturing, have been depressed by strikes and a hesitant market. In the field of investment the trend of prices, after a decline in June, is on the way up again.

A Year's Picture of Business



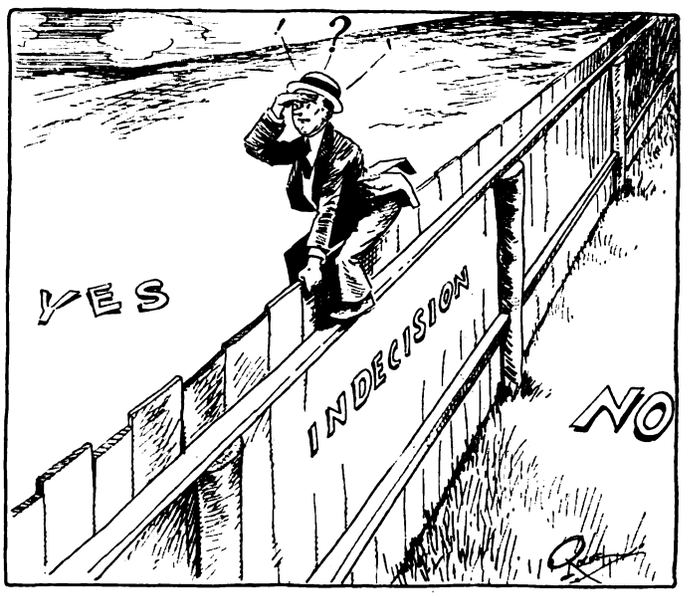
THE curves show the volume of business in three important fields of the automotive industry and in nine other important divisions of American business for the twelve months from July 30, 1921, to July 30, 1922. It is significant that despite recent declines in the curves depicting production and sales, the volume in July in all cases was ahead of that of a year ago—far ahead in most cases. Crop and livestock prices, barometer of the farmer's prosperity, also are higher than in mid-summer of 1921. Stock and bond prices are on the upward trend, indicating the confidence of investors in the business future.

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On the Fence

Reilly Talks About a Malignant Business Disease

By NEAL G. ADAIR



"BUT if you don't know, who does?"

The question, sharpened by a tone of exasperation, came from Cornelius J. Reilly, distributor of Sennett cars and Sayanna trucks in Callawassa, who had been trying for half an hour to get some inkling of the fall plans of Chadwick, his dealer at Oldtown.

Chadwick, who had been selling the Sennett for a couple of years, wasn't sure whether he would take on the truck. He hadn't made up his mind whether he would act on Reilly's suggestion that he hire another salesman to go more aggressively after car sales out in the farming country. He had been talking for six months about installing some speed tools in his repairshop—and was still talking.

"Now about your October allotment" —Reilly turned to this subject as a last resort to get the conversation on a yes and no basis—"you'll want your full quota, of course?"

"Well, I don't know—it's pretty hard to tell—," Chadwick began, and it was then that Reilly, approaching the end of patience, demanded:

"But if you don't know, who does?"

The dealer started to reply, but the distributor made it plain that he was going to anwer himself, with flourishes.

"Chadwick," he said, "do you realize that you are in the early stages of the worst disease that can get hold of a business man—I-don't-know-*itis?* I have asked you what you were going to do about four things that are vital to your business and you have hemmed and hawed and have failed to make up your mind on a single one of them."

"But they are serious questions; a fellow can't make up his mind in a minute," Chadwick protested.

"You bet they are serious questions—every one of them—and that's why they have to be decided," Reilly retorted, "not necessarily in a minute but before it's too late and with the speed of modern business it may be too late tomorrow or an hour from now."

"But a man's got to have some time to think," Chadwick persisted.

"Now you're talking," Reilly shot back. "You bet a man's got to have time to think. That's the word—*think.* If he thinks he will decide. When he doesn't decide it's a sure sign he hasn't done any thinking."

"Chadwick," Reilly continued, "you would have to hunt around some to find a man who has succeeded in business because he never made any mistakes. But there are men who have failed because fear of making mistakes kept them from making decisions. To questions of customers, employees, competitors and almost everybody they came in contact with they said 'Perhaps' or 'Maybe' or 'I'll let you know later.' They lost everybody's confidence, and then because no one else had confidence in them they lost confidence in themselves. And when a man has done that he's on the direct road to failure.

"I'll admit it's pretty hard sometimes to know what to do. Sometimes you can get advice and it's credit to any man to take advice if he can get it and it's worth taking. But advice or no advice, there's only one way to make a decision and that's on the basis of the facts as you see them—the *facts* as *you* see them, Chadwick."

"But if I decide wrong?" Chadwick suggested.

"Then you've learned something. You've made a mistake, you'll discover it's a mistake and you won't do it again. And you won't make so many mistakes as you think you might if you actually make your decision on the facts as you see them, as I said a moment ago. Get the subject to be decided right out in the open where you can see it, throw all the light you can on it, examine the pros and cons, temper common sense with a little imagination and then say 'I'll do it this way' and go ahead and do it. You'll have the satisfaction of sweeping the cobwebs of doubt out of your mind and substituting action for inaction and the folks around you will say, 'There's a bird who does things,' and give you credit for being a live wire in the community."

"But this allotment of mine and these other things we were talking about—what about them?" Chadwick asked.

"You'll have to decide them on the *facts*—as *you* see them," Reilly said, "but possibly I can help you to set the facts up in good order where you can get a good look at them.

"Your allotment for October is ten cars. You wonder if you can sell that many. Let's see if there are any facts to help settle that question. You sold thirty in June, twenty in July and ten in August and you don't seem to be worrying about disposing of ten more in September. That gives some idea of what you ought to do in October, but there are still more facts in the records of your October sales a year ago as compared with last year's business in these other months we've mentioned. Can you see much reason, looking at the thing this way, for taking the chance of running short of cars in October this year?

"Then there's the truck business. Somebody is selling trucks in your territory. You know that and you know the Sayanna is a good truck, with sizes and models adapted to the needs of towns like yours. You know that some of your Sennett owners use trucks and will need new ones some day. You know we'll help you get started selling and servicing them. Isn't it worth trying?

"Two of your competitors have men travelling from town to town in your farm country in demonstrators, selling cars. Some of your farmers have no cars at all. Others are going to have some money from their crops to buy better cars than they have, and the Sennett is a better car. Aren't these some facts on the subject of putting on a country salesman?

"And your shop—well, I've talked facts and figures on that subject until both of us were dizzy. You have always seemed to agree with me that you needed to improve your equipment but you have never done anything about it.

"I'm beginning to see," Chadwick said.

"And you've got to keep right on seeing," Reilly answered. "Every man in business has got to have vision or supervision. If you are going to stay in business for yourself you've got to see things as they are and do something with what you see. That's vision. If you can't or won't do that, sooner or later you will find yourself working for somebody else. That's supervision."

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New Franklin Model 10-A Has Changes in the Cooling System

The Air Is Now Pushed Through with a Separate Fan Instead of Being Pulled Through by Flywheel Fan—Clutch and Gearset Are in Unit With the Engine—No Change in Price

A NEW Franklin car to be known as series 10-A is now in production and ready for delivery September 1. It replaces the series 9. The new model embodies a number of changes, most of which are in the power plant, but the general design is much as before.

The cooling system has been extensively redesigned, and an important change in cooling principle incorporated. The air cooling system, which has been a Franklin characteristic for many years remains, but the air instead of being drawn through the cooling jackets by the flywheel fan is pushed through with a Sirocco blower, which is mounted on the front end of the crankshaft. This new blower handles more air than the former type flywheel fan, and the delivery system, connecting it with the cylinder jackets, including the volute blower casting, is so designed that the power required to move the greater volume of air is less than that consumed by the flywheel fan.

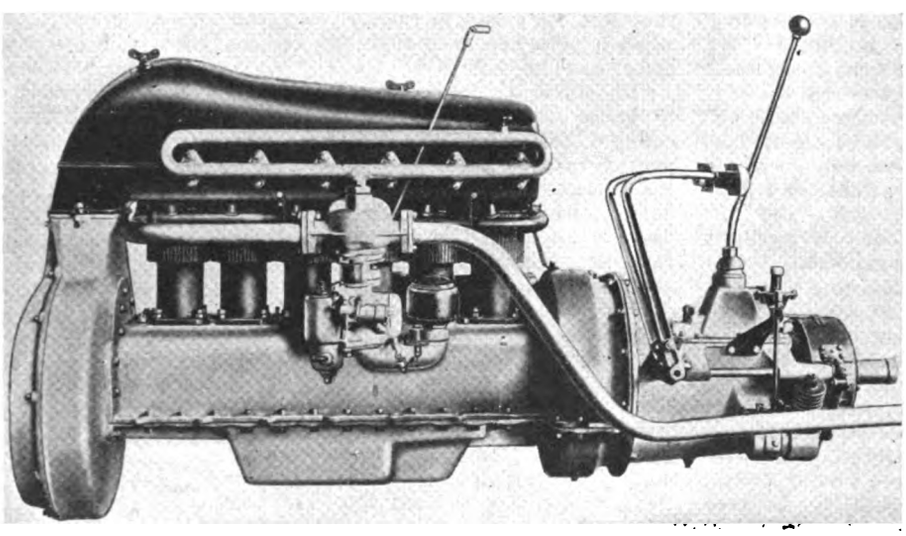
Another important change is the addition of an exhaust-heated fuel vaporizer intended to prevent liquid fuel from reaching the cylinders. An electrically heated priming device is provided to facilitate starting, especially in cold weather.

In the previous Franklin engine the jackets were surrounded by a horizontal deck dividing the upper and lower part of the space between engine and hood. Air was drawn into the upper part of this space through a grating in front of the bonnet, passed through the jackets to the lower part and was exhausted therefrom by the flywheel fan.

New Design Jackets

In the new design the air passage outside the jackets themselves is formed by rigid aluminum castings and is of such form that the air speed is substantially the same at all sections. There being no abrupt changes in section, the likelihood of forming of eddies, which are always a source of loss, is minimized, and, moreover, the rigid air passage walls are in no danger of being bent out of shape in service, with resultant loss of cooling air. The result of these improvement has been that now about 2.5 times more air is circulated through the jacket space at a given engine speed, while a material reduction in the power consumption of the fan has been effected.

The large open grille at the front of the hood is said to allow free passage for fully four times the volume of air used by the blower. This excess is used to cool the outer surface of the cylinder fins and the aluminum crankcase, which receives its heat partly from the oil.



The new Franklin powerplant showing the Sirocco blower on the crankshaft

The engine has six 3¼ x 4 in. cylinders, cast separately, as in the past. Cylinder and head are a single casting, with the sheet steel cooling fins set into the mold and cast into the cylinder wall. A change has been made in the form of these fins whereby their cooling capacity has been increased. Formerly the fins were flat strips and were surrounded by a separate sheet iron jacket, which, since it did not have any intimate metallic connection with the fins, had but little effect as cooling surface. Now the outer part of the fins are turned over at approximately right angles, so their edge comes close to the next fin, thus forming a closed jacket space without a separate outer jacket. This form of construction has made it possible to reduce the jacket diameter and length, while the fin cooling area itself remains identically the same as before.

The blower of the cooling system is mounted on the crankshaft at the forward end and is of the Sirocco type, with a 14 x 3½ in. impeller. This impeller is placed in a volute housing to increase its efficiency and air capacity. The air inlet to the housing is smoothly rounded so as to avoid the formation of eddies and its back plate forms the cover of the case enclosing the chain which drives the camshaft and generator. The aluminum air housing extends lengthwise over the top of the cylinders and is provided with six circular openings fitting the upper ends of the cylinder jackets. The housing is made in two parts, with a joint in a horizontal plane at the center of the inlet and exhaust fittings. Deflector plates are located inside the air housing so as to distribute the air equally to all of the jackets. The air housing is held to the top of the engine by means of two studs with wing nuts and can be quickly removed. Single cylinders can be removed without disturbing adjacent parts, and the engine is generally more accessible owing to the elimination of the sheet metal decks formerly employed.

Another noteworthy change in Franklin design is the use of a unit power plant. Instead of being separate units, the clutch and gearset are integral with the engine, although the construction is practically the same as in the previous model. Some other changes of a minor nature have been made in the engine itself. The piston pins now float and are held from drifting by means of steel rings over the ends. The pins are easily removed by taking this ring off. The ring in a free state has a smaller diameter than the piston bore and consequently does not press against the cylinder wall. The die cast aluminum pistons are continued. The connecting rods are made of drop forged duralumin. This has resulted in a lightening of the reciprocating parts. The case hardened

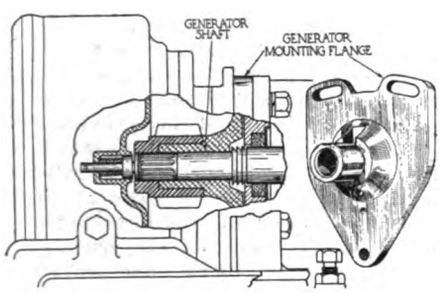
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crankshaft is to be continued in the new model.

All of the bearing surfaces are on die casting bushings of Franklin manufacture. These are backed directly by the aluminum of the crankcase and duralumin of the rods. The upper end of the duralumin of the rod bears directly upon the steel of the piston pin.

At the forward end the engine is supported by an angle-shaped, pressed steel member extending between the side members of the main frame. This support is now placed ahead of the forward cylinder instead of between cylinders Nos. 2 and 3. At the rear, supporting arms of pressed steel are bolsted to the sides of the bell housing, the ends of these arms resting on top of angle iron brackets, secured to the inside of the wood frame sills.

A triangular chain drive is used for the camshaft and generator. Adjustment for this drive is obtained by a pivotal mounting for the generator.



Sprocket which drives lighting generator is so arranged that the generator can be removed without disturbing the sprocket or chain

There is a separate duralumin flange between the cam gear housing and the generator, on the hub of which the chain sprocket rides. This permits of removing the generator without disturbing the chain drive. A hardened plug is forced into the end of the sprocket, and a hardened plunger, pressed against this plug by a spring, takes up end thrust on the shaft.

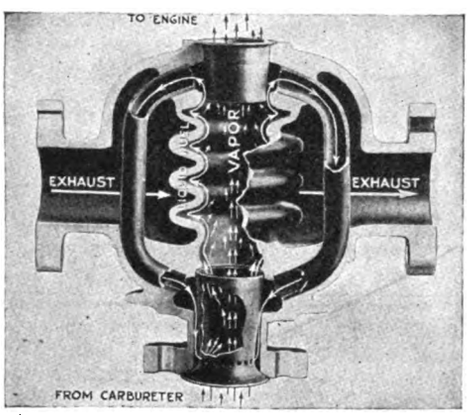
A rather unusual feature on passengers cars is the provision of an air cleaner of the self-cleaning centrifugal type on the carburetor air inlet. The carburetor is cast in aluminum for the sake of lightness.

The whirling action set up by the vanes and rotor in the cleaner cleanses the main charge by centrifugal separation to the extent of throwing all of the dirt particles out into the excess one-quarter volume, which is then discharged at the lower circumference of the cleaner. This process is continuous under all conditions and requires absolutely no attention.

Special efforts have been made in the design of the carburetor to facilitate starting in cold weather, and to this end the gasoline is electrically vaporized and superheated. The primer button closes a solenoid actuated choker, opens the primer vapor passage, and allows 80 amperes to flow through the heater coil, which is enclosed in a special porcelain tube. One end of both the tube and the coil is touching gasoline. This forms a gray vapor or permanent gas which soon fills the suction yoke and provides an ignitable mixture in sufficient quantity to keep the car running at 18 m.p.h. for an indefinite period.

Closed Circuit Ignition

The improved Atwater-Kent closed circuit ignition system is standard equipment. The distributor, which is more accessible than formerly, is provided with an automatic advance governor to follow the special timing curve found best for the Franklin, but an auxiliary hand spark control mounted on the cowl board is provided.



Sectional view of the Franklin fuel vaporizer. The liquid fuel trapped on the walls is vaporized by passage through the hot tubes

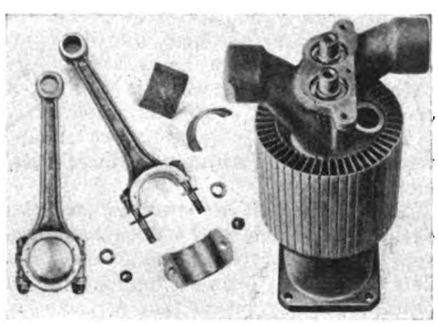
The ignition and lighting circuits are operated by means of a Briggs & Stratton switch on the instrument board. The electrical equipment, aside from the ignition system, consists of a Northeast generator and starter, with third brush output control for the generator and new Bendix drive for the starter, which meshes into a heat-treated steel ring gear shrunk onto the cast iron flywheel. The storage battery furnished with the car is a Willard 6-volt. Wires of different colors assist in tracing circuits.

A change which has been made in the lubrication system as installed on the previous model consists in retaining all piping on the upper half of the crankcase, with holes extending from the pump distributor through holes in the case jacket to the inlets of the various leads.

The lower flywheel guard has been eliminated, thus increasing the full load ground clearance 25 per cent.

A Borg & Beck 10-in. plate clutch is fitted, but the Franklin company uses its own three-speed gearset fitted with standard S.A.E. shift. The tire pump is now driven off the idler in the gearset. An improved rocking pin ball-handled lever is used for operating the gears and a Yale lock is now incorporated.

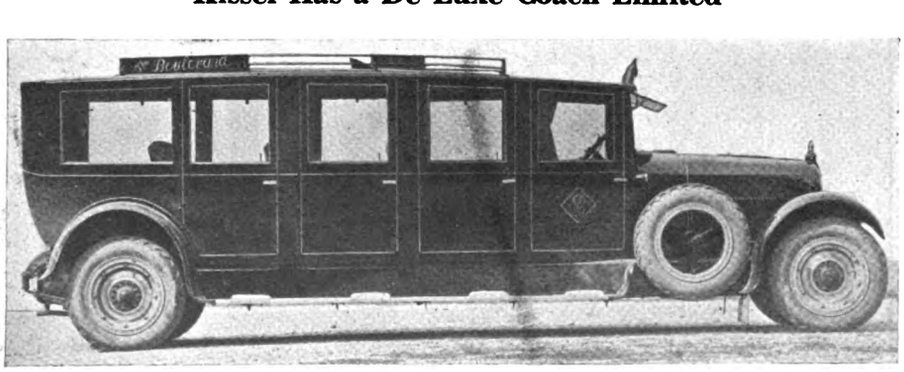
Back of the gearset is located the transmission brake, and an oil collector is provided to prevent oil from the gearset getting on to the friction surface. A shield has also been fitted to prevent water from getting on to the brake band. Two Spicer universal joints are combined with a Franklin tubular propeller shaft of nickel steel to form the connection between gearset and rear axle.



The duralumin connecting rods are shown at the left and the new fin design at the right. The fins are steel, cast into the cylinder wall

The rear axle is of the semi-floating type and is provided with an underrunning truss. The axle housing is built up of a cast aluminum center part and nickel steel tubes with slightly tapered ends, which are pressed into the aluminum housing and hot riveted in place. The spring saddle, brake brackets and bearing housings are all drop forgings. The axle is fitted with Gurney ball bearings of a type capable of taking thrust loads equal to their radial load capacity. The emergency brake is actuated by a cable which is adjusted for length by removing a pin and pulling up to next hole.

Kissel Has a De Luxe Coach Limited



This coach is built along sedan lines, but with the size and seating capacity increased so that it will accommodate eighteen persons. The top is constructed to hold a half ton of baggage. The width of the body is 76 in., length 194½ in. and wheelbase 202 in. All doors are controlled from driver's seat.

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New Mitchell Line Has Body Curves Rounded Out

Prices on Two Models Increased $100—Chassis Refinements and Improvements in Engine Design

MITCHELL cars with revised bodies and refined chassis are now in production. While there are changes in almost every part of the car, making the car a really new job, yet the fundamental design and construction are practically identical with the previous model. The car has been improved both mechanically and in looks and in step with this advance in class is a slight increase in price in some body models.

The new prices given here include wood wheels and without De Luxe equipment.

The bodies have been entirely redesigned and the sharp lines have been replaced by curved lines. Many of the details have been changed to facilitate greater production and do not really show. The same F-50 engine is used but the tappet guide blocks are made in pairs now instead of blocks of six. This has been done to relieve the stress on the cylinder block and in the guides themselves. The method of making the rear axle shaft and hub is new. A billet of steel 4 x 11 in. is used in forging out the entire axle and hub. The rear hub caps have been greatly increased in size.

Mitchell Prices

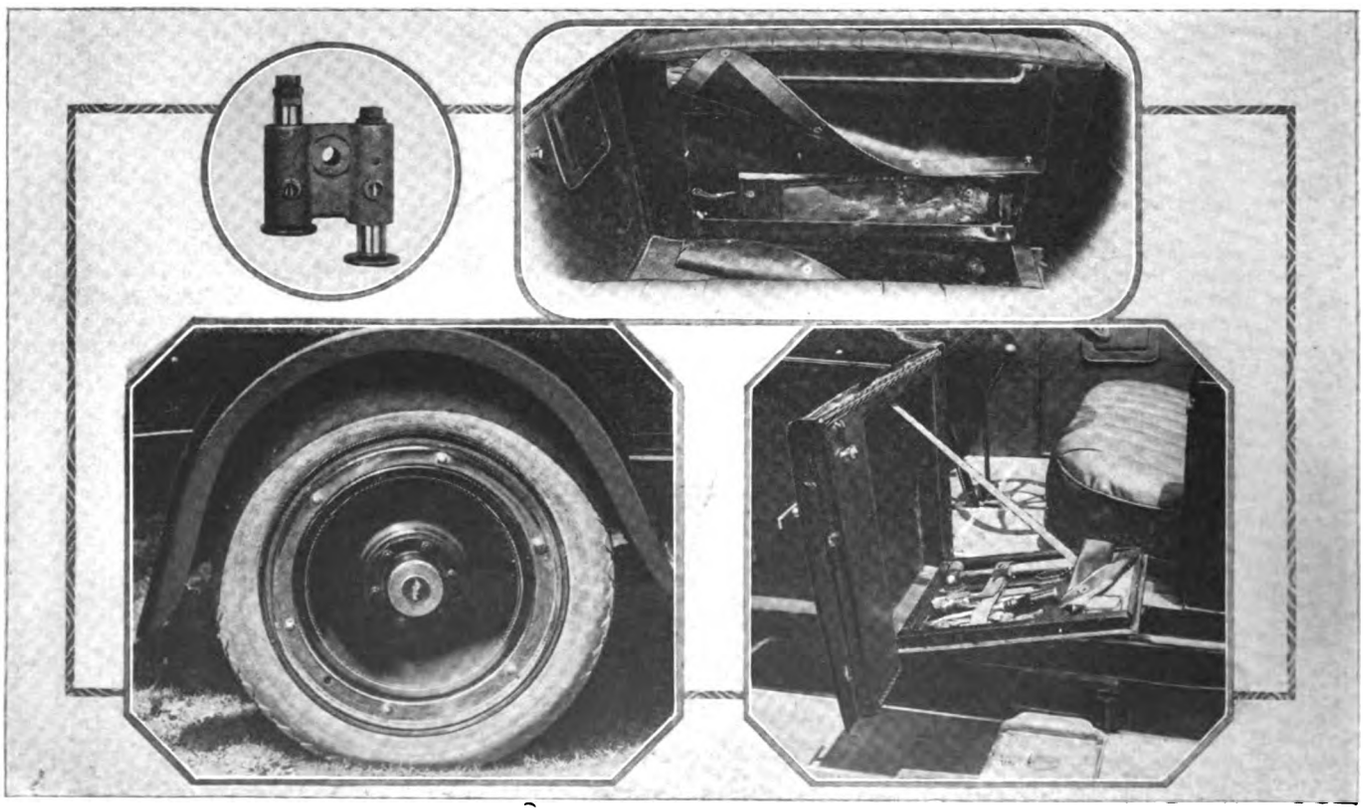
	Old Price	New Price
3-pass. roadster ..	$1,490	$1,590
5-pass. phaeton ..	1,490	1,590
4-pass. sport	1,690	1,690
4-pass. coupe	2,050	2,050
5-pass. sedan	2,275	2,275
7-pass. phaeton ..	1,690	Not announced
7-pass. sedan	new	Not announced

The Mitchell line is now confined to two wheelbases, 120 and 127. The 7-pass. phaeton and 7-pass. sedan are mounted on the longer chassis and prices on these models have not yet been announced. All other bodies are on the short wheelbase.

All of these cars are finished in blue or maroon, with gold striping on the maroon and cream on the blue. The cars are equipped with the F-50 engine designed by P. J. Batenburg, chief engineer and built entirely in the Mitchell factory. This engine was described some time ago in these columns. One of the chief characteristics of this engine is a high torque at relatively low speed.

Among the visible features of the open models is deck line and hood which are made with a slight curvature so that the reflected light on the hood gives the appearance of a straight line extending the length of the car. The shoulders of the radiator, the cowl and fender crown have been worked out to harmonize with the body curves. Drum type headlamps add to the appearance. On the sport model these lamps are fitted with lenses of French fluted glass.

The windshield is of the two-piece ventilating type. Two handles are fitted to the lower section to equalize the pull and prevent breaking the glass when opening it. One of the features of the side curtains is that they fasten both inside and outside, thus giving ample protec-



The tappet guide blocks on the new Mitchell are made in pairs as shown at the upper left. At the upper right is shown the arrangement for stowing the curtains. The new hub, which is considerably enlarged, is shown at the lower left and the tool compartment in the left front door is shown in the remaining view

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tion in inclement weather. They open and close with the doors.

The weight of the various models including water, gasoline, oil, spare rim, tools, etc., is as follows:

5-passenger phaeton	3396 lbs.
3-passenger roadster	3287 lbs.
4-passenger coupe	3685 lbs.
5-passenger sedan	3823 lbs.
7-passenger phaeton	3565 lbs.
7-passenger sedan	4117 lbs.
De Luxe sport model	3417 lbs.

The equipment on the De Luxe sport model is very complete and includes wind deflectors, bumpers front and rear, roll type visor, windshield wiper, mirroscope, extra tire and cover, bar type radiator cap, Boyce motometer, clock, French fluted lenses, nickeled lamps and tools. All models are fitted with a motor driven horn and a tire pump driven from the engine.

The frame is pressed channel steel 6 in. deep and of 3/16 stock. There are four main cross members and six including the rear engine arms and radiator support bar. The frame is bottle neck type, hot riveted, 2 in. wide and made by Mitchell. It is mounted on semi-elliptic springs in the front and cantilevers in the rear. These are respectively 40 in. by 2 in. and 50 by 2½ in. There are eight leaves in the front spring, nine in the rear and as high as eleven in the large sedan. All springs have a rebound plate. The De Luxe sport has fourteen thin leaves in the rear springs. The shackle bolts are 9/16 in.

Wood wheels are regular equipment, with disk on the De Luxe models. Cord tires are fitted; 32 by 4½ in. on the 120 in. chassis, excepting the sedan, which with the large phaeton and sedan have 32 by 4½ in. tires.

The front axle is of conventional design and built in the Mitchell factory. It is equipped with ball type thrust bearings on the spindles. The knuckles are chrome vanadium steel. The front wheels have a caster of 3½ deg. The steering gear is, also, of Mitchell make, worm and gear type and fitted with an eccentric bushing on the cross shaft to take up wear. All adjustments are on the outside of the frame. The steering wheel is walnut finish and 18 in. in diameter.

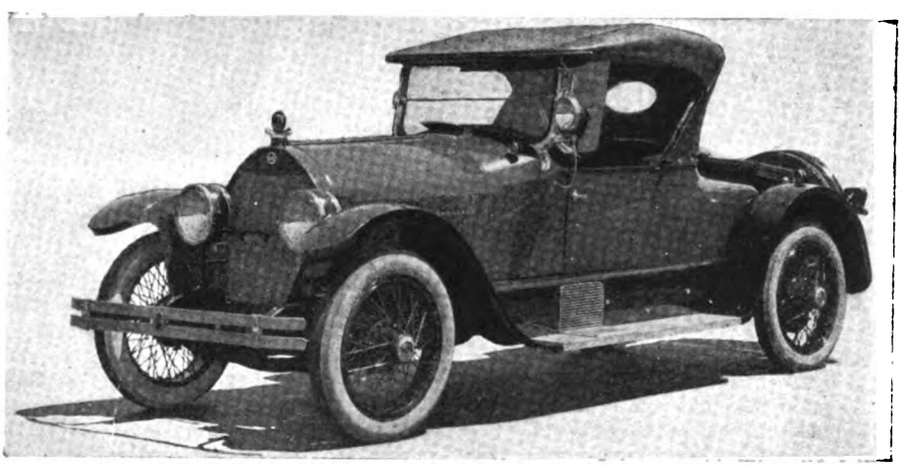
A full-floating rear axle, made by Mitchell, is used. Spiral bevel gears with a reduction of 4.42 to 1 are fitted, the pinion and shaft being forged and machined in a unit. There is a bearing behind the pinion and two ball-bearings ahead of it. The drive is taken through the springs and the axle torque and braking reaction through a tube. The axle shafts including the flanges on the wheels are made from a single billet of steel, which in its original state measures 3½ in. in diameter and 11 in. long. This makes for strength in the shaft. The brake drums are 14 by 2 in., with foot brake external and hand brake internal operating through cams. The hand lever is placed to left of the gearshift lever.

A Borg & Beck clutch is fitted with an outside adjustment. A single universal joint is placed between the clutch and gearset, the latter being mounted amidships where it is very accessible. The universal is of the block and trunnion type. All gears have a ¾ in. face, the teeth being 6-8 pitch. The mainshaft is mounted on ball bearings and the countershaft on roller bearings. The adjustment for the countershaft gears is on the outside of the case. The diameter of the drive shaft is 1⅜ in.

A Harrison radiator is used and this is spring mounted on a cross bar ⅜ in. thick by 2 in. wide. The water capacity of the cooling system is 6 gal. and this is circulated once every minute when the engine runs at 1800 r.p.m.

The body framework is of ash and maple, with steel panels. Upholstery is carried out in machine buffed leather, French plaited. The top is lined with gray whipcord. The bodies have been made very rigid by the use of long and substantial brackets, which are drop forged steel in place of castings.

New Stutz Speedway Roadster Is $2,760



A NEW model, introduced by the Stutz Motor Car Company, as an addition to its line of open cars, is the Speedway Roadster, a two-passenger De Luxe sport car.

The cars are furnished in a variety of shades with upholstery to match.

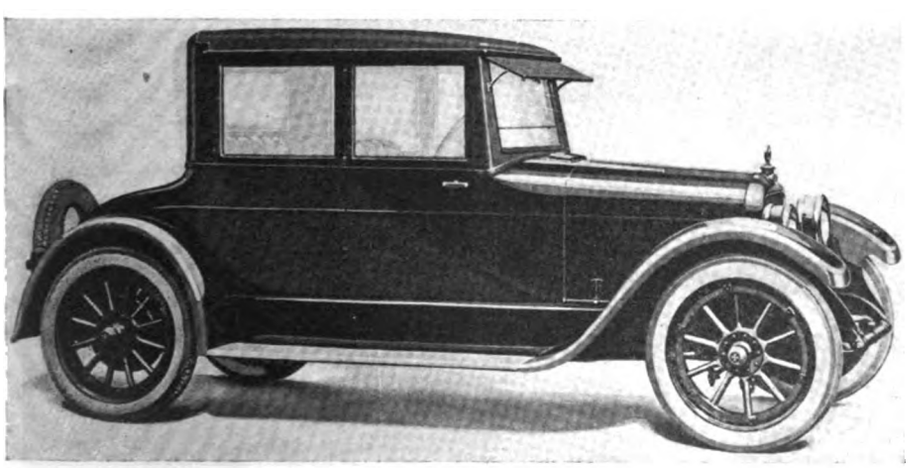
One of the features of the Speedway Roadster is the circular trunk which fits into a specially designed well in the rear deck of the car. This is of bass-wood covered with patent leather, duck bound at the sides and ends with heavy genuine leather and fitted with nickel trimmings. Inside it is lined with cretonne and holds two large suitcases.

In addition to the distinctive barrel-type headlamps and spotlight, which are standard equipment on all Stutz models, the Speedway Roadster is provided with two small cowl lights of a design that correspond with that of the headlamps, and a parking lamp, mounted on the left rear fender.

Two extra wheels, equipped with cord tires, are affixed conveniently at the rear. They are furnished with weather-proof tire covers of moleskin.

Other equipment includes the double bar bumper; plate glass side-windshields; adjustable cowl ventilator; automatic windshield cleaner; rear vision mirror, and individual scuff and step plates.

New Templar Coupe Is $2,650



The nem Templar coupe, which replaces the present job, is mounted on the standard chassis. It has seating accommodations for four, the seats being staggered but the doors are in line. The interior is trimmed in plain dark blue broadcloth and option of dark blue or Brewster green are to be had on the body. The rear deck has an opening covered with a water tight lid, this being secured with three locks

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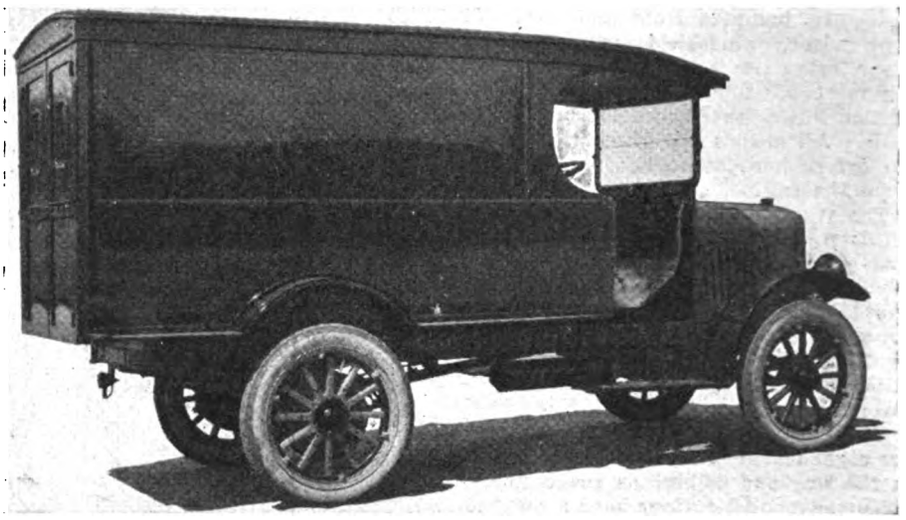
Vim Has Entirely New Speed Truck

Chassis Lists at $995—New Truck Bears No Resemblance to Former Model—Rated at ½ to ¾ Tons Capacity—Large, Slow Speed Engine Makes It a Good Hill Climber

A NEW Vim truck, which bears no resemblance to the former model of that name, is now being produced by the Vim Motor Truck Co. of Philadelphia. The new model is a speed job and is conservatively rated at from 1000 to 1500 lb. capacity. It has ample power and shows unusual hill climbing ability. The chassis lists at $995. Fitted with open express body, the price is $1185 and with panel body $1210.

The four-cylinder, L-head engine is a rugged, heavy duty design. The cylinder dimensions are 4 x 5 in., giving it a rated horsepower of 25.6. On the block, the engine shows an actual horsepower of almost 39 at 1600 r.p.m. The compression is 53 lbs. The maximum speed of the truck is 52 m.p.h. The engine is run-in and given a dynamometer test at the factory.

The crankshaft is of vanadium steel and is balanced both statically and dynamically. It is carried in three main bearings all 2 in. in diameter. The front bearing is 3 3/16 in. long, the center bearing 3¼ in. long and the rear bearing 3 5/16 in. long. The upper halves of the main bearings are bronze-backed. The connecting rod bearings are 2 in. in diameter and 2¼ in. long. The rods are drop forgings of I-beam section and are clamped to the piston pins, which are 1⅜ in. in diameter. The piston pins work in removable bronze bushings in the pistons. The pistons have three rings, two above the pin and one below. These rings are ¼ in. wide.

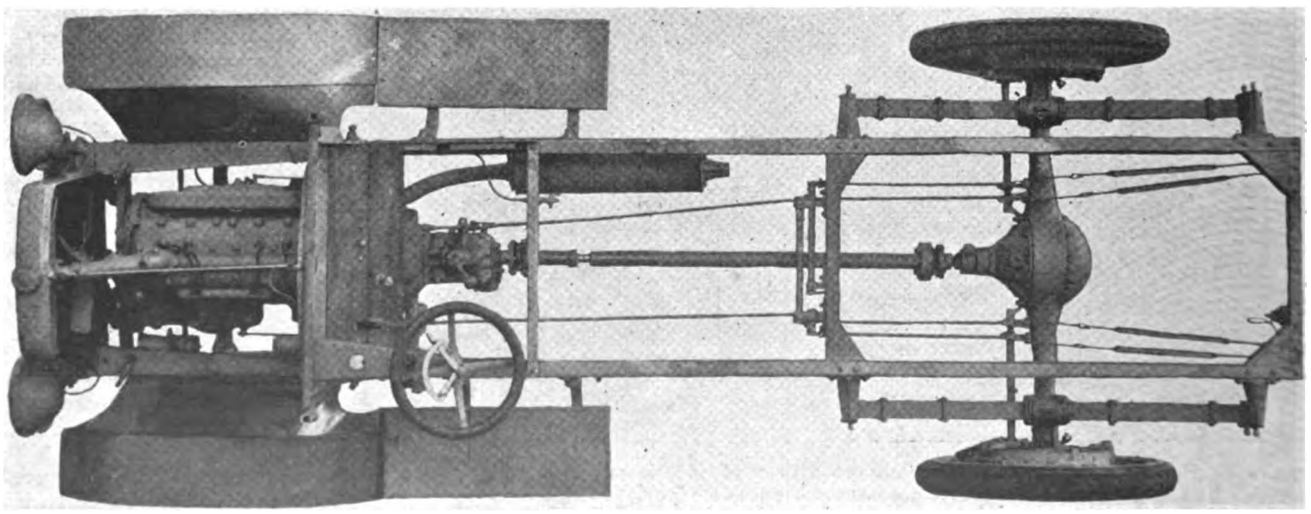


The Vim chassis fitted with the panel body shown in this picture lists at $1210. This body is designed especially for general merchandse delivery

The valves and valve operating parts are located on the right side of the engine and are entirely enclosed. They are made readily accessible, however, by the removal of two cover plates, each of which is held in position by a single stud bolt. There are 4 spiral timing gears. The right hand gear drives the camshaft, and the one on the left drives the combination generator and distributor through a coupling.

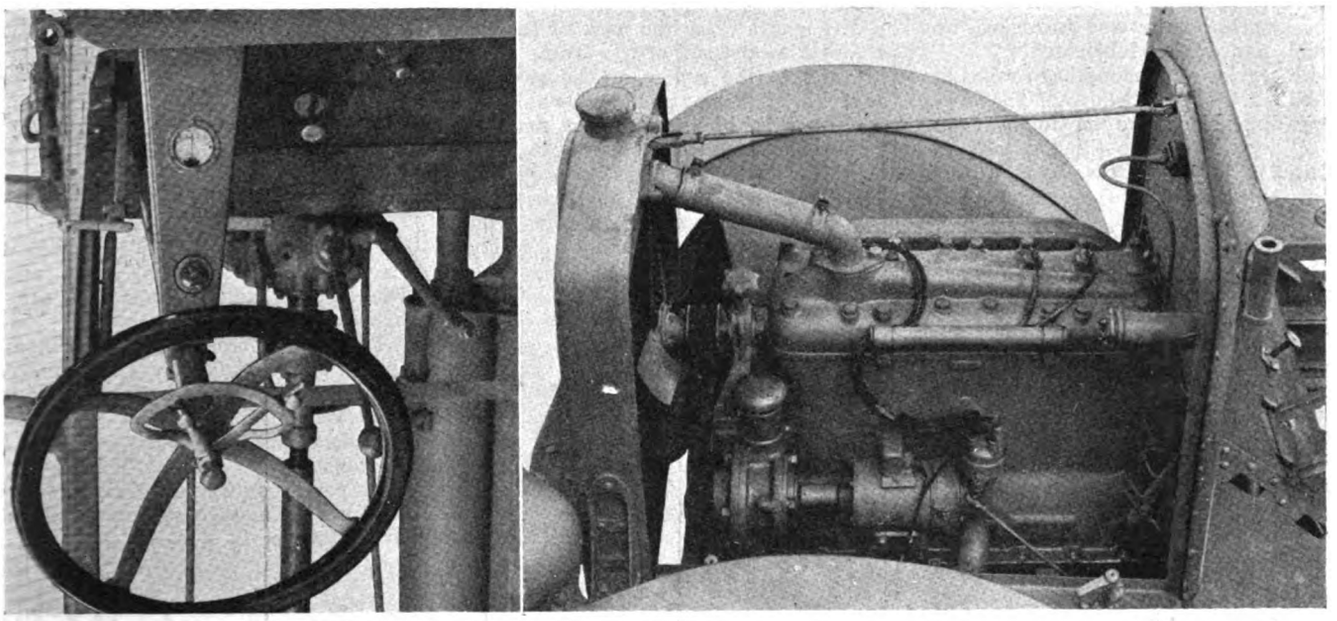
Oil is supplied to the main and connecting rod bearings under pressure. The oil pump is driven through spiral gears from the rear end of the camshaft. The pump is located at the extreme rear of the sump and at the lowest point. Consequently it is supplied with oil under all conditions. Oil draining back into the crankcase is filtered before entering the pump. The pump is of the gear type and develops about 10 lbs. pressure at 1000 r.p.m. of the engine. An oil pressure gage is located on the dash, and there is a bayonet type of oil gage for measuring the quantity of oil in the crankcase.

Fuel is fed to the 1-in. Zenith carburetor by gravity from the tank under the seat. The intake and exhaust manifolds are cast integrally, a hot spot being provided to heat the mixture. Air entering



Plan view of Vim chassis. Springs are provided in the brake linkages to take up for wear and to eliminate rattles. Torque and propulsion are taken through the springs

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Left—The steering column support carries the lighting and ignition switch and the ammeter. The starting switch is on the floor. The steering wheel is 18 in. in diameter. Right—Left side of Vim power plant. The inlet and outlet water connections on both engine and radiator are removable which makes it unnecessary to disturb the hose clamps in breaking the connections at any of these points.

the carburetor is preheated by passing through a stove on the exhaust pipe. Due to the fact that the carburetor and manifolds are on one side and the ignition system on the other side of the engine, the power plant has an unusually clean appearance and is very accessible.

Cooling water is circulated by thermosiphon. The radiator is of the tubular fin type. The radiator core is carried in a pressed steel shell, which is spring-supported on the frame. The outlet and inlet connections on both the radiator and engine are removable, so it is not necessary to touch the hose clamps to break the connections at any of these points. The fan is driven from a pulley mounted on an extension of the shaft which drives the generator. The fan-shaft may be adjusted vertically to take up slack in the fan belt. The capacity of the cooling system is 7½ gallons.

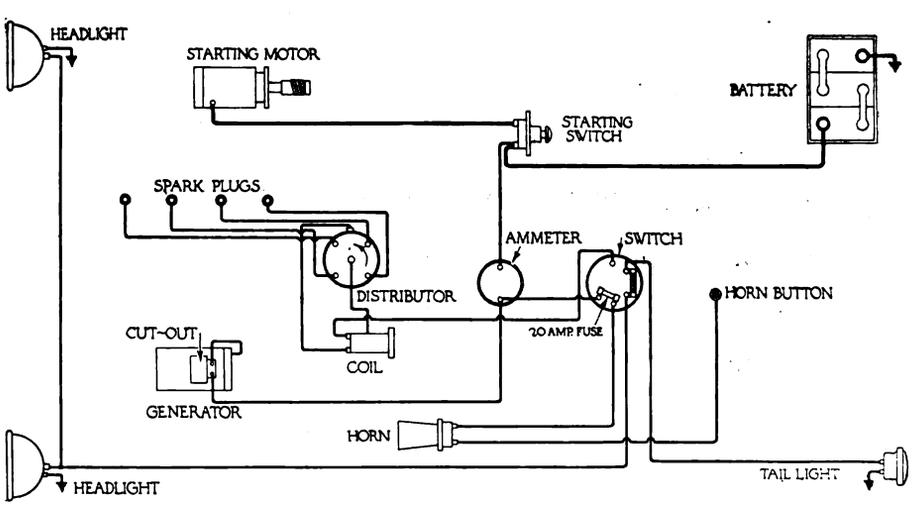
Electric starting, lighting and ignition are regular equipment. The starting motor and combined generator and ignition unit are Westinghouse and the battery is a Willard. The system is a 6-volt, ground return type. The generator is mounted on a bracket on the left side of the engine. The starting motor, which has a screw shift, is located on the right side underneath the air intake pipe leading to the carburetor. The lighting and ignition switch and the ammeter are mounted on the steering column support. Single contact bulbs of the following sizes are used: headlights 18 cp., and taillight 2 cp. The diameter of the headlight lens is 9 in.

The clutch and gearset are a unit with the engine. The clutch is a multiple dry disk type with five driving and five driven disks. A clutch brake is provided. The disks are faced with asbestos, 8 in. outside diameter, 6 in. inside diameter and ⅛ in. thick. The gearset provides three speeds forward and one reverse. The ratios are 3.24 to 1 in low, 1.66 to 1 in second, 1 to 1 in high and 4.16 to 1 in reverse. The mainshaft in the gearset is mounted in ball bearings and the countershaft is plain bearings. A power take-off is provided for tire pump only.

The propeller shaft has two metal universal joints of the self-lubricating type. The rear axle is semi-floating and has a road clearance of 9½ in. Spiral bevel reduction gears are used, the ratio being 4.7 to 1. Torque and propulsion are taken through the springs. The sleeves surrounding the pressed steel axle housing and carrying the spring chairs extend far enough toward the center of the axle so that the rubber bumpers on the bottom of the frame side members strike them and not the axle housing. The differential ring and pinion are mounted as a unit, so that the complete carrier may be removed from the housing without disturbing the adjustment. The pinion-shaft is supported by two roller bearings, both forward of the pinion.

The side members of the frame are pressed steel channels 5 in. deep with 1¾ in. flanges. The frame is braced laterally at five points. The front cross member is in front of the radiator and protects it in case of collision. The second cross member is a steel forging which serves as the front engine support. The flywheel housing acts as the third cross member. Brackets are riveted to the frame to which the front engine support and the supports on the flywheel housing are bolted. The fourth cross member is at the point where the front hangers for the rear springs are attached, and the fifth connects the rear ends of the side members.

The springs are semi-elliptic front and rear. The front springs are 2 in. wide and 38 in. long, and have nine leaves with two rebound plates. The rear springs are 2¼ x 50½ in. and have ten leaves with three rebound plates. The spring bolts are applied to the hangers by means of clamping bolts which elim-



The wiring diagram for the new Vim showing the connections of the starting, lighting, ignition and signalling systems

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inate the possibility of their working loose. Spring bolts are hardened and ground, and are oil lubricated.

Both service and emergency brakes are located on the rear wheels. The brake lining dimensions are as follows: external service brake—length, 48 in., width, 2½ in., thickness, 5/32 in.; internal emergency brake—length, 46⅝ in., width, 2¼ in., thickness, 5/32 in. Springs are provided in the brake operating mechanism to take up wear in clevis and shafts and to eliminate rattles automatically.

The steering gear is a worm and wheel type. The steering wheel is 18 in. in diameter. Hand spark and throttle controls, and horn button are located on top of the steering column. The carburetor choke is also located on the steering column. The turning radius of the truck is 19 ft. The wheelbase is 108 in. Wood wheels with 32 x 4 in. cord tires on Firestone rims are regular equipment.

The length from the back of the driver's seat to the end of the frame is 76½ in., and to the center of the rear axle 44¼ in. The maximum allowable body overhang is 10 in. and the maximum body width between rear wheels is 46¾ in. The driver's seat is 44½ in. wide. The extreme width of the frame is 30 in. and the distance from the ground to the top of frame, assuming the truck is fully loaded, is 27¼ in.

The dash is built of one main plate of 11 gage sheet steel to which the floor board supports are hot riveted. Chassis equipment includes electric headlights with approved lenses, tail light, motor-driven horn, complete set of tools, front fenders, gasoline tank, running boards, jack and pump.

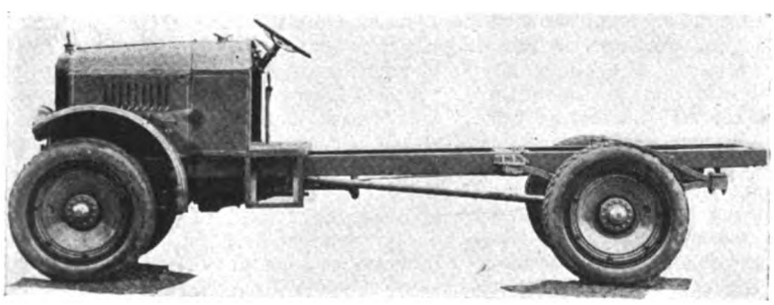
The open express body is ruggedly constructed. The uprights are made of ash and the steel sides are bolted to them. The tailgate is 12 in. high and is supported by covered chains. The seat is comfortably upholstered. The inside loading dimensions are: length, 85½ in., width at floor, 44½ in., and the height, 55¼ in.

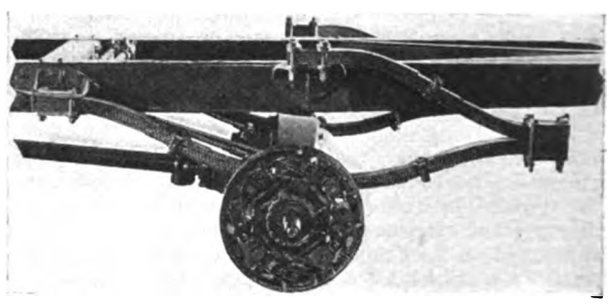
The panel body is intended for general merchandise delivery. The frame of this body is ash reinforced with steel. The rear doors have glass windows. The body is painted a dark olive green with black trim and natural wood wheels. The inside loading dimensions are the same as for the express body.

The Vim company is now controlled by an entirely new organization. The new truck is being produced at a new plant located in the Nicetown section of Philadelphia. The units entering into the construction of the truck are for the most part manufactured elsewhere, but they are in most cases produced exclusively for use in this vehicle.

Indiana One-Ton Speed Truck Priced at $1425

Three-Quarter Elliptic Springs of Unusual Design Are a Feature—Maximum Speed 30 to 35 m.p.h.





Left—The new Indiana speed truck priced at $1425, has a maximum speed of from 30 to 35 m.p.h. The engine is a 4-cylinder, 3¾ x 5¼ in. Waukesha. Right—Unusual three-quarter elliptic spring construction on new Indiana one-ton speed truck

THREE-QUARTER elliptic springs of unusual design are a feature of the new Indiana one-ton speed truck, which will be known as the Highway Express. These springs are used in both front and rear. The construction is such that shackles and ground bolts are eliminated, thus making lubrication at these points unnecessary. The drive is through the springs, and the driving strains are carried by a number of main plates instead of by one main plate, as in the conventional construction.

The power plant is a four-cylinder Waukesha with 3¾ in. bore and 5¼ in. stroke. The carbureter is a Stromberg, and ignition is by Bosch generator and distributor with Presto-Lite battery. Starting motor, motometer and electric horn are regular equipment. The clutch and gearset are mounted as a unit with the power plant and are of Brown-Lipe manufacture. The rear axle is a semi-floating type with spiral bevel drive. The pressed steel frame is 5 7/16 in. deep with 3¼ in. flanges. The wheelbase is 132 in. Disk steel wheels with 34 x 5 in. pneumatic tires are standard.

The capacity of the truck is 2000 lbs. with a body allowance of 900 lbs. The maximum speed is between 30 and 35 miles per hour. The engine speed at 33 miles per hour is 2000 r.p.m. The truck is said to have done 13.4 miles per gallon of gasoline on test.

The price is $1,425. The manufacturer is the Indiana Truck Corp., Marion, Ind.

Lexington Adds New Models and Cuts Old

CONNERSVILLE, IND., Aug. 23—Lexington line for 1923, just announced by the Lexington Motor Co., shows ten body types included in the list of Series 23 models. The company has decided to confine its line to one chassis, the Ultimate, with 123 in. wheelbase, abandoning for 1923 the 122 in. and the 128. The Ansted motor will be the only engine used in the new line.

Of the 1922 family only two models are retained, the 5 passenger phaeton, which has been reduced from $1,745 to $1,695, and the 5 passenger sport model, which has been dropped from $2,100 to $2,045. The rest of the new line consists of a 2-passenger roadster, which lists at $1,695; a 7 passenger phaeton at $1,795; 5 passenger California top, $1,995; 7 passenger California top, $2,095; 5 passenger Royal Coach, $2,145; 4 passenger coupe, $2,345; 5 passenger sedan, $2,545, and 4 passenger brougham, $2,645. The roadster, Royal Coach and brougham are brand new additions to the line.

Barley to Produce Medium Priced Car

DETROIT, Aug. 23.—The Barley Motor Car Co. is preparing to bring out a medium priced car following the general lines of the Roamer, according to a statement by George Hopkins, secretary of the company, in an address before the Kalamazoo Exchange Club. The car will not be called the Roamer, this name being reserved for the higher priced vehicle. Hopkins declined to give any details concerning the new car, though he declared plans and specifications have been completed and production will be started in the near future.

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How I Make Shop Profits in Winter

Will You Tell the Trade How You Do It—in Motor World?
$50 for the Best Story, $25 for the Next, $10 for the Next, and $5 for All Stories Accepted



OLD Man Winter's a tough-looking customer — old, cold, lean and tight-skinned. Doesn't look as though you could get much out of him. Lots of folks are like that—and lots of folks like that are pretty well lined with cash. But you never know it until you shake 'em down.

A good many men in the automobile business have found that Old Man Winter isn't as tight-skinned as he looks. They've been shaking him down—and getting shop profits.

Perhaps you have, Mr. Garageman, or you, Mr. Service Manager. If you have, Motor World would like to have your story.

How do YOU make shop profits in winter?

Will you tell the story in 500 words, or less, and send it in to Motor World?

The story will naturally divide itself into two parts:

1—What kind of work do you get to keep your shop and your men busy in cold weather?

2—How do you get the work?

Perhaps you specialize in winter overhaul jobs, or painting, or service to cars and trucks kept running in winter or attachment of cold weather accessories. Whatever you do to MAKE YOUR SHOP PAY IN WINTER, will you tell what it is and how you do it? You have an effective way of getting this work into your shop, possibly by advertising, possibly by canvassing, possibly by still another method. What is the method and how do you carry it out?

These must be FACT stories, with your name and the name of your company and town. Put the story in simple language and write it with a typewriter on one side of the paper.

Mail the story to Motor World not later than September 23 and earlier than that if you can. If yours is the best story—the most practical description of a practical method of making shop profits in Winter—Motor World will send you a check for $50. For the second best story we will pay $25, for the third, $10, and for all stories good enough to print, $5. The editors of Motor World will be the judges.

Please remember—500 words or less. And if you are a car, truck or tractor dealer, a little bit out of touch with the intimate details of the shop, pass this offer on to your service manager and give him a chance to compete.

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Editorial Notes

Don't Advertise Wrecks

IN a fair sized Eastern city there is an automobile dealer with a large repairshop who makes a specialty of towing in and repairing wrecks as a side line of his motor car business. He has a vacant lot alongside his sales and service building onto which wrecks are hauled and often left standing for days and sometimes for weeks at a time before their repair is undertaken. This practice undoubtedly serves to advertise the towing and repair features of the dealer's business, but apparently he hasn't given much thought to the sales resistance set up against passenger car sales by this more or less continuous reminder to the public of the dangers of motoring.

One would think that this dealer would keep these wrecks indoors or in the backyard or would build a fence around them if circumstances force him to store them in a vacant lot. Well informed people know that the ratio of accidents to the total volume of traffic is small, but not all people are well informed, and evidences of accidents such as presented by lining up wrecked cars alongside a busy sidewalk are likely to defer some prospects from becoming owners and drivers of cars. There is enough sales resistance set up by the publicity given to highway accidents by the newspapers, but the reading of stories of this sort does not create any such impression as does the sight of a row of cars with wheels and bodies smashed in a way to suggest that some of the occupants suffered serious injury or death when these crashes occurred.

Some day the dealer mentioned may be awakened to the fact that his array of wrecks is a persistent obstacle in the way of new and used car sales, but when he awakens there will still be many other dealers in different parts of the country letting this sort of heedlessness stand in the way of business and profit in the merchandising division of their business.

An Ideal Highway

IT is interesting news that contracts have finally been let for the construction of a section of "ideal highway" on the Lincoln Highway running through Indiana.

This road, which will present a 40-foot surface of reinforced concrete paving 10 in. thick and laid out in the middle of a 100-foot right of way, will be truly ideal and will be a high mark for road builders throughout the country to aim at. It cannot be expected, of course, that the average community can have any such highway, at least under present methods of financing, but it is a tribute to public interest in adequate motor highways that the Lincoln Highway Association, with contributed funds and with the assistance of federal and state resources, has been able to undertake a piece of construction of this sort.

It is stated that the highway will carry 20,000 vehicles a day without danger or congestion. It will not be a speedway, like some of the private projects throughout the country, but a highway. It should stimulate study leading to scientific highway building and, with the vision it holds out for a much improved type of highways for coming generations, it should encourage the highway pioneers to carry on their work with reasonable expectation of growing public support.

Speedmaniacs and Sales

THE public has become pretty well calloused to news of automobile accidents in which reckless sons of millionaires have plunged themselves and their friends to death or serious injury by speeding on the public highways. Recently, however, the news contained the story of a particularly atrocious violation of the road, in which the guilty motorist met his death, but which resulted also in the maiming of several persons in other cars who suffered from his recklessness.

This is the type of violation of traffic rules that should be punished with the greatest severity as a warning to other potential violators. There is no call for much sympathy for any motorist who is injured as a result of his own recklessness, but where persons driving carefully along the highways are hurt and sometimes killed as a result of the speed mania or heedlessness of others, a direct blow is dealt to fair play and to expansion of motor travel.

The average prospect for an automobile is likely to feel that he is capable of operating a car with sufficient skill to keep him out of accidents of his own causing. However, if he finds his newspaper continually filled with accounts of injuries to careful motorists inflicted by drivers of the reckless kind, his ardor is likely to be somewhat dampened and the dealer or salesman who is trying to sell him may find himself stumped by sales resistance which otherwise should not exist.

Automotive men everywhere will do a service for themselves and for the public, including all motorists, if they will lend their support to insistence that reckless driving be suppressed as far as possible by proper traffic control and when necessary by punishment of flagrant offenders. There is a difference between fast driving and reckless driving. On an open highway, with no other cars in sight, a driver can hardly be called reckless if he utilizes some of the speed capabilities of his car, but when he resorts to racing and speeding against time, tactics which should be confined to speedways, he should be made promptly to feel the heavy hand of the law and his reprehensible conduct should be held up to public attention.

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Unlawful to Use Photo Without Permission

New York Statute Protects Persons Against Use of Their Portraits in Advertising

Editor Motor World:—Can you advise us on the following question?

Some time ago a crowd of us were on an outing and had our photographs taken. When I got my copy, I put it in the window of the store that I use as a supply shop. One of the crowd remarked to me the other day, in more or less of a joking way, that I was committing a misdemeanor by doing this. Is there any chance of my getting in trouble because I put this picture in my window?—S. H. E., Buffalo, N. Y.

Answer:—There is a New York Statute on the matter of using photographs of persons for advertising purposes without their consent in writing. But I certainly do not think it was ever meant or intended to cover a case where a member of an organization puts a group picture, in which his own photograph appears, in his window, for display purposes. In any event, I can hardly conceive of anyone going to the trouble or expense in a case of that kind. What the law was intended to cover is a case where a person's picture is used to advertise somebody's tooth powder or shaving soap, or the like.

The New York Statute on this matter provides:

Right of Privacy.—A person, firm or corporation that uses for advertising purposes, or for the purpose of trade, the name, portrait or picture of any living person without having first obtained the written consent of such person, or, if a minor, of his parent or guardian, is guilty of a misdemeanor.

Any person whose name, portrait or picture is used within this State for advertising purposes, or for the purpose of trade, without the written consent first obtained as above provided, may maintain an equitable action in the Supreme Court of this State against the person, firm or corporation so using his name, portrait or picture, to prevent and restrain the use thereof; and may also sue and recover damages for any injuries sustained by reason of such use; and if the defendant shall have knowingly used such person's name, portrait or picture in such manner as is forbidden or declared to be unlawful by the last section, the jury, in its discretion, may award exemplary damages.

But nothing contained in this act shall be so construed as to prevent any person, firm or corporation practising the profession of photography from exhibiting in or about his or its establishment specimens of the work of such establishment, unless the same is continued by such person, firm or corporation after written notice objecting thereto has been given by the person portrayed.

Unless a dealer wishes to run the chance of an expensive lawsuit, it is always well to get the written permission of the person whose pictures you wish to show before using it.

Another Decision Gives N. Y. Artisan's Lien Priority

That under section 184 of the lien law a garage-keeper has a lien for storage, maintenance, etc., of motor vehicles, which is superior to the lien of a chattel mortgage, was the decision in the recent case of Bardasch vs. Kalisch, 193 N. Y. S. 719.

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

The court said: "The provision of the statute which allows the artisan to retain possession of the chattel until his lien is paid indicates an expressed intention on the part of the Legislature to create a prior lien in favor of the artisan as the provision for such possession could have no other affect than to create a right superior to that of the mortgagee. The effect of a chattel mortgage in this state is to transfer ownership of the chattel to the mortgagee subject to being defeated by the payment of the amount of his lien. If such ownership is subject to the absolute right of possession in the artisan, it must necessarily follow that the artisan's lien is prior to that of a mortgagee."

Replevin According to Common Law in Maryland

Editor Motor World:

Accepting your offer for legal inquiries through the Motor World, we would like to learn the law in Maryland for replevining a truck.

The truck in question was sold by us last fall on a lease. The lessee skipped town and sold the truck in the State of Maryland. We have located the present owner of the truck and desire to regain our property.

Thanking you in advance for this information, we are—W. W. Co., Worcester, Mass.

Answer.—I suggest that you retain an attorney in the town where your customer is now located and let him advise you as to what course you should proceed. In Maryland, replevin is according to common law. The sheriff executes the writ when you file a bond for double the value of the goods and returns them to you—whereupon the other fellow has a like right to get the goods back upon filing a bond himself. Finally the action is tried and either you or the other fellow gets the goods, the attorneys on both sides get their fees and the court passes on to the next case which may be for divorce or murder or something else which is a whole lot more interesting.

Fire Extinguisher Inoperative; Owner Can't Collect

The Supreme Court of Arkansas in the recent case of Union Marine Insurance Co. vs. High decided that, where a reduction of premium was allowed on an insurance policy in consideration of the covenant that a fire extinguisher would be kept on the car, the car owner could not recover damages for the loss of the car through fire when it appeared that at the time the car caught fire the extinguisher was empty, naving been exhausted at a previous fire.—239 S. W. 741.

Truck Owner Liable in Negligence Case

That where a truck owner agrees to do all trucking work for another concern and to furnish gasoline, chauffeurs, etc., it is liable for a death caused by negligent driving, was the decision in the case of Braxton vs. Mendelson, which recently came up in the New York courts.—135 N. E. 198.

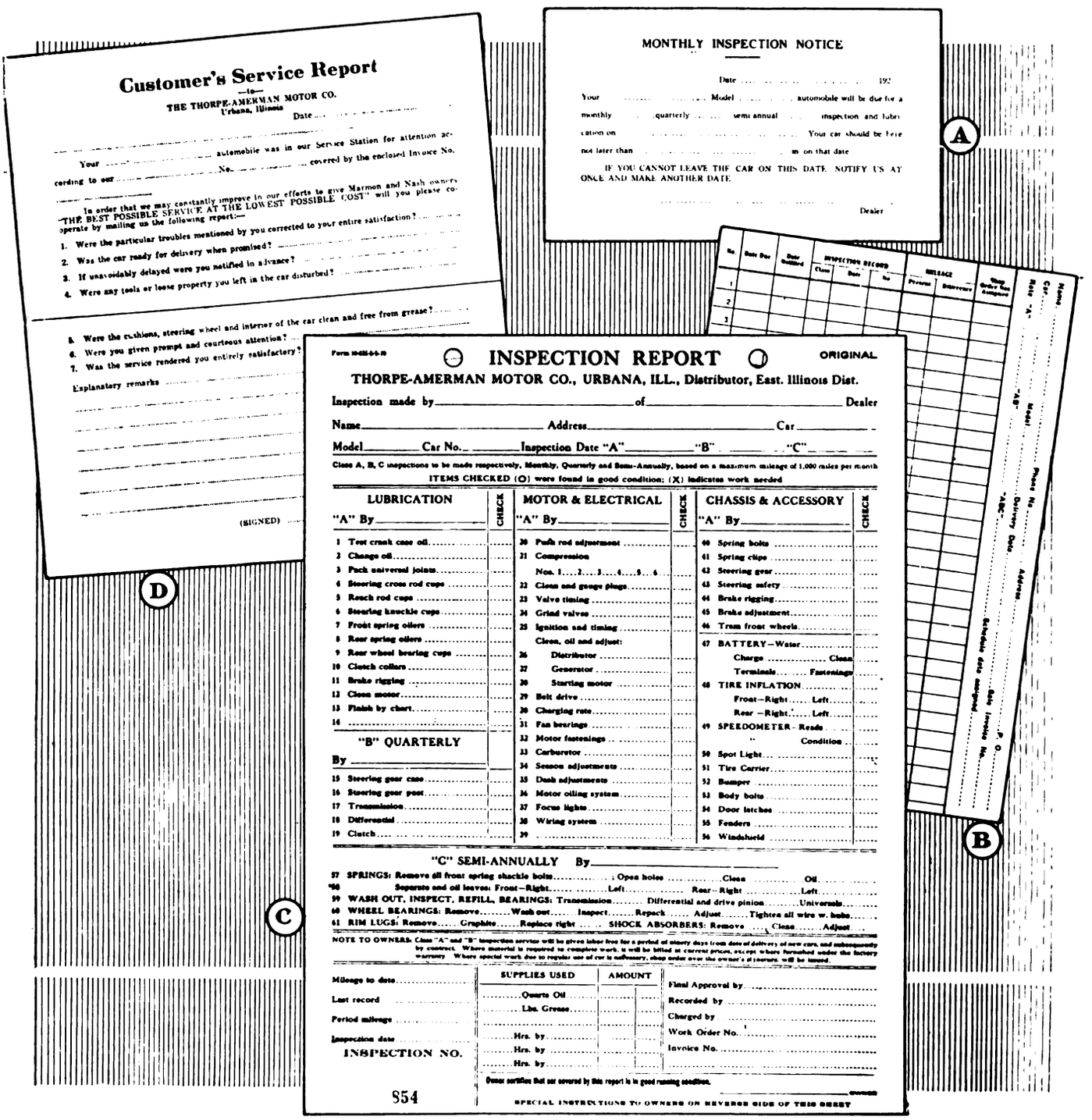
That in replevin by lessor of automobile under a writing, which was plain, clear, and wholly free from ambiguity, and provided for a lease and not a sale, court did not err in refusing to charge the jury that they might find that the alleged lease was in fact an absolute sale, was the decision in the recent California case of Automobile, Truck, Tractor and Implement Co. v. Salladay, 203 P. 163.

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Keeping in Touch with the Customer

THE ideal of the dealer would perhaps be realized if he could keep in constant touch with every car buyer. If he could perform all the service on every car he sold in his territory, he would not only get the profit from his service, but would probably be able to resell the customer when the time came for him to buy a new car.

The Thorpe-Amerman Motor Co., distributor of Marmon and Nash cars in Urbana, Ill., uses a system of records and notices that help materially in keeping this very necessary touch with the customer through service. Every owner in the territory is listed and is given a certain time appointment for regular inspection. Four days before the appointed time he is sent a postal which is shown at A. When the car comes in, an inspection report shown at C is made out and the 61 items checked off. If any repairs are necessary a regular shop order is made out and the work goes through as in any regular job. After the job is completed a record is made on form B, which is kept on file in the office. This condensed record is of great value in determining the condition of the car, age of parts, etc., in case of a used car trade and also to settle any disputes that might be brought up by the owner as to when certain work was done or how much it amounted to. The return post card shown at D is used with every repair job and is primarily intended to check up any carelessness on the part of mechanics. Notice the questions asked.



Customer's Service Report

—to—

THE THORPE-AMERMAN MOTOR CO.
Urbana, Illinois

Date .....

Your ..... automobile was in our Service Station for attention according to our ..... No. ..... covered by the enclosed Invoice No. .....

In order that we may constantly improve in our efforts to give Marmon and Nash owners "THE BEST POSSIBLE SERVICE AT THE LOWEST POSSIBLE COST" will you please cooperate by mailing us the following report:—

1. Were the particular troubles mentioned by you corrected to your entire satisfaction?
2. Was the car ready for delivery when promised?
3. If unavoidably delayed were you notified in advance?
4. Were any tools or loose property you left in the car disturbed?
5. Were the cushions, steering wheel and interior of the car clean and free from grease?
6. Were you given prompt and courteous attention?
7. Was the service rendered you entirely satisfactory?

Explanatory remarks .....

(SIGNED) .....

D

MONTHLY INSPECTION NOTICE

Date 192

Your ..... Model ..... automobile will be due for a monthly ..... quarterly ..... semi-annual ..... inspection and lubrication on ..... Your car should be here not later than ..... m on that date

IF YOU CANNOT LEAVE THE CAR ON THIS DATE, NOTIFY US AT ONCE AND MAKE ANOTHER DATE.

Dealer .....

A

No.	Date Due	Date Notified	INSPECTION RECORD Class	Date	No.	MILEAGE Present	Discovery	Shop Order No. Assigned
1								
2								
3								

Name ..... Car ..... Model ..... Phone No. .....
Rate "A" ..... Delivery Date ..... Address .....
"AB" ..... "ABC" ..... Schedule date assigned ..... Date invoice No. ..... P. O. .....

B

Form 1021-55-B

INSPECTION REPORT ORIGINAL

THORPE-AMERMAN MOTOR CO., URBANA, ILL., Distributor, East. Illinois Dist.

Inspection made by _____ of _____ Dealer

Name _____ Address _____ Car _____

Model _____ Car No. _____ Inspection Date "A" _____ "B" _____ "C" _____

Class A, B, C inspections to be made respectively, Monthly, Quarterly and Semi-Annually, based on a maximum mileage of 1,000 miles per month

ITEMS CHECKED (O) were found in good condition; (X) indicates work needed

LUBRICATION "A" By _____	CHECK	MOTOR & ELECTRICAL "A" By _____	CHECK	CHASSIS & ACCESSORY "A" By _____	CHECK
1 Test crank case oil		20 Push rod adjustment		40 Spring bolts	
2 Change oil		21 Compression Nos. 1...2...3...4...5...6		41 Spring clips	
3 Pack universal joints		22 Clean and gauge plugs		42 Steering gear	
4 Steering cross rod cups		23 Valve timing		43 Steering safety	
5 Reach rod cups		24 Grind valves		44 Brake rigging	
6 Steering knuckle cups		25 Ignition and timing		45 Brake adjustment	
7 Front spring oilers		Clean, oil and adjust:		46 Tram front wheels	
8 Rear spring oilers		26 Distributor		47 BATTERY—Water	
9 Rear wheel bearing cups		27 Generator		Charge ... Clean	
10 Clutch collars		28 Starting motor		Terminals ... Fastenings	
11 Brake rigging		29 Belt drive		48 TIRE INFLATION	
12 Clean motor		30 Charging rate		Front—Right ... Left	
13 Finish by chart		31 Fan bearings		Rear—Right ... Left	
14		32 Motor fastenings		49 SPEEDOMETER—Reads	
"B" QUARTERLY By _____		33 Carburetor		" Condition	
15 Steering gear case		34 Season adjustments		50 Spot Light	
16 Steering gear post		35 Dash adjustments		51 Tire Carrier	
17 Transmission		36 Motor oiling system		52 Bumper	
18 Differential		37 Focus lights		53 Body bolts	
19 Clutch		38 Wiring system		54 Door latches	
		39		55 Fenders	
				56 Windshield	

"C" SEMI-ANNUALLY By _____

57 SPRINGS: Remove all front spring shackle bolts ... Open holes ... Clean ... Oil ...
58 Separate and oil leaves: Front—Right ... Left ... Rear—Right ... Left ...
59 WASH OUT, INSPECT, REFILL, BEARINGS: Transmission ... Differential and drive pinion ... Universals ...
60 WHEEL BEARINGS: Remove ... Wash out ... Inspect ... Repack ... Adjust ... Tighten all wire w. bolts ...
61 RIM LUGS: Remove ... Graphite ... Replace tight ... SHOCK ABSORBERS: Remove ... Clean ... Adjust ...

NOTE TO OWNERS: Class "A" and "B" inspection service will be given labor free for a period of ninety days from date of delivery of new cars, and subsequently by contract. Where material is required to complete work, it will be billed at current prices, except where furnished under the factory warranty. Where special work due to regular use of car is necessary, shop order over the owner's signature will be issued.

Mileage to date	SUPPLIES USED	AMOUNT
Last record	Quarts Oil	
Period mileage	Lbs. Grease	
Inspection date		
INSPECTION NO.	Hrs. by	
	Hrs. by	
	Hrs. by	

Final Approval by .....
Recorded by .....
Charged by .....
Work Order No. .....
Invoice No. .....

Owner certifies that car covered by this report is in good running condition. _____ (owner)

SPECIAL INSTRUCTIONS TO OWNERS ON REVERSE SIDE OF THIS SHEET

854

C

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Accessory Store in Service Station Pays

Service Salesmen Sell Automobile Equipment in Cadillac Station in Detroit and Increase Their Earnings

SERVICE salesmen sell accessories in the Cadillac service station in Detroit. The plan is proving very successful, and although the accessories store in the service station has been in operation only a short time, sales already have reached a volume of $10,000 a month.

The store is conveniently located in the court or reception garage into which the service customers drive. This small accessories store handles bumpers, spotlights, tires, etc.

The service salesman is permitted to sell at opportune times to the customers such items as he thinks will be of value to them. The salesman on such sales is allowed 3 per cent commission on most merchandise and 2 per cent on other merchandise such as tires and tubes.

The service station accessory store in this case has not only increased the sales of accessories and provided a source of profit, but it has resulted in an opportunity for the service salesmen to appreciably increase their earning capacity, and this has had an appreciable effect in the morale of the men.

Get His Name

ACCESSORIES are like peanuts—the more you get of them the more you like them. So the wise dealer will keep the name and address of each person who buys an accessory from him and every three months or so he will solicit this individual by personal call, phone or letter for other accessory sales. Considerable business can be secured in this way which, otherwise, would probably be lost.

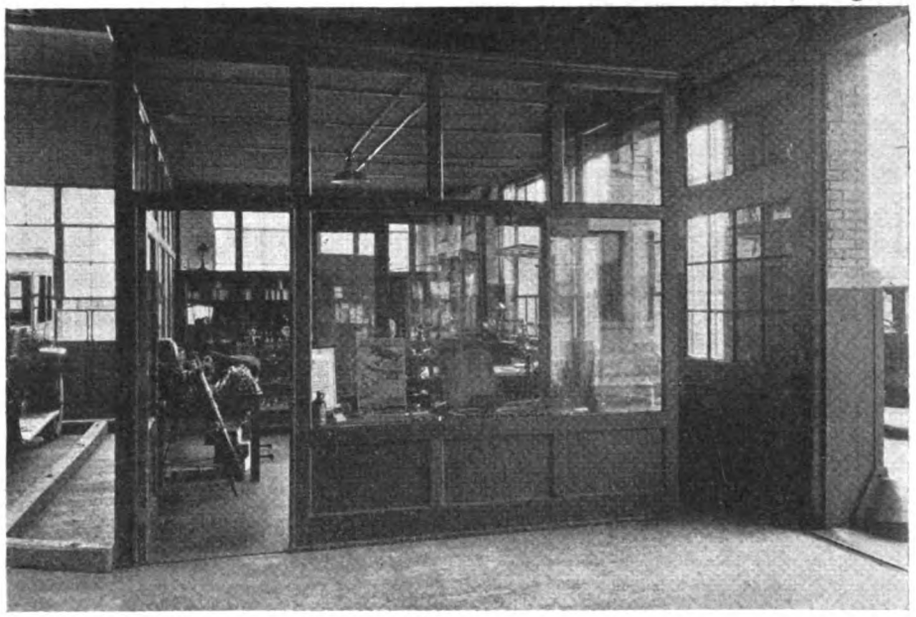
Furnishes Garages with Price Cards

THE Wayne Cylinder Grinding Co. of Fort Wayne, Ind., has a very comprehensive price card which it distributes to all garages which do not do cylinder grinding so that these garages can show the price card to folks wanting such a job. On this price card is the price for all size bores and for grinding alone, grinding and new rings, complete job, etc. By this distribution of the cards the concern gets a considerable amount of extra business and the flat price card appeals to all motorists.

How to Ask 'Em to Buy a Tire Gauge

WE find it a simple proposition to sell tire gauges to a good percentage of all the autoists who buy gas from us," said a middle western accessory dealer. "When a man is getting gas we say to him: 'Isn't that one tire a little flat? You better put your tire gauge on it.' To this a good percentage of the autoists reply that they haven't any gauge. And it is then merely a matter of good salesmanship to sell them a gauge. We've worked up quite a lot of extra business in this way, and I've no doubt but what this plan would work equally well for other dealers."

Service Station Corner Makes $10,000 a Month Accessories Sales



This is a small accessory store in the Cadillac service station in Detroit, which, although only opened recently, already has reached a value of $10,000 a month sales. Service salesmen sell the accessories and are paid 2 and 3 per cent commission

A Novel Tire Service Truck

THE Perfection Tire Co. of Sioux City, Iowa, uses a service truck with the delivery end of the truck shaped like a section of a huge tire casing. There is a regular bend in the imitation section, as there would be in the real thing, and with vivid lettering on the sides of the truck this service car never fails to get a lot of attention.

Timely Advertising Sells

WHENEVER it rains during the touring season a middle western garage, which handles a full line of accessories, makes a display in its show windows of anti-skid chains and of spotlights. With this diplay it uses a sign reading like this:

"THE ROADS NEAR HERE ARE *GOOD*,

"but this rain may make other roads bad. Be prepared for emergencies by getting skid chains and spotlights here NOW. Don't take a chance."

This timely advertising has enabled this concern to make a number of sales which otherwise it probably wouldn't have made.

Touring Information on Sign at Filling Station

A MIDDLE WESTERN filling station has a large placard attached to the side of the station on which, in large letters and figures, is painted the distance to nearby touring points and to far touring points to which many motorists head. This sign never fails to attract a lot of attention from motorists, and it is believed by the owners of the filling station that it has been instrumental in bringing a lot of trade to the station which otherwise might have passed by.

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Fitting, Renewing and Adjusting Engine Bearings

Service Stations and Equipment Manufacturers Have Developed Methods Which Are Quicker and Superior to Hand Fitting

By J. Howard Pile

Part I.

DUE largely to the development of special equipment it is now possible to fit engine bearings in much less time than was formerly the case and with more knowledge of bearing metals, clearances and other things that affect bearing operating it is possible to get longer lived bearings.

Assuming a set of properly fitted bearings in the first place and the proper kind of care on the part of the car owner, there is almost no limit to the life of modern engine bearings. The greatest causes of bearing trouble are neglect of lubrication and improper lubrication. Allowing the oil supply to run out will, of course, cause the bearings to burn out in practically no time. A more lingering form of bearing death is the dilution of the crankcase oil by seepage of liquid gasoline past the piston rings into the crankcase. This thins out the oil and leaves a liquid in the crankcase which has little viscosity and practically no lubricating value. With present day gasolines containing as they do a considerable quantity of kerosene, it is recommended that the crankcase be drained every 700 miles. Previous practice had been to drain every 1000 or 1500 miles but this is too long to allow between drainings even in very hot weather. In winter the period should be cut down to every 500 miles to allow for more frequent use of the choke and the greater difficulty in vaporizing due to lower temperatures.

Bearing Knocks

Loose bearings, of course, evident themselves by knocking. A slight knock can be located and usually by removing some of the shims the play can be taken out and the knock will disappear. A bearing knock will never mend itself, but will continue to get worse. A bearing which is properly fitted will stay put a long time but a loose bearing has a tendency to pound the oil out of itself and the shaft acts like a hammer. To illustrate the action, imagine pounding a nail with a hammer. You cannot drive it very far when the head of the hammer is pressed against the head of the nail. But if the hammer is raised a trifle, more effect will be produced because of the momentum of the hammer. The greater the distance from the nail to the hammer, the greater will be the force exerted on the nail. It is the same way with shafts and bearings. Lost motion or looseness gives the shaft momentum to hit the bearing a hammer blow with force behind it. That is the reason that a knocking bearing will get rapidly worse.

Bearings which wear loose naturally after a natural period can usually be put back in good shape simply by taking up on the bolts after removing the required amount of shims from both ends of the bearing. It is customary to fit each bearing separately, removing enough shim material to make the shaft bind when the bolts are tightened up, then adding just sufficient to give them a running fit. After fitting, each bearing is loosened a trifle, so that the next one can be given the same fit without the slight tightness of the bearing which has already been adjusted affecting the bind on the shaft. Some engines, especially eight and twelves of the V-type, require more care in fitting, and it is sometimes necessary to use feeler gages in getting the correct clearance.

Endplay in the bearings has in the past only received attention when it produced a knock. This endplay might exist in either the crankshaft or the camshaft. It has been more recently found that the end clearance on the bearings in engines using the pressure system of lubrication has a decided effect on lubrication and the accumulation of carbon in the combustion chamber This subject has been mentioned in these articles before several times. In a pressure system using a hollow crankshaft the pressure shown on the gage is dependent not only on the pump and the bypass adjustment but on the area of the space through which the oil finally escapes which is around the bearings. If the bearings are tight, there is considerable resistance offered to the flow of oil and the pressure is high. If the area is large due to loose bearings or endplay, the oil will rush through as fast as it can be pumped and although many times the quantity of oil is going through the system, the gage will register a low pressure. This excessive amount of oil pass-

Better Mechanics

Article No. 255

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous isues.

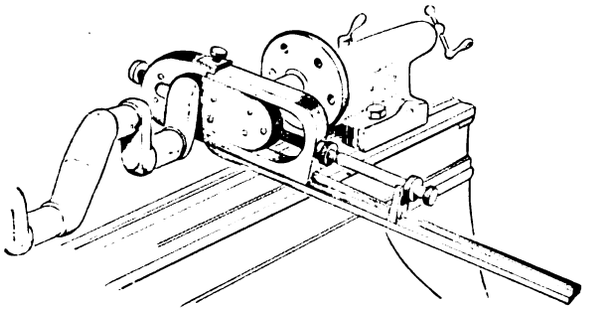
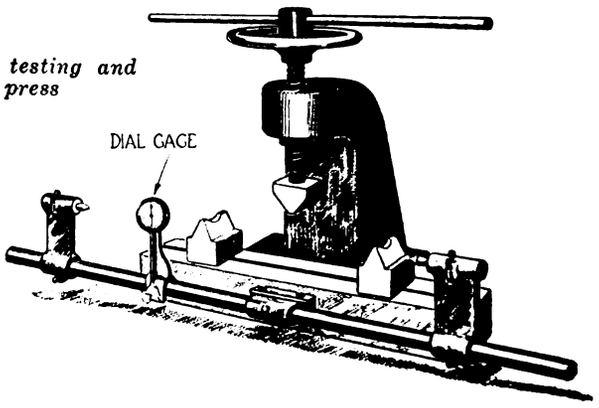


Fig. 1—Chankshaft turning or truing tool

Fig. 2—Crankshaft testing and straightening press



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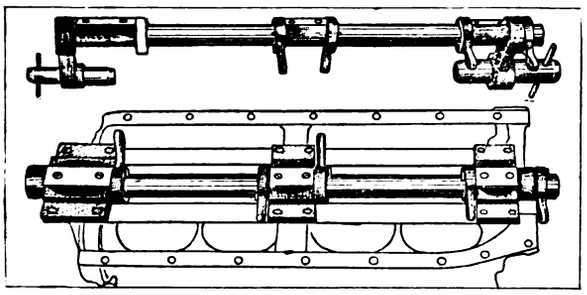


Fig. 3—Bearing rebabbitting jig

ing through the system allows a surplus to be thrown on the cylinder walls with the result that a good deal of it gets up to the combustion chamber.

When bearings are so loose that they have a decided knock there are liable to be other things the matter besides the wear of the babbitt metal itself. A bearing which has been loose for some time is liable, in the case of the connecting rod to have worn a slightly flat place on the crank pin. This comes from the fact that on the firing stroke the bearing has been striking a hammer blow at exactly the same point on the crank pin at every revolution. Similarly other flat places will have developed when the bearing hits the shaft on the intake and exhaust strokes. In other cases the crankpin will have worn oval.

Another defect that develops with loose bearings and to a greater extent on the smaller crankshafts is the springing of the shaft so that the main bearings are out of line.

Crankpins and main bearing portions of the crankshaft can be trued up for roundness in several ways. If the surface is merely cut in rings without being out of round, the shaft can be swung in a lathe and the surfaces lapped or turned and lapped to a good finish. If the shaft is out of round the same process can be used.

There are a number of tools on the market known as crankshaft turning tools which will do this truing work either with or without the use of a lathe. One such type is shown in Fig. 1.

Another piece of equipment for testing and straightening a crankshaft is shown in Fig. 2. This is a shaft straightening press provided with testing centers and a dial gage. Either the crankshaft or the camshaft can be tested and straightened on this machine. It is absolutely impossible to maintain a fit on bearings when the crankshaft is out of line and much expense is gone to in some shops that do not have adequate equipment for testing and straightening. The testing part of the operation can be done between the centers of a lathe, using a dial gage in the same manner. The testing is done in either case by swinging the shaft between the center and applying the plunger of the dial gage to the center main bearing with the dial set to zero. A variation of more than a half thousandth should receive attention. Shafts will often be found to have a variation of ten to fifteen thousandths. The high side of the bend is marked with chalk and the shaft bent in the press.

Several testings and bendings will usually be necessary to get the shaft back in line. Where the shaft has more than three bearings the job is more complicated and tests will have to be made on all the bearings to find out just where the bend is.

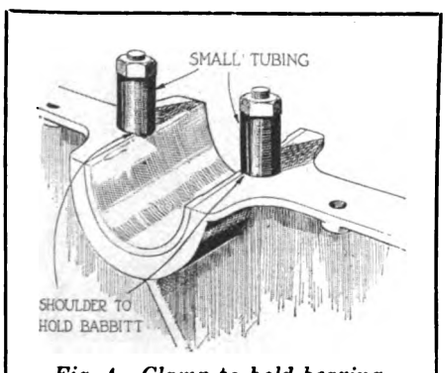


Fig. 4—Clamp to hold bearing down in crankcase

Before starting to fit new bearings, it is assumed that the crankshaft is true, perfectly round and the surface which revolves in the bearings has a mirror polish without scratches or cuts. The fillets must also be perfect.

Some engines have the babbitt bearings cast right in the crankcase. The Ford is an example of this class. In replacing the bearings on this kind of an engine it is first necessary to cut out the old bearings, clean out the anchor holes and pour the bearings with new metal, using the right kind of a jig. It is possible to cast the bearings without a jig but several things have to be taken into consideration and the job is a pretty delicate one. The gear distance has to be maintained exactly and a rebabbitting jig will determine this distance. The shaft must also be positioned so that it is exactly at right angles to the cylinder walls. If this is not done excessive wear on the pistons, connecting rod bearings and piston pin bushings will take place and the pistons will stick and bind at first, developing a slap later.



Fig. 5—Line reamer for main bearings

Most engines have die cast bearings of the removable type which are affixed to the crankcase with either dowels or screws. If the bearings are to be fitted by the hand scraping method it is necessary to force the bearings down to the casting before starting to mark them. This is done by using the bolts and clamps shown in Fig. 4. Otherwise one or more of the babbitts may spring up and give a false marking.

No matter what type of bearing is used, the main bearings should be line reamed before proceeding with further fitting. The line reamer reams all main bearings at the same time, gets them exactly in line and at right angles to the cylinder walls when the reamer is correctly set up.

Further fitting of the main bearings is either by the burning in process or by hand scraping. Details of the burning-in and hand scraping methods will be given in the September 6 issue.

PART II of this article on refitting engine bearings will appear in the next issue of Motor World. It deals with the detailed procedure of burning-in and hand scraping. Many service stations are applying burning-in and running-in in preference to hand scraping and while the process has heretofore been confined largely to Ford shops, other shops are seeing the advantages of the method and are applying it to engines of other makes.

Novel Stunt Advertises New Car Laundry

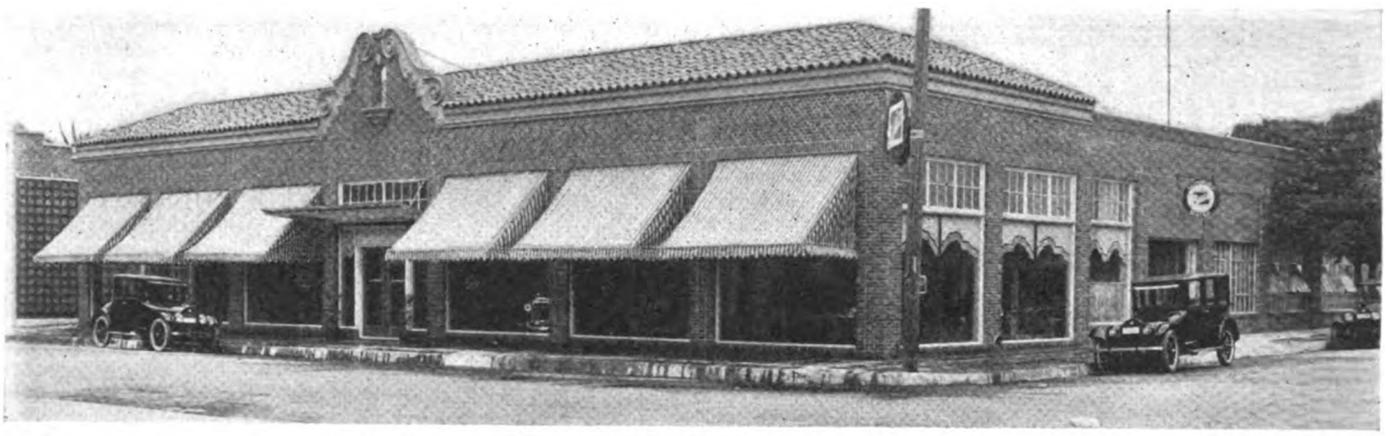
ONE of the best advertising stunts staged in Pine Bluff, Ark., in a long time was that of the Pines Auto Laundry, a new firm just recently opened up at 205 Walnut Street, in that city, the proprietors being John Baldridge and R. E. Cash.

In order to let folks know they were in town, Messrs. Baldridge and Cash rigged up an outfit calculated to give the people a mild shock, and drove over town with it. It was one of the oldest, most dilapidated buggies it was possible to secure. A steering wheel and steering arrangement were rigged onto the front part of the buggy, and one of the proprietors sat in the buggy and steered, while a horse *pushed* the outfit. It wasn't exactly pushing, either, but to say the least, the cart was before the horse. Attached to the bottom of the rear end of the buggy were a couple of two by four pieces of timber long enough to serve as shafts, and nailed across the rear end of these shafts was another short piece of timber to serve as a singletree. Hence, when the horse pulled, he pushed, and the buggy was propelled forward.

Cards and banners were attached to the outfit here and there announcing the opening of the Pines Auto Laundry, and inviting people to bring their cars there to be washed and greased.

A small negro boy rode the horse.

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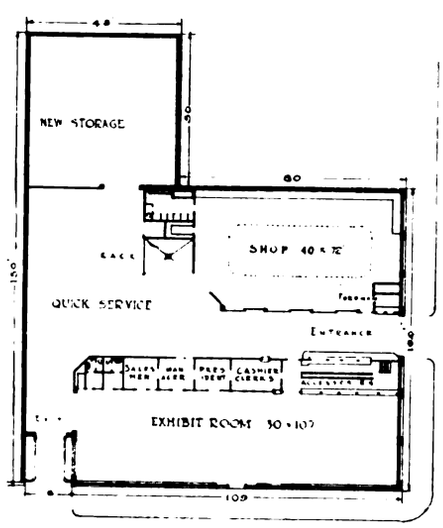
New Dealer Building Is Well Arranged

Salesroom Provides Splendid Display Facilities—Shop Has Good Light and Air

ADEQUATE sales facilities and a service department that has been laid out with the idea of efficient service in mind, are found in the new building of the Reid Motor Co., Santa Ana, Cal. The building is of reinforced concrete construction, Spanish Colonial design, with red tile roof with light brown hand ruffled brick facing. It has a street frontage of 125 ft. and is 100 ft. deep with a brick addition 45 x 50 ft. in the rear which is used for new car storage. No provision is made for the handling of a general garage business, as the building is designed for the sale and service of Buick cars exclusively.

The salesroom is 107 ft. wide and 30 ft. deep. The ceiling height is 17 ft. The walls and ceiling are finished in very light gray, the woodwork in ivory white and the floor is a very dark brown tile, the tiles being 12 in. square. An accessory store is located at the rear of the salesroom. Next to it and extending across the rear of the salesroom are general offices, president's office, manager's office, sales office and toilets. There is a mezzanine balcony over the offices which is used for the storage of parts.

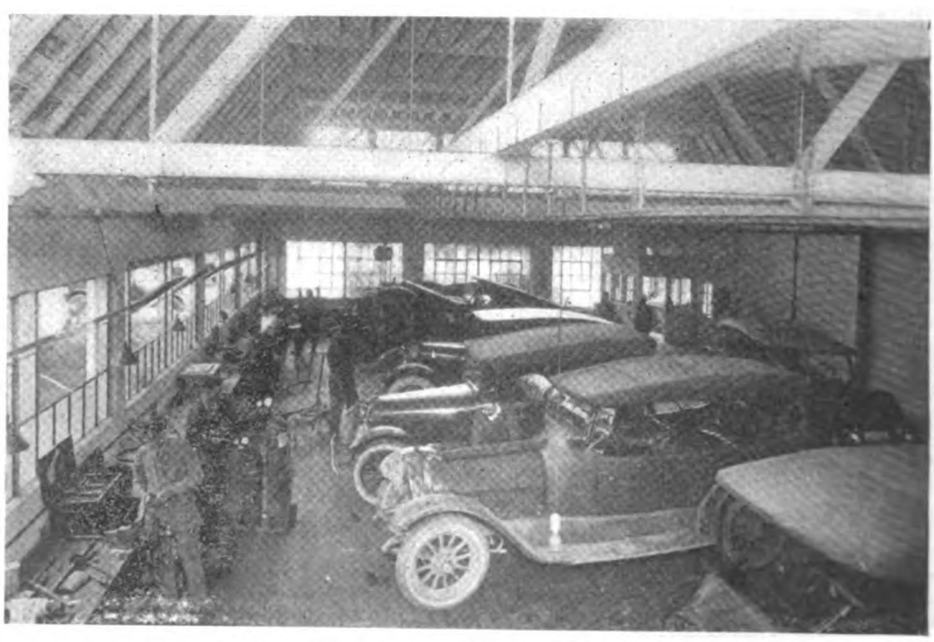
The shop is 72 x 40 ft. Metal sash of the ventilating type furnish ample light and air. The shop floor is of 2 in. tongue and groove pine laid on a 4 in. concrete base. This construction affords much greater comfort to the men in the shop than a cement floor would.



Floor plan of Reid Motor Co.'s building showing layout and proportions of various departments

An overhead monorail crane is used for the transportation of heavy parts and also for hoisting cars, thus eliminating the necessity for a pit. A vat with cleaning solution kept at the boiling point is installed for cleaning parts. Other equipment includes electric valve grinder, connecting rod and piston alignment jig, arbor press, electric drill, 14-in. lathe, acetylene welding outfit and a number of special Buick speed tools.

In laying out the shop special attention was given to the provision of space around the cars in the shop so that the workmen would not be hampered by crowding. The foreman has a well appointed office near the entrance to the service department. The time clock used by the men on all shop operations is installed just outside his door. For the convenience of the shop employees there is well-lighted and ventilated lavatory and locker room.



Favorable working conditions make shop employees more efficient. Here is a service department that has good light and ventilation and a wooden floor to make it easier for a mechanic's feet

Motor World's Department of

Better Business Buildings

Is a weekly feature of the paper.

Size of plot, with rough sketch showing shape and its relation to adjoining plots; name and number of departments operated; number of cars to be shown in salesroom; number of cars in garage should be given when making inquiries.

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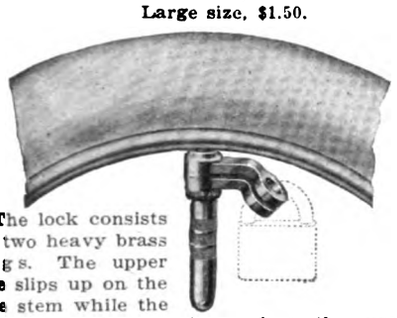
Equipment to Sell

New Devices for the Car and Truck

Imperial Spare Tire Lock

Imperial Brass Manufacturing Co.,
1200 West Harrison Street, Chicago.

Price—Small size, $1.25.
Large size, $1.50.



The lock consists of two heavy brass lugs. The upper one slips up on the tire stem while the lower lug fits snugly against the upper one and when rotated one-quarter turn engages threads in the valve stem. An ordinary padlock locks the lugs together, thus securing the tire. The standard package contains five large size and five small size locks. Each lock is packed in a separate box.

Forer Fendagard

Fendagard Mfg. Co., 138 Dwight Street, Springfield, Mass.

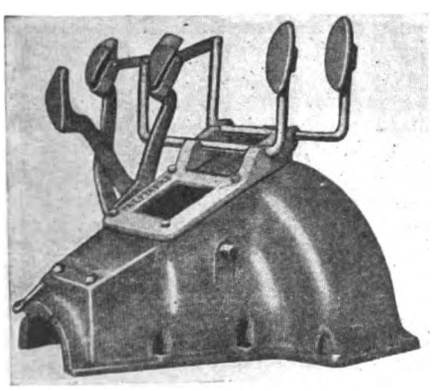
Price $5, black enamel; $6 nickel.

The device is attached to the rear spring shackle and extends outward to protect the rear fenders from injury in backing or parking. It does not project beyond the line of the fenders and consequently cannot hook another machine. It does not interfere with the jacking of the car or with the devices carried on the rear.

Safety Control for Fords

Selleck Motor Co.,
710 Bank Street, New London, Conn.

Price $5.50.



In teaching a person to drive it is advisable to provide duplicate controls so that the instructor may bring the car to a stop in the case of an emergency. This device provides duplicate control on Ford clutch and brake pedals. It bolts on to the Ford transmission cover plate, using the same holes that are tapped to take the transmission cover plate screws.

Adjustable Commutator Contactor

P. J. Durham Co.,
244 West 49th Street, N. Y. City.

Price $5.



A special tool for electrical service stations. It may be used with any armature tester. To measure the drop in voltage between commutator bars or induced current in coils. It maintains a positive contact and correct position while armature is being rotated.

No-Float Carbureter

F. L. Huber Co.,
219 No. Channing Avenue, St. Louis, Mo.

Price $7.50.

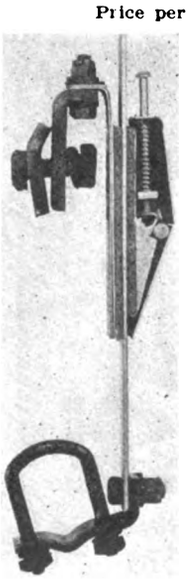


This carbureter has no float or reservoir for fuel, neither has it any adjustments. It is entirely controlled by the vacuum of the engine.

Checkers for Fords

Wellman Wieber Checkers Co.
7016 Euclid Avenue, Cleveland.

Price per set of four $14.

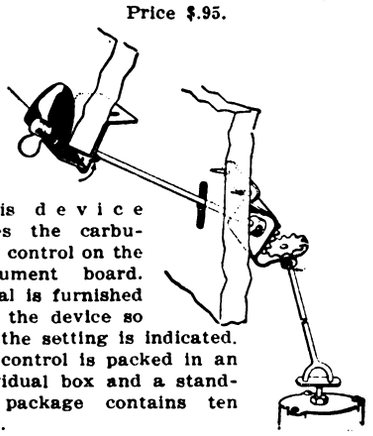


A shock absorbing device for Ford cars. A steel blade travels between two pieces of friction material. One of these is mounted in the housing and the other is fastened to a floating wedge. A roller acts between the wedge and the inclined surface of the housing and an adjustable spring presses down the wedge. The effect is a heavy constant resistance on the rebound and a much lighter resistance to upward movements of the axle. The device is adjustable. The steel straps are nickel plated and all other metal parts are japanned and rustproofed

Imperial Carbureter Control for Fords

Imperial Brass Manufacturing Co.,
1200 West Harrison Street, Chicago.

Price $.95.

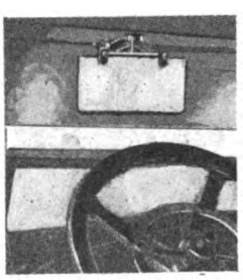


This device places the carbureter control on the instrument board. A dial is furnished with the device so that the setting is indicated. The control is packed in an individual box and a standard package contains ten units.

Security Glare Eliminator

Security Mfg. Co.,
263 Central Avenue, Rochester, N. Y.

Price $2.50



This device consists of an adjustable colored glass shield which attaches to the top of the windshield. It is made for all types of cars and in various colors of glass.

Warner Elgin Speedometer

Stewart-Warner Speedometer Corp.
1826 Diversey Boulevard, Chicago.

Price $110.



This speedometer is known as Model 78-A. It consists of a 75-mile speedometer, 100,000 total mileage recorder, 100-mile trip register and an Elgin seven jewel, eight day timepiece. The clock is compensated for temperature changes and is constructed to withstand vibration. The speedometer operates on the magnetic principle.

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Repairshop Shortcuts

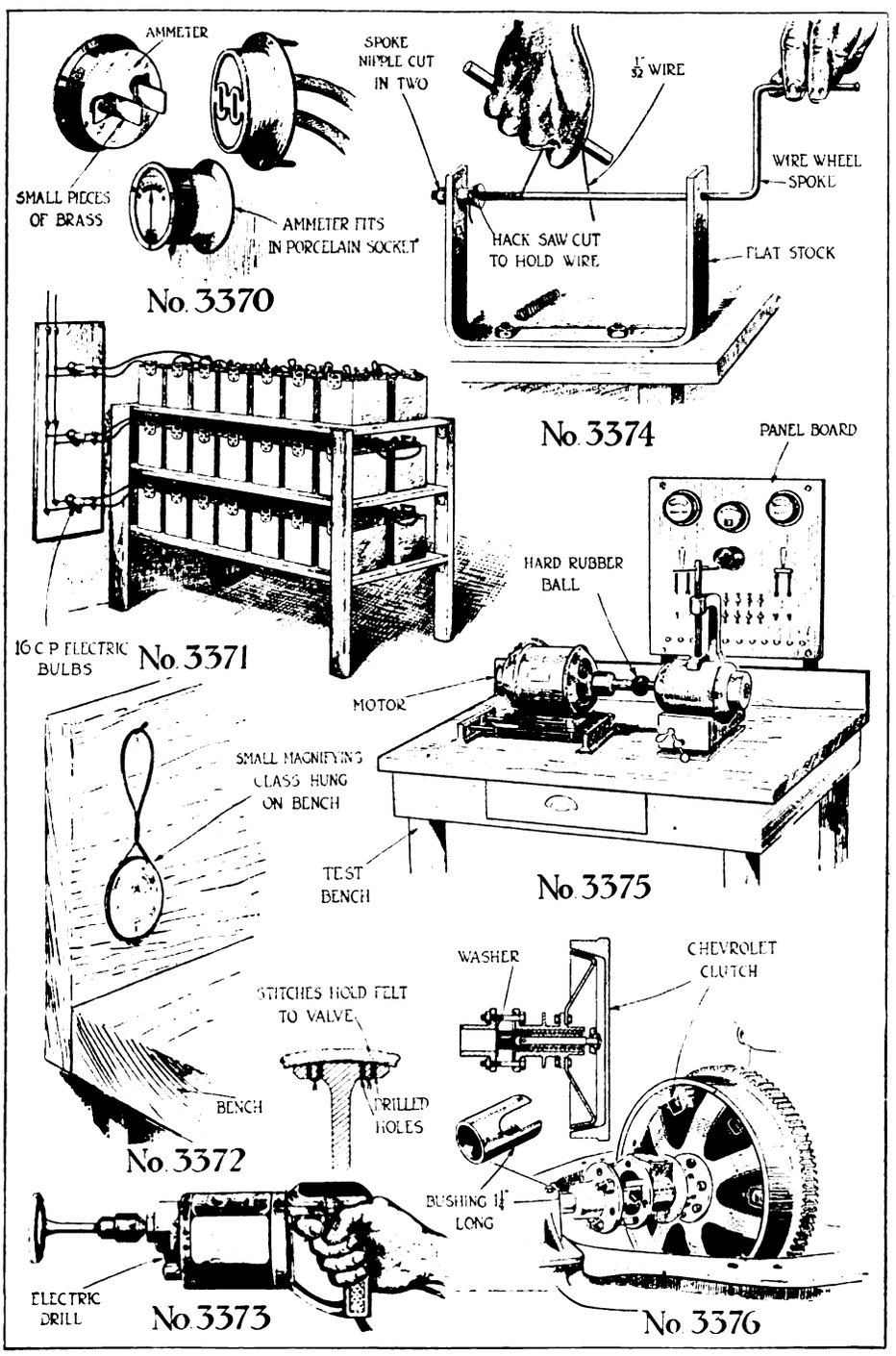
Nobody Has a Corner on Good Shortcuts—What Are Yours?

ABOUT half a century ago or more some fellow resigned from the patent office in Washington because, he said, everything had been invented that possibly could be thought of, and he felt he wasn't needed any more.

As we turn to the Repairshop Shortcut page in Motor World each week, and particularly as we note the fact that more than 3000 ways of doing something a little better and saving a little time and money have been invented, we may have a feeling somewhat like that of the fellow in the patent office.

But, if we do, we are just as far away from being correct as he was because there is hardly a shop in the country that isn't doing some little thing a better way and nearly all of us have little pet tricks that we've used so long that we don't recognize that they may be real new to some fellows. Sort of another case of intimacy breeding contempt.

Motor World pays a dollar for every idea printed on this page. How many shortcuts do you know? Let's cash in on 'em.



No. 3370—Removable Ammeter—Two brass blades are attached to the binding post of the ammeter. The blades are spaced so that they fit into openings in a receptacle connected in the charging line. This makes it easy to change ammeters in case of breakdown.—J. Harry Hearnen, Trenton, N. J.

No. 3371—Three Story Charging Bench—This bench is used to carry batteries in wet storage. In the winter months, it replaces the regular charging bench. The batteries receive a continuous charge at one-half ampere, the current being regulated by a 16 cp. carbon lamp.—J. Harry Hearnen, Trenton, N. J.

No. 3372—Magnifying Glass for Shop Use—A small magnifying glass, preferably one with a wire handle, is useful in the shop for examining finished surfaces, breaks, etc. It can be held on a nail at the back of the bench.—Donald McClean, Cleveland.

No. 3373—Rotary Rubber—A rubber for polishing or buffing small surfaces is made by attaching a piece of heavy felt to the end of a poppet valve, the valve being placed in the chuck of a portable electric drill.—Arthur G. Raabe, Long Island City, N. Y.

No. 3374—Winding a Small Spring—A small spring is wound by bending a wire wheel spoke into the form of a crank. This is mounted in a piece of flat stock bent to a U-shape and the nipple is split in two to position the spoke in the frame.—R. G. Reeksting, Boksburg, M., Transvaal, South Africa.

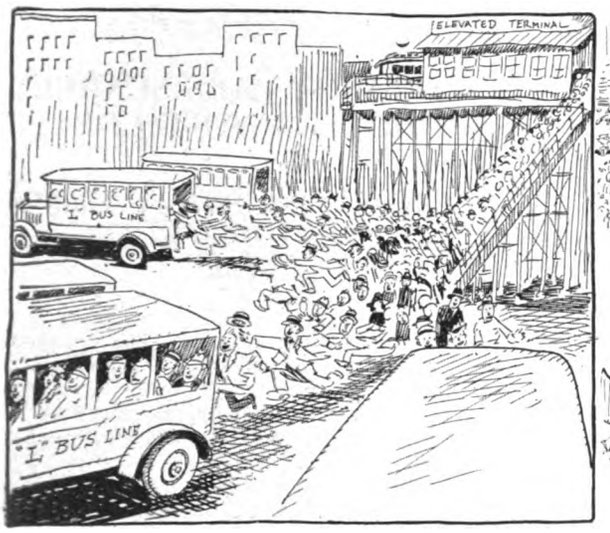
No. 3375—Electric Test Bench Coupling Protector—Some electric test benches use a spring to couple the generator to the motor for testing. To prevent this spring from flying out at high speeds a hard rubber ball is placed between the generator and motor and the generator pushed up tight.—C. R. Stafflet, Kobe & Smith Auto Co., Scattville, Mich.

No. 3376—Clutch Puller for Chevrolet 490—A puller for removing the Chevrolet 490 Clutch is made up of parts as illustrated. By sorting tho two cap screws then screwing down the nuts the spring is compressed until the pin can be removed.—A. C. Knight, Service Garage, Warrenton, Ore.

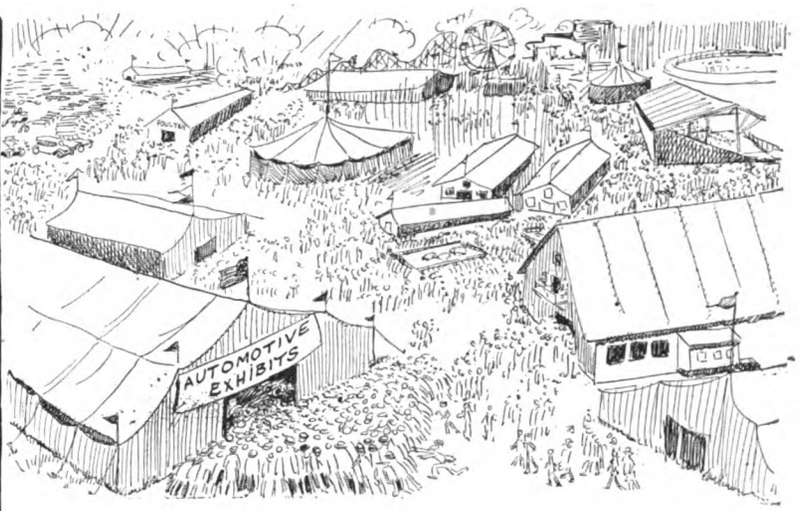
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Along the Automotive Newsway

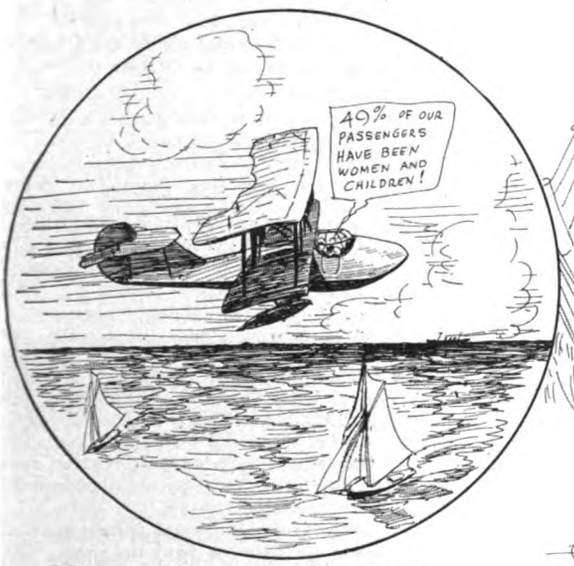
By Leo Roche



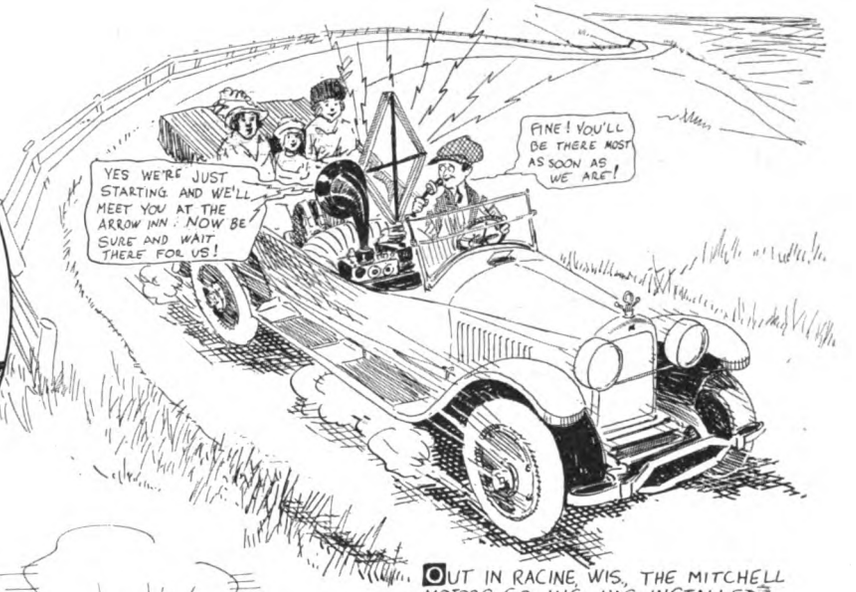
CHICAGO "L" TO USE BUSES TO SUPPLEMENT ITS ELECTRIC RAILWAY SERVICE



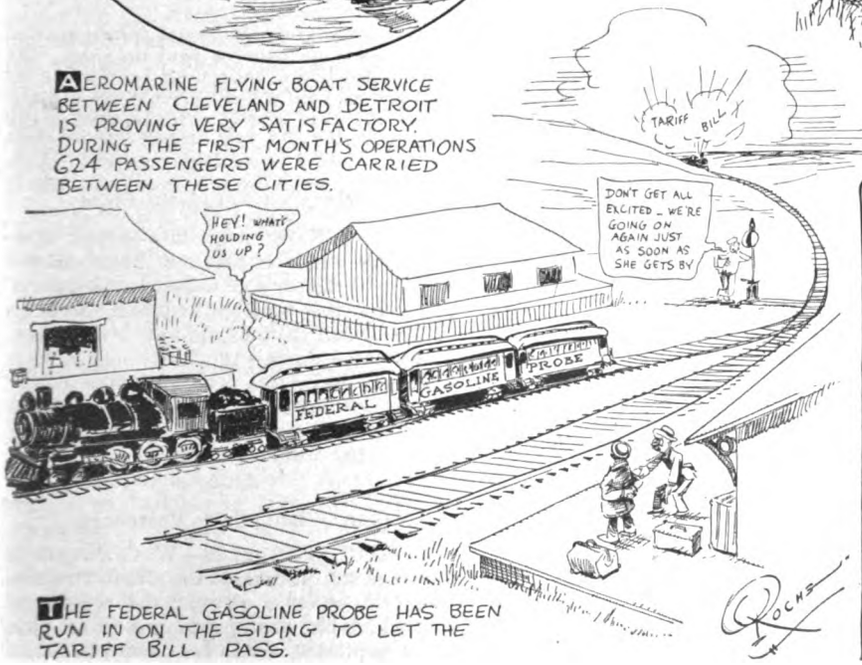
DEALERS THROUGHOUT THE COUNTRY WILL TAKE ADVANTAGE OF THE WONDERFUL SALES POSSIBILITIES OF THE STATE AND COUNTY FAIRS



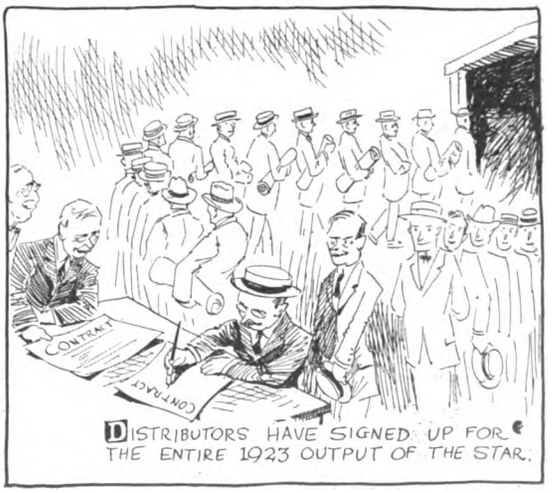
AEROMARINE FLYING BOAT SERVICE BETWEEN CLEVELAND AND DETROIT IS PROVING VERY SATISFACTORY. DURING THE FIRST MONTH'S OPERATIONS 624 PASSENGERS WERE CARRIED BETWEEN THESE CITIES.



OUT IN RACINE, WIS., THE MITCHELL MOTORS CO, INC, HAS INSTALLED RADIO TELEPHONES ON TWO OF ITS CARS. CONVERSATION BETWEEN THE TWO CARS CAN BE SUCCESSFULLY CARRIED ON UP TO TWO MILES.



THE FEDERAL GASOLINE PROBE HAS BEEN RUN IN ON THE SIDING TO LET THE TARIFF BILL PASS.



DISTRIBUTORS HAVE SIGNED UP FOR THE ENTIRE 1923 OUTPUT OF THE STAR.

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August May Exceed July in Output

SHIPMENTS THUS FAR ARE RUNNING AHEAD

If Pace Is Maintained Month May Be Within 10 Per Cent of Record June

NEW YORK, Aug. 28—Anticipating a smart fall business, the automotive industry is not experiencing as much of a seasonal slump in production as is usually the case at this time of the year. Instead, there is every indication that the August figures will show more automobiles produced in this month than during July, which was the third greatest month in a production way in the history of the industry. Returns to date from railroads, boats and drive-aways show August ahead of July at this time of the month. If the pace is maintained the rest of the month, it is thought August will be within about 10 per cent of June, the record holder, which turned out 288,000.

And this big production is being maintained in the face of manufacturing difficulties out of the ordinary in the way of a scarcity of both fuel and materials. The problem of the manufacturers has been to maintain adequate supplies of some materials and parts which has not been possible in the case of some of the factories, despite the employment of aggressive "parts chasing" methods.

Many New Models

The industry is already feeling somewhat the effects of the coal shortage. There is no accumulation of supplies. Factories generally have been able so far to avoid curtailment because of lack of power.

With the price reduction wave apparently wholly spent, the attention of the industry has been turned to new passenger car models, of which there has been a wealth since Aug. 1. Several old line companies, whose designs have been changed only slightly, if at all, have modernized both their chassis and body construction. Many manufacturers have added more models, particularly in the sport line. The fall season will open with a rich array of automotive merchandise for public inspection.

Reo Increases Working Week

DETROIT, Aug. 28—The Reo Motor Car Co. will resume operations on a full five and a half day week, after being on a five day operation throughout the summer. It had been the company's plan to work the short week through the warm weather period but sales have increased to such a point that it is necessary to get largely increased production. The speed wagon business, which has been steady all year, has been augmented by large increases in passenger car business following the reduction of prices and the presentation of new models.

JULY OUTPUT TOTAL PLACED AT 244,444

WASHINGTON, Aug. 28—Official production figures received by the Department of Commerce give July production as 223,201 passenger cars and 21,243 trucks. With few exceptions the reports each month are from identical firms and include approximately 90 passenger car manufacturers and 80 truck manufacturers.

The production figures for the first seven months of the year with the revisions made from the published figures for May and June are as follows:

	Pass. Cars	Trucks
January	81,693	9,344
February	109,170	13,121
March	152,959	19,651
April	197,221	22,227
May	232,431	23,803
June	263,017	25,985
July	223,201	21,243

75 PER CENT INCREASE IS EXPECTED BY STUTZ

INDIANAPOLIS, Aug. 26—Present shipments from the plant of the Stutz Motor Car Co. factory will raise August deliveries at least 75 per cent over July and about 100 per cent over the shipments of the same month a year ago.

The response from the dealers to the price cut, the dealer protection and the new outlook for the company has been prompt and will permit the record month shipment to be made in spite of the fact that the great activity of the period has come in the later part of the month.

Present indications point to a brisk September trade and fall records that will continue to surpass previous marks.

Canada Boosting Good Roads

EDMONTON, ALBERTA, CANADA, Aug. 28—Better highways propaganda has been put on an aggressive basis in Alberta by launching of a new publication, *Good Roads*, organ of the Edmonton Automobile and Good Roads Association. It will be issued monthly and will encourage motoring and bettering motoring routes.

FREIGHT CARS SCARCE; DRIVEAWAYS INCREASE

Effects of Rail Strike Certain to Affect Deliveries This Fall

NEW YORK, Aug. 28—The National Automobile Chamber of Commerce is closely watching the coal priority rulings to see that the industry is placed at no undue disadvantage compared with other manufacturers.

"Preference in the matter of coal is given first of all to the railroads in this crisis, for if the railroads are not operating no one can get coal in quantities, says James S. Marvin, assistant general managers of the N. A. C. C. Then come hospitals and public utilities and institutions. Therefore the automobile industry is on the same plane with other industries."

Continuing he said:

"Even if the rail strike is settled soon, the automobile industry is going to be affected in the matter of deliveries this fall. Already driveaways are becoming more and more necessary because of the increasing difficulty in getting the necessary freight cars. This may get worse before it gets better and adds to the difficulty of keeping automobile cars in this service.

"Despite the strikes, general business is improving to an extent that the demand for freight cars is increasing. On top of this comes the crop movements which need still more freight cars. With the automobile industry in heavy production right now difficulty is found in getting enough transportation to carry its product, despite the fact the railroads now have more automobile freight cars than ever before.

"Fortunately this scarcity of transportation is not going to make us shut up shop. We have learned how to deliver cars over the road and this fall will see driveaways utilized to get the new cars into the hands of the dealers."

Working on Lafayette Plant

MILWAUKEE, Aug. 28—Actual construction work on the new plant of the LaFayette Motor Car Corp., Indianapolis, adjoining the four-cylinder car division of the Nash Motors Co. at Milwaukee, was started during the past week. It is hoped to have the first buildings ready to receive the equipment of the present plant by Dec. 1 and the entire new works in running order by Jan. 1.

Gear Plant Sale Postponed

SYRACUSE, Aug. 28—W. C. Durant is expected to purchase the New Process Gear Co. of this city at the receivers' sale which has been postponed from Aug. 22 to Sept. 6.

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Coal Shortage Hits Ford Factories

WILL CLOSE SEPT. 16; OPENING INDEFINITE

Depends Upon Price of Coal—Production Averages 5000 Cars Daily

DETROIT, Aug. 28.—Blaming the coal shortage on Wall Street manipulators, Henry Ford has ordered the closing of his plants on Sept. 16. He states that he will not re-open his factories until he can get coal at a fair price. Telegraphic notices have been sent out to about 2000 sources of supply to cease shipment until further notice.

A formal notice signed by Edsel Ford states: "On account of coal shortage we will be unable to operate our plant after Saturday, Sept. 16. No material will be received if shipped other than as detailed in the letter following."

It is estimated that the closing of the Ford plants will be responsible for the laying off of over 1,000,000 workmen. There are approximately 50,000 at the Highland Park plant, 20,000 at the River Rouge and other Detroit plants and 30,000 at Ford branches throughout the country. There are 1500 plants scattered throughout the country whose principal business is the supplying of parts and materials for Ford cars.

Henry Ford reiterated the statement this morning that he will not pay excessive prices for steel or coal. He states that he could get coal if he were willing to pay over the market price, and that he had been offered 60,000 tons at $6 a ton. He refuses to pay more than $4.50.

Ford has sufficient coal on hand to run until Sept. 16 and then to keep his ovens and boilers warm for an indefinite period. Ford production has been running in excess of 5000 cars per day.

None of the other plants are affected as seriously as Ford. When asked when plants would resume, Ford stated that he had no idea and that the situation seemed to him impossible.

Mining Resumed in Illinois

CHICAGO, Aug. 26—Coal mining in Illinois has been resumed, following the settlement Tuesday of the strike which had been in effect since April 1 and which was settled in other fields by an agreement reached at Cleveland last week.

Many factories connected with the automotive industry in Chicago and Illinois will feel the effect of the settlement, as many of them were beginning to run short of fuel, although lack of coal has not necessitated the closing of any automotive factories of consequence here. Many had seen their fuel reserves dwindle and others had kept in operation only at the expense of higher prices and additional freight charges on coal brought from other states.

The shortage of coal and the unsettled business condition incident to the strike resulted in a considerable depression in the sales of automotive accessory manufacturers located in Chicago.

MAXWELL USES CANAL TO SHIP TO NEW YORK

DETROIT, Aug. 28—Shipment of 40 automobiles from the Maxwell plant by an all water route through the New York State barge canal and thence down the Hudson to the Colt-Stewart Co., New York City, will be made the subject of considerable publicity by the State of New York in its campaign to show the practicability of the barge canal for all water shipments to seaboard from Great Lakes cities.

The publicity attending the shipment is not supported by factory officials because of the strong feeling which Detroit shares with other great lakes cities for the development of the St. Lawrence River project which would open the lake to sea going vessels. The State of New York, however, has seized the opportunity to back its opposition to the St. Lawrence project by making the shipment the subject of favorable barge canal propaganda.

BANK GIVES DEALER WINDOW FOR DISPLAY

CHICAGO, Aug. 28—Chas. J. Dempsey, Inc., Ford dealer, has tried the "friendly co-operation" thing with the Madison Kedzie State Bank, a neighboring firm. The bank is located on a busier corner than the automobile dealer but use of one of the bank's windows was arranged for by the dealer, because, if the dealer sells more cars, he will have more money to put into the bank, and then, too, it makes a better impression on the folks in the neighborhood.

Former Tire Head Dies

SPRINGFIELD, OHIO, Aug. 28—After an illness of two years from heart trouble, Van H. Cartmell, aged 72, former president of the Kelly-Springfield Tire Co., died at the home of his son Robert Cartmell.

NO LET UP IN A. E. A. MERCHANDISING WORK

Warm Weather Does Not Hinder Activities—Meetings Held in South

CHICAGO, Aug. 29—The merchandising work of the Automotive Equipment Association has progressed without abatement during the warm weather, according to records from the office of Ray W. Sherman, merchandising director. In the first 11 months of the movement more than 600 "Ask 'Em to Buy" meetings were held and there was reason to expect that activity might lessen during the summer months. On the contrary, June, July and the early part of August recorded 82 additional meetings, most of them in the Dixie section.

Ozburn, Abston & Co.'s representative, George A. Brusch, operating out of Memphis, has the largest string to his credit. Next comes the McCauley-Ward Motor Supply Co., Waco, Tex., which is working a schedule of successive days from Aug. 1 to Sept. 5.

The Peoria, Ill., jobbers, following their big meeting of 555 people on July 28, held meetings in Paxton, Aug. 11 and Springfield, Aug. 21. Another was scheduled at Monmouth Aug. 28.

Company Has Film

The Multibestos Co. has produced a 1000-foot reel on how to sell its brake lining, and several other manufacturers and jobbers have inserts and added reels in prospect. The Multibestos reel fits into either the "Ask 'Em to Buy" or the "Shop Profits" pictures.

Tentative arrangements have been made for meetings in the Twin Cities during the Minnesota State Fair, the first week in September, in Richmond Sept. 18, and in Milwaukee, Sept. 22.

Successful Anderson Meeting

ROCK HILL, S. C. Aug. 28—The convention of dealers and stockholders of the Anderson Motor Co., held Thursday and Friday, was a decided success. The new light six was enthusiastically received, and the company reports the placing of orders by the dealers that will exhaust the year's output.

The annual meeting of the stockholders resulted in the election of the following officers: John G. Anderson, chairman of the board; J. W. Anderson, president; W. A. Anderson, vice-president; C. J. Henry, treasurer; E. H. McConnell, secretary.

Finances of the company were found to be in excellent shape, and steady progress has been made in enlarging the output.

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FORD ADOPTS ONE-MAN TOP AND NEW SHIELD

Also Makes Gypsy Side Curtains Regular Equipment—Prices Not Increased

DETROIT, Aug. 28—A one-man top, slanting windshield and Gypsy side curtains are now regular equipment of Ford cars coming through from the factory and assembling plants. It is understood that the change has been in contemplation for some time and production facilities are now completely worked out.

The slanting windshield, in addition to adding to the appearance of the car, gives increased comfort due to the fact that it can be opened and adjusted to any angle at both top and bottom. In making the change in the windshield it has been possible to slightly change the cowl lines and the rake of the instrument board. No change in prices is made with the new equipment.

Cadillac Surpassing Schedules

DETROIT, Aug. 24—In a statement issued by H. H. Rice, president of Cadillac Motor Car Co., the rate of production and sales at the present time is declared to be considerably in excess of all previous schedules. A majority of distributors, he reports, find business by far the best that they have ever enjoyed. Cadillac distribution has been increased until it now includes a majority of small communities.

Bowser Makes Staff Changes

FORT WAYNE, IND., Aug. 28—L. E. Porter has been appointed assistant general manager of S. F. Bowser & Co. Porter for the past three years has been director of publicity. Roscoe L. Heaton, formerly assistant to the president, succeeds him as advertising manager.

WOULD MAKE DYER LAW COVER EXPORTS

NEW YORK, Aug. 28—A movement to interest Congress in adopting an amendment to the Dyer law which now makes it a felony to take a stolen car across a state line, has been started by the National Automobile Anti-Theft Association.

The proposed amendment would forbid steamship lines from issuing their bills of lading for the transport of any car, whether or not boxed, until its engine and factory numbers have been certified by an inspector of customs as intact (and recorded); and until the automobile has been further certified as not on the list of stolen cars to be required to be kept posted in the office of the collector of customs of each port of entry in the United States.

LOUISVILLE HAS SOLD 8361 CARS IN 1922

LOUISVILLE, KY., Aug. 28—There were 8361 automobiles sold in Jefferson County, of which Louisville is the county seat, during the first seven and one-half months of 1922, according to figures compiled by the Louisville Automobile Dealers Association.

Total sales for the entire period amounted to 4497 new cars and 3864 used cars. Of the total number of new cars sold, 8 per cent were in the high-priced class, 28 per cent in the medium-priced and 64 per cent in the low-priced.

An increase of more than 2000 new automobiles sold during the period over new cars sold during the entire year of 1921 is shown.

MINNEAPOLIS PLANS BIG CENTRAL GARAGE

Part of Building Would Be Given Over to Stores—And Part to Repair Shops

MINNEAPOLIS Aug. 28—Garage space in the center of the loop district for 10,000 cars—that is the project now before the Minneapolis City Council.

The proposal includes the erection of a five-story building with four or five sub-basements, each floor to be made easily accessible to car owners by means of spiral driveways. On the ground and perhaps the second floor would be located stores handling automobile accessories and other merchandise, as well as automobile repair shops.

The parking charge contemplated is only 10 cents a day; and the revenue from parking at this charge, together with the revenue from store rentals, will, it is estimated take care of the upkeep of the building and retire the bonds with interest.

Pierce Manages Federal Sales

DETROIT, Aug. 28—W. C. Rowley, vice-president in charge of sales of the Federal Motor Truck Co., has resigned but will remain as a director of the company. He has been sales director for the past five years. F. F. L. Pierce, sales manager, is now in charge of the sales department.

Cyclone Receivers Named

GREENVILLE, S. C., Aug. 28—The Cyclone Motors Corp., formerly known as the Cyclone Starter & Truck Co. has been placed in the hands of receivers. The court named C. G. Eidson, president of the company, Frank J. Leigh and Ricketts as receivers. The Cyclone company began business about two years ago.

Southern Buick Dealers



Buick dealers from Georgia, Tennessee, Florida, Alabama and South Carolina, who met in convention at the offices growing business through the late summer and fall.

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PHILADELPHIA SALES OF ACCESSORIES GOOD

Outlook for Fall Trade Is Regarded by Dealers as Particularly Promising

PHILADELPHIA, Aug. 25—Reports for the past week reaching the Philadelphia Automobile Trade Association headquarters show that sales of new cars are fair. A few dealers claim to be considerably ahead of last year's figures at this period.

Thus far in the month sales of accessories and parts have been unusually good, notwithstanding that a very large number of cars have been withdrawn from the immediate territory through the absence of their owners at mountain and seaside resort and on prolonged tours.

Some distributors of automotive equipment state that July business was far ahead of the corresponding month a year ago and that it looks as if August sales might be in the same class. A good start has been made and the outlook for fall trade is regarded as particularly promising.

Customers who have been holding back for some time will be compelled to make purchases in a month or so.

The used passenger car business has slumped in the last month and a half, until there is little or nothing doing in that line at present, either in the traded-in cars at the agencies or among the houses along North Broad Street and elsewhere that make a specialty of handling this stock.

Business in the trailer field is quiet. The tractor trade, which took a small spurt following the recent Fordson show here, is again dull, and the truck business, which for a few weeks gave promise because of some large sales of units for fleets, appears to have subsided.

BUSINESS MEN JOIN IN OPERATING BUSES

BIRMINGHAM, ALA., Aug. 25—The Merchants' and Business Men's Association of Ensley, a suburb of Birmingham, have started to run motor buses from the small industrial and mining towns of the surrounding territory for the purpose of increasing trade.

Ensley is a complete town in itself, although a part of Birmingham, and the association that is backing this movement is composed of eighty-five firms. The population of Ensley proper is about 20,000 people.

SYRACUSE BUSINESS ALMOST EQUALS 1920

SYRACUSE, Aug. 22—Syracuse automobile dealers have had one of the most prosperous seasons in the history of the trade in this part of the state. A total of 3,639 new cars have been delivered to owners within the last five months, which is 20 per cent better than for the same period a year ago and nearly equal to the high record of 1920.

July sales this year were 25 per cent bigger than during the same month in 1921, while during May there were more cars delivered than in any other month.

Many dealers now have unfilled orders on hand and the usual slowing up of business will shortly be noticed here.

Tourist Camp an Attraction

MILWAUKEE, Aug. 28—Since the city of Milwaukee established a tourist camp in Lake Park, on Lake Michigan, late in May, this year, 1211 persons from twenty-six states have made use of the facilities.

STRIKE CONDITIONS AIDING TRUCK SALES

Farmer Demand Is Expected to Quicken with Opening of State Fair

MILWAUKEE, Aug. 28—With the annual Wisconsin State Fair opening here to-day, distributors as well as dealers look for a definite increase in wholesale and retail sales, perhaps not so much in Milwaukee, but throughout the State. This event, due to the peculiar conditions obtaining at present, is expected to bring about a genuine revival in farmer demand, which has been slowly but surely developing after an extended period of slackness.

Locally retail sales are increasing as prospective buyers are being acquainted more and more with the true effect of price reductions recently established, and a better consciousness aroused by merchandisers.

Watson Receivership Ends

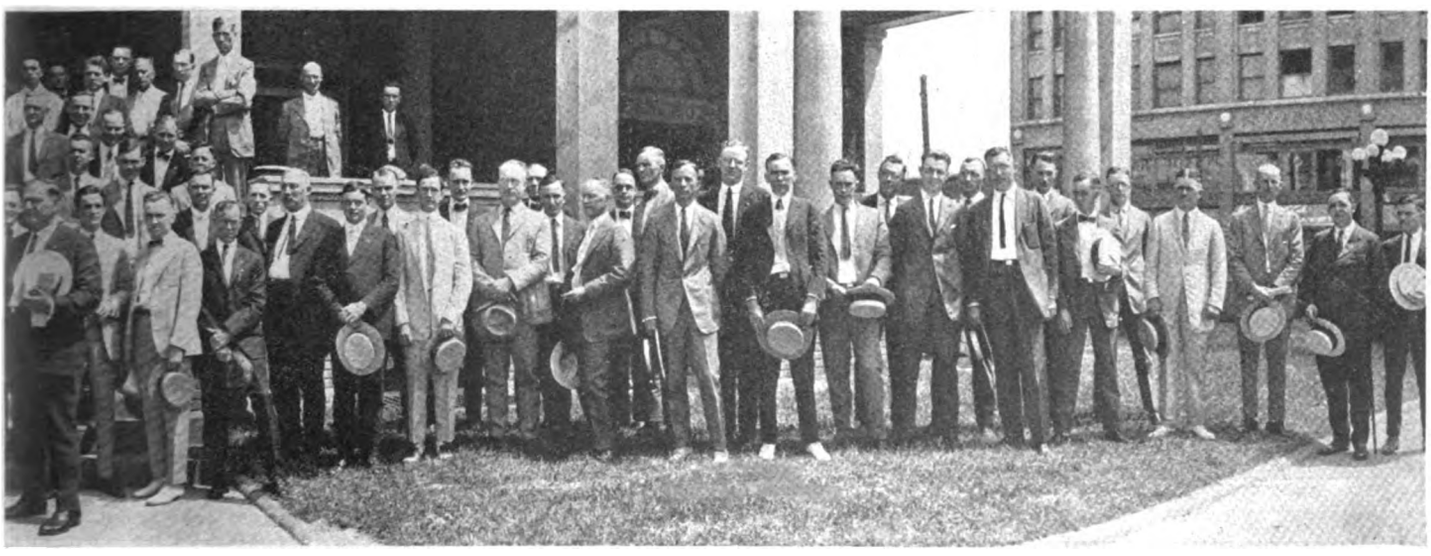
SYRACUSE, Aug. 28—Federal Judge Ray has signed an order authorizing the reorganization of the Watson Products Co. of Canastota and ending the receivership which has been in effect about two years.

The Watson Truck Co. is the name of the new concern. Indebtedness of the old company will be met by giving first preferred stock in the new concern to all creditors with claims of more than $1,000.

International Output Greater

MILWAUKEE, Aug. 28—The Milwaukee works of the International Harvester Co. are operating at approximately 62 per cent of capacity, and prospects seem to be for a material increase in this rate, due to the brilliant crop outlook.

in Optimistic Mood



of the Buick Motor Co.'s Atlanta branch, showed keen interest in the 1923 models and reported prospects for a About 150 dealers attended the convention, in two groups

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MAXWELL CUTS PRICES ON ITS CLOSED CARS

Reductions Are $150 — No Change Made with Company's Open Models

DETROIT, Aug. 28—Prices on the Maxwell sedan and coupe have been reduced $150, effective immediately, while no change has been made in the open models, which remain at $885.

President William Robert Wilson states that the preference shown by the public for closed models has led to the decision to increase production on the sedan and coupe.

The revised list is as follows:

	Old Price	New Price
2-pass. roadster	$885	$885
5-pass. phaeton	885	885
Coupe	1,385	1,235
Sedan	1,485	1,335

PEERLESS SETS LIST FOR ITS NEW MODELS

CLEVELAND, Aug. 28—Prices for the new Peerless line show an increase of about $200 over the retired series, although there can be no comparison in the prices for the reason that the new line has many changes and refinements not found in the old. The prices of the new models are as follows:

4-pass. phaeton	$2,990
7-pass. phaeton	2,990
2-pass. town coupe	3,300
4-pass. suburban coupe	3,400
5-pass. town sedan	3,900
7-pass. suburban sedan	4,090
7-pass. berline limousine	4,390
4-pass. opera brougham	4,900

Lincoln Prices Changed

DETROIT, Aug. 26—The Ford Motor Co. has reverted to a 136 inch wheelbase for all models of the Lincoln car. The coupe was the only model having a 130 inch wheelbase. Prices have been decreased $200 on the sedan and increased $500 on the coupe. The new list is as follows:

	Old Price	New Price
Sedan	$4,900	$4,700
Coupe	3,900	4,400

Paterson Reduced

DETROIT, Aug. 24—W. A. Paterson Co., manufacturer of the Paterson car has reduced prices on all its models as follows:

	Old Price	New Price
5 passenger	$1,550	$1,390
7 passenger	1,585	1,425
Coupe	2,595	2,395
Sedan	2,595	2,395

AMERICAN LIST LOWER; 25,000-MILE WARRANTY

PLAINFIELD, N. J., Aug. 28—A new series is announced by President Carl H. Page of the American Motors Corp., which is accompanied by a guarantee on each car against defects in materials for 25,000 miles.

The new series on which deliveries already are being made include both open and closed models, equipped with a larger engine (3½ x 5 in.), in addition to such special equipment as dash clock, cowl light and ventilators, tonneau lights, windshield wiper and inside mirror.

List prices have been reduced from $65 on open models and $210 on closed types, including extra equipment. The revised list is as follows:

	Old Price	New Price
4-pass. roadster	$1,995	$1,885
5-pass. phaeton	1,850	1,785
7-pass. phaeton	1,925	1,850
Sedan	2,695	2,485

Wills Planning Additions

MARYSVILLE, MICH., Aug. 8—C. H. Wills & Co. is contemplating an addition to its present plant at Marysville, Mich., to afford 104,000 sq. ft. more space.

SENATORS PREDICTING MORE GASOLINE CUTS

Preliminary Report Made—Special Committee Resumes Probe Into Price Situation

WASHINGTON, Aug. 28—The probe into the price of gasoline, which has been resumed by the special Senate committee, has produced a preliminary report in which the committee predicts further reductions in prices, which is based on the recent cut in the price of crude oil. The committee feels that this will reflect itself in the cost to the ultimate consumer of the refined product.

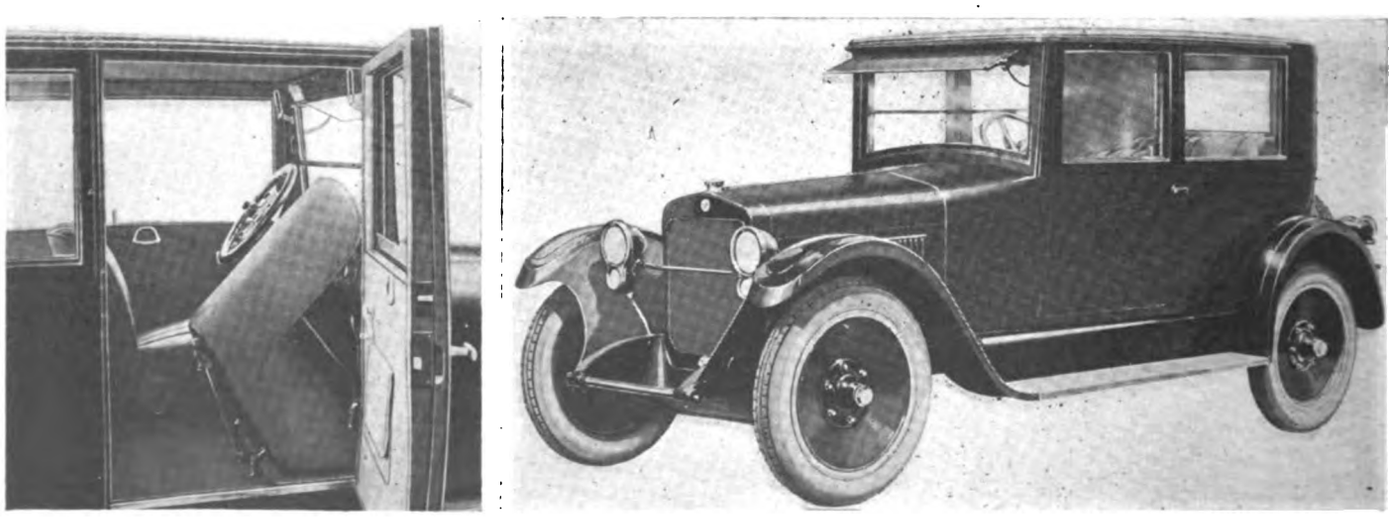
Continuing, though, the committee holds that small oil producers and refiners are suffering because of the present organization of the gasoline industry and because of the violent price fluctuations which have followed control of a large percentage of stocks by the larger companies. The small independent concerns, it is said, really produce more than half the nation's crude oil.

GROUND IS BROKEN FOR DOBLE FACTORY

SAN FRANCISCO, Aug. 28—Ground has been broken at Atascadero and work started on the first unit of a factory to be built for the Doble Steam Motors Corp. which will be completed in four months. The plant is to be of reinforced concrete construction, with 90 per cent of the wall area of glass incased in steel frames.

The Doble company is a $10,000,000 organization to build the Doble steam car, designed by Abner Doble, who is president of the company. The directors include W. A. Doble, Jr., and Warren Doble, who control the Doble Laboratories; Harold Haven and F. G. Lewis.

Wills Sainte Claire Adds a Brougham, $3,375



A 5-pass. brougham has been added to the Wills Sainte Claire line. Passage from the door to the rear seat is by tilting the front seat. Granite weave or gray velour upholstery is provided and the body colors are blue or maroon with the upper panels black. Special disk wheels to conform to the lines of the body are fitted. A trunk platform with nickel bars on the rear is standard. The lighting equipment includes large and small headlamps with the standard magnetic control.

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CHAIN STORE IDEA USED IN CAR SALES

Dealer in Chicago Has Four Establishments, Each to Handle Different Line

CHICAGO, Aug. 25—The Broadway Motor Sales Co. opened its fourth motor car sales establishment in Chicago with rather an elaborate function. The handsome storeroom was transformed into a flower trimmed ballroom and there was music, dancing, refreshments and the automotive display was limited to sport models and dolled up cars of the Paige and Willys Knight lines. The Jewett and Overland cars also will be sold here.

This salesroom is finished in a cream white tile and has exceedingly high ceilings and a handsome indirect lighting system. It is quite a remarkable salesroom to be located as far out of metropolitan activities as 6335 Broadway, which is eight miles from State and Madison Streets. The owners refer to this store as the "farthest north in Chicago." It is the coming neighborhood, however.

The Broadway Motor Sales Co., which is directed by the Brothers Bernstine, is adapting the chain store idea to the motor sales work. In each of the stores a different line of cars is handled. There is a central maintenance department, which is run as an independent company. All except emergency service is sent to this company. Also such work as warehousing cars in off seasons and other overhead activities are cared for by special departments. A special department cares for the used cars.

These stores are located in different parts of the city and in communities that are expected to develop. The Bernstines believe that they have a new and profitable idea in metropolitan car sales, and they expect to extend their store system until they are selling in some of their stores the better known lines.

In their advertising they are making maintenance prominent, and over the spacious storage and maintenance department at the new store there is a sign, "Service with a Smile."

NEW BOSTON COMPANY WILL HANDLE MARMON

BOSTON, Aug. 28—The Marmon Boston Co. has been organized to handle the Marmon line in the territory of Eastern Massachusetts as successor to Frank E. Wing. While factory executives are officials of the new company it is not a factory branch, being a Massachusetts corporation. Col. E. S. Correll is president and treasurer; A. R. Heiskell, vice-president and Fred E. Moskovics, secretary.

The company has taken over the lease of the Winton building on Commonwealth Avenue and St. Paul Street that has 40,000 sq. ft. and is practically new. Winton vacated it when a change was made from a branch to a distributorship.

The nucleus of the sales and service force for the new company was secured from Wing's organization. L. S. Dean has been placed in charge of retail sales; E. L. Harrison is wholesale manager, and J. N. Hatch, service manager.

G. M. Vice-Presidents Return

NEW YORK, Aug. 25—Alfred P. Sloan, Jr., vice-president of the General Motors Corp., in charge of operations; J. J. Raskob, vice-president and chairman of the finance committee, and Alfred H. Swayne, vice-president in charge of banking relations, who have been abroad for the last seven weeks, returned last Wednesday on the Majestic.

BARLEY WILL MARKET NEW CAR IN 30 DAYS

Not to Be Called Roamer — Change Is Made in Name of Company

KALAMAZOO, MICH., Aug. 26—A. C. Barley, president of the Barley Motor Car Co., announces that models of a new light six to be made by the Roamer organization, but not to be called "Roamer," will be on the market in 30 days. At the outset the line will consist of a five passenger phaeton, a five passenger sedan and a five passenger touring sedan. Later a coupe model will probably be added.

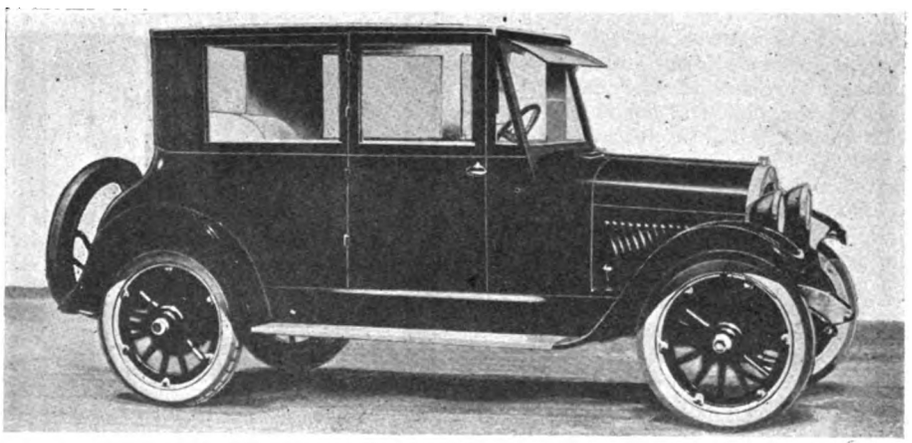
The car will be equipped with a new type of Continental Red Seal motor. The wheelbase is to be 115 inches. Prices will be set when the first shipments are made, or about Sept. 20.

Roamer models will be continued as in the past. New closed models will be on the streets in the near future. They will carry the new 12-XD Continental motor. Duesenberg engines will also be used in certain specified types of Roamers.

Barley reports that orders for the new Light Six and Roamers are coming in rapidly and that the production for next season for the local plant should be well in excess of 2000 cars, all models included.

In connection with the manufacture of the new car, announcement is made of an issue of $300,000 first mortgage real estate gold bonds, paying 7½ per cent interest and maturing in three to ten years. Olmsted & Mulhall of Kalamazoo and Corrigan, Hilliker & Corrigan of Grand Rapids, participated in underwriting the issue. The Grand Rapids Trust Co. is trustee. This issue is guaranteed by the Roamer Motor Car Co. which has just been incorporated as successor to the Barley Motor Car Co.

Oldsmobile Brougham, $1,425; Only $280 Above Phaeton



Oldsmobile has started production on a brougham which is only $280 more than the phaeton. It is mounted on the standard four-cylinder chassis. It carries five passengers and provides access to the rear seat by a tilting front seat. Among the features are an extra large rear window, metal sunshade and locked tool compartment under rear deck

SELDEN-ATLAS MAKES CHANGE AT BRANCHES

ROCHESTER, N. Y., Aug. 28—The building and facilities of the Hartnett-Stewart Motor Co., Chicago, have been taken over by the Selden Truck Corp. and will be operated as a direct factory branch. The branch will be known as the Selden Sales & Service Co., with James W. Stewart as branch manager.

The Hartnett-Stewart Co. has represented the Selden Truck Corp. in Chicago since the first of the year. The Selden Sales & Service Co. will be a combination of the Atlas Truck Corp. and the Selden Truck Corp. branches. J. Ira Hartnett will remain as Selden sales manager and Randall H. Crouse will be the Atlas sales manager.

At Philadelphia, the Atlas Truck Corp. branch has been united with the Selden branch to operate as the Selden Sales & Service Co. handling both Atlas and Selden trucks. George H. Covert will remain as branch manager in charge of Selden sales. H. A. Woodruff will continue in charge of Atlas sales at the Philadelphia branch.

At York, Pa., another branch operated as the Selden-Atlas Sales & Service Co. has been opened with H. M. Heiges as manager.

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MAXWELL MAY TAKE TITLE TO CHALMERS

If Proposed Plan Is Accepted, Production Will Be Increased

DETROIT, Aug. 28—President W. R. Wilson of the Maxwell Motor Corp. and Chalmers Motor Co. said to-day that a basis had been arrived at between the bondholders committee of the Chalmers Company and representatives of the Maxwell Company for an exchange of bonds outstanding of the Chalmers Company for class A and B stock of the Maxwell corporation. If the plan is ratified by 90 per cent of the Chalmers bondholders, it will become effective and Maxwell will take title to the Chalmers Company.

With the consent obtained, steps would be taken at once toward refunding the Chalmers organization and placing it in a satisfactory financial position.

An outline of the production possibilities of the Chalmers Company has been drafted through to next July and with the financing plan effective, production would be started upon the scale outlined. This is considerably larger than production now which has been held to a point which Wilson determined was consistent with its financial position.

Much larger production, he said, was warranted by the demand for the car, but it was financially unable to extend its operations. The material inventory at the plant has been practically worked off, Wilson said, and purchases are being made to meet manufacturing requirements until the future operation of the plant has been determined. The reduced prices announced this month have brought a large increase in business which the company has been unable to meet because of its financial condition.

Enjoin Lug Companies

PHILADELPHIA, Aug. 28—In United States District Court, Northern District of Ohio, Eastern Division, Anthony Gerosa and the Hudson Motor Specialties Co. of Philadelphia have secured a perpetual injunction against the Simmons Manufacturing Co., Lake Erie Accessories Co., the M. & M. Co., and the American Signal Co., restraining them from manufacturing or selling lugs for power plant support for motor vehicles embodying the inventions held by the complainants or from using the term "Crank Case Repair Arm."

N. A. C. C. Service Association Paster



The National Automobile Chamber of Commerce is promoting the formation of local service associations by means of letter head pasters similar to this. The pasters are in orange and blue and a number of car manufacturers are using them

Earl Motors Balance Sheet

JACKSON, Mich., Aug. 28—Total assets of $5,984,153, including current assets of $1,557,759 against current liabilities of $793,396 are reported in the balance sheet of Earl Motors as of April 30. The total deficit is $1,439,419.

CHICAGO "L" TO USE BUS LINE AS FEEDER

Electric Line Gives Recognition to Utility for Passenger Transportation

CHICAGO, Aug. 26.—Plans for the operation of buses to supplement its electric railway service are announced by the Chicago elevated lines. This step involves a recognition by the management of the elevated lines of the utility and convenience of the bus for passenger transportation, so capably demonstrated during the recent strike on the street and elevated railway lines, and indicates a determination to take advantage of the bus as a feeder for the electric lines.

Three bus lines are proposed for the inauguration of the service and, to begin with, 14 buses will be operated on these routes. The bus routes begin at the end of three elevated lines and extend from one to two and a half miles through well populated districts.

The bus lines will be an integral part of the elevated service available to the passengers without extra fare. Transfers will be issued from buses to electric trains or from trains to buses.

It is estimated that probably 40 buses will be required when the service is fully developed. The company expects to use buses seating about 25 passengers, lighted and heated by electricity. Formal application has been made to the Illinois Commerce Commission and to the city authorities for permission and license to operate the buses.

ACTIVITY MARKING FLINT OPERATIONS

FLINT, MICH., Aug. 28—An investigation of manufacturing conditions shows that Buick is adding to its employees at the rate of 100 a day; Mason Motor Truck Co. and the Martin-Parry Corp. are about to open plants; Chevrolet declares that its force will be increased by about 3,000 by next spring and Durant building plans call for the completion of the Flint factory by spring.

There is no unemployment in the city now and it is reported that all of the new help required will have to come from outside the city. There are fewer than 100 available dwellings reported and many real estate agents report a waiting list of persons seeking homes in certain sections.

Gillam Directs Service Sales

WABASH, IND., Aug. 28—G. L. Gillam, formerly associated with the International Harvester Co. in the sales department of the truck division, has been appointed sales manager for the Service Motor Truck Co. Rolfe C. Spinning has severed connections with the company as advertising manager and has accepted a position with the Service Corp. of Troy, N. Y. His place is being filled by W. B. Murphy.

A New Earl Custom Roadster, $1,485



The roadster is furnished with option of three colors of paint and upholstery. Wire or disk wheels are standard equipment. Radiator, lamps, marine type ventilators on the cowl, windshield frame and standard and light fittings are nickeled. A feature is the left hand ignition and dimmer switch to facilitate night driving on main roads

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HEADLIGHT STATIONS ADOPT A. E. A. SLOGAN

Lamp Adjusters in California Reap Benefit from Sales of Lenses, Etc.

SAN FRANCISCO, Aug. 28.—The California Automobile Trade Association reports that during the last three months official headlight adjusting stations, which it established to meet the existing law, have adjusted more than 12,000 pairs of headlights. The association's engineers spent seven months appointing the 200 stations.

"A southern California adjusting station employs one man at $250 a month to do nothing but headlight adjusting," Robert W. Martland, secretary-manager of the association, says. "The average net receipts from this department is in excess of $30 a day. A flat rate of 75 cents is made for adjusting, but that is the least of the profit. The unusual opportunity to 'ask 'em to buy' better lenses, new bulbs, wire, sockets, etc., soon runs into real money for the dealer. The average charge throughout the state is about $2.85, which proves that the 75 cents for adjustment only drops into the background because the stations are asking 'em to buy.

"Motorists are given an official certificate of adjustment which is honored by all authorities. Police officials are really enforcing the headlight law for the first time in the history of the state. This is undoubtedly due to the fact that they know it is now possible for a car owner to have his lights properly adjusted and at a nominal charge."

210 PER CENT GAIN REPORTED BY HUPP

DETROIT, Aug. 28—Reports for the first seven months of 1922 show that Hupp Motor Car Corp. sales were 210 per cent of those for the 1921 period, with July deliveries showing an increase of 87 per cent over the same month last year. August business so far is 114 per cent greater than a year ago.

In the way of sales the books show about 19,000 cars disposed of, while the shipments for the seven months exceed those of any preceding full year. April, May and June were the best months in the company's history and for the first three months of 1922 net profits before federal taxes were paid were $383,656.

Pandolfo Sentence Affirmed

CHICAGO, Aug. 28—The United States Circuit Court of Appeals has affirmed the sentence of 10 years in the penitentiary and a fine of $4,000 imposed on Samuel C. Pandolfo, formerly head of the Pan Motor Co., of St. Cloud, Minn., who was convicted on a charge of using the mails to defraud.

The sale of stock through the mails was the basis of the prosecution, it being charged that Pandolfo had represented that the company had assets of $2,000,000 and that tractors actually were being built and sold. More than $1,000,000 was alleged to have been realized by stock sales.

HE MAY BE GOVERNOR TWO YEARS FROM NOW

BOSTON, Aug. 26 — Lieutenant Governor Alvan T. Fuller of Massachusetts, Packard distributor for Boston and much of the adjacent territory, is again a candidate in the primaries for that office. Winning in the primaries is equivalent to election, as he is running on the Republican ticket.

If he is successful this year it leaves the road open to the Governorship two years from now. As he won the election two years ago after a close three-cornered fight it is expected that he will secure the nomination again.

Moon's Report for Six Months

NEW YORK, Aug. 28—Moon Motor Car Co. for the six months ended June 30, 1922, reports a net income of $236,655 after costs and expenses. For the year ended Dec. 31, 1921, the net income was $99,373 after cost, expenses and taxes.

Ford Dealers Handle Own Trades

CHICAGO, Aug. 28—The used car department of the authorized Ford dealers of Chicago has been discontinued and hereafter each dealer will handle his own trades and used car transactions.

GOVERNMENT CHARGES BRING INDICTMENTS

Two Companies Involved—Officials Said to Have Made Misuse of Mails

CHICAGO, Aug. 24 — Indictments against officials of two firms for alleged frauds within the automotive industry have been voted by a United States grand jury here and made public by Assistant United States District Attorney Harry F. Hamlin. The firms are:

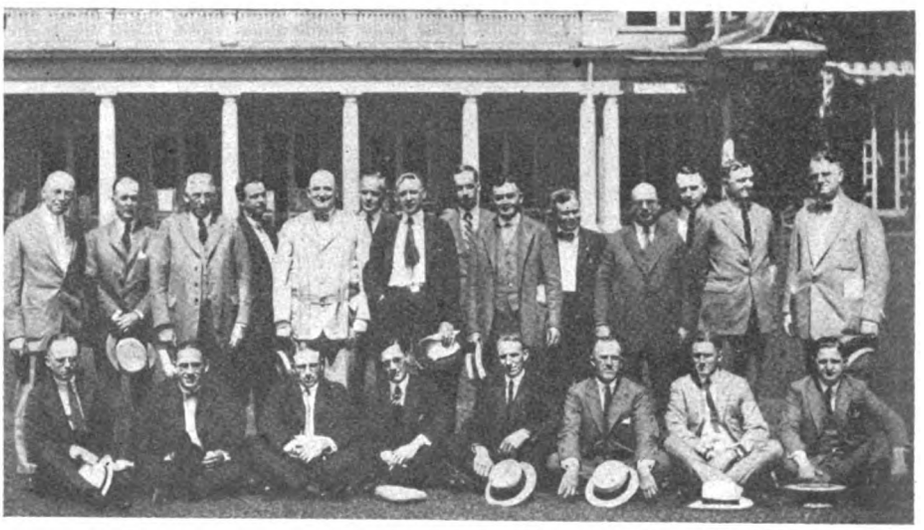
Dragon Motors, capitalized at $1,000,000; officers indicted, Herman Neidick, Joseph Stein and Hyman Edelman.

Caterpillar Manufacturing Co., Ltd.; officers indicted, Charles Weidman, W. C. C. Weidman, John A. Seibert, E. J. Anderson and M. E. Poehly.

In both cases misuse of the mails in the sale of stock or "territorial rights" is charged. It is charged that stock of the Dragon Motors was sold through the mails by the Neidick Financial Corp. on alleged fraudulent claims that the company was manufacturing one automobile a day, that it possessed assets of $592,772 and that orders were on file for $600,000 worth of taxicabs. It is charged that about 300 persons lost sums ranging from $100 to $5,000 through investment in the Dragon Motors.

The Caterpillar Manufacturing Co. is charged with having sold through the mails territorial rights for a "marvelous tire rejuvenation invention." Advertising claimed that the company was the possessor of a secret process for making new tires out of old casings.

Franklin District Sales Heads at Factory



Franklin district sales managers have been holding a four day conference at the factory in Syracuse with General District Manager W. H. Kemp presiding. In the back row at the extreme left is S. E. Ackerman, sales manager; F. A. Barton, secretary-treasurer, is the third man from the left and Louis Stellmann, chief engineer, fourth. The fifth is assistant sales manager Gaylord A. Hoyt and the tenth Ralph Murphy, assistant to vice-president. In the front row Advertising Manager H. H. Goodhart is the first man at the left. The picture was taken in front of the Bellevue Country Club, Syracuse, where a luncheon was tendered the visitors

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NEW ENGLAND TO USE FAIRS EXTENSIVELY

Dealers See Sales Possibilities They Offer—Distributors Co-operating

BOSTON, Aug. 28—With New England scheduled to hold 167 county and district fairs nearly all of them during September and October, Boston automobile distributors are giving attention to the possibilities of more intensive selling at these outdoor exhibitions.

In the past some of the larger distributors exhibited at a few large fairs like Brockton, Marshfield and at Presque Isle, Me. Outside of these very little attention was paid to others, leaving all that to the sub-dealers. Now some of the distributors in their intensive combing of the territory are writing dealers offering to co-operate with them in placing cars in the country fairs. Some may help defray part of the expenses.

The potential value in New England is large because the fair days are holidays of a kind all their own, made so by the people who insist on taking the time off to participate. If they were not a success the number would not be increasing year after year, and now at many of them special buildings have had to be constructed for automobile shows, notably at Bangor, Me., and Brockton.

Maine and Connecticut are rivals for the larger number of exhibitions, with Massachusetts third. Connecticut with 56 leads; Maine has 54 scheduled and Massachusetts 32. Vermont has 15 listed, New Hampshire seven and Rhode Island three. The dates start in September right after Labor Day and run continuously through the Fall.

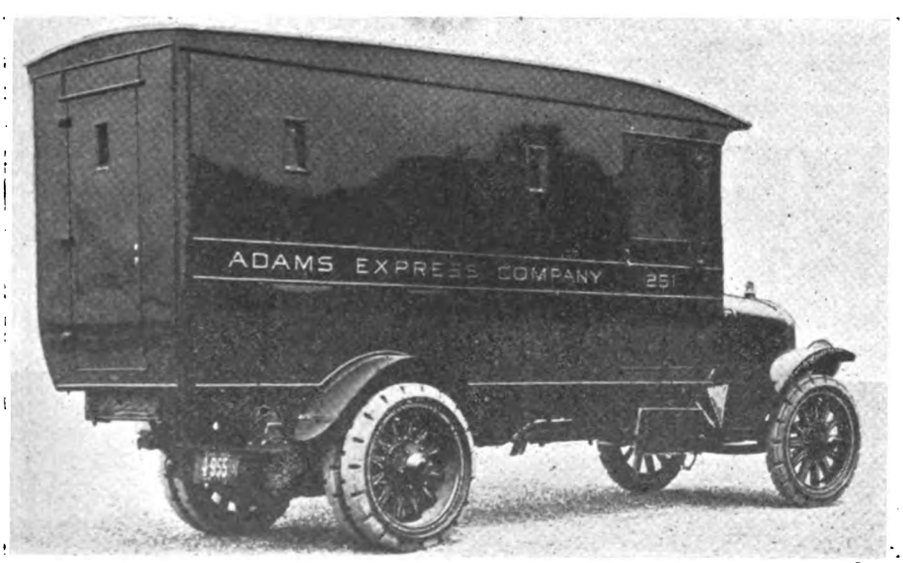
Some fairs will be in November. A large number will be held for two days or three. But some will be longer, notably the Eastern States Exposition at Springfield, Mass., that covers the entire week of seven days beginning September 17; the Worcester fair that will run five days; Brockton, four days; Charter Oak, Hartford, four days; Rochester and Lancaster, in New Hampshire, four days each; Vermont State, White River Junction, four days; Maine State Agricultural, Lewiston, four days; Eastern Maine, Bangor, four days; and Presque Isle, four days.

PACKARD TO CONTINUE CAPACITY PRODUCTION

DETROIT, Aug. 26—Since the inception of quantity shipments on the single six model in May, this year, the Packard Motor Car Co. reports that earnings have increased to a point where they now are at an annual rate of about $6,000,000. This is reported equivalent, after all disbursements, to about $2.85 a share on the 1,188,510 shares of $10 par common stock outstanding, or about three times the annual 10 per cent dividend requirement. The cash balance is now about $16,000,000, an increase of $7,000,000 since Jan. 1.

Capacity operation is planned through the winter. Present production is reported to approximate 2,100 vehicles monthly, including single six, twin six and truck models. This production will be increased, the factory having capacity for 3,000 monthly.

Mack Presents an Armored Car



This looks like the ordinary delivery wagon but it is a specially built armored body on a Mack chassis. The entire interior is lined with bullet-proof steel and the windshield, windows and port holes are fitted with shatterless bullet-proof glass. The steps fold up when the door to the cab is closed and there are no handles or other projections which the thug might take hold of. A doorway to the interior of the body is placed next the driver's seat. Inside, the body has folding cushion seats, dome lamps, ventilators and exhaust heater. A brake is also installed here for use in case the driver meets with an accident. Rifles and revolvers are provided

TEXAS IS PLANNING EXHIBITS AT FAIRS

Biggest Display Will Be at Dallas—Houston Show of Importance

DALLAS, TEXAS, Aug. 28—With the dull days of the summer gone and the farmers marketing their crops, money is becoming more plentiful and the automobile men are turning their attention to fall campaigns which will net sales and at the same time serve to keep alive interest and business through the winter months.

Right now efforts are centered on fall automobile shows with the intention of making them the most impressive, appealing, complete and profitable ever held in the state. More than 100 fairs are scheduled in various parts of the state during the next three months and the automobile shows are going to be held in connection with these fairs. The duration will range from three days to three weeks.

The biggest display will be that of the Dallas dealers during the state fair Oct. 6 to 16, inclusive. The Dallas dealers will have their own show house open at that time and arrangements have been made for a complete exhibit of cars, trucks, accessories, parts and tires.

Another big show will be that of the Houston dealers in their own building Nov. 8 to 18, inclusive. It is expected that this will be the biggest ever staged in South Texas. Every dealer in Houston is lined up for an exhibit.

Fort Worth dealers will stage a show during the Fat Stock Show. This will last for one week. Beaumont will put on a week's show during the Southeast Texas fair. San Antonio will have a four day exhibit.

ATLANTA EXHIBITORS GREATER THIS YEAR

ATLANTA, Aug. 28—Officials of the Southeastern Fair to be held this fall in Atlanta advise that the tractor and power farming equipment shows to be held in connection with the fair will be the largest in its history.

About 25 per cent more exhibitors will have space and about 30 to 35 per cent more acreage will be devoted to the displays. There will also be automotive and accessory exhibits by individual dealers and manufacturers as has been the custom the past few years.

Electrical Show Oct. 7-14

NEW YORK, Aug. 28—The annual electrical and industrial exposition will be held at the Grand Central Palace, Oct. 7 to 14. As in former years electric trucks and passenger cars with their accessories will form an important department of the show. Incidental to the exposition a parade of electric trucks will be held on Oct. 10.

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CHANGES IN THE TRADE

Fite-French Co., Nashville, Tenn., has added the "Jewett Six" to its line.

Simpson Motor Sales Co., Davenport, Ia., has added the Lexington and Gardner cars to its line.

J. F. Koch has been appointed service manager of the Franklin-Cincinnati Co., Cincinnati, succeeding **Clifford Leuders.**

E. A. Anthony has been appointed sales manager for **Brown Motors, Inc.**, distributors in Eastern Massachusetts for the Gray car.

Brunswick-Balke-Collender Co. of Chicago has appointed **Charles B. Dunbar** as district sales manager of Wisconsin with Milwaukee as headquarters.

John C. McCampbell, owner of the McCampbell Sales Co., an automobile agency at Maryville, Tenn., has been elected sheriff of Blount County, Tenn.

Fred N. Rose has been appointed factory representative in California for the **Murray Rubber Co.**, Trenton, N. J. Rose has opened an office in Los Angeles.

Templar Motors Co. has opened a new branch in Philadelphia. **Lewis F. Johnson**, at one time with the Packard Motor Car Co. of Philadelphia, is in charge as manager.

Adams-Odell Co. has been organized and incorporated in Atlanta, and plans the establishment of a new automobile agency. Display rooms have been leased providing 15,000 square feet.

Julien Motor Co. of East Dubuque, Ia., has opened its salesrooms with S A. Schley in charge. It handles Ford and Lincoln cars and the Fordson tractors. In addition a plant is maintained for repair work.

McCarthy Bros. & Wilson, Inc., Philadelphia, has purchased the **Walter E. Lanagan Ignition Co.** and will combine the two businesses in the company's new building with Lanagan in charge of the battery department.

Robert Bosch Magneto Co., Inc., has established a direct branch office at 1302 South Wabash Avenue, Chicago, Ill. with **Lee C. Carlton** as the executive head. This branch will take care of the business of the middle western section.

W. E. W. Motors Corp., Philadelphia, Durant distributor for that territory, has been appointed to establish the Philadelphia branch of the Star Motor Co. of Pennsylvania, which will have complete charge of marketing the Star line in that district.

H. B. Sexton, born and reared in Cincinnati but absent from his home town for a number of years, has become assistant to **Thomas W. Kent**, general manager of the **Lexington Automobile Co.**, Cincinnati, wholesale distributors of the Lexington for a number of states.

Brachey Battery Service recently appointed distributor for USL batteries has opened a store in Louisville, Ky. **W. A. Reisert** is president and **H. C. Brachey**, who has been identified with the automotive industry in that territory for many years, is the secretary and treasurer.

Robert Lurie of 125 West 49th Street, New York, has taken the greater New York and Connecticut representation for the Kelsey. Up to 1918 Lurie was distributor for Metz. He is planning an extensive campaign in the eastern territory and is to place in operation a wholesale distributing department.

J. Burke Riddick, Jr., and **George Abernathy** have organized a new sales agency at Memphis, Tenn., and will handle the Chevrolet and Stutz lines. The new firm will be known as the **Abernathy-Riddick Auto Co.** The firm is composed of Abernathy, president; Riddick, secretary, and **J. G. Bailey.**

A. C. Brock is manager of the **Spartanburg Cadillac**, Spartanburg, S. C., succeeding J. Thomas Arnold, Jr., who goes to New York to be associated in business with his father as resident buyer for drygoods stores. The Cadillac repair department is in charge of **H. H. Godwin**, formerly of the Cadillac factory.

Acorn Buggy Co., Cincinnati, has been appointed distributor of the new Mitchell in that territory. The business of the company was founded and incorporated in 1897. It built a single standard model buggy, which was widely sold in the United States and abroad. **Harry Pollock** is president of the company.

Staley's Garage, Baltimore, has taken over the premises occupied by the **Stewart Taxi Service**, 7-11 West Eager Street, that city, and in addition to carrying on a general garage business will have a used car department together with a repair and paint shop. **William B. Staley**, the proprietor, owned and operated a garage at Hagerstown, Md., for about seven years.

J. F. Hundt, formerly district manager for the Wainwright Engineering Co., has joined the staff of the Globe Machine & Stamping Co. of Cleveland and will represent it in a sales way in the West, while **W. F. Edwards**, the company's national sales representative will look after the East in selling the Globe Motoright steering wheel lock, tool and battery boxes and stop signals.

M. C. Auble Motor Co., Chicago, will organize a company to distribute the Star in that territory. The Auble company is the distributor for the Durant cars. The new company will have a distinct name, not yet decided upon, and will distribute the Star in northern Illinois, the Iowa counties adjacent to the Mississippi River, eight counties in Indiana and one county in Wisconsin.

James F. Boyd, formerly manager of the Willys-Overland branch at Spokane, Wash., has been appointed branch manager at Indianapolis to succeed **G. V. Orr**, who resigned to become associated with the Willys-Overland distributor in the state of Iowa. He has been with the Willys-Overland company for three years, first as sales manager of the Seattle branch and lately as branch manager at Spokane.

Martin A. O'Mara, for the past two years manager of the Kansas City branch of the White Co., has been made a vice-president of the company and a member of the sales committee with headquarters at the general offices in Cleveland. O'Mara entered the employ of the company about six years ago as a salesman in the St. Louis office, going to Kansas City as a salesman in 1917 and three years later becoming manager of the Kansas City territory. As a member of the sales committee at the general offices, O'Mara will have supervision of White truck sales in the territory covered by the following branches: Kansas City, Tulsa, St. Louis, Memphis, New Orleans, Dallas, El Paso and Houston.

The New Car and Truck Description Index

Giving the date and page number on which they appeared

CARS

Anderson (Light Aluminum Six)....Aug. 9, 1922-39
Auburn Sedan ....June 7, 1922-39
Buick (Special Six-55 Sport).May 17, 1922-22
Buick (1923 Model)....July 26, 1922-14
Cadillac (Victoria)....July 26, 1922-24
Chandler (Metropolitan Sedan)....June 7, 1922-38
Cleveland (Chesterfield Special)....Aug. 9, 1922-30
Cole (Two-pass. Coupe)....Apr. 12, 1922-40
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Durant Four (Sport Roadster)....Apr. 12, 1922-41
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Earl (Cabriole) ....July 26, 1922-17
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Gardner (Coupe and Sedan)..July 26, 1922-24
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Haynes (7-passenger Suburban)....June 21, 1922-41
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Hudson (New Super Six)....May 10, 1922-22
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Jewett (Roadster)....June 14, 1922-38
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Jewett (Coupe) ....July 19, 1922-38
Kissel (Phaeton)....Mar. 24, 1922-32
Lexington 7-passenger Phaeton....May 3, 1922-41
Lexington (Supreme 7-pass. Phaeton).May 3, 1922-41
Liberty Coupe....July 19, 1922-26
Liberty (Special Roadster)...Apr. 19, 1922-39
Marmon (7-pass. Phaeton)..Aug. 23, 1922-38
Marmon (4-pass. Speedster).Mar. 15, 1922-19
Merit ....Feb. 1, 1922-31
Mitchell ....Aug. 30, 1922-22
Mitchell (5-pass. Phaeton)..Aug. 16, 1922-25
Mitchell (De Luxe Sport Model)....Mar. 29, 1922-31
Moon (7-pass. Phaeton).....Aug. 16, 1922-25
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Oldsmobile Model 47 (Phaeton) ....Mar. 15, 1922-37
Oldsmobile (New Body).....July 26, 1922-17
Packard (New single six)....May 3, 1922-23
Peerless ....Aug. 23, 1922-18
Reo (Phaeton)....Aug. 9, 1922-31
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Star (Details)....June 28, 1922-28
Star ....Mar. 15, 1922-14
Stearns-Knight Six....July 12, 1922-29
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Wills Sainte Claire (Brougham)..Aug. 30, 1922-42
Wills Sainte Claire (Sedan and Town Car)....Mar. 8, 1922-36

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Buick (Special Delivery).....Mar. 29, 1922-31
Denby (Model 35).....May 10, 1922-23
F W D (3-ton Roadbuilder)..Mar. 8, 1922-41
Federal Express Chassis.....July 19, 1922-26
Indiana (One Ton Speed)....Aug. 30, 1922-26
Mack ....June 21, 1922-42
Milburn Electric (1 and 1½-ton).....Mar. 8, 1922-31
Overland (½-ton).....Apr. 19, 1922-41
Standard (Model 75).....July 5, 1922-43
Stewart Utility Wagon.....July 12, 1922-30
Transport (1, 1½, 2, 3, 3½ and 5-ton).May 17, 1922-22
United States (1¼-ton).....Mar. 8, 1922-37
Vim (Speed Truck).....Aug. 30, 1922-24

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Calendar of Trade Events

CONVENTIONS

Toledo .....September
Annual Convention of the Ohio Automotive Trades Association.

Buffalo .....Sept. 13-14-15
Annual Fall Convention of the Motor and Accessory Manufacturers Association. Lafayette Hotel.

Chicago .....Sept. 14-15
National used car conference of Trade Association Secretaries, under auspices National Association of Automobile Show and Association Managers.

Santa Barbara.....October
Annual Convention of the California Automobile Trade Association.

Chicago .....Oct. 18-19-20
National Association of Farm Equipment Manufacturers.

Chicago .....Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

SHOWS

Toronto, Ont.....Aug. 26-Sept. 1
National Automobile Show held in conjunction with the Canadian National Exhibition.

Columbus .....Aug. 28-Sept. 2
Ohio State Fair.

Minneapolis, Minn.....Sept. 2-9
Minnesota State Fair.

Hartford, Conn.....Sept. 4-9
Connecticut Fair Grounds.

Spokane .....Sept. 4-9
Annual Automobile Show held in connection with the Spokane Interstate Fair, B. J. Garnet, manager.

Wilmington, Del.....Sept. 4-9
Delaware State Fair.

Indianapolis .....Sept. 4-9
Automobile and Accessory Show in conjunction with the Indiana State Fair, Automobile Show Building under the auspices of the Indianapolis Automobile Trade Association, J. B. Orman, manager.

Syracuse, N. Y.....Sept. 11-16
New York State Fair.

Cleveland.....Sept. 18-28
Exhibition of Closed Cars during the merchants and manufacturers exposition, under the auspices of the Cleveland Automobile Manufacturers & Dealers Association, Herbert Buckman, manager.

Memphis, Tenn.....Sept. 23-30
Annual Automobile Show held under auspices of the Memphis Automobile Dealers Association, Tri-State Fair Grounds.

New York.....Sept. 23-30
Closed Car Show, under Auspices of Automobile Merchants Association, Grand Central Palace.

Dallas.....Oct. 6-16
Texas State Fair.

New York City.....Oct. 7-14
Annual Electrical and Industrial Exposition, Grand Central Palace.

Washington, D. C.....Oct. 21-28
Annual Closed Car Salon held under auspices of the Washington Automobile Trade Association, Convention Hall.

Houston.....Nov. 8-18
South Texas Fair.

Chicago .....Nov. 13-18
Annual Show of Automotive Equipment Association.

Cincinnati .....Nov. 22-29
Second Annual Automobile Accessory and Radio Exposition, Music Hall, under the auspices of the Cincinnati Automotive Trade Association.

New York.....Dec. 3-9
Eighteenth Annual Automobile Salon, Commodore Hotel.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, auspices of the Automobile Body Builders Association.

Chicago .....Jan. 27-Feb. 3
Annual Automobile Salon, Drake Hotel.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Minneapolis .....Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Syracuse.....Feb. 26-Mar. 3
Annual Automobile Show under auspices of the Syracuse Automobile Dealers Association.

Newark, N. J.....Mar. 10-17
Annual Automobile Show under the auspices of the New Jersey Automobile Exhibition Co., Claude E. Holgate, manager.

RACES

Kansas City.....Sept. 16
Opening Meet of New Kansas City Board Speedway.

ASSOCIATION ACTIVITIES

Code of Ethics in Texas

DALLAS, Aug. 28—The Texas Automobile Trade Association is enforcing a strict code of ethics now. The association has set out to impress upon the automobile buying public of Texas that when they deal with a member of the association they are assured of a square deal, according to W. A. Williamson, manager. Williamson declared that no firm which fails to live up to the ideals of the association will be continued as a member. He said the association intends to make this so apparent that no firm will countenance a shady transaction. Eventually the members of the association will have to make good claims made to customers when sales were concluded.

New York Dealers' Outing

NEW YORK, Aug. 28—The "Motor Booster's Outing," the annual Broadway picnic of the New York motor trade, which for the past 12 years has been held every September, will be staged for the twelfth consecutive time at Fred J. Wagner's 180 acre farm at Smithtown, L. I., on Sept. 7. Jim Nichols, the veteran Schebler carburetor distributor, is treasurer of this year's affair and is assisted by a committee composed of William A. Allen of the Allen Tire Case Co.; Joe Hall of the Marmon, Fred Philips of the Phillips Top Manufacturing Co., Otto Braunwarth, former Dunlop tire distributor, and "Doc" C. G. Percival of the Peerless.

Allen has charge of the athletic events and games, in which valuable prizes will be awarded to the winners. Breakfast will be served from sunrise until noon; the clambake, at which "Wag" and a score of helpers will labor for several days in advance, will be opened at 3.30 o'clock in the afternoon, and then the clams, lobsters, chickens, corn and watermelon will occupy the 700 "Boosters" until dusk. Last year over 600 motor tradesmen attended, and this year's affair promises to be even better, bigger and busier.

Houston Wants Slogan

HOUSTON, TEXAS, Aug. 28—The Houston Automotive Trades Association has started a campaign for a slogan The prizes offered for the best slogan applicable to all dealers is $20. So far thousands of short, catchy and pulling slogans for the members of the association have been submitted and still they come in.

The campaign ends in September and it is expected the winner of the prize will be announced the latter part of that month. With the announcement of the winner the members of the Houston association will have a new slogan which they will use in the advertising, on their office stationery and in the show windows.

In Houston practically every dealer has a slogan of his own. What is wanted now is one that every dealer can use From the great number of suggestions sent in it would seem certain that the word "service" will be found in the sentence or phrase finally adopted.

Rochester Tire Dealers Organize

ROCHESTER, N. Y., Aug. 25—A permanent organization of the Rochester Tire & Accessory Dealers' Association has been effected. Henry J. Rowerdink has been named as president; Frank W. Hahn, vice-president; Phil Hoffman, secretary, and Elmer Raither, treasurer. Directors are Harry Harrison Frank, Charles S. Owen, Louis Gibaud, James Rutherford, James J. Williams, J. Kraus, J. Scanlon, Forrest Peabody and Clarence Ager.

Syracuse Sets Show Dates

SYRACUSE, N. Y., Aug. 24—The Syracuse Automobile Dealers Association has selected Feb. 26-March 3 as dates for its next annual show, which, it is expected, will be held in the armory as usual. The association has in mind the promotion of a fall automobile week but has not made a final decision because of inability to get a hall large enough to enable the dealers to make a good showing of their product. Beginning in September, the association will hold semi-monthly dealers' luncheons which were discontinued during the hot weather.

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason.....A	¾-1	$1650a	3½x5	34x5n	31x5n	W
Acason.....RB	1½	1950	3½x5¼	36x3½	36x6	W
Acason.....H	2½	2750	4⅜x5¾	36x4k	36x8k	W
Acason.....L	3½	3450	4⅜x5¾	36x5k	36x10k	W
Acason.....M	5	4350	5 x6¼	36x6	40x12	W
Ace.....C	1½	2295	3¾x5½	34x3½	34x5k	W
Ace.....A	2½	2795	4¼x5½	36x4k	36x7	W
Acme.....20	1	....	3½x5	35x5n	35x5n	W
Acme.....30	1½	....	3¾x5	34x3½	34x5	W
Acme.....40	2	....	3½x5	34x3½	34x5	W
Acme.....60	3	....	4¼x5½	36x4	36x7	W
Acme.....60L	3	....	4½x5½	36x4	36x7k	W
Acme.....90	4½	....	4½x5½	36x5	40x10	W
Acme.....125	6¼	....	4¾x6	36x6	40x12	W
American.....25	2½	3350	4 x6	36x4k	36x4dk	W
American.....40	4	4275	4½x6	36x5k	36x5dk	W
Armleder.....20	1	....	3½x5¼	34x3½k	34x6k	W
Armleder.....21	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder....40-B	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder....40-C	1½	....	4⅜x5¼	34x3½k	34x6k	W
Armleder..HW-B	2½	....	4¾x5½	36x4k	38x7k	W
Armleder..HW-C	2½	....	4¾x5¾	36x4k	36x7k	W
Armleder..KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder..KW-C	3½	....	4½x5½	36x5k	36x5dk	W
Atlas.....MD	1	1185	3½x5	32x4½n	32x4½n	W
Atterbury....20R	1½	2475	4¼x5	34x3½	34x5	W
Atterbury....22C	2½	3375	4½x5½	36x4	36x4d	W
Atterbury....22C	2½	3375	4½x5¼	36x4	36x4d	W
Atterbury....22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury....22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury.....8E	5	4975	4¼x6	36x5	40x6d	W
Atterbury.....8E	5	5125	4¾x6	36x5	40x6	W
Autocar.....21UF	1½-2	1950	4¼x4½	34x4k	34x5k	D
Autocar.....21UG	1½-2	2050	4¾x4½	34x4k	34x5k	D
Autocar.....27H	2	2950	4 x5½	34x5	36x7	D
Autocar.....27K2	2	3075	4 x5½	34x5	36x7k	D
Autocar.....26T	5	3950	4½x5½	34x6	36x12	D
Autocar.....26-B	5	4100	4½x5½	34x6	36x12	D
Available....H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available.....H2	2	2775	4 x5	36x3½k	36x6k	W
Available....H2½	2½	3160	4 x5	36x4k	36x8k	W
Available....H3½	3½	4175	4½x5½	36x5	40x5d	W
Available.....H5	5	5375	5 x6	36x6	40x12	W
*Avery.....	1	....	3 x4	34x5n	34x5n	I
Beck.....A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	I
Beck.....B-30	1½	1725	3¾x5	34x5	36x6	I
Beck.....C-40	2	1810	3¾x5	36x6	36x6	I
Beck.....D-50	2½	2395	4½x5¼	38x7	40x8	I
*Bell.....(Penn.)	½	1000b	3½x5	31x4n	31x4n	B
Bell.....M (Iowa)	1	1495	3½x5⅛	35x5	35x5n	W
Bell.....E (Iowa)	1½	2100	3¼x5¼	34x3½	34x5	I
Bell.....O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Belmont.....A	½	725	3¼x4¼	31x4	31x4	B
Belmont.....D	2	2575	4¼x5½	34x3½k	34x6k	I
Belmont.....F	3	3500	4 x6	36x5k	36x5dk	I
Bessemer.....G	1	....	3½x5	35x5n	35x5n	I
Bessemer....H-2	1½	....	3½x5	36x3½	36x5	I
Bessemer....J-2	2½	....	4½x5¼	36x4	36x4d	I
Bessemer....K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem....KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem....GN	2	1595	4 x5½	36x6k	40x8k	D
Bethlehem....HN	3	2195	4 x5¼	36x6k	42x9k	D
Brinton.....C	2	2500	3¾x5	34x4	34x5	W
Brinton.....D	3	2975	4½x5¼	36x4	36x7	W
Brockway.....E	1	....	3¾x5⅛	35x5n	35x5n	B
Brockway.....S-5	1½	....	3¾x5	36x4	36x6	W
Brockway.....SK	1½	....	4¼x5½	36x4	36x6	W
Brockway.....KR	2½	....	4½x5½	36x4	36x8	W
Brockway.....K-5	2½	....	4½x5¼	36x4	36x8	W
Brockway.....RT	3½	....	4¾x6	36x5	36x10	W
Brockway.....R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway.....T-4	5	....	4¾x6	36x6	40x6d	W
*Buick.....	½	915b	3¾x4¾	31x4n	31x4n	B
Capitol.....G	1½	2975	3¾x5	35x5	38x7	W
Capitol.....H	2½	3700	4½x6	36x4	36x8	W
Capitol.....K	2½	4250	4½x6	36x6	42x9	W
Capitol.....M	3½	4425	4½x6	36x5	36x10	W
Case.....	2	....	4¼x5¾	30x6	38x7	I
*Chevrolet.....	¼	510b	3½x4	30x3½n	30x3½n	B
*Chevrolet.....G	¼	650	3½x4	31x1n	31x4½n	B
*Chevrolet.....T	1	1095	3½x5¼	33x4n	35x5n	W
Chicago.....C1	1½	....	4 x5	36x3½k	36x5k	W
Chicago.....C2	2½	....	4 x5	36x4k	36x7k	W
Chicago.....C3	3½	....	4½x5½	36x5	36x10	W
Chicago.....D5	5	....	4½x5½	36x6	40x12	W
Clydesdale.....10	¾-1½	1485	3¾x5	34x5n	31x5n	B
Clydesdale.....18	¾-1½	1890	3¾x5	34x5	34x5	W
Clydesdale.....20	1-1½	2385	3¾x5	34x5	34x5k	W
Clydesdale.....42	1½-2	2475	3¾x5	36x3½	36x6	W
Clydesdale....65X	2½-3	3250	4½x5½	36x4	36x8	W
Clydesdale....65EX	2½-3	3150	4½x5½	36x4	36x8	W
Clydesdale.....90	3½-4½	4100	4½x5½	36x5	36x10	W
Clydesdale....120	5-6	4500	4¾x6	36x6	40x12	W
Columbia.....H	1½	1995	4 x5	35x5	38x7n	I
Columbia.....G	2½	2335	4 x5¼	36x4	36x7	I
Comet.....T	1½	1950	3¾x5	34x4	34x4	W
Commerce.....T	¾-1½	1450	3¾x5	31x4½n	31x4½n	B
Commerce.....12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce.....16	2	2150	3¾x5	35x5n	36x6n	I
Commerce.....18	2½	2495	4½x5¼	36x6n	40x8n	I
Commerce.....25	2½	2425	4½x5½	36x4	36x7	W
Cook.....51	2½	3600	4 x5⅛	36x6n	40x8n	W
Corbitt.....E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt.....D-22	1½	$2200	3¾x5	34x3½	34x5	W
Corbitt.....C-22	2	2600	4½x5¼	36x3½	36x7	W
Corbitt.....B-22	2½	3000	4½x5½	36x4	36x7	W
Corbitt.....R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt.....A-22	3½-4	3800	4½x5½	36x5	36x10	W
Corbitt AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder....AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder.....B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder.....D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder.....C	2½	2750	4¾x5½	36x4	36x7	W
Day-Elder.....F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder.....E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn.....E	1	1600	3⅝x5½	35x5n	35x5n	W
Dearborn.....FX	1½	2300	3¾x5⅛	34x4	34x5	W
Dearborn.....F	1½	2180	3¾x5⅛	34x4	34x5	W
Dearborn.....48	2	2590	3¾x5⅛	34x4½n	34x7	W
Defiance.....G	1	1095a	3¾x5	35x5n	35x5n	B
Defiance.....D	1½	2095a	3¾x5	35x5n	36x6n	I
Defiance.....E	2	2275a	3¾x5	35x5n	38x7n	I
Denby.....31	1½	1485	3½x5	35x5n	35x5n	B
Denby.....33	1½	2145	3¾x5	35x5n	38x7n	I
Denby.....34	2	2395	3¾x5	36x3½	36x6	I
Denby.....35	2½-3	2795	4½x5¼	36x4	36x7	I
Denby.....27	4	3895	4½x5½	36x5	36x5d	I
Denby.....210	5	4295	4½x5½	36x6	40x6d	I
Dependable....A	¾-1	1650	3⅝x5½	34x5n	36x6n	W
Dependable....C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable....D	2½	2650	4 x5½	34x5	36x6	W
Dependable....E	3	2950	4¼x5½	36x4	36x7	W
Diamond T...O-3	1-1½	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T.....T	1½	2250	3¾x5½	36x3½	36x5	W
Diamond T.....U	2-2½	2650	4 x5½	36x4	36x7	W
Diamond T.....K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T....EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T.....S	5	4500	4¾x6	36x6	40x6d	W
*Diehl.....A	1	....	3½x5	34x4½	35x5	I
Diehl.....B	1½	....	3½x5	36x6	36x6	I
Deane.....	2½	4100b	4¼x5⅝	36x5	36x7	C
Deane.....	3½	6100b	4⅝x5⅝	36x5	36x5d	C
Deane.....	6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers.	¾	730	3⅞x4½	32x4n	32x4n	B
Derris.....K-4	½-2½	3400	4¼x5½	36x4	36x7	W
Derris.....K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort.....103	½	685a	3½x5	31x4n	31x4n	B
Double Drive....B	3	4000	4¼x5½	6	6	W
Duplex.....A	2	2775	4 x5½	35x5n	38x7n	W
Duplex.....E	5½	3500	4¼x5½	36x8	36x8	I
Eagle.....101	1½	1875	3⅝x5½	34x5	34x5	I
Eagle.....100-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D.....B	3	4200	4¾x5½	36x6	36x6	B
Fageol.....1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol.....2½	2½	3900	4¼x5¾	34x4	36x7	W
Fageol.....3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol.....5	5	5700	4½x6¼	36x6	40x6d	W
Fargo.....R	2	1700	3¾x5	36x4	36x6	I
*Federal.....R2	1	1375	3¾x5	33x5n	33x5n	W
Federal.....SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal.....TE	1½	2175	4¼x5¼	30x3½	36x5	W
Federal.....UE	2-2½	2425	4¼x5¼	36x4	36x7	W
Federal.....WE	3½-4	3150	4½x5½	36x5	36x5d	W
Federal.....X2	5-6	4500	4¾x6	36x6	40x6d	W
*Ford.....TT	1	430	3¾x4	30x3½n	32x4½n	W
Front Drive....C	1½	2800	3¾x5½	5	4	W
G & J**.....20	1	2275	3⅝x5½	34x5n	34x5n	W
G & J**.....A	2-2½	3375	4x5¼	36x4	36x7	W
G & J**.....B	3½-4	4475	4½x5½	36x5	36x10	W
G.M.C.....K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C.....K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C.....K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C.....K41-T	2	2450	4x5½	36x4	36x8	W
G.M.C.....K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C.....K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C.....K71-T	3½	3700	4½x6	36x5	40x12	W
G.M.C.....K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C.....K101-T	5	4050	4½x6	36x5	40x14	W
G.M.C.....K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W.....	1½	1850	3¾x5½	35x5	35x5	I
*Garford.....15	1	1590	3⅝x5½	34x5n	34x5n	W
Garford.....25-B	1½	1990	3¾x5½	36x3½	36x5	W
Garford.....70-H	2½	2750	4¼x5½	36x4	36x8	W
Garford.....77-D	4	3750	4½x6	36x5	36x5d	W
Garford.....68D	5	4500	5 x6½	36x6	40x6d	W
Garford.....150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary.....F	1-1½	1675	3¾x5	36x3½	36x5	W
Gary.....I	2	2250	4 x5½	36x3½	36x6	W
Gary.....J	2½	2650	4¼x5½	36x4	36x8	W
Gary.....K	3½	3650	4½x6	36x5	40x5d	W
Gary.....M	5	4100	5 x6½	36x6	40x6d	W
Gersix.....M	1½	3100	4 x5½	36x3½	36x7	W
Gersix.....K	2½	3500	4½x5½	36x4	36x8	W
Gersix.....	3½	$1500	4½x6	36x5	40x12	W
Graham Bros....	1	1265	3½x4½	33x4½n	34x5n	B
Graham Bros....	1½	1725	3¾x4½	33x4½n	36x6n	B
!Gramm-Pion..10	1	1245	3½x5	33x5n	33x5n	B
!Gramm-Pion..15	1½	1750a	3¾x5	36x3½k	36x5k	I
!Gramm-Pion..65	1¾	2250a	3¾x5	36x3½k	36x5	W
!Gramm-Pion..20	2	2475a	4½x5½	36x4k	36x7k	W
!Gramm-Pion..30	3	3300a	4½x5½	36x4k	36x4dk	W
!Gramm-Pion.75P	3½	4225a	4½x5½	36x6n	42x9n	W
!Gramm-Pion..40	4	3850a	4½x5½	36x5	36x5dk	W
!Gramm-Pion..50	5-6	4450a	4¾x6	36x6	40x6dk	W
Hahn.....B2	1	1750	3½x5	34x5k	34x5k	W
Hahn.....O	1½	2150	3¾x5½	36x3½k	36x6k	W
Hahn.....K	2	2550	4½x5½	36x4k	36x7k	W
Hahn.....L	3	3350	4½x5½	36x5k	36x8k	W
Hahn.....M	5	3850	4½x5½	36x5	36x10	W
Hahn.....N	6	4250	4¾x6	36x6	40x12	W
Hal-Fur.....E	1½	2350	4x5½	34x5n	38x7n	W
Hal-Fur.....B	2½	3000	4½x5½	36x6n	36x8	W
Hal-Fur.....F	3½	4000	4½x5½	36x6n	40x10	W
Hall.....1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall.....2½	2½	3275	4½x5½	36x4	36x6	W
Hall.....3½	3½	4100	4½x5½	36x5	36x5d	W
Hall.....5	5	5100	4½x5½	36x5	40x6d	W
Hall.....7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey.....WOA	2	2650	4½x5½	34x4	34x7	W
Harvey.....WFA	2½	2950	4½x5½	36x4	36x7	W
Harvey.....WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye.....K	1½	1850	3¾x5½	34x3½k	34x5k	I
Hawkeye.....M	2	2650	4¼x5	36x4k	36x6k	I
Hawkeye.....N	3½	3700	4½x6¾	36x5k	36x10k	I
Hendrickson...O	1½	2200	3½x5½	36x4n	36x5n	W
Hendrickson...N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson...M	3½	3000	4¼x5	36x5k	36x5dk	W
Hendrickson...K	5	4000	5 x6¼	36x6	40x6	W
Huffman.....B	1½-2	1795	3¾x5	34x3½	34x6	W
Huffman.....C	1½-2	1695	3¾x5½	36x3½	36x6	I
Huffman.....D	2-3	2895	4¼x5½	36x4	36x7	
Hurlburt....A-A	1-1½	1950	3¾x5	34x5n	34x5n	W
Hurlburt....B-B	2-2½	2800	4¼x5½	36x4	36x4d	W
Hurlburt....C-C	3-3½	3475	4¼x5½	36x5	36x5d	W
Hurlburt....D-D	4-4½	4150	4¼x6	36x5	36x6d	W
Hurlburt....E-E	6-6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa).B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa).G	1½	2040	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.) .H1	2½	2940	4½x5¼	36x4	36x7	I
Indep'd't(Ohio) .F	1½	2385	3¾x5	36x3½	36x5	W
Indep'd't(Ohio) H	2½	3085	4¼x5¼	36x4	36x4d	W
Indep'd't(Ohio) K	3½	3985	4½x5½	36x5	36x5d	W
Indiana.....12	1-1½	....	3¾x5¼	34x3½k	34x5k	W
Indiana.....20	2	....	4½x5½	36x4k	36x7k	W
Indiana.....25	2½-3	....	4½x5½	36x4k	36x8k	W
Indiana.....35	3½-4	....	4¾x5½	36x5k	36x5dk	W
Indiana.....51	5-7	....	5 x6¼	36x5k	40x6dk	W
*International...S	1	1250	3½x5	34x5n	34x5n	I
International...21	1	1550	3½x5¼	36x3½	36x3½	I
International...31	1½	1650	3½x5½	36x3½	36x4	I
International...41	2	2100	3½x5¾	36x3½	36x5	I
International...61	3	2400	4½x5	36x4	36x6	I
International..101	5	3600	4¼x5	36x5	40x10	I
Jackson....4WD	3½	3850	4½x5½	36x7	36x7	B
Jumbo.....15	1½	2295	3¾x5¼	36x3½	36x5	I
Jumbo.....20	2	2520	3¾x5¼	35x5n	38x7n	I
Jumbo.....25	2½	2660	4½x5½	36x4	36x7	I
Jumbo.....30	3	3060	4½x5½	36x6n	42x9n	I
Jumbo.....35	3½	3900	4½x6	36x5	36x10n	I
Jumbo.....40	4	4400	4½x6	38x7n	44x10	I
K-Z.....1	1	1750	3½x5	34x3½	34x5	W
K-Z.....1½	1½	2075	3¾x5	36x4	36x6	W
K-Z.....2½	2½	2550	4½x5¼	36x4	36x8	W
K-Z.....3½	3½	3350	4½x5½	36x5	40x10	W
K-Z.....5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo.....T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo...G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo....NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo....HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo....SK	4	3845	4½x6	36x5	36x12	W
Kalamazoo....OK	5	4350	4½x6	36x6	40x6d	W
*Kelly-S.....K-31	1½	2700	3¾x5½	36x3½	36x6	C
*Kelly-S.....K-34	1½	2700	3¾x5½	36x3½	36x6	W
*Kelly-S.....K-38	2½	2900	3¾x5½	36x4	36x4d	W
*Kelly-S.....K-35	2½	2900	3¾x5½	36x4	36x4d	C
*Kelly-S.....K-40	3½	3900	4½x6½	36x5	40x5d	C
*Kelly-S.....K-41	3½	3900	4½x6½	36x5	36x10	I
*Kelly-S.....K-42	3½	3900	4½x6½	36x5	40x5d	W
*Kelly-S.....K-50	5	4400	4½x6½	36x6	40x6d	C
*Kelly-S.....K-60	6	4600	4½x6½	36x6	40x7d	C
*Kelly-S.....K-61	7-7	4800	4½x6½	36x6	36x7d	I
Keystone.....40	2	2175	3¾x5½	34x5n	38x7n	I
Kimball.....AB	2	3675	4 x6	36x4	36x7	W
Kimball.....AC	2½	3975	4¼x6	36x4	36x8	W
Kimball.....AK	3	4500	4½x6	36x4	36x10	W
Kimball.....AE	4	5000	4¾x6	36x5	40x12	W
Kimball.....AF	5	5500	5 x6	36x6	40x7d	W
*Kissel....Express	1	1585	3¾x5½	34x5n	34x5n	W
Kissel.....Utility	1½	1975	3¾x5½	36x3½	36x5	W
Kissel...Freighter	2½	2875	4¼x5½	36x4	36x7	W
Kissel.....H. D.	4	3675	4¼x5½	36x5	36x5d	W
Kleiber.....AA	1	2200	4¼x5¼	34x3½k	34x5k	W
Kleiber.....A	1½	3100	4½x5¼	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

1—Gramm-Pioneer. 2—Kelly-Springfield.

See Page 52 for Passenger Car Specifications

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5½	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Keohler.....D	1½	2150	3½x5	34x3½	34x5	W
Keohler.....M	2½	3175	4 x5½	36x4	36x7	W
Keohler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Keohler.....F	3½	4170	4½x5½	36x5	36x10	W
Keohler.MT. Trac	5	3275	4 x5½	36x4	36x7	W
Krebs.....23	¾	1260	3½x5	31x4½	34x4½	B
Krebs.....24	1	1565	3½x5	34x5	34x5	W
Krebs.....45	1½	2125	4½x5½	36x4	36x7	W
Krebs.....75	2½	2375	4½x5½	36x4	36x8	W
Krebs.....110	3½	2975	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1925	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2100	3½x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3½x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½-3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4090	4½x5½	36x5	36x5.1	W
Larrabee.....W	5-7	4800	4½x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x6½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4½x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack...AB D.R.	1½	3150	4 x5	36x4	36x3½d	D
Mack...AB Chain	1½	3000	4 x5	36x4	36x3½d	C
Mack...AB Chain	2	3300	4 x5	36x4	36x4d	C
Mack....AB D.R.	2	3750	4 x5	36x4	36x4d	D
Mack....AB D.R	2½	3850	4 x5	36x4	36x4d	D
Mack...AB Chain	2½	3400	4 x5	36x4	36x4d	C
Mack...AC Chain	3½	4950	5 x6	36x5	40x5d	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4 x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Maplesleaf....**	1½	3000	3½x5½	34x5n	36x6n	W
Maplesleaf....AA**	2	3600	4 x5½	36x4	36x7	W
Maplesleaf....BB**	3	4050	4½x5½	36x4	36x4d	W
Maplesleaf....CC**	4	4800	4½x5½	36x5	36x5d	W
Maplesleaf....DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x5	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4½x5½	34x4	36x7	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x5d	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4½x6½	36x6	40x6d	W
Master.....F	5	5090	4½x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	942	3½x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1¼	2000	3½x5	31x3½	36x5	W
Menominee....H	1½	2475	4 x5	36x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	36x5	36x10	W
Menominee....J-3	5	4250	4½x6	36x6	40x12	W
Meline.....10	1½	1985	3½x5	31x5n	36x6n	I
*Moreland...R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	30x3½	36x6k	W
Moreland.....EX	2	2800	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3590	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-5	4600	4½x6	36x6	40x6	W
Nash.....2918	1-1½	1595	3¾x5½	34x3k	34x4k	I
Nash.....3018	2-2½	2150	3¾x5½	34x4k	34x7k	I
Nash.....Quad.	2-2½	2750	4½x5½	36x5k	36x5k	I
Nash. 3018, LWB	2-2½	2200	3¾x5¾	34x4k	34x7k	I
Nash Quad. LWB	2-2½	2800	4½x5½	36x5k	36x5k	I
Nash.....5018	2½	2250	3½x5½	34x4k	31x7k	I
*Nelson.....G2	1½	....	4½x5½	36x3½	36x6	W
*Nelson.....G3	2½	....	4½x5½	34x4	36x7	W
*Nelson.....G4	3½	....	4½x5½	36x5	36x5.1	W
*Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5½	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5½	36x4k	36x7k	W
Noble.....A21	1¼	1840	3½x5½	34x5	34x5	W
Noble.....B31	1½-2	2480	3½x5½	36x4	36x7	W
Noble.....D51	2½-3	2950	4½x5½	36x4	36x8	W
Noble.....E71	3½-5	3800	4½x6	36x5	36x10	W
Noble.....B30	1½	....	4½x5	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4½x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4½x5½	34x4	36x6	W
Northwestern..WS	2½	3590	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	31x3½	31x4	W
Norwalk.....35E	1½	1925	3½x5	31x3½	31x3½d	W
Norwalk,35E.Spec	1½	2285	3¾x5½	31x3½	31x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3½x5	36x3½	36x5	W
Ogden.....E	2½	....	4½x5½	36x4	36x8	W
Old Hickory...W	1	$1775	3¼x5	30x3½k	30x4k	W
Old Reliable....A	1½	2350	4 x5	31x4	36x6	W
Old Reliable....B	2½	3500	4¼x6	31x4	36x4d	W
Old Reliable....C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6½	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5½	35x5n	35x5n	I
Olympic.....A	2½	3200	4¼x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	2½	3100	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x6	36x6	40x12	
Oshkosh.....A	2	3250	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	3400	3½x6	36x6n	36x6n	B
Oshkosh.....B	2½	3850	4 x5½	38x7n	38x7n	B
Oshkosh.....BB	2½	4000	4 x5½	38x7n	38x7n	B
*Overland.....4	½	450	3½x4	30x3½n	30x3½n	B
Packard.....EC	2-3	3100	4½x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4½x5½	36x6n	40x8n	W
Packard.....ED	3½-4½	4100	4½x5½	36x5	36x5.1	W
Packard.....EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5½	31x3½	31x5	W
Paige.....51-20	2½	2420	4½x5½	31x4	31x8	W
Paige.....51-13	3½	3115	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot....Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot....Lincoln	2	2950	4 x5¼	34x3½	34x5	W
Patriot .Washgt'n	3	2990	4½x5½	36x4	36x7	W
Pierce-Arrow....	2	3200	4 x5½	30x4	36x4d	W
Pierce-Arrow....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3½x5	36x4	36x6	
Pittsburgher.....	3	3800	4½x5½	36x5k	36x8	W
Power.....I	2	3150	3¾x5¼	36x5	36x7	W
Power.....C	3½	4250	4½x5½	36x5	4 x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier.....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-2	1	....	3¾x5	31x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	31x3½	31x5	W
Rainier.....R-28	2	....	4½x5½	31x4	31x6	W
Rainier.....R-20	2½-3	....	4½x5½	31x4	31x7	W
Rainier.....R-15	3½-5	....	4½x5½	30x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	36x6	40x6d	W
Ranger...TA-20-2	1½	2450	3½x5	36x6n	38x7n	W
*Reo.....F	¾-1½	1245	4½x4½	31x4½n	31x4½n	B
Reliance.....10A	1½	2100	4 x5½	36x3½	36x5	I
Reliance.....20B	2½	3100	4½x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3¾x5	34x4	34x4	I
Republic..10 Exp	1	1695	3¾x5	34x5n	34x5n	I
Republic.....11X	1½	1795	3¾x5	34x4	34x6	I
Republic.....19	2½	2195	4½x5½	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rowe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rowe.....C.D.W.	2	3300	4 x5	31x4	36x3½d	W
Rowe.....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rowe.....G.P.W.	3	5250	3¾x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4½x6	30x5	36x6	W
Rowe.....F. W.	5	5500	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	L
Samson.....15	¾	....	4-3¼x4	32x4n	32x4n	B
Samson.....25	1¼	....	4-3¼x5½	35x5n	35x5n	B
Sanford....W-15	1½-2	2150b	3¾x5	36x3½k	36x5k	
Sanford.....25	2½-3½	....	4½x5½	36x4	36x4d	W
Sanford.....35	3½-5	....	4½x5½	36x5	36x5.1	W
Sanford.....50	5-7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ten	2	3200	4½x5½	36x4	36x7	W
Schacht....3-Ten	3	3800	4½x5½	36x5	36x5d	W
Schacht....4-Ten	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ten	5	4100	4½x6	36x5	40x6d	W
Schacht....7-Ten	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3300	3¾x5½	31x3½	31x7	W
Schwartz.....L	3	3600	4½x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½-2½	2250	3¾x5	31x3½	34x5	W
Selden.....31	1½-2½	3350	4½x5½	34x5n	38x7n	W
Selden.....50	2½-3½	3250	4½x5½	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4½x6	36x6	40x12	W
Seneca.....M	1½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3½x4½	32x4½n	32x4½n	B
*Service.....15	1¼	....	3¾x5	31x4½n	35x5n	B
Service.....21	1½	....	3½x5½	34x3½	31x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4½x5½	35x5n	38x7n	W
Service.....52	3	....	4½x5½	36x4	36x8	W
Service.....72	3½	....	4½x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	$1450	3¾x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5½	34x4	36x6	W
Signal.....J	2½	2375	4½x5½	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x5d	W
Signal.....R	5	3900	4¾x6	36x6	40x6d	W
Southern.....10	1	2090	3¾x5	34x3½	34x4	W
Southern.....15	1½	2590	3¾x5½	36x6n	34x4	W
Southern.....23	2	2990	4¾x5½	36x6n	40x8k	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5½	36x4k	36x7k	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x10	W
Standard.....5-K	5-7	4400	4¾x6	36x6	40x12	W
*Star.....	½	610b	3½x1¼	30x3½n	30x3½n	B
Sterling.....1½	1½	2885	4 x5¼	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5¾	36x4k	36x6k	W
Sterling.....2½	2½	3290	4¾x5¾	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6¼	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6¼	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6¼	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6¼	36x6	40x7d	C
*Stewart...Utility	¼-1½	1245	3¾x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3¾x5½	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3¾x5	34x3½	34x5	I
Stewart.....7	2-2½	2190	4½x5½	34x4	34x7	I
Stewart.....7-X	2½-3	2390	4½x5½	34x4	34x7	I
Stewart.....10	3½-4	3190	4½x5½	36x5	36x5d	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x5d	I
*Stewart.....	1¼	1245	4-3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1240	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3¾x5½	34x5n	34x5n	W
Stoughton.....B	1½	2150	3¾x5½	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....I	3	3150	4½x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4½x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Thomart.....	1¼	1795a	4 x5¼	34x5	34x5	
Tiffin.....GW	1½	2100	4½x5½	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5½	36x4	36x3½d	W
Tiffin.....PW	3½	3600	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4½x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000a	4½x5½	35x5n	38x7n	W
Tower.....H	2½	2475a	4½x5½	36x4	36x7	W
Tower.....G	3½	3475a	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3¾x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5½	34x3½k	34x4k	I
Transport.....35	2	1885	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5½	36x4k	36x8k	I
Transport.....60	3½	2585	4½x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Trayler.....B	1½	2390	3¾x5½	34x3½	34x5	W
Trayler.....C	2-2½	2850	4 x5½	36x4	36x7	W
Trayler.....D	3-3½	3300	4½x5½	36x4	36x8k	W
Trayler.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3¾x5	34x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3¾x5½	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5½	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5½	36x4k	36x7k	I
Twin City...B.W.	2	2750	4 x5½	36x6	40x8	I
Twin City...A.W.	3½	3950	4½x6	36x5	40x5d	W
*Twin City.....B	3½	....	5½x6	36x6	36x6	I
*Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4½x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4½x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4½x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4½x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
Union.....FW	2½	3190	4 x6	36x5k	36x8k	D
Union.....HW	4	4650	4½x6	36x6	40x12	D
United.....A	1½	2145	3¾x5½	34x3½k	34x5k	W
United.....B	2½	3150	4½x5½	36x4k	36x7k	W
United.....C	3½	3975	4½x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States .U	1	1875	3½x5½	34x5n	34x5n	B
UnitedStates,NW	1½	2225	3¾x5	36x5	36x3½	W
United States...N	1½	1975	3¾x5	36x3½k	36x5k	I
United States...R	3	3075	4 x5½	36x4	36x4d	W
United States...S	4	3875	4½x5½	36x5	36x5d	W
United States...T	6	4850	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Veteran.....M**	1½	2609	3¾x5½	35x5n	35x5n	W
Veteran.....P**	2	3699	4½x5½	36x4	36x7	W
Veteran.....R**	3	4200	4½x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	1½	1050	3½x4½	31x4n	31x4n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express, truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Vim.....30	1½	$1775	3½x4½	32x4½	32x4½	W
*Vim.....50	½-¾	995	4 x5	32x4n	32x4n	B
Vim.....31	1	1975	3¾x5½	35x5n	35x5n	W
Vim.....22	2	3150	3¾x5½	36x4	36x6	W
Vim.....23	3	3950	4¼x5½	36x5	36x5d	W
Walker-JohnsonA	2	2250	3½x5	34x3½	34x6	W
Walker-JohnsonB	3	2750	4¼x5½	36x4	36x8	W
Walter.....M	2½	3850	4½x5¾	36x4	36x8	D
Walter.....S	5	4850	4½x6½	36x6	40x6d	W
*Watson.....C	1	1465a	3½x5½	35x5n	35x5n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2550	4½x5¼	36x3½k	36x5k	W
Western....L1½	1½	2550	3¾x5	36x3½k	36x5k	W
Western....W2½	2½	3250	4½x5¼	36x4	36x7	W
Western....L2½	2½	3250	4¼x6	36x4	36x7	W
Western....W3½	3½	4250	4½x6	36x5	40x5d	W
*White.....15	¾	2400	3¼x5½	34x5n	34x5n	B
White.....20	2	$3250	3¾x5½	36x4k	36x7k	D
White.....40	3½	4200	3¾x5¾	36x5	40x5d	D
White.....45	5	4500	4½x5¾	36x6	40x6d	D
White Hick....E	1	1225	3¾x5	34x5n	34x5n	W
White Hick....H	1½	1375	3¾x5	36x3½	36x5	W
White Hick....K	2½	1675	4½x5¼	36x4	36x5	W
Wichita.....K	2	1875	4¼x5¼	36x3½	36x4k	W
Wichita.....M	1	2400	3¾x5¼	36x3½k	36x6k	W
Wichita.....RX	3	3200	4½x5¾	36x4k	36x8k	W
Wichita.....O	4	$3500	4½x6½	36x5k	36x5k	W
Wilcox.....AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4¼x5	36x4k	36x3½k	W
Wilcox.....E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox.....F	5	4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¼x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4½x5½	36x4	36x7	W
Wilson.....G	3½	3635	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin.....A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin.....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin.....C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin.....D	3½	3000	4¾x5¾	36x6n	40x8	W
Wisconsin.....E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin.....F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will.....N	1½	2450	3¾x5	36x3½k	36x5k	W
Witt-Will.....P	2½	2900	4½x5¼	36x3½k	36x7k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment, b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm..	15-25	1185	4	Midw.	4-4½x5¼	Gas.	3
Allis-Chalm..	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm.	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork...2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork....C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T....	15-30	1900	4	Clim.	4-5 x6½	G,K	4
Aultman-T....	22-45	2800	4	Own	4-5½x8	G,K	6
Aultman-T....	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Automot. B-3	12-24	1250	4	Here.	4-4 x5½	Gas.	2-3
Avery,SR.Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery..Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4½x6	G,K,D	3-4
§Avery.....	....	....	*	Own	4-4x5½	G,K,D	3
Avery.....	12-25	....	4	Own	2-6½x7	G,K,D	3-4
Avery.....	14-28	....	4	Own	4-4½	G,K,D	3-4
Avery.....	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7½x8	G,K,D	8-10
Bates Mule.H	18-28	....	4	Midw	4-4½x5¼	Gas.	3
Bates Mule..F	18-28	....	*2	Midw	4-4½x5¼	Gas.	3
‡Bates MuleG	25-35	....	*2	Midw	4-4½x6	Gas.	..
Bear.....	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman...G	2-4	240	4	Own	1-3½x4½	Gas.	....
Best.....	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best.....	60	....	*2	Own	4-6½x8½	G,K,D	8-9
Boring.....	5-10	395	4	LeR.	4-3½x4½	G	..
Boring...1921	....	1850	3	Wauk	4-4¾x5¾	GorK	2
Bure-Oil, 1922	15-30	1395	4	Own	2-6¾x7	Ker.	3-4
Capital.....	15-30	1000	2	Own	4-4¼x6	Gas.	3
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	3
Case.....	12-20	....	....	....	4-4½x5	....	2
Case.....	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case.....	22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case.....	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T35	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar .5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur.....	5-2½	345	2	N Way	2-4½x4½	GorK	1
Chicago....40	40	2500	4	Own	4-4½x6	Gas.	4
Cletrac.....F	9-16	595	*2	Own	4-3½x4½	G,K,D	2
Cletrac.....W	12-20	1315	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Dapse.....A	20-30	2500	4	Buda	4-4½x6	Gas.	4
Dill.....D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dill.....R.W.	20	2980	4	Midw.	4-4½x6	Gas.	3
Do-It-All....A	3-6	495	..	Own	1-4½x5	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B.....AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol.....D	9-18	1525	4	Lyc.	4-3½x5	Gas.	2
Farm Horse.B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Farquhar.....	15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar.....	19-35	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar.....	25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch..4 Drive	20-35	1950	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	$ 395	4	Own	4-4x5	G,K	2
Franklin....G	18-30	4000	*2	Clim.	4-5 x6½	G or K	3-4
Franklin....C	18-30	3350	*2	Clim.	4-5 x6½	G or K	3-4
Franklin...G2	18-30	4350	2	Clim.	4-5 x6½	G or K	3-4
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt,..A	18-36	2150	4	Wauk.	4-4¾x6¾	G or K	4
Gray.....	20-36	1975	3	Wauk.	4-4½x6¼	Gas.	4
Gray.....	22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. Western St	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr..20	20	765	4	Own	2-5¼x6½	K.D.	2
Hart-Parr..30	30	895	4	Own	2-6½x7	K.D.	3
‡Hart-Parr....	....	1695	4	Own	6½x7	K.D.	..
Heider.....D	9-16	870	4	Wauk	4-4¼x6½	G,K	2
Heider.....C	12-20	995	4	Wauk	4-4½x6¾	G,K	3
Heider....Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4.	12-25	985	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4	15-30	1885	4	Midw	4-4½x6	Gas	3
Illinois.....C	15-30	....	4	Clim.	4-5 x6½	G,K	4
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International.	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5½x8	G,K,D	4
J-T.....N	25-40	3000	*2	Clim.	4-5x6½	G,K,D	3-4
¶Kinkade....	1½	190	1	Own	1-3 x3	Gas.	....
La Crosse.....	12-24	985	2	Own	2-6 x7	G,K	3
Lausen.....S	12-25	1295	4	Midw	4-4½x5¼	Gas.	3
Lausen.....21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lausen Road	15-30	2000	4	Beav.	4-4¾x6	K	....
Leader.....B	12-18	685	4	Own	2-6 x6½	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader....GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn.....H4J	40-	4500	*	Cont	4-4½x5½	Gas	4
Linn.....W	60	5000	*	Wauk	4-5 x6¼	Gas	6
Little Giant,.B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant,.A	26-35	3300	4	Own	4-5½x6	K	6
Lombard.1922	35-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2¾x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Med.D	22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD	35-70	3850	4	Own	4-7½x9	G or K	8-9
Mohawk .1922	8-16	650	2	Light	4-3½x4½	K or G	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch..	9-18	....	2	Own	4-3½x5	Gas.	2-3
‡Monarch....	20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Meter Macult.	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	425	4	Own	2-3¼x4	Gas.	1
Nichols-Shep.	20-42	2650	4	Own	8 x10	G or K	3-6
Nichols Shep.	25-50	3000	4	Own	9 x12	G or K	4-7
Nichols-Shep.	35-70	3650	4	Own	10½x14	G or K	8-10
Nilsen Senior..	20-40	1975	5	Wauk	4-5 x6¼	G,E	4
Oil Pull....K	12-20	....	4	Own	2-6 x8	K,D	3
Oil Pull....H	16-30	....	4	Own	2-7 x8½	K,D	4
Oil Pull....G	20-40	....	4	Own	2-8 x10	K,D	5-6
Oil Pull....E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar ..K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Peoria.....L	12-25	1600	4	Clim.	4-5 x6½	G,K	3
Pioneer.....G	18-36	1750	4	Own	4-5½x6	G,K,D	4
Pioneer.....C	40-75	3550	4	Own	4-7 x8	Gas.	10
Plowman....A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable.....	10-20	390	4	Own	2-6 x7	Ker.	2
Rex.....	12-25	1600	4	Wauk	4-4¼x5¾	G or K	3
Russell.....	12-24	1500	4	Own	4-4¼x5¾	G or K	2-3
Russell.....	15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson....M	....	445	4	Own	4-4 x5½	G,K	2
Sandusky....J	10-20	1250	4	Own	4-4¼x5½	G,K,D	2
Sandusky....E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
¶Shelby.....	1	150	3	B & S	1-2½x2½	G	..
Shelby.....D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby.....C	9-18	....	4	Wauk	4-3¾x5¼	G or K	2
Steady Pull..	12-24	1485	4	Own	4-4 x5	Gas.	3
Tioga.....3	18-32	....	4	Wisc.	4-4½x6	Gas.	3-4
Tore Cultivater	6	750	3	LeR	4-3½x4½	Gas.	2
ToreTractor'22	6-10	495	3	LeR	4-3½x4½	Gas.	2
Townsend....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend....	25-50	2500	2	Own	4-8½x10	Ker.	4-8
Traction Meter	40-50	....	4	....	8-3½x5	Gas.	4-5
Trayler....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar...10	25-40	3750	*2	Wauk	4-5 x6¼	G or K	4
Twin City....	12-20	1200	4	Own	4-4¼x6	G,K	3
Twin City....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City....	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle Sam C20	12-20	1295	4	Weid.	4-4 x5½	G	2-3
Uncle Sam B19	20-30	1985	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam D21	20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utiliter....501	2½-4	295	4	Own	1-3½x4½	G	1
Utiliter...501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	....	4	Own	4-4½x5¾	G,K	3
Waterloo...N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore 21-22	12-25	1185	4	Wauk	4-4 x5¾	G,K	3
Whitney....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin...E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin...F	20-40	2050	4	Wauk	4-5 x6¼	G or K	4
Wisconsin...H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba....12-20	12-20	2400	*2	Wisc.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4¼x6	G,K,D	..
Yuba....23-35	20-35	3900	*2	Wisc.	4-5½x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba.....	25-40	4750	*2	Yuba	4-5½x7	D	..
Zelle.....	12-25	....	4	Buda	4-4¼x5½	G or K	3

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont.—Continental. Dom.—Domas Evin.—Evinrude. Here.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows §Track Runner. ‡Industrial Tractor. ¶Garden Tractor.

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Specifications of Current Passenger Car Models

NAME AND MODEL	Engine Make	Cylinders Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Ace.....F	G-B..	4-3½x5	114	32x4	$1295	$1295	....	....	$2295
Ace.....L	H-S..	6-3½x5	117	32x4	2260	2260	....	....	3680
Ace.....C	Cont..	6-3⅝x5¼	123	33x4½	2975	2975	....	....	4500
Ambassador.....R	Cont..	6-3⅝x5¼	136	33x5	....	b4500	$4500	....	6500
American.....C	H-S..	6-3¼x5	127	33x4½	b1995	1850	1925	....	2695
Anderson...Aluminum 6	Cont..	6-3½x4¼	114	32x4	....	1195	....	....	....
Anderson.....Series 40	Cont..	6-3¼x4½	120	33x4	2195	1650	1795	$2450	2550
Apperson.....8-21-S	Own..	8-3¼x5	130	34x4½	....	2620	2645	3625	3695
Auburn.....6-51	Cont..	6-3⅜x4½	121	32x4	1575	1475	....	2275	2345
Auburn.....6-51	Cont..	6-3⅜x4½	121	32x4½	....	n1995	1545	....	....
Bay State.....	Cont..	6-3¼x4½	121	32x4	1800	1800	....	2400	2500
Bell.....4-32	H-S...	4-3½x5	114	31x4	1095	1095	....	....	....
Bell.....6-50	H-S...	6-3¼x5	124	32x4	1545	1545	....	....	....
Biddle.....B1 & B5	Buda..	4-3¾x5⅛	121	32x4	2950	b2950	....	3950	3950
Brewster.....91	Own..	4-4 x5½	125	32x4½	5000	5000	....	....	7000
Buick..1922-34-5-6-7-38	Own..	4-3⅜x4¾	109	31x4	865	885	u 725	1175	{1395
Buick...1922-41-4-5-47	Own..	6-3⅜x4½	118	33x4 t	1175	1195	u975	1935c	{1325e 1995
Buick.1922-48-9-50-4-55	Own..	6-3⅜x4½	124	34x4½	n1625v	n1675v	1435	1895	2195
Cadillac.....61	Own..	8-3½x5½	132	33x5	3100	3150	3150	b3875	4100
Case.....X	Cont..	6-3⅜x4½	122	32x4½	1750	1790	....	2550	2690
Case.....W	Cont..	6-3⅜x5¼	129	34x4½	....	2200	2250	2850	3250
Chalmers.....1322	Own..	6-3¼x4½	117	32x4	1185	1185	....	1595	2295
Chalmers.....1322	Own..	6-3¼x4½	122	32x4	....	....	1345	....	....
Chandler.....Six	Own..	6-3½x5	123	33x4	1495	b1495	1645	b1995	2295
Chevrolet.....Superior	Own..	4-3½x4	102	30x3½	510	525	u425	{b840 k680	860
Chevrolet.....FB	Own..	4-3½x5¼	110	33x4	865	885	....	1325	1395
Cleveland.....41	Own..	6-3 x4½	112	32x4	1085	1095	n1260	1495	1585
Cole.....890	Nort..	8-3½x4½	127¼	33x5	2685	b2685n	2685	b3385	3685
Columbia.....De Luxe	Cont..	6-3⅜x4¼	115	32x4	1475	1475	b1475n	b1925	1995
Columbia.....Light Six	Cont..	6-3½x4¼	115	31x4	995	985	....	....	1395
Comet.....C-53	Cont..	6-3½x5¼	125	33x4½	....	1985	2085	....	2985
Crawford.....22-6-60	Cont..	6-3⅝x5¼	122½	32x4	3000	3000	3000	....	4500
Crawford-Dagmar...6-60	Cont..	6-3⅝x5¼	135	33x5	....	n3500	....	....	....
Daniels.....D-19	Own..	8-3½x5¼	132	33x5	a4350	b4350	4350	5250	6000
Davis.....71	Cont..	6-3½x4¼	114	31x4	....	1295	....	....	....
Davis.....61-67	Cont..	6-3⅜x4½	120	32x4	1595	1595	b1605	2095	2195
Dixie Flyer.....H-S-70	H-S..	4-3½x5	112	32x4	1175	1175	b1295	1545	1595
Dodge Brothers.....	Own..	4-3⅞x4½	114	32x4	850	880	....	980h	1440
Dorris.....6-80	Own..	6-4 x5	132	33x5	....	b3900	3050	4985b	5750
Dort.....19-14	D-Ly..	4-3½x5	108	31x4	885	885	....	{1265 1045k	{1385 1095k
Driggs.....	Own..	4-2⅝x4½	104	30x3½	1275	1275	....	....	1975
Duesenberg...Straight 8	Own..	8-2⅞x5	134	33x5	6500	6500	6750	7800	7800
Du Pont.....A	Own..	4-3½x5½	124	32x4½	3000	3200	....	3800	4000
Durant.....A-22	Cont..	4-3⅞x4¼	109	31x4	n890	890	....	1365	1365
Durant.....B-22	Anst..	6-3¼x4½	123½	32x4½	1600	1650	....	2250	2400
Earl.....40	Own..	4-3 x5¼	112	32x4	1485	1095	950u	b1395	1795
Elcar.....K-4	Lyc...	4-3½x5	118	33x4	1095	1095	n1095	1345	....
Elcar.....7-R	Cont..	6-3¼x4½	118	33x4	1395	1395	n1395	2065	2165
Elgin.....K-1	Falls..	6-3½x4¼	118	33x4	1345	1295	b1345	2195	2195
Essex.....	Own..	4-3⅜x5	108½	32x4	....	1095	....	1195k	{1895 1295k
Ford.....T	Own..	4-3¾x4	100	30x3½	r319	s348	u285	580	645
Franklin.....9-B	Own..	6-3¼x4	115	32x4	1900	1950	u1750	2750	2850
Gardner.....T-R & G	Lyc...	4-3½x5	112	32x4	895	895	....	1095k	{1595 1345k
Grant.....	Own..	6-3½x4½	116	32x4	1385	1385	....	1895	1945
Gray.....	Own..	4-3⅝x4	100	30x3½	....	490	....	....	760
H.C.S.....Series 3	Weid..	4-3⅝x5½	120	32x4½	2475	2475	....	3250	3475
Halladay.....4	Own..	4-3½x5	115	32x4	1095	1095	....	1990	2085
Halladay.....6	Own..	6-3½x5	115	32x4	1595	1595	....	2295	2395
Handley-Knight.....	Own..	4-4½x4½	125	32x4½	....	....	2650	3450	3450
Hanson.....30	Cont..	6-3½x4¼	114	31x4	....	995	....	....	....
Hanson Six.....60	Cont..	6-3⅜x4½	121	32x4	1595	1595	1795	b2475	2585
Hatfield.....A-42	H-S..	4-3½x5	115	32x4	....	1345	b1375	1950	1950
Haynes.....7	Own..	6-3½x5	132	34x4½	2395	b2395	2395	....	3395
Haynes.....55	Own..	6-3½x5	121	32x4½	1545	1495	....	2095	2395
Holmes.....Series 4	Own..	6-3½x4¼	126	34x4½	....	b2500	2500	b3300	3600
Hudson.....Super 6	Own..	6-3½x5	126	34x4½	....	b1645	1695	2570	{2650 1745k
Huffman.....	Cont..	6-3⅜x4½	120	32x4	1395	1395	....	....	2295
Hupmobile.....Series R	Own..	4-3¼x5½	112	32x4	1150	1150	u1025	{1635 1335k	1785
Jackson.....638	Cont..	6-3¼x4½	121	32x4½	....	1485	b1685	2985	2985
Jewett.....Six	Own..	6-3¼x5	112	31x4	a995	995	....	b1445	1465
Jordan.....MX	Own..	6-3 1/16x4¾	120	32x4	1895	1795	....	2785	2785
Kelsey.....4	Gray..	4-3½x5	111	32x3½	....	985	....	....	1450
Kelsey.....6	Walk'r	4-3½x4½	118	32x4	....	1525	....	....	2175
Kenworthy.....8-90	Own..	8-3 x5¼	130	32x4½	5000	5000	5250	6000	6000
King.....K	Own..	8-3 x5	120	32x4½	1795	1795	b1795	2400	2550
Kissel.....45	Own..	6-3 1/16x5½	124	32x4½	n2385	1885	2385	b2975	3075
Kline Kar.....6-55-K	Cont..	6-3⅜x4½	121	33x4	1690	1690	1690	2750	2890
LaFayette.....	Own..	8-3½x5¼	132	33x5	3985	b4090	4090	5500	5500
Leach.....999	Own..	6-3⅜x5¼	134	32x4½	5500	5500	5500	5500	5500
Lexington.....23	Anst..	6-3¼x4½	128	32x4½	1695	{1695 2045n	1795	b2345	2545
Liberty.....10-D	Own..	6-3½x5	117	32x4	1575	1395	▼1575n	{2085 1695k	2245

NAME AND MODEL	Engine Make	Cylinders Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Lincoln.....	Own..	8-3⅜x5	136	33x5	$3800	b3800	$3800	$4400	$4700
Locomobile.....48	Own..	6-4½x5½	142	35x5	....	b7600	7600	10500	11000
Maibohm.....B	Own..	6-3½x4½	116	32x4	1395	1395	b1495	2165	2165
Marmon.....34	Own..	6-3¾x5⅛	136	32x4½	3385	b3185	3185	3985	4385
Maxwell.....	Own..	4-3⅝x4½	109	31x4	885	885	....	1385	1485
McFarlan.....1922	Own..	6-4½x6	140	33x5	6300	b6300	6300	7500	7500
Mercer.....Series 5	Own..	4-3¾x6¾	132	32x4½	3950	b3950	c3950	4850	5250
Merit.....	Cont..	6-3¼x4½	119	32x4	1895	1895	....	....	....
Mitchell.....F-50	Own..	6-3½x5	120	33x4	a1590	1590	b1690n	b2050	2275
Mitchell.....F-50	Own..	6-3½x5	127	32x4½	....	....	1850	....	....
Monroe.....1922-S-9	Own..	4-3¼x4½	115	32x3½	950	950	....	....	....
Moon.....6-40	Cont..	6-3½x4¼	115	31x4	....	1295	....	....	1665
Moon.....6-58	Cont..	6-3⅝x4½	128	33x4½	1785	1785	1785	2785	2785
Nash.....691-96-97	Own..	6-3¼x5	121	33x4	1210	1240	b1395n	....	....
Nash.....692-94-95	Own..	6-3¼x5	127	34x4½	....	....	1390	b1890	2190
Nash Four.....41-4	Own..	4-3⅝x5	412	33x4	915	935	....	{a1385 1195k	{1545 1275k
National.....BB	Own..	6-3½x5¼	130	32x4½	a2475	b2475	2375	b3725	3825
Noma.....3C	Cont..	6-3¼x4½	128	32x4½	2500	b2500	c2600	....	3500
Noma.....1D	Bea...	6-3½x5¼	128	32x4½	3000	b3100	c3200	....	5500
Norwalk.....439-KS	Lyc...	4-3½x5	116	32x3½	....	1035	....	....	....
Oakland.....6-44	Own..	6-2¹³⁄₁₆x4¾	115	32x4	975	{995 u795	b1165n	{b1445 1185k	1545
Ogren.....6 T D Luxe	Cont..	6-3⅝x5¼	134	33x5	b3750	3750	3850	4500	4800
Oldsmobile.....43 A	Own..	4-3½x5¼	115	32x4	1145	1145	b1265	1645	1795
Oldsmobile.....46	Own..	8-2⅞x4¾	122	33x4½	....	b1735	1735	....	2635
Oldsmobile.....47	Own..	8-2⅞x4½	115	32x4	1595	1595	b1595	2145	2295
Overland.....4	Own..	4-3⅜x4	100	30x3½	550	550	....	850	895
Packard.....Single-Six	Own..	6-3⅜x5	126	33x4½	2485	2485	u2250	3175	3275
Packard.....Single-Six	Own..	6-3⅜x5	133	33x4½	....	u2350	2685	....	3525
Packard.....Twin-Six	Own..	12-3 x5	136	35x5	3850	3850	3850	5240	5400
Paige.....6-44	Own..	6-3¼x5	119	32x4	1465	1465	u1290	1995	2245
Paige.....6-65	Cont..	6-3¾x5	131	33x4½	a2495	n2245	2195	3100	3155
Paterson.....22-6-52	Cont..	6-3⅜x4½	120	32x4½	....	1390	1425	2395	2395
Peerless.....56-S-7	Own..	8-3¼x5	125	34x4½	....	b2790	2790	3500	3790
Pierce-Arrow.....	Own..	6-4 x5½	138	33x5	5250	b5250	5250	6800	7000
Pilot.....6-5	H-S..	6-3¼x5	126	32x4½	2050	2000	2050	2950	3000
Premier.....6-D	Own..	6-3⅜x5½	126¾	33x5	3150	b3100	3250	4300	5100
Premocar.....6-40-A	Falls..	6-3½x4¼	117	32x4	1095	1095	....	1750	1825
R & V Knight.....R	Own..	4-3¾x5	116	32x4	....	1665	....	2385	2475
R & V Knight.....J	Own..	6-3½x4½	127	32x4½	2475	b2475	2475	3015	3105
Reo Series.....T6 & U6	Own..	6-3⅝x5	120	33x4	1595	n1645	1485	b2355	2435
ReVere.....C	Dues..	4-4½x6	131	32x4½	3200	3200	3200	....	4000
Rickenbacker.....A	Own..	6-3½x4⅜	117	32x4	....	1485	....	1885	1985
Roamer.....6-54-E	Cont..	6-3½x5¼	128	32x4½	2850	b2585	2785	3850	3850
Roamer.....4-75-E	Dues..	4-4½x6	128	32x4½	3985	b3585	b3750n	....	b4650
Rolls-Royce.....	Own..	6-4½x4¾	143½	33x5	....	10,900	....	....	....
Saxon.....125	Own..	4-3½x5	112	32x4	1195	1195	....	1795	1795
Sayers Six.....DP	Cont..	6-3¼x4½	118	33x4	1645	1645	....	2645	2645
Seneca.....L-2 & O-2	Lyc...	4-3½x5	108	30x3½	875	875	....	....	....
Seneca.....50 & 51	Lyc...	4-3½x5	112	31x4	1095	1095	....	....	....
Sperling.....A	Supr..	4-3⅝x5	114	32x4	980	980	....	1685	1685
Standard.....93	Own..	8-3¼x5	127	34x4½	2150	b2500	2500	2750	3200
Stanley.....	Own..	2-4 x5	130	32x4½	2700	2700	2700	3775	3950
Stanwood Six.....	Cont..	6-3¼x4½	118	33x4	1765	1765	....	2750	....
Star.....	Cont..	4-3½x4¼	102	30x3½	r319	s348	u285	580	645
Stearns-Knight....SKL4	Own..	4-3¾x5⅝	125	34x4½	2250	2250	2450	3150	3450
Stearns-Knight.....6	Own..	6-3⅝x5	130	34x4½	2700	2700	2850	3350	3700
Stephens.....90	Own..	6-3¼x4½	122	33x4½	1575	b1595	c1625	2450	2550
Stevens-Duryea.....E	Own..	6-4 x5½	138	35x5	7250	b6900	6800	u5600	b8900
Studebaker....Light Six	Own..	6-3½x4½	112	32x4	975	975	u785	1225	1550
Studebaker..Special Six	Own..	6-3½x5	119	32x4	1250	1275	b1275	1875	2050
Studebaker.....Big Six	Own..	6-3⅞x5	126	33x4½	u1300	1650	n1785	2275	2475
Stutz.....	Own..	4-4⅜x6	130	32x4½	2450	b2790	c2640	3490	4450
Templar.....A-445	Own..	4-3⅜x5½	118	32x4	2025	2125	b2175	2650	2785
Tulsa.....E-1-2-3	H-S..	4-3½x5	117	33x4	1175	1175	....	....	....
Velie.....48	Cont..	6-3¼x4½	115	32x4	1585	1585	b1800	2485	2485
Velie.....34	Falls..	6-3½x4½	112	32x3½	1235	1235	....	1750	2085
Velie.....58	Own..	6-3½x4¼	115	32x4	1275	1275	....	2185	2185
Washington.....C	Cont..	6-3⅜x4½	120	32x4	....	1785	....	....	2285
Westcott.....C-48	Cont..	6-3½x5¼	125	32x4½	....	....	1890	....	2890
Westcott.....A-44	Cont..	6-3¼x4½	120	32x4	....	1690	n1890	....	2690
Wills Sainte Claire..A-68	Own..	8-3¼x4	121	32x4½	2475	2475	....	3275	3475
Willys-Knight.....20	Own..	4-3⅝x4½	118	32x4	1350	1375	....	1875	2085
Winton.....40	Own..	6-3¾x5¼	132	35x5	3400	n3600	3400	b4450	4550

a—3-passenger. b—4-passenger. c—6-passenger. n—Sport. h—All Metal Type. k—Soft Top Type. u—Chassis Price. r—Price without starter and demountable rims. Price with starter and demountable rims $414. s—Price without starter and demountable rims. Price with starter and demountable rims $443. t—Model 47-34x4½ Tires. v—Tire Sizes 32x4½. e—Touring Sedan.

Engine Make: Anst—Ansted. Bea—Beaver. Cont—Continental. Curt—Curtis. D.Ly—Dort Lycoming. G-B—Grey Beal. H-S—Herschell-Spillman. Lyc—Lycoming. Nort—Northway. Roch—Rochester. Rut—Rutenberg. Supr—Supreme. Weid—Weidely. Wisc—Wisconsin

For latest price changes, see page 42.

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THE solidly-woven lining, preferred by owners, jobbers and repairmen who seek SERVICE and SATISFACTION!

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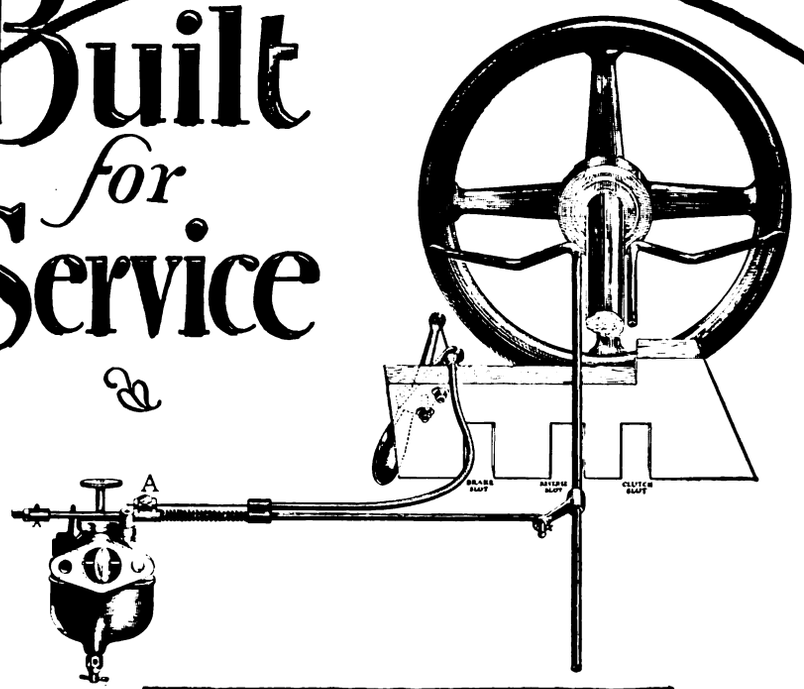
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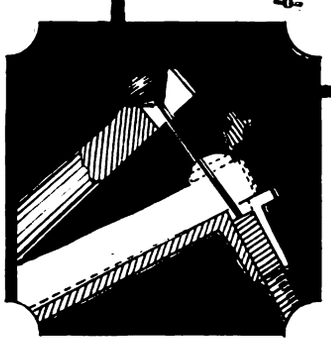
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Built for Service



Only three working parts



The above drawing shows a cross section of the end of the pedal. The ball, at the end of the control wire, swivels when the pedal is operated; thus keeping the control wire in true alignment, and insuring smooth action and even acceleration.

Another sales feature of the Williams Accelerator is that it is thoroughly practical—built for year-after-year of dependable service. Not one of the three simple working parts of the accelerator proper can get out of order.

(1) The slide marked "A" is of babbitt and will outwear the car. (2) The control wire, which runs from this slide to the pedal, is made of oil-tempered spring-steel, and is kept in alignment by the ball swivel shown at the left. (3) The coiled spring, which closes the throttle when pressure is removed from the pedal, is also of oil-tempered steel.

When you sell the Williams Accelerator you don't have to explain a lot of intricate parts. That is why Williams Accelerators sell so easily, move so rapidly.

DEALERS: Write us for a complete line of sales helps. Order your accelerators through your jobber.

RETAIL PRICE $3.00 AND WORTH IT

WILLIAMS BROS. AIRCRAFT CORPORATION
SAN FRANCISCO

WILLIAMS ACCELERATOR *for FORD CARS*

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for
DEALERS, JOBBERS AND GARAGEMEN

Gier Tuarc STEEL WHEELS
—a Motor Wheel Product

Standard equipment on fourteen prominent makes of motor cars

MOTOR WHEEL CORPORATION
LANSING, MICHIGAN

Motor Wheel PRODUCTS



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NO-LEAK-O
Piston Rings

THE ONLY GROOVE THAT CANNOT CLOG

Customers Knocking At Your Door

Dealers who are taking advantage of No-Leak-O National Advertising are adding to their satisfied customer list every day. Millions of motorists are being told month in and month out to "hook up" with a garage that shows the No-Leak-O sign. The result is bound to be *SATISFACTION.*

Motorists know tnat No-Leak-O Piston Rings **'Won't leak because they're sealed with oil.'** The specially cut "oilSEALing" groove—found only in No-Leak-O prevents oil and gas **leakage and gives** *perfect oil control and compression in each individual ring.* **"Unburnt"** gas or kerosene can't leak *down* and **injure lubrication if** No-Leak-O rings are used.

No-Leak-O Piston Rings are made in one piece—**easy to install—of** finest material—most economical. Fully guaranteed. **Over 200** reliable jobbers carry No-Leak-O Piston Rings **in all sizes and *over* sizes. Prompt service *always*.**

For replacement jobs you need a dependable ring designed and made especially to give satisfaction on replacement jobs. No-Leak-O started as a replacement ring; they are still the leading replacement ring; they make good on every job.

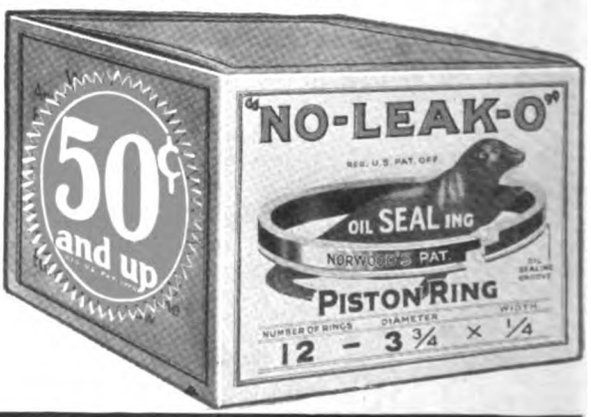
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NO-LEAK-O PISTON RING COMPANY
Dept. T-42
BALTIMORE, MD.

One price during eight years of continued success

One design—for all cars—50c and up

Important—In buying piston rings insist on the genuine No-Leak-O with the original "oilSEALing" groove, packed in this standard package bearing the famous ring and seal, our registered trade mark. Beware of imitations.



WON'T LEAK
because they're sealed with Oil

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MOTOR WORLD
DEALERS, JOBBERS AND GARAGEMEN

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PUBLISHED EVERY WEDNESDAY BY

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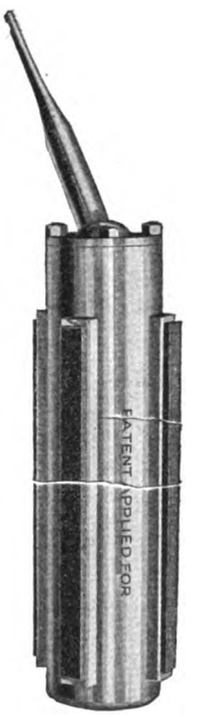
Skilled labor is not necessary to operate the AUTO-HONE. Any mechanic's helper can handle it with ease.

15 Minutes to Grind a Cylinder Without Taking Down the Motor

Think of the time—labor—and expense saved by being able to re-size and hone cylinder walls to a state of precise roundness and with a fine, smooth finish, simply by removing cylinder head, and pistons from engine.

Slip the AUTO-HONE into the cylinder—connect its steel driving handle to your electric drill—turn on the power and the work is started.

In fifteen or twenty minutes the usual five to seven thousandths out-of-round or tapered cylinder is ground true and free from all traces of scoring, ring travel, and unevenness. The eight inch stones bridge the area of piston travel—grind down the unworn ends of the piston walls — and then hone the entire length of the cylinder.



The Cylinder AUTO-HONE is one of the most profitable tools ever constructed for the Garage and Service Station. When you consider the possibilities of this guaranteed and wonderfully efficient tool, which enables you to HONE cylinders perfectly for less than re-boring costs, then you begin to realize the profits that await you.

Get all the particulars you can about this easy to handle—fool-proof—guaranteed shop tool. Don't let money slip through your fingers. Send in the coupon today — it will bring you information you can turn into sure, quick profits.

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THE AUTO-HONE CO.
GENERAL OFFICES 1587 MAIN STREET
BUFFALO, N.Y., U.S.A.

The AUTO-HONE CO., 1587 Main St., Buffalo, N. Y.

Gentlemen:
Please send at once complete information and prices of the Cylinder AUTO-HONE. This does not obligate me in any way.

Name .....

Address .....*City*.....*State*.....

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In Stockton, Kansas—

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THE WIZARD GARAGE
(STOCKTON, KANSAS)
George Beckley

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It means that the cars he sells are not simply "fair" or "medium" but are high grade in every particular and so recognized everywhere.

Oldsmobile cars are in demand because they dominate their class for sheer beauty and physical refinement, backed by chassis excellence representing the very finest workmanship and materials.

Satisfaction on the part of Oldsmobile owners is the reason for the success of Oldsmobile dealers.

Why not get into this class? Dealer connections are still available—perhaps there is such an opportunity right in your territory.

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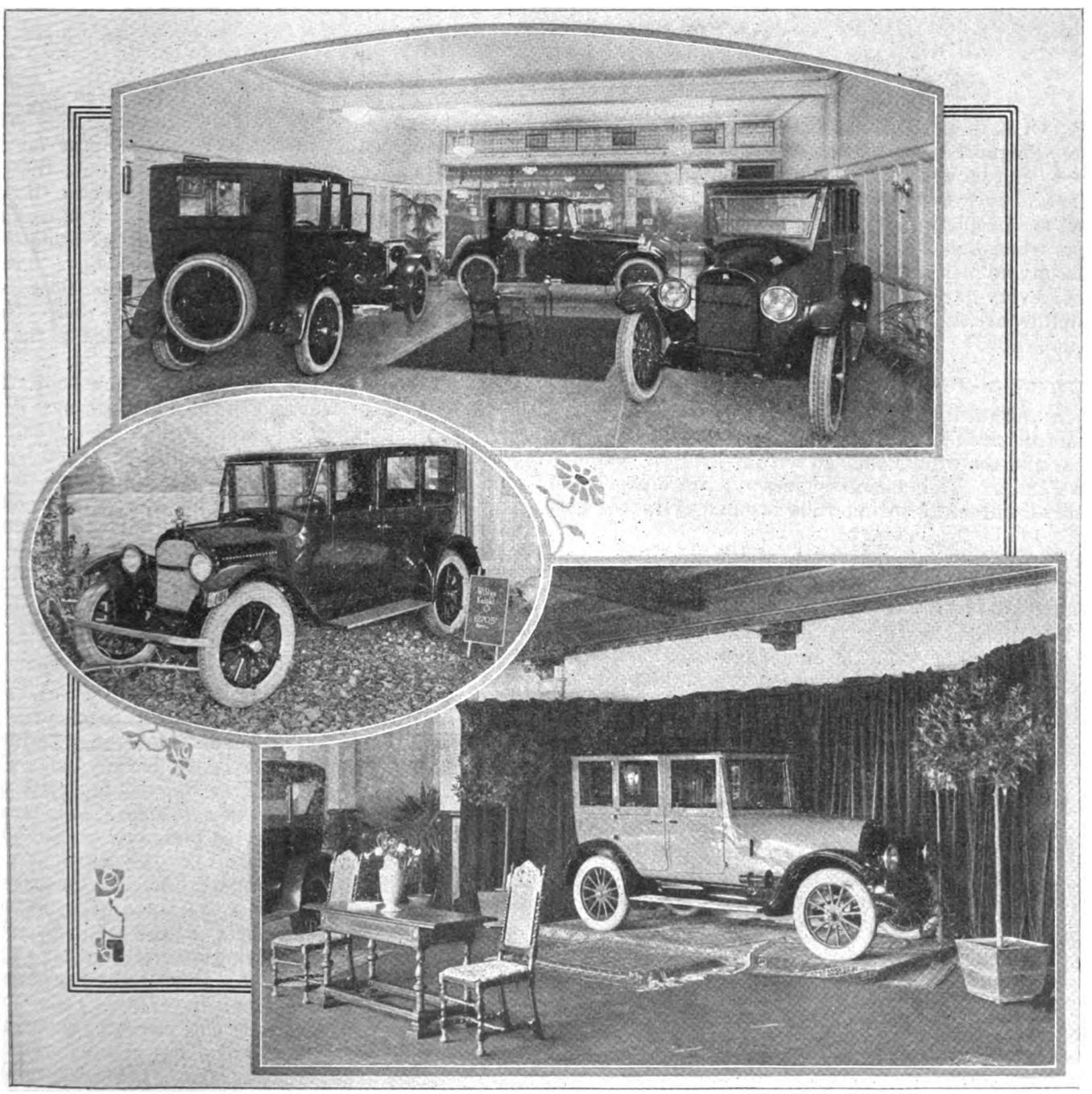


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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

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In Closed Car Weather, Closed Car Displays



A trio of interesting suggestions. At the top, salesroom display of Miller-Judd Co., Liberty, Detroit. Center, window of Willys-Overland of Sacramento. At the bottom, E. W. Lawton Co., Franklin, Syracuse

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Summer's Gone! Let's Jump Right Into Fall Business!

The Public Changes Its State of Mind As It Changes Its Clothes After Labor Day—Business Needs to Get Into Fall Togs, Too—Here Are Some Suggestions

By NEAL G. ADAIR

LOOK in the almanac and you will find that fall begins September 21. Ask the man on the street and he will tell you it's here already. Fall, for him and everybody in these United States of ours except the people who work in the Weather Bureau, begins when Labor Day writes "Finis" to the vacation season and men and women settle down for the ordinary, every-day work and play that prevail when families are at home and the big idea is business as usual.

From Now Until Snow—

In this ordinary, every-day work and play of a hundred million Americans there is business—business and the profits that go with it—for the automotive trade. This business goes on continuously, of course, but until spring rolls around again the best of it will be the business done between now and snowfall. And the automotive tradesman who is going to get his share of this business can't afford to lose a single day in getting after it.

For the real worker, in office, store or shop, there is no interval between the end of his vacation and the beginning of his after-vacation work. He doesn't slosh around three or four days wishing he was back at the old swimming hole and dreading to tackle the job ahead. *He goes right to work.* Jumps right into his job.

Men in the automotive trade haven't been enjoying a vacation. They have been working while others play because there is profit for the automotive trade in other folks' play. But the automotive trade can't do business with people at work with the same appeal that sold them merchandise and service while they were at play.

The public has put on fall buying clothes. The automotive trade must put on fall selling clothes.

In an Eastern city a dealer suspended his salesmen's meetings, all except the ten-minute conferences every morning, through June, July and August. He resumed the evening meetings—one every week at 6 o'clock—the second day after Labor Day. He has jumped right into the training system that is going to keep his men on their toes earning profits for him and commissions for themselves throughout the fall. He is going to exhibit in a closed car show the last week in September. In three evening sales meetings before then his men are going to perfect themselves on their closed cars and on quick closing. Pretty lively combination, isn't it? When the closed car show opens these salesmen will have their closed cars down pat AND they will be schooled in the art of bringing a prospect to a quick decision, the only kind of selling that will sell cars on a show floor. The dealer is a good closer and one of his salesmen is noted for fast work in getting signatures on the dotted line. These two men are going to talk at the three meetings preceding the show and what they have to say will be reinforced with experience stories of the other salesmen brought out in round table discussions. After the show this dealer's staff is going ahead with weekly meetings to study fall and winter selling methods until the approach of the mid-winter show prompts a series of special meetings for that particular sales event.

A Garageman's Fall Plan

A garageman in a Middle Western town, with repair and accessory departments, had a new business-getting campaign ready to work before Labor Day came. He began right after the holiday mailing a series of letters urging owners to bring their cars in to get them tuned up for the pleasant, near-at-home touring of the fall season. In one letter he suggested a carbureter adjustment, now that the extreme heat of mid-summer was over. In another he suggested a valve grinding job to put the car in fine fettle for care-free autumn driving after the motor's hard work on long summer trips. In still another he mentioned his facilities for repairing and redressing tops, getting them ready to resist autumn rains and winter snows. Later letters will talk about installation or repair of closed car heaters and other cold weather jobs. In his little accessory store he cleaned out all the manufacturers' summer-time advertising cards

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and all the summer touring accessories. He put in a tire manufacturer's fall touring poster. A display of tires and a card suggested: "Don't let a blow-out spoil that drive into the country. Re-tire NOW." His next window will show a motor picnic kit with a background of early autumn leaves—just a simple setting-up of small maple twigs—with a suggestive array of standard accessories covering the rest of the window floor. Later on will come car heater windows, robe windows and other seasonal displays.

There's nothing impossible about this garageman's fall selling plan, even for a small town man. The business building point of it is that he is going after customers with ideas that fit in with their thoughts —fall ideas to jibe with fall thoughts. Why not jump right into something like that, as this garageman did?

Stimulant for a Jobber

Not far from the Atlantic seaboard a jobber watched sales lag and his salesmen's enthusiasm sag through August. There wasn't much prospect for improvement in September unless ——. That word "unless" started the jobber thinking. How could he give his men new life and a new start right after Labor Day, not a month afterward, when cooler weather would naturally set them stepping a little faster? He decided on a five weeks' sales contest. There's a money prize for the salesman turning in the largest volume of delivered orders in the five weeks. To add zest and mystery to the contest the jobber announced that the award would be more than $100 and less than $1,000. In addition there are prizes for all men reaching a certain volume and for the top man each week. Then there is a gift for the wife, sister, sweetheart or mother of each prize winner. Are they digging into the territory? Are they on their toes to forget summer heat and sluggishness and get fall business? Are they being encouraged by womenfolks anxious to share in prize money and gifts? We'll say they are.

The prize contest idea will fit just as well into the work of a wholesale or retail oranization selling cars, trucks or tractors. Why not jump right into it, like this jobber did?

Reviving a Prospect List

In a city down South a dealer had everything set, long before Labor Day, to "spring" immediately afterward a drive for sales of business cars—roadsters and coupes for salesmen, doctors, inspectors. construction men and the like. Business in that line had been stagnant through August and most of July with executives with buying power away on vacation or too exasperated with the mid-summer heat of the cotton belt to consider investments in personal transportation. The dealer launched an advertising campaign on his business cars. He used the newspapers, letters, circulars and special window and salesroom displays of cars for business purposes. He arranged for drivers to go on one and two-day trips with salesmen and other travelers who were using the railroads or trolley lines. He offered his salesmen a bonus on roadster and coupe sales—he was slightly overstocked on these models—and schooled them for demonstrations intended to show the time-saving, convenient features of the use of cars in business. He prepared charts of operating cost per mile and other charts showing typical salesmen's routes in his territory, indicating the difference between the calls possible per day by car and by train or trolley. The campaign will run for a month and the dealer expects to reduce his roadster and coupe stock and put new and lasting life into the business car sales activities of his staff.

Nothing involved about this plan, is there? Why not jump right into it, like this dealer did?

Another dealer set a girl at work before Labor Day checking his prospect list against the latest available list of registered car owners. When the day after Labor Day came he had a file of names for his salesmen with all the deadwood eliminated—no more useless calls on people who had bought other cars within the past few weeks. To get more "livewood" into the file he hired ten high school boys in the last two weeks of their vacations to scour the well-to-do residential sections for names of people without cars. Names turned in were checked against city directories and registration lists and paid for at a fixed rate per accepted name.

And in the Farm Country—

A Western dealer sent a man to the grain elevators in his town to get the names of farmers making especially large deliveries. He is going to keep the plan up through September. It will show what farmers are turning their harvest into cash—what farmers will have money to invest in trucks and tractors.

This dealer is going to sell tractors for the fall plowing, trucks for fall and winter work on the farm. He is taking farm buying power at the flood tide and turning it into sales. He is not going to wait until the farmers have all their crop money. He is talking with them while they are getting it and while they have still more in sight. He has jumped right into fall business. Why don't you?

Everywhere distributors, jobbers, dealers, repairmen, accessory men are cleaning house of mid-summer dry rot. They are dressing up, mentally and physically, for fall business. They are not waiting until September 15 or October 1 or any other time. They are jumping into fall business right now.

Everywhere there are county and town fairs, fall shows, livestock exhibitions and other fall events that automotive tradesmen can take advantage of, not only to promote sales of cars, but of trucks, tractors, automotive equipment and tires and even of repair work. But it's a short time from Labor Day to Thanksgiving Day, when the bulk of fall business must be done. Quick action is the only kind that will count.

There is no secret order of automotive tradesmen who are going to get business and make profits this fall. You would hardly say the doors are open, but they can be pushed open. A lot of energetic fellows are jumping to it—right now. Are you?

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HARVEST days are here. The farmer is marketing his crops and getting paid for them. The soil is giving him back in profits the materials and labor he has been putting into it since early spring. The farmer is in the mood to buy things, and will be throughout the fall. And when the farmer buys things everything looks brighter and money is freer for the small town man who lives on service to the farmer. So the fall—right now—is the ideal time to show your products—cars, trucks or whatever they may be—to the farmer and the small town man. To an extent they can be induced to come to town to see what you have to sell. But some of them won't come and the car, truck and tractor dealer in particular ought to take his product to them. This story tells about a dealer who promoted sales both of cars and trucks in his country territory by loading a stripped chassis of the car he sells on to a truck of the make he sells and driving out into the small towns where he showed his products to the people, talked about them, listed a great many prospects and made some sales, all the while providing attractive but inexpensive entertainment which made the countryside warm up to his campaign. The dealer made this effort in the spring, to show to small town folks the chassis that big town people had seen at the city shows. But the plan would be just as effective in the fall. Perhaps you would like to try it.

Showing the Car and Truck to the Country Prospect

Put a Chassis on a Truck and Go to It Is the Suggestion of This Story That Tells How a Dealer Made 5,000 New Acquaintances—and Some Sales

LIKE the great majority of dealers and a good many people who are not dealers, Jud Joslyn goes to the automobile shows. Like other dealers and other folks who are not dealers, he finds educational and inspirational value in them. Joslyn, head of the Joslyn Automobile Co., Nash dealer in Rockford, Ill., went to the shows, national and local, last winter. After they were over he began to wonder if there was some way to take some of the show inspiration and education to the people—many hundreds of them out in his territory—who didn't go to the national shows, and in a good many cases even to the local show in Rockford.

Joslyn determined he would take the show, or at least that part of it pertaining to the Nash, to the people of his territory. Incidentally, he would promote the Nash truck along with the car. A stripped Nash chassis mounted on a Nash truck formed the kernel of the idea. This story tells how it grew into a sales promotion achievement.

The Joslyn Automobile Co. has the agency for three Illinois counties, Winnebago, Boone and Ogle. The largest city in this territory is Rockford, with approximately 80,000 people. There is some manufacturing but agriculture predominates. There are a relatively large number of small country towns. Perhaps half the people in the three counties live on the farms. This company has an especial desire to reach the small town and country trade. It is necessary if maximum sales possibilities are to be realized. Ten dealers are under contract. In addition there are many garages in this territory giving service on the Nash products.

It was desired to wage an educational campaign. Joslyn is a constant user of the ordinary forms of advertising. He wanted to do something different, something which would impress upon the public mind the fact that he sold Nash cars. He wanted to stimulate his own sales and service organization and to reach the small garage owner. He wanted personal contact and did not want to spend a large sum of money to get it. Above everything else, he wanted to do educational sales promotion, something which would make his prospects more discriminating buyers.

Automobile Education Needed

Joslyn believed that everyone in his territory, including his sales and service men, garagemen, owners, buyers and prospects, needed automobile education and he wanted them to have a good portion of Nash education.

The plan evolved was as follows: He secured from the factory a cut-out chassis exhibited at the national shows and mounted it on a Nash 2-ton truck. A phonograph with an amplifier and a telephone equipped with a loud speaker were installed on the truck. A service man drove the truck. A car which had been driven more than 30,000 miles was taken along and provision was made to have new cars on hand wherever stops were made, which was usually in towns where dealers were located. This outfit was then taken to various towns in the county for afternoon and evening stands. With one exception no advertising was done in advance of the arrival. This Mr. Joslyn now considers a mistake.

Early in the afternoon and again in the evening the population of the town being visited would be surprised to hear an announcement somewhat as follows: "Concert this afternoon and evening at Gables' Garage beginning at 1 o'clock and again at 8 o'clock. Cut-out chassis, which was exhibited at the National Automobile Shows, will be shown." By using the loud speaker, the announcement could be heard for two blocks. People would rush to the doors and windows to see the truck and chassis. If a crowd of any size gathered a brief lecture on the car or the company behind it would be given. Then the return to the garage would be made and at the appointed time the concert given with the phonograph and amplifier. This music could be heard for ten blocks. By this means it was not long before everyone in the vicinity knew that Joslyn was in town, and many of them had enough interest to find out what he was there for.

In the meanwhile the service man was busy inspecting every Nash car that he could get his hands on. An owner would drive up. Immediately the service man would approach him and say: "How is the car running?" No matter what the answer, the service man would say: "I am the service man with the Joslyn Automobile Co.,

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Rockford. Let's drive around the block once to see how things are working." Usually the expert was able to make some minor adjustments which improved the running of the car, and pains were taken to explain the reasons for these adjustments and to tell how they were made. If the desired number of cars did not come in, the dealer would call up the owners and suggest that cars be brought in for free inspection.

The concerts proved popular, many selections calling for encores. Usually the program opened with a stirring march, then followed some songs, dance music, band music, and closed with "The Stars and Stripes Forever." At the conclusion of the concert a short lecture was given on the chassis, history of the company, the place the automobile occupies in community life and other subjects of interest. Frequently announcements were made of coming community events.

All afternoon and until late in the evening when concerts and lectures were not being given the chassis construction was being explained to interested visitors. These visitors came by ones and twos, by dozens and in some towns by hundreds. A large percentage of these visitors showed keen interest in chassis construction and automobile operation. A regular chassis talk was given, starting at the radiator and going through to the rear axle. The question most often repeated by visitors was: "How does this form or detail of construction compare with that on other cars?" Practically none of the visitors had any definite knowledge of valves, ignition and other details of engine construction and operation. Gasoline consumption, tire mileage, life of the car, the difference between ball and roller bearings and brake location were subjects frequently brought up by visitors for discussion.

Now, what are the results of this campaign? The program was carried out in Rockford and in five outlying sections of the city. It is estimated that 8000 people in the city of Rockford have seen this chassis. Classes from both the high school and grade schools interested in physics, manual training or drawing came to go over the chassis and learn of automobile construction. Fourteen other towns in the three counties were visited. The combined attendance at these places is given as 10,000. A detailed explanation of the chassis was given to thousands. Joslyn would make no estimate of the exact number.

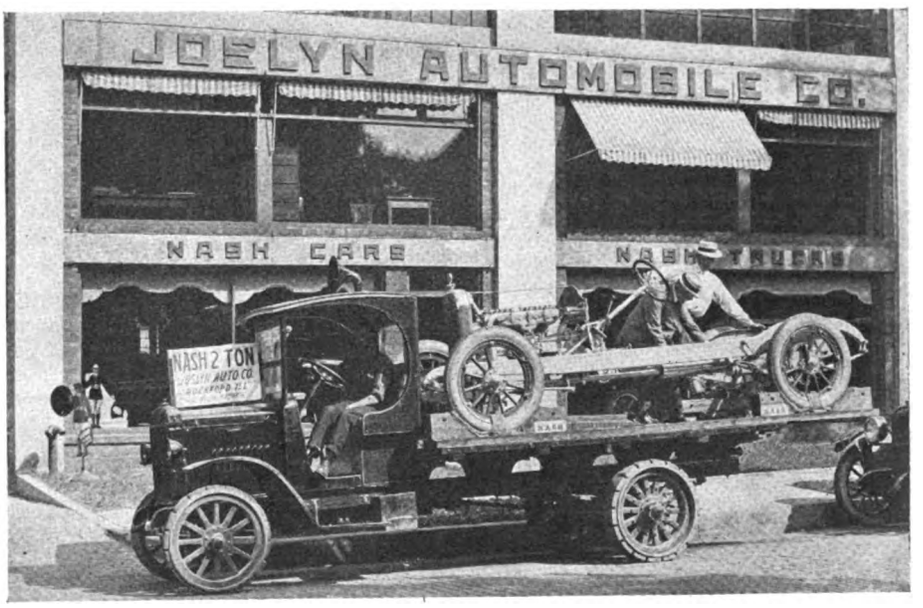
The plan took a small part of the National Show to the territory. The sales and service organizations of the Joslyn Co. were stimulated to greater efforts. Sales were made as a direct result. Service men in independent garages were educated in the care and repair of Nash cars. And last but not least, Joslyn's name and service are now known over the territory as never before. Joslyn believes that he has made 5000 new acquaintances.

There are some interesting sidelights on this program. For example, at Belvidere, the county seat of Boone County, Joslyn and his outfit happened to arrive in town on the day of the high school graduating exercises. This brought a crowd to town, and many of them took the time to look the chassis over. At Mount Morris there was a band concert. The lecture and phonograph concert were handled ahead of the main event, and while the band played many people came up and looked over the chassis. If handled in the right way a demonstration of this kind can be given in connection with other events to good advantage.

So successful has this venture been that other dealers are already putting in requests for the chassis, and the Joslyn Automobile Co. is planning to repeat the campaign on a more elaborate and better organized basis. The chassis will be mounted on the frame instead of the wheels and the working parts connected with a combination direct and alternating current motor. Two or three days will be spent in the larger towns. Advertising will be used and owners encouraged to bring their cars in for inspection. If some new stunts to attract the crowd can be devised they will be used, but the fundamental idea will remain. It is automobile education to advertise a company and a product.

Joslyn has some other unique promotion ideas worthy of attention. There is a piano in his waiting room, which is on a balcony over the showroom. This piano is one of the instruments in the Joslyn eleven-piece orchestra which gives concerts in town, at grange meetings and wherever the opportunity offers. On this balcony is a radio receiving outfit and the equipment for a sending outfit. As soon as a government license is received, Joslyn will have the only radio sending outfit in Rockford. He told about the plans for transmitting market reports, lectures, concerts and important announcements from this station. Undoubtedly among the "important announcements" will be something about the Joslyn Automobile Co., and the products which it sells.

Wandering Show Ready for the Road



This is the traveling exhibit of Joslyn of Rockford, Ill., just before starting on the tour of the countryside that told small town folks all about the Nash and cultivated business among them. By the way, there's Jud Joslyn in the picture—wearing a coat

Would Street Car Ads Help You Sell?

WARD BECKER, Ford dealer in Fort Wayne, is using street car cards quite heavily in pushing his sales. These cards carry his photo and his signature and a snappy sales phrase. The phrase which Mr. Becker has used most extensively in this campaign is this: "People who come to us to buy Fords tell us that they expect more. They have a perfect right to do so." Becker says that he is getting very good results from his car cards and at a low cost for advertising.

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Sell Cars to Give Salesmen More Time With Prospects

Show Sales Managers How Automobiles Will Cut Down Travelers' Time on the Road and They Will Listen to the Story of Your Car

By RALPH BARSTOW

FORTY per cent of their time is spent in traveling! This is the report of a firm that has just finished an investigation of the working hours of its traveling salesmen.

In an eight-hour day, three hours and twelve minutes are consumed in traveling! Truly, he is well named, a "traveling salesman!"

Will automotive transportation reduce the percentage of time spent in traveling or increase the number of calls per working day? A good many sales managers feel that it will. If it will—and it will under many circumstances—dealers who can prove this practical, economical value can sell cars for salesmen.

Provided the distance between calls is not too great and the roads are good enough to make possible a low upkeep cost for the machine, the automobile represents a distinct saving in time and frequently in railroad fares over any other method of transportation.

A Typical Territory

The territory in the central part of New York State is typical of this situation. The roads are level and are in good condition, and the distances show distinct evidences of the utility of the automobile.

From Albany to Buffalo, the two cities that mark the eastern and western boundaries of central New York is a distance of 296 miles. There are five large centers which every salesman must cover: Albany, Utica, Syracuse, Rochester and Buffalo.

The following list will give an idea of the mileages which the salesman will be called on to cover:

	Miles
Albany to Utica	86
Utica to Syracuse	83
Utica to Rome	11
Syracuse to Rochester	81
Syracuse to Oswego	35
Syracuse to Watertown	62
Syracuse to Binghamton	83
Syracuse to Ithaca	59
Syracuse to Elmira	99
Syracuse to Auburn	26
Rochester to Buffalo	90
Buffalo to Jamestown	75
Jamestown to Olean	51
Elmira to Ithaca	46
Elmira to Binghamton	54

On non-stop runs, an average of 25 miles an hour coverage can be maintained with safety. The territory between the cities listed, however, is dotted with all kinds of prospects. Between Albany and Utica we have Troy, Cohoes, Schenectady, Amsterdam, Johnstown, Gloversville, Herkimer, Ilion and Little Falls; places that practically 75 per cent of the salesmen in New York need to make. If they depend on train and trolley service, they lose from 15 minutes to an hour in waits, which time can be used in driving if they are supplied with automobiles.

The cities listed can be covered once every two months by one man in an automobile, where two men, using the railroads and trolley, would be required to accomplish the same schedule.

"The Neglected Field of the Salesman's Car"

THAT is the way the author of this story, who has been a sales manager employing travelers, refers to the market for business automobiles, which he says manufacturers and dealers have not canvassed as they could. He presents some interesting figures on railroad and automobile travel schedules, showing the greater efficiency of the latter in calls per day. He suggests that dealers and salesmen, with figures such as these applying to the territories of manufacturing and mercantile firms, would find it easy to interest heads of these firms in putting their salesmen on wheels.

In many cities, such as Owego, Groton, Painted Post, Corning, Cortland in the lake district of New York, there may be but one or two customers, important to be seen, and in the old condition, a call of this kind means an all-day trip, because of the limited railroad facilities on branch lines. With a car at least two of these towns can be covered each day, thus saving 50 percent of a salesman's time. Here is a typical record of results. Salesman A and B were provided with automobiles. Salesman C was not.

	Sept.	Oct.	Nov.	Total
Salesman A calls	160	120	83	363
Salesman B calls	106	110	65	281
Salesman C calls	92	98	50	240

Salesman C's traveling expenses for September and October were $432.98, while Salesman B's were $392.00. But B made 216 calls to C's 190. The difference was largely due to transportation expense, for Salesman C spent $153.07 in railroad fares while Salesman B spent $190.90 for gasoline, storage and necessary repairs.

Speeding Up Calls

Here is another specific instance from the experience of a New Jersey salesman. Consider that New Jersey is exceptionally well supplied with good roads and that winter is not so severe as to render driving a car impossible.

This man lives in Jersey City. He wanted to cover New Brunswick, Perth Amboy and Plainfield in one day. The best train to New Brunswick left at 9:17 unless he got up at 6 to catch the 7:20. The 9:17 got him into New Brunswick at 9:52 and he got through his calls at 2:10 p. m. Then fifty minutes wait. For the trolley or the bus to either Perth Amboy or Plainfield did not leave until 3 and got him into the next place at 4 with a scant hour to work and three people to see. Actually, he saw one of them and had to double back on his trail the next day, adding to his overhead in the way of traveling expense as well as knocking the spots out of his time in the presence of his customer. With a car, he could have left the house at 8 a. m., been at work in Perth Amboy by 9:15

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and in New Brunswick at 11:30 and Plainfield could have been covered that afternoon.

Try another one with a salesman living in Springfield, Mass. Here is a typical day with a car. He leaves Springfield at 8 a. m. and makes Stafford Springs, Conn., by 9:15 with one call. Then to Willimantic by 10—three calls. The next place, with one call before dinner, is Norwich and three calls after dinner, one of them causing some delay and a trip out to see a customer's customer! Leave Norwich at 2:30 and arrive at New London at 3:15, get in two calls there and one more over the river at Groton (a call that a man on foot would practically never make) and on the road again by 5 p. m. if you want to go on toward Providence for the night.

From a train and trolley point of view, that trip is an impossibility—but it is the most economical road to follow and the automobile makes it easy. Score eleven calls in one day.

Some Firms Big Buyers

A great many firms that have traveling salesmen, anywhere from five to 500—one manufacturer bought 100 cars at one crack. They are open to conviction as to putting their salesmen on wheels—just the consideration of a railroad strike is a big influence—and the same sales methods could be used as were adopted by the truck manufacturers, who made routes, time studies and roadmaps for the prospects to whom they sold fleets of trucks.

With an experience of seven years in one company and three in another, during which time he has handled salesmen, the writer does not recall ever receiving a single piece of direct mail matter from any automobile manufacturer or from any sales agency on the possible merits of automobiles for his salesman. He has never been canvassed by a salesman for any company on that subject, although it was well known that we bought eight cars in one batch, two and a half years ago for our salesmen and *paid cash for them.* No one has ever thought that we might want to replace those cars!

What Does It Cost?

Accounting nowadays in business is all inclusive. A fleet of salesmen's cars will be listed by the accounting department immediately on its arrival and complete and accurate records will be provided all concerned each month.

Before me lie our figures showing just what it costs in the aggregate and "per mile" to operate each salesman's car we own. The depreciation per month is figured out and included in the cost. The "trade-in" and present book value are shown; the number of tires used and the mileage per tire.

On a three year average, it has cost us 12 cents a mile to operate our cars for our salesmen. By the end of 1922, this average will have dropped to about ten cents. Then repairs will begin to push the average up so that it will be more economical for us to buy new cars. We do not include interest on our money invested but carry every other item charged against the account.

The Advertising Plan

Advertising and solicitation for the salesman's car should be a graphic exposition of the salesman's canvass The car salesman should open up with maps and routes and deadly parallel charts that any sales manager would simply have to stop and attend to. The car salesman should show that the only answer to increased selling efficiency is to make it possible for the salesman to spend a larger percentage of his time *in front of the possible buyer.* The car salesman should get data on the number of salesmen employed by the prospect, the routes they cover, the present expense per day both for traveling and for living, the average number of calls and then go away to return with a canvass that would convince. It would appeal to the reason, the emotions and the economy instinct of the prospect.

And It Happened on Broadway!

Broadway, Sept. 5.

THIS is the age of merchandising.

Having passed through the periods of mechanical development and production intensification, the automobile industry now has reached the blossom of its growth.

Nowhere, probably, has the industry flowered so gorgeously as on Broadway—the only Broadway—where rentals reach kings' ransoms, and super-salesmen swarm like bootleggers along the three-mile limit.

Have we provided sufficient atmosphere? Then let's to the story.

The scene is a palatial Broadway salesroom. Immaculate tile floors. Tapestried walls. Massively carved balcony overhanging back, where shadows deepen beyond the expanse of plate glass fronting on Broadway—the only Broadway.

Enters a young man. Purpose is unmistakable in his deliberate advance. Halfway down the floor he slackens his step and stops before a powerful, low-slung sport model.

A salesman on the balcony rises from his chair, walks to the balustrade, surveys the newcomer with a cold, calculative glance—and returns to his "Snappy Stories."

The young man tarries before the sport model; even drops to his haunches the better to view the spring suspension.

Then from behind a richly upholstered and scintillating limousine emerges an overall-bedecked porter, mop in hand.

"Does yo' want tuh see somebody?"

It's gospel truth—every word of it.

It happened to-day on Broadway—the only Broadway.

And—this is the age of merchandising.



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THE MEN THIS STORY IS WRITTEN ABOUT—JOBBER SALES STAFF OF HYSLOP BROS., Ltd., TORONTO, CANADA.

THE man in the center of the picture, looking squarely at you, is A. M. Bottcher, author of the story and manager of the automotive equipment department of Hyslop Bros., Ltd. Looks like a fellow who gets things done, doesn't he? Read his story and form your own opinion. The story tells about a training plan for a jobber sales force. Much of it would apply to a car or truck sales organization or even to a service staff. What do you think of the weekly meeting idea, where the men learn from each other's experience? And what do you think of the talks of salesmen York and Hawes?—EDITOR.

Training a Jobber Sales Force

Weekly Meetings Help Men Learn from Each Other's Experiences and Foster Co-operation With Other Departments —A Fact Story About Two Kinds of Salesmen

By A. M. BOTTCHER

Manager, Automotive Equipment Department, Hyslop Bros., Ltd., Toronto

THE fundamental principles of salesmanship applying to travelers soliciting orders for automotive and garage equipment do not vary materially from any other line of industry. Practically all schools of salesmanship theoretically teach the successive stages, or evolution, from approaching a prospect to closing a sale and building an enduring business irrespective of the nature of the merchandise, approximately as follows:

1—Know your goods.
2—Awaken interest in the mind of your prospect.
3—Create desire on the part of the prospect.
4—Close the sale.
5—Render service, present and subsequent.
6—Build enduring connections by educating your customer to better business methods.

Hyslop Bros., Ltd., employ from 12 to 15 traveling representatives selling automobile accessories, supplies and garage equipment. These men are not graduates of any outside school for salesmen, correspondence or otherwise. They do, however, receive actual work, instruction and training in Hyslop's own establishment, where the six principles enumerated above are thoroughly absorbed by them in a practical manner. It is a pleasing commentary to note at this time that the embryonic salesmen during their period of apprenticeship evidently later on appreciate the training they receive as, with few exceptions, where they have qualified, they remain loyal to the firm and are not enticed away.

The method followed by our firm is to carefully select a man, either in the organization or outside, who has possibilities of developing into a worthy representative. He is first put to work in the stock room so as to know the goods thoroughly. After about six months of placing stock in the bins and filling orders for shipment, he

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is placed behind the counter of the wholesale store. There he meets dealers, garagemen and their employees, requiring all kinds of equipment and repair supplies for automobiles. He is taught to maintain at all times a courteous and pleasing attitude when serving customers and, after supplying their requirements, call their attention to articles that may be of interest at the moment, or show them the working of some brand new invention that will appeal to their mechanical inclinations.

Specially Trained Salesmen

A year in the store, serving and becoming acquainted with customers, should enable the salesman to gain much information that will be useful and instructive to him when advanced to a traveling position. If he is of the right type, he has by this time quite unconsciously had inculcated in his training the seven cardinal points of salesmanship referred to. He is now ready to take up his portfolio and call on the trade. His first tryout is in the city, where he can be further coached and receive the benefit of daily instruction and assistance from the home office. Should any difficulty develop in closing a deal, the manager often accompanies the salesman and assists him.

When a vacancy occurs in an out-of-town territory, the city salesman is assigned to it.

It will thus be seen that Hyslop's salesmen are specially trained men. During the boom period of the war the demand for goods was in such volume that all rules of salesmanship were practically suspended and orders were literally forced upon salesmen, often beyond the capacity of the house to fill due to the scarcity of goods. With business conditions later completely reversed, the specially trained Hyslop salesmen were able to adjust themselves accordingly. Not so, however, with the few extra travelers hurriedly engaged during 1918-1920 when business was at its apex. True, during that time, their volume of sales often exceeded those of the specially trained men, but their order-taking proclivities availed nothing when it meant a fight to go out and get business under conditions which prevailed from the fall of 1920. They were unable to stand the gaff and were accordingly released.

Weekly Sales Meetings

With the turn of the tide from an orgy of buying on the part of the dealer to one of hard plugging to secure even a small order, Hyslop Bros. felt something should be done to keep up the morale and interest of the sales force. Prizes and competitions are good things in their respective spheres, but produce only temporary results. The company decided upon a plan which is meeting with great success. Every Saturday morning at 11 o'clock a meeting is held in the board room and is attended by the manager, salesmen, head of the order department, credit man and stockkeeper. A schedule is drawn up two months in advance, and each week one of the men has charge of the meeting and talks on a subject previously assigned to him. Here are a few examples of the subjects selected:

Salesmen's Talks

April 22—F. J. Rogan, Salesman. My Experience in Talking the A. E. A. "Ask 'Em to Buy" Campaign to Dealers in My Territory.

April 29—H. J. Munro, Order Department. Importance of Salesmen Mailing in Orders Daily, Making Out Weekly Reports and Route Sheets Promptly.

May 6—S. J. York, Salesman. My Method of Approaching Dealers, Closing Orders, Securing Large Volume Business and Retaining My Customers' Good Will and Confidence.

May 13—R. B. Rife, Credit Manager. General Talk on Credits. Helpful Assistance That Can Be Rendered by Salesmen to Facilitate Prompt Shipments.

May 20—C. Cummings, Salesman. How I Increased Sales in My Territory as Compared with 1921 Season.

May 27—George Davies, Stockkeeper. Shipments, and Methods Employed to Fill Orders Promptly, Keeping Stock Up to Maximum Requirements and Reducing Back-Orders to a Minimum.

June 3—J. A. Singer, Salesman. Methods by Which I Secure Big Business in Motor Oil.

June 10—W. Spencer, Salesman. Interesting the Dealer in Garage Equipment.

June 17—R. A. Galbraith, Salesman. Securing Volume Business from Large Car Distributors and Dealers in Toronto.

June 24—G. Hawes, Salesman. The Mistake Many Salesmen Make in "Passing Up" the Small Accounts. How I Secure a Good Volume of Business from the Small Dealer and Garageman.

Experience Stories

As will be observed, the subjects are diversified and are chosen with a view of bringing out any unusual qualities with which a salesman may be gifted. The interest in the meetings is strong. The experiences of the different salesmen bring vividly before the men many points in selling and service which they have either overlooked or allowed to become dormant, and they go out the following week resolved to benefit by the information received.

The salesmen also have lost their former antagonistic attitude toward the credit department after the trials and tribulations of the credit man are explained to them. They also know how to talk convincingly to a customer complaining about delays or mistakes in shipments after listening to a discourse from the stockkeeper. *The salesmen now know that all concerned are working for the mutual benefit of the house, which enables them to meet the trade with renewed vigor and in the full confidence that their efforts are being backed up to the limit.*

The entire sales force of Hyslop Bros. has consistently backed up the A. E. A. campaign of assisting the dealer to build up a better and more profitable business. They have personally devoted considerable time during evenings to helping make attractive window and showcase displays. The "Ask 'Em to Buy" motion picture has been shown throughout Ontario, and one of Hyslop's salesmen made it a point to be present and give assistance. In small communities where the dealer has not viewed the film, the story was told by a Hyslop salesman and interest created by practical demonstrations. The salesmen state that in their leisure time in the evening they talk to the dealer's customers, and even man the gasoline pump and emulate the example of the screen salesman by interesting people in the purchase of useful articles for their cars.

Ask 'em to Buy

At the weekly Saturday meeting of salesmen, after the scheduled address is concluded and which, by the way, is limited to a half hour, the meeting is thrown open for remarks or discussion, and almost invariably instances are related of how dealers have increased their profits through "Asking 'Em to Buy." At the last meeting, a salesman described how a dealer in his territory had returned for credit several sets of a well-known shock absorbing device, with the explanation that they would not sell and that payment was past due. This salesman personally took the dealer to see the "Ask 'Em to Buy" picture, and then told him if he had used the selling tactics depicted on the screen he would not have returned the shock absorbers. He finally induced the dealer to re-order one set, and now, after a period of only a few weeks, the

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dealer by using a little sales effort has installed eleven sets of these shock absorbers, and before the season is over will have made several hundreds of dollars' extra profit out of this one item alone. This is only one incident of many that Hyslop's traveling men report to the house as exemplifying how they are assisting in helping the dealer to become a better merchant, a keener salesman and a factor for service in his community.

TWO typical talks by Hyslop salesmen at Saturday morning meetings are given below. They show how practical training is given the men by exchanges of experiences and reports of selling methods that have proved successful.

My Method of Approaching Dealers

Closing Orders, Securing Large Volume Business and Retaining My Customers' Good Will and Confidence

By S. J. YORK
Salesman, Hyslop Bros., Ltd., Toronto

AT the outset I want to say I have no trick cards to play, nor do I work by any set rule. What I have to say will be typical of many instances I have experienced in the past when calling on a new account. After a permanent connection is once established with a dealer on a mutual confidence basis, it should be a comparatively easy proposition to retain his business.

It has always been my custom to present a neat and clean appearance. My fellow travellers often "jolly" me because of my habit of rising early in the morning and devoting so much time to shaving and otherwise perfecting my toilet. However, it gives me a clean appearance and I feel better for it all day. In conjunction with this, I always advocate a good night's rest. (It may fittingly be interjected at this point, that York has no respect for the night-hawk, poker-playing, sporty type of salesman who dissipates his energies during the night and consequently goes about during the day in a dopey and listless manner.)

In approaching the customer be patient, don't argue, and make notes of any matters the customer considers requires adjustment, and then after a little while the dealer will listen to what you have to say and gradually forget any grievance or ill-feeling he may have entertained toward the firm you represent. The salesman now has the dealer's attention and it is "his turn at the bat." He commences by talking goods and service.

After some conversation, which should be adroitly led by the salesman, the dealer suddenly thinks of something and exclaims: "By Golly, I do need a bumper for that Ford sedan I am delivering this afternoon! But, if I order it now, you can't get it here before to-morrow and it will be too late." "Excuse me a moment," says the salesman. "I'll be right back." In a few minutes he returns with a new bumper. The dealer cannot help expressing his astonishment, "Where did you get that?" he inquires. "Oh, I just took it off my Ford coupé," replies the salesman. "Well, I'll be switched," exclaims the dealer. "What did you do that for?" "Oh, just my idea of rendering service to customers. The bumper was only put on my car yesterday, so it is brand new and will satisfy your customer; besides, I can get another when I drive into Toronto the end of this week." "Well, young man," says the dealer, "send me ten more bumpers of the same kind at once." "Thanks," says the salesman, opening his order book. "You will be able to realize a nice profit if you equip every car with a bumper before delivery. Your customer will be glad of the service and willingly pay the price of the bumper when taking delivery of his car, rather than spare the time to have it installed later. In fact, the chances are 1 to 25 that you will never sell him a bumper unless it goes out with the car as extra equipment. Then also, there are shock absorbers, visors, mirrors, Moto-Meters and various other items the car owner needs and will buy if his attention is called to them. How is the car owner to know about these different articles of equipment if the dealer does not bring them to his attention and explain their advantages?"

By this time the salesman has already turned over the freshly filled page of his order-book and has commenced writing down such items as spark plugs, brake lining, piston rings, etc., for the service department, and the transaction is eventually completed.

All I can say further on this subject is that any of you can do as well as I have. You have the same lines, same resale prices and the ability. Gain the friendship and good will of your customers so they will be calling you by your first name. Let them know you are there not merely to get an order but to assist them to become better merchandisers. Don't feel it is beneath your dignity to call around in the evening and help the dealer make a better display of goods or dress his window for him. Above all, be a gentleman always, remembering that according to your conduct so will the firm you represent be judged by your customers.

As you all know, I have been on my present territory for several years. All my customers call me by my first name. They often invite me to their homes. They have confidence in me and the house I represent. As an evidence of this I need only mention that during my recent illness I received several letters from my largest dealers expressing sympathy and the wish that I would soon recover and be able to call on them again. Didn't I appreciate that! Oh boy! I'll say I did. And when I resumed my travels they gave me nice, fat, juicy orders that they had been saving up for me.

How I Get a Good Volume of Business

The Mistake Salesmen Make in Passing Up the Small Accounts

By GEORGE HAWES
Salesman, Hyslop Bros., Ltd., Toronto

THE subject assigned to me deals with my experience in selling automobile accessories to small garages and repairshops.

Being desirous of locating permanently in Toronto, I approached the management for a transfer to a city position. It seems they had two men calling on the trade in Toronto, but a recapitulation of sales showed that business was only flowing in from car dealers and the larger garages. The smaller garages and back-alley repairshops were practically neglected.

In order to secure the latter trade, a change was made whereby one man now works car dealers only in Toronto, and my field of endeavor is devoted to the other trade in the city.

It is not self-praise or egotism on my

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part to say that inside of a month I secured more than 50 new accounts and many of these so-called small dealers repeated several times during that period. I am daily adding to that list. Some are not good for credit, nor do they ask for it. They are perfectly willing to accept the goods C.O.D. and are not so finicky in this respect as the large dealer who may have a good rating but is short of ready cash. My experience in the city bears out what I ascertained while out on the road, and that is, that many a salesman makes the mistake of "passing up" the small garage proprietor or repairman as being beneath his dignity and too picayune to waste his valuable (?) time upon.

It was because of my specializing on the "smaller fry" while traveling Ontario that I was given my present position. My weekly summary of sales was largely made up of accounts that salesmen from competitive houses ignored.

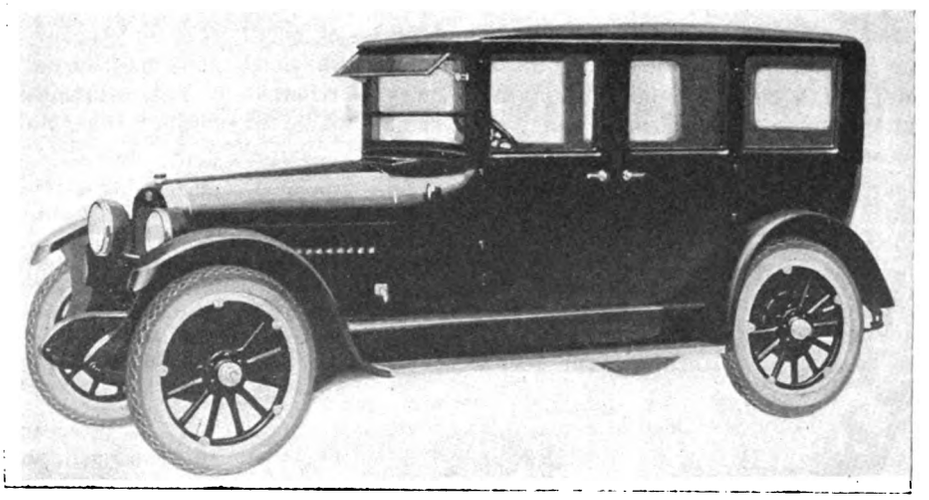
There are no particular methods I employ in going after the small garage and repair trade in Toronto. One thing I have observed, however, is that if the proprietor is not too busy the salesman is generally accorded a better reception than by the more prosperous car dealer or his purchasing agent. The fact that the salesman calls on the small garage or independent repairman appears to indicate to them that their status as business men is recognized in the trade. If the proprietor, however, is busy it will be necessary to use a little tact, and often a great amount of patience. He may be in the midst of an exacting operation like timing a motor or changing a commutator. Wait until he straightens up from his task and looks around before starting to talk accessories.

When I first began calling on my present trade in Toronto I was often told by the garage and repairmen that it did not pay to handle accessories. This did not discourage me. I personally spend considerable time, often in the evening, with such men and tell them about the kind of goods they could sell to advantage based upon my experience with similar businesses while out on the road. *I am careful to start them off with only fast selling articles of equipment, and then add to the line on subsequent visits.* At the same time, orders for brake lining, piston rings, spark plugs and other service lines can be picked up at practically each visit. Everything considered, therefore, my trade provides a good outlet for a steady and increasing volume of business. The individual orders may not bulk large, but with my car I can make many calls and the total of each day's work is satisfactory.

So, fellows, I suggest when driving your Ford coupe throughout your territory that you do not contemptuously sail past the small wayside garage or repair-shop intent only on getting to the next town as fast as possible. But stop, get acquainted with the proprietor, secure what business he has to offer, and then when you get to town just ferret out the little garage you formerly overlooked or the repairman doing business in a converted blacksmith shop, in addition to your regular trade. You will be surprised and delighted with the result.

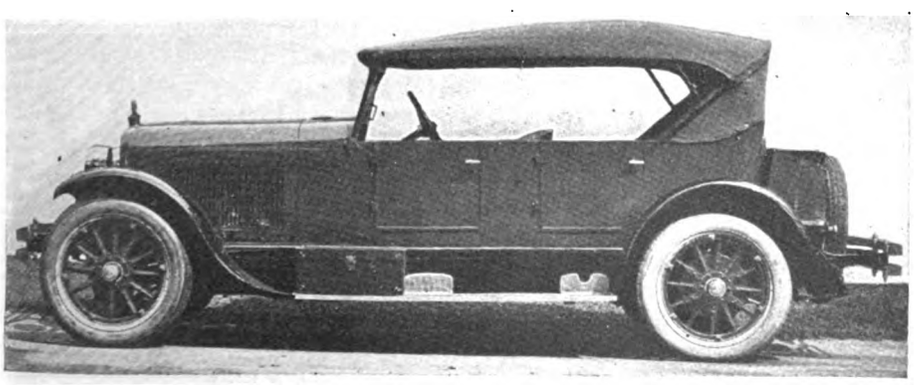
A Jordan Blue Boy in Blue Devil Blue for $2150

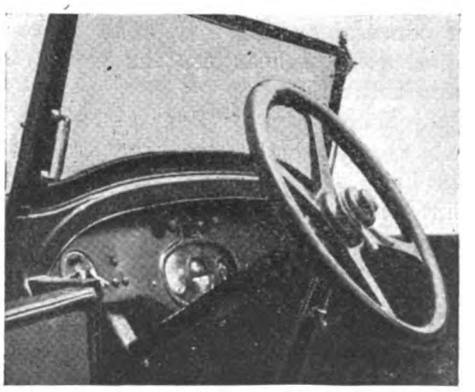
THIS is a new four-passenger sport model now in production. The wheelbase has been lengthened on this model to 124½ in. for lowness and the cushions are right down on the floor. The general shape of the body is the same as the Play Boy back to the front seat. A slight curve has been added back of the front seat and the rear of the body is low and does not have the sweeping curve on the back panel that is found on the phaeton. The finish is in blue with dark blue Morocco leather upholstery without plaits and with rolls at the front to support the knees. The steering wheel has walnut spokes and the spark and throttle controls are mounted in a small space at the center of the steering wheel and without the customary aluminum center. The top is a Golde type with polished rust-proof frame and natural wood finished bows. Top, side curtains and slip cover are imported Burbank. The rear is fitted with a trunk rack and trunk and headlamps are barrel type, nickeled.



A New Nash Six Cylinder Sedan, $2040

This five-passenger car is fitted to the 121 in. wheelbase chassis and is a miniature of the seven-passenger sedan. The interior furnishings and upholstery are in mohair and there are four doors. Several years ago Nash built a five-passenger six sedan with a staggered door but this was discontinued. This recent addition gives Nash 13 models





The new Jordan Blue Boy, $2150. At the right is shown the steering wheel with new type spark and throttle controls eliminating the conventional quadrant

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Editorial Notes

Something New

WE are rather inclined to take it for granted that automotive engineering has reached a point where it is so nearly perfect and conventionalized that there is not much further to be done. That this is not so is proved by a recent innovation in the design of overhead valve engines which will no doubt remove the one point of sales resistance that has always been raised against them, noisy operation.

Since the inception of the overhead valve engine it has been necessary to work with rather large clearances between the rocker arms and the tappets, due to the varying expansion under hot and cold conditions. This has led to more noise than seemed necessary and also required rather frequent adjustment. The new Buick cars have sought to overcome this trouble with a combination metal tappet rod of aluminum and steel, so proportioned that the tappet rod will have exactly the same expansion as the cylinder block with which it has to work. Now comes a new engine in Great Britain, the Vauxhall, with a duralumin tappet, which is designed for exactly the same purpose. These pioneers will doubtless have many followers and the success of the new design will mean much in lessening the selling resistance of the overhead valve engine, which, while it has many advantages, has also been beset with disadvantages, chief of which was noise.

Price

FROM a good many sections come reports that price is dominating business in the automotive field, particularly in the sale of automotive equipment. Motor car owners are doing more shopping around for price concessions than in any recent season, with the result that some dealers and garagemen, yielding to such an insistent price demand, are pressing their jobbers for concessions and they in turn are scrutinizing with almost painful keenness the price competition of the manufacturers.

A jobber writes: "Ever since the buyers' strike the consumer has had the garageman buffaloed so that all they hear is price, price, price. They have reached the point where we, in our own buying, are forced in some cases to put price ahead of quality. Let us hope this is only part of the business cycle and things will change for the better. Business is good in volume but business done on a price basis is pretty unsatisfactory when you make up your balance at the end of the month."

Newspapers and magazines are still talking about high prices which still prevail in a good many lines other than the automotive field, where reductions from the post-war level have been quite general. As long as this price agitation continues consumers will have prices prominent in their minds whenever they go into a store to buy, yet there are people, and always will be, who want quality goods with service and reputation behind them. The only way wholesalers and retailers in the automotive trade can combat the price demand is to advertise their merchandise as quality merchandise and their establishments as establishments which stand back of what they sell and are in a position to give buyers service as well as goods. Advertising of this kind, supported by merchandise on the quality and service basis, will bring to the wholesalers or retailers applying it at least a fair proportion of people with whom price is a secondary consideration when quality and service are shown to be part of the thing they are buying.

The automobile trade cannot expect to overcome in a minute the sales resistance that is based on price demand, but they must overcome it some time if business is to be done with any pleasure and profit, and it should be remembered that every effort along the line of merchandising quality and service will prove a step in the direction in which the trade wants to go.

Roads Sell Cars

IT is interesting news that comes from Alaska that the building of improved roads in the National Forest area has induced a sale on an average of approximately 90 cars for every ten miles of road. The National Forest Service has been making a study of motor vehicles in the Tongass and Chugach regions and has traced the purchase of additional cars directly to the provision of adequate road facilities. The Service estimates that the completion of 86 additional miles of road under construction will result in the sale of half a million dollars' worth of cars and trucks.

This story from Alaska carries a definite suggestion to dealers in states or sections of states where road facilities are poor. Volumes could be written about factors affecting sales, but there is no escaping the fact that cars and trucks run on roads, and without proper roads they cannot be sold in any great volume. Dealers anywhere will find it worth time and money to interest themselves in better highways projects. In doing this they do not only build their own business but they help their home communities, because it has been proven time and time again that good roads are a business asset to the territories they traverse.

The Alaska experience is just a hint. Are there any Alaskas in your territory?

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With the Equity Agreement Plan Dealers Don't Trade—How It Works

A Reader Writes to Motor World to Tell About an Interesting Used Car Plan—Would It Help You?

EDITOR, Motor World: "We don't trade, but we do," is the watchword of our organization, which has been able to handle used cars on a new car transaction by selling them on commission instead of by purchasing them outright for resale from the used car owner.

Some dealers who work on this basis get as high as 10 per cent for disposing of a new car purchaser's used car, and others operate for approximately 6 per cent. Whatever commission is paid they do not at any time take title to the used car but merely put it on their salesroom floors for sale, in the meantime making the customer who brought the used car in an allowance in the nature of a loan, which is figured considerably below the estimated minimum resale value.

Let me describe the plan:

Suppose a new car prospect, Jones, comes in with a used car, which, when properly reconditioned, we can sell for about $1,000. We talk with Jones about facilities for selling used cars, which he generally concedes are at least better than his own, and we then proceed on this basis:

"Now, Mr. Jones, if we trade your car outright we must figure on our selling expense, any necessary repairs, overhead charges, and a profit on our investment, and can only allow you $800, although your car will readily sell for more money—but if we take your car in on sale you will not find it necessary to stand *all* of this expense. We will take it on sale at your own figure and deliver your new car at once, so that you need not be without a car. And to save you paying for it in full and have a full investment in two cars, we will make you a loan, or advance, of $600 against your car until it is sold—and we will only charge you the actual salesman's commission of 5 per cent in selling it, plus any expense necessary to make it salable."

"But how long will it take to sell it?" asks Mr. Jones.

"If the car is really worth our asking price, it should be sold within a month. If, however, at the end of a month you are not fully satisfied, you have the privilege of taking it out by returning the amount of the loan to us—or else we will buy it at that price, if you prefer, so you can see that we are not trying to get your car at that figure. We don't want the car at any price—and we are only selling it to accommodate you. And after we have disposed of the car, we will immediately refund you the difference between our loan and the selling price, minus the commission and any necessary expense."

Result—Mr. Jones is generally satisfied and signs his order for the new car together with the On Sale Agreement, which he never reads but which we explain to him. His old car is now a secondary consideration, and whatever amount he receives back is like money found because he has already paid for his new car and had accepted our advance price as the allowance on his used car.

Before he leaves our store, however, we say, "Mr. Jones, if we can't get quite $1,200 within the first couple of weeks, don't you think it might be advisable to drop the price a few dollars, say to $1,000?" Generally he does, and we have now obtained permission to sell it for less than his asking price and at a price at which we should move it.

If within a week or two we receive an offer somewhat close either to the asking price or the second price, we phone the owner, and in most cases he accepts—because he is now riding in his new car and wants to get the old one off his mind. Immediately upon receiving payment for the old car we remit the balance due to the owner, and in nine cases out of ten receive a letter of acknowledgment and thanking us for the courteous and prompt treatment we have accorded him. If, however, at the end of a month we have not disposed of the car at the second price or received a satisfactory offer, we have the privilege of selling the car at the advance price or else asking the owner to take it out—but we have only had this case come up but once in over two years. We do not necessarily hold a man to the 30-day clause, but use our own judgment, often times refunding money after this period is up.

It is true that we do not quite break even on this method, but we lose only our overhead and are well fortified to stand any break in the used car market. Likewise we sell our used cars faster.

But, best of all, we have educated the local public to the fact that we do not trade (very few exceptions made, less than 10 per cent), but that we offer a plan which is even better. Neither is the On Sale Plan a one-sale plan which prevents the customer from trying the same medicine twice. We have already had several repeat cases, and the general result is satisfaction; although we know in our own minds that we are taking those cars in to eventually sell at a figure at which the customer would never consider an outright trade.

Because the customer pays the 5 per cent to the used car salesman for selling the used car, we are enabled to pay the new car salesman 5 per cent on the full list price of the new car. Needless to say, the new car salesman won't stand for trading if he can get the used car in on sale. He wants the On Sale Plan, it nets him more money. The house wants the On Sale Plan, they haven't so much involved nor so much possibility for a loss on a sudden depreciation in used car values. Therefore, everyone prefers the On Sale Plan, with the possible exception of the customer, who must first be sold.

In summarizing, let me say that the general satisfaction derived by the house (because of smaller amount lost by the used car department, the smaller number of cars constantly in stock, the smaller amount of money involved and the ability to handle more cars in a faster way), the satisfaction of the salesman (because of larger commission), and the satisfaction of the customer (because he can purchase his new car with less controversy about his old one) has made us 100 per cent in favor of our On Sale Plan, and we do not intend any change in our method of handling used cars.—Eastern Dealer.

Milk Bottles as Oil Containers

Editor Motor World: In a recent issue of Motor World we noted a reader's suggestion for using milk bottles in serving stations for containing oil. Do you think this is practical, when in several states there is a law, with fine or imprisonment, or both, for placing anything but milk in milk bottles?

This is simply a matter of suggestion, for we believe that some readers may be misled by this suggestion. What is your opinion in this matter?—Morris Jones, Inc., Philadelphia.

Answer: Thanks for the suggestion. It is contrary to law to use milk bottles for other purposes than containing milk in New York, New Jersey and Pennsylvania. Such use is a misdemeanor. The garageman or oil station man wishing to serve oil in quart bottles should use unbranded bottles or buy branded ones from their owners. The best plan would be to use unbranded bottles, then there could be no claim that he was putting oil in bottles which might later be used as milk containers.

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Is Price All There Is to Used Car Advertising?

Injudicious Publicity Policies, or Lack of Any Policies at All, Destroy Confidence and Discourage Buyers

By SHERMAN LEWIS SMITH
Advertising Manager, Linscott Motor Co., Reo, Boston, Mass.

A GREAT many suggestions have been offered with regard to the used car "problem" during the past year, and even more worrying has been done over it, and yet the real solution seems a long way off. The real solution is one that will relieve the used car congestion on the dealer's floor by increasing the market for these same used cars.

Obviously, with so many low priced cars in the field, as is the case to-day, it is impossible to find any considerable number of people who will purchase a used car solely on the basis of price. The price of almost any used car of the so-called "quality group" will buy a brand new car of some description; and it must be admitted that most people would rather own a cheap *new* car—while it is new—than buy a much better *used* car. I am not maintaining that there is logic in this attitude; but who will deny that it is a fact?

This attitude on the part of the automobile purchaser is due to two factors. Some people have bought used cars—where makes no difference—which were very *much* and not very *well* used and which did not give them, to say the least, very favorable satisfaction. These dissatisfied used car owners have been loquacious in their condemnation of all used cars under the sun, and this has tended to create in the minds of non-owners the impression that used cars are very uncertain, if not always undesirable, values.

The other factor is the shortsightedness of many automobile dealers in running advertising copy that creates in the public mind an unfavorable opinion of used cars in general. A study of the used car advertising in a large eastern city during the past 12 or 14 months shows that, in the spring and early summer, when business is good, the copy is inspiring and tends to build up an impression of desirability; but as winter approaches and dealers are faced with the possibility of having to carry large stocks of used cars through the quiet months the advertising takes on a panicky tone, stressing the extreme *un*desirability of used cars from the dealer's point of view. And it is only natural that the reader will think that what is undesirable for somebody is undesirable for somebody else.

Here are some actual extracts from used car advertising run during the past few months: "Gigantic Price Wrecking Sale," "We must reduce our stock," "Must be sold at once," "We simply must sell these cars at once," "Our tremendous new car business has loaded (!!!) us with these cars taken in trade," "We are determined to sell out all used cars between now and December 1st, REGARDLESS OF COST," "Every car to be sold at YOUR price," "No reasonable offer will be refused."

What is your own personal reaction to such statements as these? If you were looking for a "bargain" you might be tempted to patronize one of these firms; but the average American is learning that a "bargain" is not a bargain so far as automobiles go. The man who is willing to take a chance would probably buy on the strength—or weakness—of such advertising; but the man who has had a sad experience with used cars or has heard of someone who has (and who has not heard of many?) will become more firmly convinced than ever that a used car is a "cheap" proposition in the most odious sense of the term.

An advertisement of "bargain prices" may perhaps attract buyers without doing a great amount of harm; but to call a sale a "clearance sale" implies a desire to get rid of something, and few people want to put $800 to $2,000, more or less, into a car that somebody else wants to "clear out."

With the approach of spring and better buying prospects, used car advertising seems to take on a more dignified and confidence-inspiring tone and we find the copy featuring such statements as these. "New Car Quality at Used Car Cost," "Dependability," "Value," "Our Used Cars are Guaranteed," "For twenty-one years we have realized that *your* interests are *our* interests," "Used Cars of Known Value." And so forth.

How much better is the impression created by such advertising! How much more likely is this impression to result in the purchase of a used car by the prospective buyer of a cheap *new* car than is that inspired by the former kind of copy!

Used car advertising must be kept on a high plane if an extensive used car market is to be developed; and without this market the field of the new car is going to continue to suffer. Hence everything possible must be done to prevent odium from being cast on the used proposition, either intentionally or otherwise. In this connection advertisers should insist that the newspapers run their copy in a good environment and not on the pages with mail order or patent medicine advertising, as has sometimes been the case.

And they should insist that they, as reputable and reliable dealers, should have preference over others who buy a lot of salvaged material, lacking considerable needed equipment, and advertise it in competition with the legitimate dealer as "never having turned a wheel." Literally, the claims made for such material may be true, but nothing is said about tire equipment, electrical equipment, and many other features which the purchaser expects to get from the reputable dealer and which are usually winked at by the bargain hunter. These "bargain" dealers are not usually consistent advertisers. The newspapers depend on the regular advertisers whose copy runs week in and week out. Thus it is only fair that the reputable dealer should get square treatment from the publishers and automobile editors.

The doctrine of better used car advertising should be preached by every regular dealer. Do not hesitate for fear that if your competitor improves the nature of his advertising you will benefit less from the improvement of your own. We must look beyond the limits of this week's or this season's sales. We must look to the upbuilding of the entire used car field; and this can be done only by bettering the impression generally held of used cars themselves. It is up to everybody to help.

Practical Suggestions for Used Car Advertising

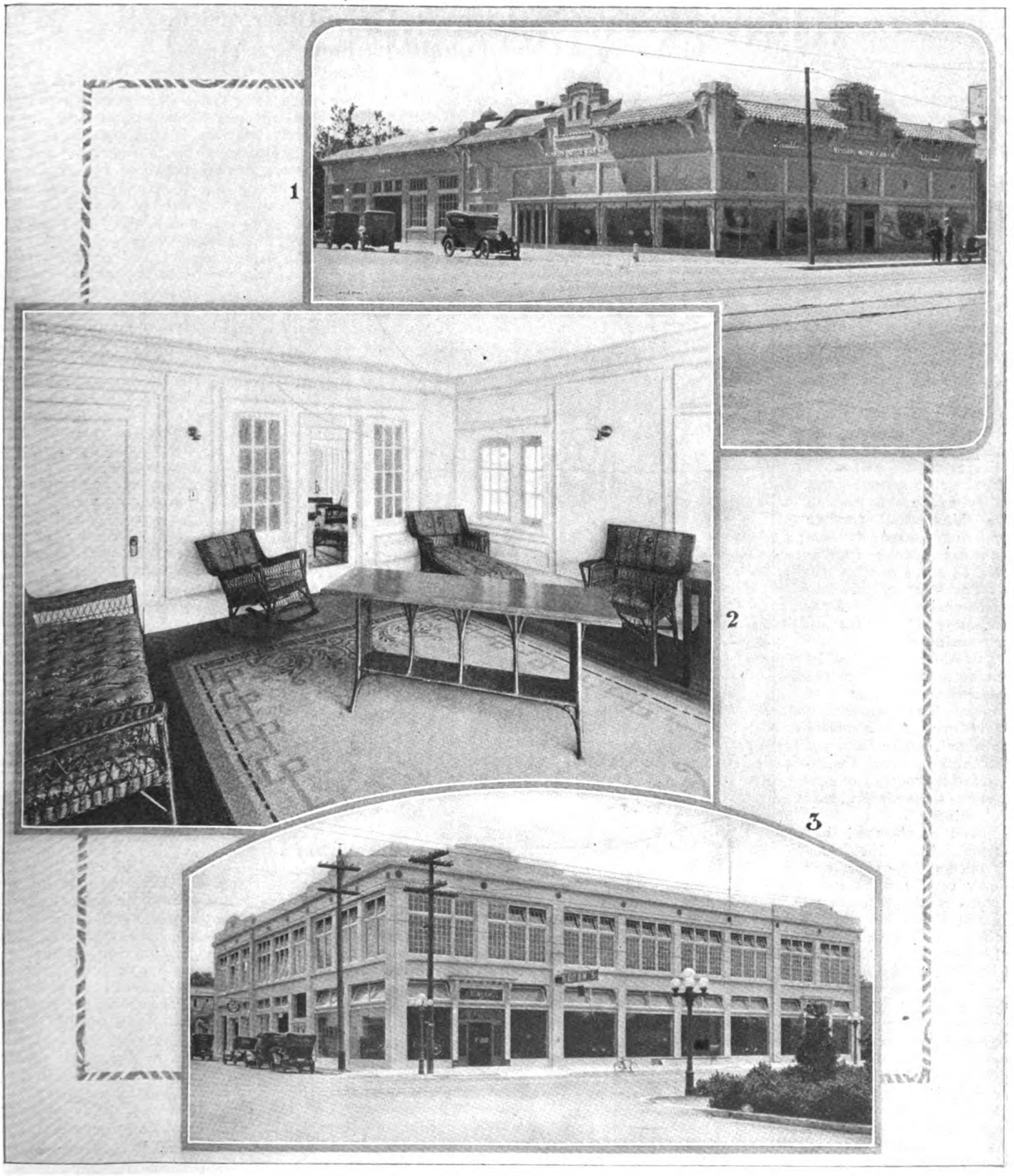
THIS story, written by an experienced automobile advertising man, points out that the trade is approaching the danger time in used car advertising — the time when dealers who fear that winter will catch them with excessive used car stocks are inclined to talk in big, black type about bargains and price slashing.

This kind of advertising doesn't sell many cars, in the opinion of the writer, and it has a tendency to discourage used car buying, not only from the dealer advertising but from all dealers, by shaking public confidence in this class of merchandise.

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A Whiff of California Atmosphere—

Buildings Like These Attract Business Anywhere



Both of these buildings have been recently erected by San Jose, Cal., dealers. 1—The new home of the Mission Motor Co., Franklin, Chevrolet and Velie dealer. It is of unusual design yet the architecture is dignified and is suggestive of the name of the company. 2—The ladies' rest room in the new building erected by J. E. Sloan, Buick dealer. 3—The exterior of the new Sloan building. It is a neat, attractive structure that is a splendid advertisement for the business it houses

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Showcase "Plaything" Increases Sales

Experiment With Piston Ring Suggests Use of Other Articles in the Automotive Equipment Store

OBSERVE the yearning look in the eyes of customers who wait at the showcase.

Yearning for something to play with.

There is a six-inch piston ring on counters or showcases of some 150 accessory distributors and garages of Kansas City territory. It's not worth carrying away, because it won't fit anything.

It has resulted in increase of more than 200 per cent in sales of piston rings in a few months at some of these garages and sales rooms, and has very materially increased the sales of the manufacturer of this ring in the territory.

And there's no telling how much good it has done, in other ways. It has aroused the interest of the customers, so that they are awake enough to think about possible purchases—*and it has awakened the garagemen to the value of displays.*

The story of this six-inch piston ring reflects a human interest feature in business.

C. A. Grainger, district sales manager for the American Hammered Piston Ring Co., with a territory of five states around Kansas City, got to thinking about the instinctive tendency of customers to handle and look at things.

And he observed that people have the same tendency, wherever they may be. A workman coming into the office of an executive will cast his eyes about the room and over the desk; if there is anything handy for him to touch, he will touch it and examine it.

People going into any store will, while waiting—even while being waited on—glance about, pick up loose objects, inspect anything whatever that is visible. They will read the labels on the boxes and cans on the shelves back of the counter. They will droop over the showcase and peer through the glass, even if the glass is cloudy, down at the dusty and disguised and mysterious boxes that may be reposing there.

If, by any chance, there is an object in the case that is not boxed or canned and can be inspected, the visitor will study it with great attention, probably guessing at its uses if he is not familiar with it, and at any rate dreamily wondering what it might be.

When any objects are touchable on the showcase, these are "meat" for the customer who waits. For he will inspect them in minutest detail, trying to operate them, if they are operable, and expending his best casual thought on conjectures as to utility.

The average customer seems always in a restless, nervous state of mind while waiting to be served. They are all alike, whether in a dentist's office or a garage



—they have to have something to anchor their thoughts to.

Grainger, studying this condition, concluded that the garage or accessory dealer who gave the customer something to play with would be gratifying a real need of the customer. But the customer might thoughtlessly put the object in his pocket, as so many do in the ten cent stores.

It really is not necessary, however, for the garageman to display small items that may be pocketed unmissed; a large object that has some element of novelty about it, even a large object of familiar use, but capable of a little manipulation for the killing of time, would answer the purpose.

And then it was that Grainger conceived his notion of the piston ring to play with. He had the factory make up a lot of piston rings six inches in diameter, of a size to be useless for practical purposes. These were passed around to the company's distributors and to the service stations in this district.

Immediately the garagemen and accessory dealers began to report success for the idea. Nearly every customer, no matter how quickly served, or what he came for, picked up the ring and gave it a glance. Many of them toyed with it, figuring out its theory; many of them inquired as to the special feature.

In the accessory and parts distributing stores, dealers coming in to buy stocks paused to look at the ring; and being enlightened on its features, bought sets for their own cars. They had become interested primarily as users, and soon became interested as dealers. They put the sample ring on their own display cases and found that it operated on the car owners, as it had operated on themselves.

The idea of having something on the display cases to attract the attention of the waiting customer — something that he can look at, pick up and examine and "fuss" with while he is waiting—may be worked out in many ways.

For instance, a section of a large tire is a mighty interesting object to most motorists, and one or two such sections on the display cases in stores that sell tires and accessories would many times a day give the proprietor or clerk an opportunity of very effectively opening a tire selling talk, while a customer is "playing" with the section and waiting for change.

A few cut-away spark plugs, such as supplied by some makers to show the interior construction of the plugs, if left on a display case on a small felt pad would offer an opportunity for customers to closely examine the object and give the salesmen an opportunity to explain it and sell plugs of that particular make.

The same is true of many other articles that are on the shelves of most accessory stores and it is a merchandising idea worth considering for the dealer who is losing no opportunities to put his stock before his customers in the most effective way.

Is the idea worth a tryout in your store?

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How I Make Shop Profits in Winter

Will You Tell the Trade How You Do It—in Motor World?
$50 for the Best Story, $25 for the Next, $10 for the Next, and $5 for All Stories Accepted



EXCEPT for a few fortunate folks who have rich relatives nobody gets much in this world without digging for it. It used to be the belief that automobile men might as well shut up shop in winter. Then some of them began digging for winter business. Digging got the business.

Some of these diggers are repairmen—garage operators and service station managers. Are you one of them? Are you making shop profits in winter? If you are Motor World would like to have your story.

How do YOU make shop profits in winter?

Will you tell the story in 500 words, or less, and send it in to Motor World?

The story will naturally divide itself into two parts:

1—What kind of work do you get to keep your shop and your men busy in cold weather?

2—How do you get the work?

Perhaps you specialize in winter overhaul jobs, or painting, or service to cars and trucks kept running in winter or attachment of cold weather accessories. Whatever you do to MAKE YOUR SHOP PAY IN WINTER, will you tell what it is and how you do it? You have an effective way of getting this work into your shop, possibly by advertising, possibly by canvassing, possibly by still another method. What is the method and how do you carry it out?

These must be FACT stories, with your name and the name of your company and town. Put the story in simple language and write it with a typewriter on one side of the paper.

Mail the story to Motor World not later than September 23 and earlier than that if you can. If yours is the best story—the most practical description of a practical method of making shop profits in winter—Motor World will send you a check for $50. For the second best story we will pay $25, for the third, $10, and for all stories good enough to print, $5. The editors of Motor World will be the judges.

Please remember—500 words or less. And if you are a car, truck or tractor dealer, a little bit out of touch with the intimate details of the shop, pass this offer on to your service manager and give him a chance to compete.

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Selling Service Brings Buyers to This Dealer

Advertising, Owners' School and Loaning Motors, Chief Features of Merchandising Effort

PUBLICITY is regarded a great sales weapon by the J. M. Osborn Co., St. Paul. This is an authorized Ford sales agency.

Consistent newspaper advertising, an owners' school and free loan motor service are three forms of publicity that are being followed up closely by the Osborn organization.

Also in all correspondence advantage is taken of the opportunity to broadcast information about the Osborn "Service that satisfies."

In all advertising and on the correspondence paper one motif is always employed, and that is a narrow view across the front of the big Osborn building on Capitol Hill.

The newspaper advertising is based on the theory that constant appearance gets results. The advertisements appear each Sunday in the first section of the largest newspaper. Each is a five inch-one column advertisement, carrying the cut of the building front with a short statement about some feature of the business. The advertisements make a perfect series.

For instance, one advertisement is addressed to Ford owners who are not mechanics bearing the suggestion that periodical inspection is the greatest safeguard against unknowing abuse and the expense which surely follows. Another discusses the Ford owners' school in 17 one-inch lines. In each instance at the bottom is the Osborn Co.'s trademark.

The free motor loan idea was devised to save Ford truck owners time when their engines require overhauling. The only expense to the truck owner is a labor charge of $7.50 and the loss of perhaps two hours while the change is underway. This will do away with the necessity of hiring substitute trucking while the motor is being repaired, or some $30 extra expense per day.

Information about this deal is stated in a few short paragraphs in a special letter sent to Ford truck owners with a suggestion at the bottom of the sheet that reads: "Will you please see that this letter reaches the man in charge of your cars."

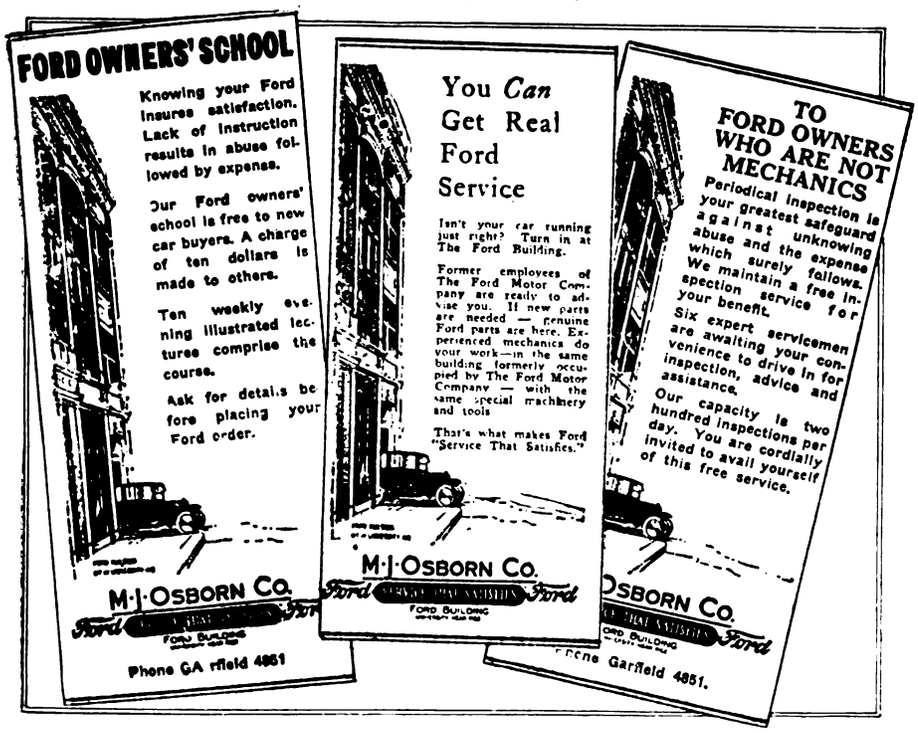
The owners' school is a great success. It is free for new buyers and a charge is made of $10 for others. It doesn't make any difference whether the applicant drives a Ford or some other car. In fact the school is popular with other owners. It has been the custom to have two classes running for a term of 10 lectures each, and students are invited to attend either of the two nights, Monday or Thursday.

That every owner may have a fair idea of the whole of the motor car and its operation the lectures cover the entire range of academic knowledge, including ignition and the nine other important things the tyro should learn about the internal combustion engine. A competent graduate engineer is in charge of the school.

Some genius invented the correspondence form that is utilized in regular correspondence. The second, third and fourth pages are devoted entirely to printed publicity. The first page on which appears the same view of the building used in all publicity, is used for the merchandising message. The purpose is to acquaint every Ford owner with the details of the complete service offered by Osborn.

There are 16 departments and each gets a few lines of explanation. These paragraphs are reinforced with seven engraved cuts. Then on the back is the inevitable sales building front, the faces of the general service and shop superintendents, as a sort of introduction to them, and the Ford scale of car prices, cash and time payments.

Small Space Effectively Used



The advertising of the M. J. Osborn Co, Ford dealer in St. Paul, is another proof of the effectiveness with which small, frequently appearing advertisements may be used. These ads are one column, five inches deep, and have been remarkably successful in getting Osborn's name before the public and bringing business to his establishment. The picture of a slice of the dealer's building makes the copy distinctive, while the selling message is invariably interesting and forceful

Lent a Helping Hand. Result—Five Truck Sales

SOME times the other fellow's misfortune may uncover an opportunity to create good will if the dealer is on the lookout, as evidenced recently by the Atlanta truck branch of the International Harvester Co.

When the garage of the Southern-Dorris Co. was destroyed by fire in Atlanta some 100 automobiles and trucks, owned mainly by commission merchants along Produce Row, were destroyed.

The following morning Mercer Lee, manager of the International truck branch in Atlanta, sent every available truck he had to Produce Row and offered their use to the commission merchants free of charge.

Result—five trucks sold to merchants who had lost their own in the garage fire.

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Making a Camera Help Sell Tires

Kansas City Dealer Finds It Profitable to Make Pictures of Local Installations for Selling Purposes

HERE'S a tip, that will help to interest prospects, and to clinch sales.

It can be used by almost any branch of the automotive industry.

It is especially useful for the tire dealer and service station; the source of it is a service station.

Buy a camera.

R. E. Robinson, president of the Osgood-Robinson Tire Co., Kansas City, bought a camera a few weeks ago that is paying him 100 per cent profit as an investment, every day or so.

Many firms, motor car, truck, accessory, tire dealers, use photographs in promoting sales, albums which salesmen carry or which are available in the office. In these albums can be shown the pictures of jobs which may give ideas to prospects. Usually the photographs supplied by manufacturers are of jobs in other cities than that where the salesman is trying to sell.

"A photograph of a job in some other city doesn't mean much to a prospect," said Robinson. "But a photograph of a tire equipment on trucks of a company locally known makes a deep impression."

The Osgood-Robinson Company has used the photograph album, containing pictures of tire equipment on trucks, for years. During the past year, the company has had many pictures taken by local photographers, showing equipment on trucks of the larger local companies which the firm serves. But it was difficult to get such photographs—and rather expensive, too. It was not always convenient to secure the services of the photographer when the equipment could be pictured.

Then Robinson bought his camera, and now a gallery is rapidly being accumulated. Every new equipment can be photographed as soon as the tires are installed. And the album can show dozens, scores of pictures of the trucks of well known companies on which are Goodyear tires installed by the Osgood-Robinson Company.

Another advantage of having a camera of your own is that you can have as many prints as you please, of any job, and get them quickly.

The salesman can leave a print with a prospect, whereby the latter may have before him the example of a well known company that uses these tires.

And here's an important use of the prints: The tire company mails prints of special subjects to lists of prospects. There may be half a dozen prospects on the point of buying a print of a new installation, on trucks in similar service to that required by these half dozen, is mailed to them.

The picture shows the truck bearing the name of the company owning it, often loaded with commodity easily recognized.

The camera is of the autographic record style. The date of taking the picture is shown on the print—and a notation as to the name of the company, etc.

The camera is often used with the portrait attachment, when a close-up of the wheel with its Goodyear tire is desired, or when the tire is to be shown under some special condition of road service, or when notation indicates the length of service.

Not only are truck tire installations shown in these kodak pictures, but also shop jobs.

Various classes of shop jobs may be pictured, to give exact reflection of the results in this station. Signs may be painted on large cards, and erected in the tire repaired, indicating the work done on it. The portrait attachment is especially useful in picturing the close-up views of the retreaded tires. These pictures of single tires are also used as mail literature to prospects.

The home made pictures, showing jobs done by this station for Kansas City firms, are used in the printed advertising of the Osgood-Robinson Company. Half tones are made of pictures, and cards or circulars printed to emphasize particular points, or to indicate the class of patrons of the company.

One such photograph taken by Robinson was of a truck of the Kansas City Star loaded with newspapers. Details as to the tire equipment, the length of service and extent of wear, were given in the text; and the suggestion was made, "If they'll save money for the Kansas City Star, don't you think they might also do the same for you?"

Robinson is not a professional photographer; he had never used a camera until he bought this one. But he quickly learned to use it, and is now quick to take any subject that might appeal to a tire user.

And when he bought a camera, he secured a good one, taking a picture about three by five and a half inches, and with an extra good lens, F 7.7.

The home made pictures are often used in connection with pictures or cuts from the factory. The factory pictures show the utility or special advantage of the tire—and the pictures taken in Kansas City show that local people have caught the idea, and are using this tire.

Ideas On Selling and Management

You will find them on this and the opposite page—ideas that will make dollars or save dollars for the

Car Dealer Truck Dealer
Equipment and Tire Dealer
Tractor Dealer Repairman

Some of our readers are contributors to this section of Motor World. Have you developed a plan that might help some other men? If you have, will you write it out and send it in?

Presenting a New Service



When the Colonial Auto Supply Co., Norristown, Pa., became distributor for bearings service, the motor car owners of its territory were told of it in this neatly and effectively made pamphlet.

Crop Display Attracts Motorist Attention

THE Alden Motor Co., of Alden, Iowa, has a particularly attractive feature to tourists and people of the vicinity in a display of the tallest corn grown in the vicinity of Alden this year. As some of the stalks exhibited are ten feet high, and as each stalk bears the name and address of the farmer raising it, it is small wonder that this feature proves so interesting to so very many people.

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Fitting, Renewing and Adjusting Engine Bearings

Service Stations and Equipment Manufacturers Have Developed Methods Which Are Quicker and Superior to Hand Fitting

By J. Howard Pile

Part II.

Better Mechanics

Article No. 256

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.

BURNING in necessitates a machine which will firmly hold the crankcase and a connection to a power source to turn the crankshaft against bearings which are set so tight that they cannot be moved with a hand lever. Stock models are made for the Ford car and truck, Fordson tractor, Dodge, Chevrolet, Buick, etc.

It is desirable that the burning in machine be set up on a firm foundation to prevent vibration. The power required will be at least 10 hp. for small engines. The first pull is severe. It is recommended that a larger amount of power be available if possible to prevent slowing up of the machine when the clutch is thrown in. The machine should run at 250 r.p.m.

Burning in Bearings

1. Fit the main bearing caps to the shaft so that when they are held in place with the hand, the ends of the bearing caps where the bolts go through the holes will rock slightly. In other words, the bearing must be too tight to set down by hand against the shims. If the adjustment cannot be made very exact by shifting the shims around then the bearing cap should be taken down a little until the proper "rock" to the cap is obtained. The proper rock is between .004 and .006 in. A feeler gage should be used to determine the correct rock until the operator can judge it by feel. A thin visiting card will give about the right rock. The method of testing the rock is shown in Fig. 7.

2. In removing metal from bearing caps to get the correct rock, they should not be filed, but taken down on a piece of emery cloth tacked on a piece of board, as shown in Fig. 8.

3. The babbitt must be beveled to allow for the surplus metal which is burned off in the burning in process. This can be taken out with a file or a special scraper can be made from an ordinary painters' scraper with part of one ground off and a cutting edge formed on the 45 deg. angle side, as shown in Fig. 9.



Fig. 7—Testing the bearing cap rock with a feeler gage

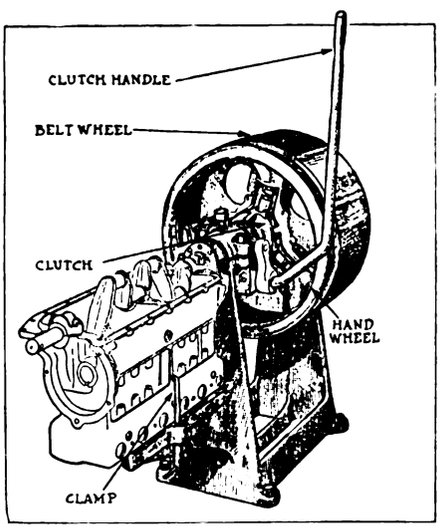


Fig. 6—Bearing burning-in machine

4. Place the block in the machine, engaging the lugs of the driving head in the holes in the flywheel flange.

5. Clamp the block firmly to the bed of the machine.

6. There is a handwheel between the clutch of the machine and the block, and it should not be possible to turn this by hand if the proper amount of rock has been given to the caps, and if they are set down tight with the bolts.

7. Throw in the clutch slowly. If the belts slip, throw the clutch in and out several times till things loosen up so the machinery will take the load.

8. Run the machine for about 30 seconds with the clutch in and then feel the bearing caps with the fingers. The caps should be smoking hot and should not bear the touch of the skin. If any caps are running cool, the caps are not tight enough and the machine should be stopped and the cap fitting be done over again. If cool caps are not caught immediately it will be necessary to do the entire operation over again.

9. The total time of burning in is about two minutes, but this will depend on a number of things. The job is completed when it is possible to turn the handwheel with one hand.

10. The burning in is followed by oiling the bearings well and running the machine for a few minutes.

11. The pistons are now installed in the block and the connecting rod bearings burned in in the same way, the main bearings being oiled to prevent further burning.

12. The same process is carried out for the connecting rods. After they are burned in the bearings are oiled and, with a good supply of oil to all bearings, the machine is run for about twenty minutes. This will give the bearings a high polish and will free them up.

Scraping the Bearings

If it is desired to fit the bearings by the slower method of hand scraping, the operations are as follows:

1. Remove part of the shims till the bearing is binding when the bolts are set up tight.

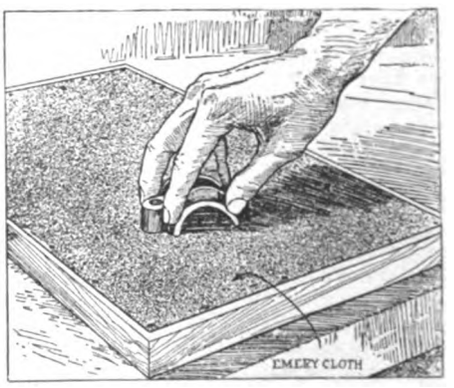


Fig. 8—Bearing caps are taken down on emery cloth tacked on a board

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2. Scrape the connecting rod bearings first. A handy stand for holding the shaft is shown in Fig. 10.

3. Remove the caps and coat the bearing surface of the shaft very lightly with Prussian blue or lampblack and oil.

4. Put the connecting rod in place and bolt up the cap till the rod can just be moved.

5. Work the rod back and forth a few times.

6. When the bolts are loosened and the caps are removed it will be found that the high spots on the babbitt are marked with the blue or black marking compound. These are the high spots that are to be removed with the bearing scraper. When the bearing is first marked it will be found that the spots are widely separated by unmarked areas. The task is to get the high spots off until the bearing will mark all over.

7. If the bearing is only scraped on the exact places that are marked, the process of scraping will be a long and tedious one. Some judgment in reaching out a little with the scraper will bring the bearing to a fit much quicker. Fig. 11 shows how the markings progress. In practice it is not possible to get every white mark off the bearing and if some small white spots remain, say not over one-tenth the area of the bearing, the job is as nearly perfect as it is commercially possible to get it, and the few remaining high spots will soon run in when the machine is run a little.

8. When the scraping is completed the bolts should set down so that when the rod is in a horizontal position it will not drop of its own weight. When the scraping is finished the burnisher may be run over the whole surface.

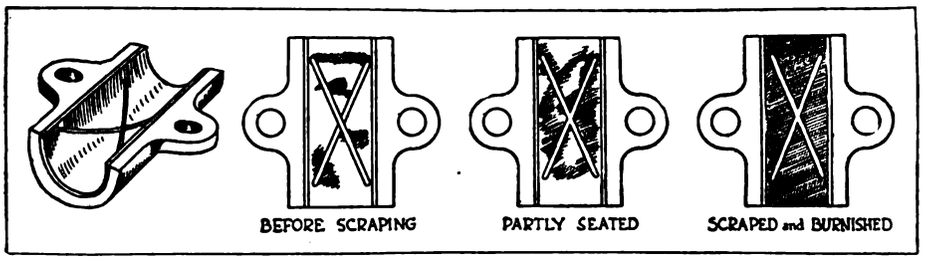


Fig. 11—Progressive stages of bearing scraping showing the markings as the scraping proceeds

9. The main bearings are finished next. Before scraping, each bearing should be tested for tightness. With the other bearings loose, each cap should set down so that the shaft can just be turned with a bar. The crankcase is placed upside down so that the upper bearings are underneath and the caps on top. All the upper bearings are finished first and the caps afterwards. If any bearing shows up high, the other bearings will have to be scraped down to it. If the bearings were line reamed there should be no trouble of this kind.

10. The upper bearings are marked and scraped without using the caps. The weight of the shaft is sufficient to mark them.

11. After finishing the upper bearings, the caps are scraped in the same way. When the scraping is finished and the cap bolts set down tight, the shaft should offer some resistance to turning with each individual bearing. If it turns too tight it will be necessary to add shim material.

12. A light rapping with a hammer around all the bearing caps will insure that no bits of metal or dirt are holding the caps off the shims.

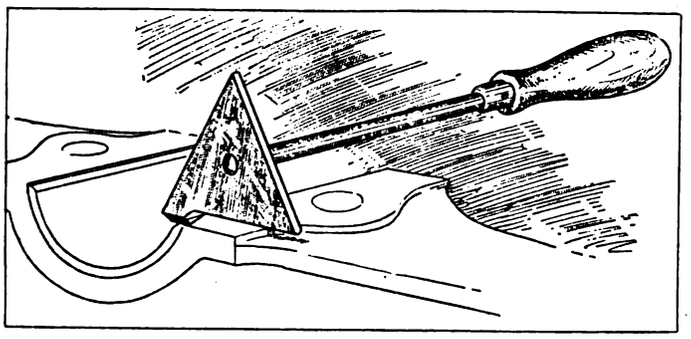


Fig. 9—Cutting a bevel on the babbitt

THE mechanical fitting of bearings is interesting service men handling all makes of cars and engines. Mechanical methods of producing good bearing surfaces are receiving the study of shop equipment manufacturers because it is realized more and more that time savers in the shop are money savers for car owners.

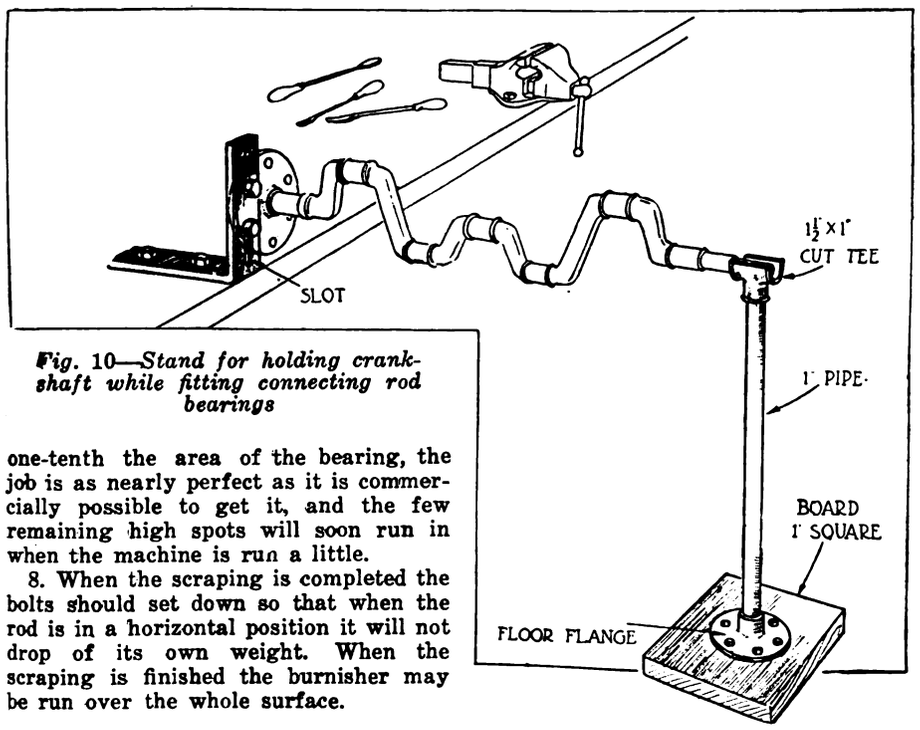


Fig. 10—Stand for holding crankshaft while fitting connecting rod bearings

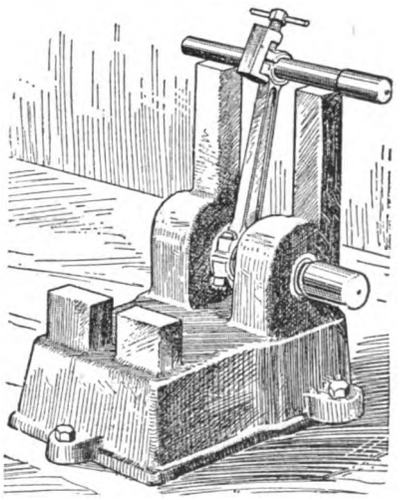


Fig. 12—Connecting rod alignment jig

Aligning the Connecting Rods

Whichever method of fitting bearings is employed it is necessary that the connecting rods be lined up so that the holes in the top and bottom are exactly parallel. If they are out of line it will be impossible to maintain a good bearing at the upper end and knocks will soon develop. A jig for testing the alignment is shown in Fig. 12. In the absence of such a jig a dial gage or surface gage can be used. If the rods are not in alignment, they are bent till they are in alignment with a forked tool.

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Equipment to Sell

New Devices for the Car and Truck

Lowell Timer for Fords

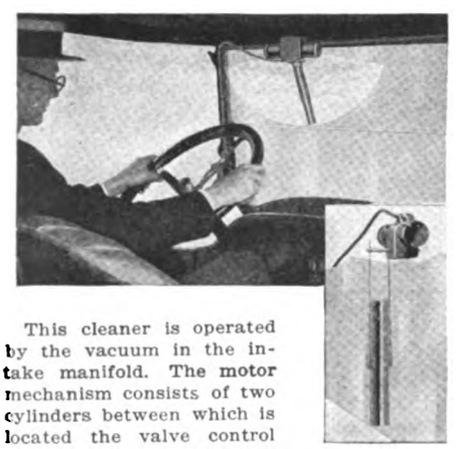
Lowell Equipment Mfg. Co., Lowell, Mass.
Price $3.95



The timer shaft drives a revolving disk which carries a pin on which a rocker oscillates. There is a constant pin on the leading arm of the rocker and an insulated cam wiper on the trailing arm. This wiper is pressed against the contact plate by a spring. When the wiper slips off the contact plate, the contact pin on the other end of the rocker is snapped away from the contact plate across which it is passing.

K-M Automatic Windshield Cleaner

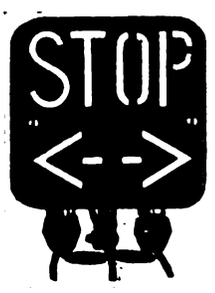
K-M Manufacturing Co., Toledo, Ohio.
Price $6.50



This cleaner is operated by the vacuum in the intake manifold. The motor mechanism consists of two cylinders between which is located the valve control mechanism. The device cleans both sides of the windshield. The housing is made of aluminum. The inside working parts are of steel and all exposed parts are made of brass and zinc.

Bosk Auto Signal

Bosk Auto Signal Co.,
39 Suburban Avenue, Stamford, Conn.
Price $7.50.



This device signals both to the front and the rear. The slow and stop signal is operated by the brake. The right and left signals are operated by hand. The signal is 4½ in. square and 2 in. thick. The price includes switches, lamps, cables, brackets and bolts.

Lubri-Tector

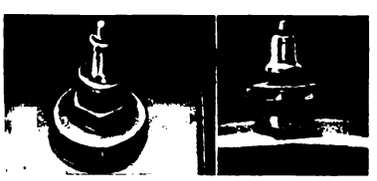
Pierce Governor Co., Anderson, Ind.
Price $5



This device cuts off the supply of gasoline to the carbureter as soon as the oil pressure fails. It is installed in the main gasoline line close to the carbureter. The pressure of the oil operates against a diaphragm in the device and holds the valve in the gasoline line open. If the pressure fails due to a defective oil pump or to lack of oil, the pressure on the diaphragm is of course removed and the valve in the gasoline line closes thus stopping the engine. To make sure that the trouble is due to lack of lubrication, the driver can open the valve by hand and allow the carbureter to fill with gasoline. If the engine stops as soon as this supply of gasoline is consumed, lubrication trouble is indicated.

Lubin Gas and Steam Signal

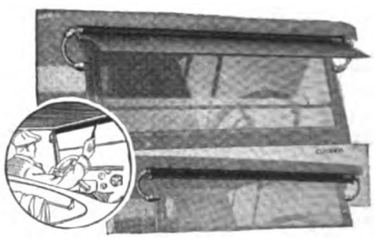
Robert Marcus Co., 1755 Broadway,
New York City
Price $2



The signal is attached to the radiator cap by boring a 13/32 in. hole. It is held in position by a lock nut. If the temperature of the cooling water rises to a dangerous point the signal gives an audible warning. Another type of signal is made for attachment to the gas tank of any car using the vacuum fuel system. It gives an audible warning of low gasoline.

V. P. Automatic Sun Visor

V. P. Appliances, Inc., 4077 Park Avenue,
New York City.
Price $15.



This visor is controlled from the driver's seat. It has a metal roller in a metal casing. Automobile top material is used for the shade. It is attached with universal clamps that fit all makes of cars.

Ryd-E-Z Springs for Ford Truck

Ryd-E-Z Spring Co.,
Cleves, Hamilton Co., Ohio.

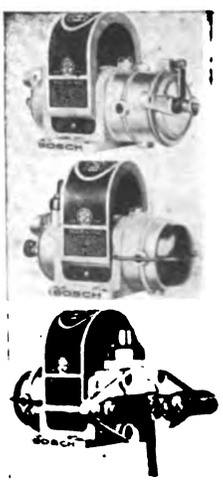


These springs give the Ford one-ton truck a platform spring suspension. The spring equipment consists of three 42-in. half-elliptic springs with seven leaves each.

Model F Bosch Magneto

American Bosch Magneto Corp.,
Springfield, Mass.

Prices, FB-1 $30, FO $28, FX-1 $28.



These magnetos are intended for one and two cylinder stationary engines. Model FO is of the oscillating type, Model FX of the rotating type with no provision for spark advance and Model FB-1 is also of the rotating type but is designed for variable timing.

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Equipment for the Shop

New Machinery and Tools

Spring Shackle Bolts and Cabinets

P. H. Webber Co., Hoopeston, Ill.

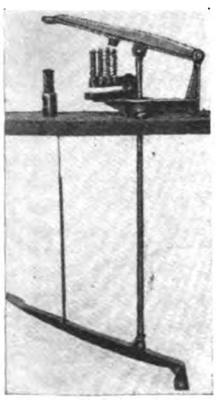


This company manufactures a complete line of spring shackle bolts. It also furnishes a cabinet containing 113 bolts in 24 sizes. These sizes will fit over 300 models of cars. A list of the contents is furnished with each cabinet. All bolts are tapped to accommodate any standard grease cup or pressure lubricating system.

Roberts Two-in-One Valve Spring Compressor

Roberts Manufacturing Co., Bend, Oregon

Price $15



This device will compress any overhead valve spring and will cut holes for shims in gasket in the following sizes ⅛ in., ⅜ in., ⅞ in. and ½ in. It is operated by foot pressure. It is easily installed on the work bench.

Gellman Adjustable End Wrench

Gellman Wrench Corp.,

Chamber of Commerce Bldg., Chicago.



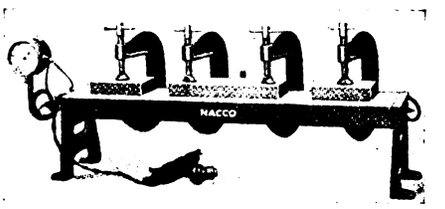
This wrench has an adjustable opening which adapts it to a wide range of nut sizes. It is made in 6, 9 and 12 in. sizes. It is a drop forging and is said to be light, strong and durable.

Nacco Automatic Electric Steam Vulcanizer

Newsom Automatic Controller Co.

5812 Easton Avenue, St. Louis, Mo.

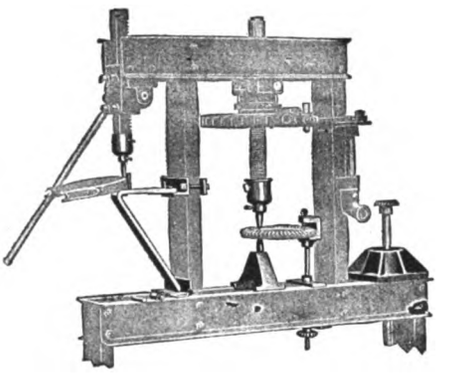
Price, 4 clamp, $50, 6 clamp, $62.50; Direct current attachment $3 extra



The steam used in this vulcanizer is generated by electric heat. It has an automatic controller which holds the steam pressure at 55 lbs. A safety plug is installed to prevent accident which might result if the controller failed to operate. The plate is constructed of one piece of steel boiler tube with machine steel ends welded in. The current consumption on the four clamp size is 300 watt and on the six clamp size 400 watts.

Attachments for Manley Press

Manley Mfg. Co., York, Pa.



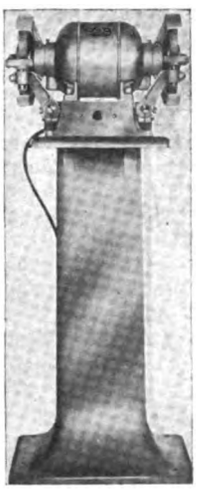
Three new attachments have been provided for the Manley combination press. They are the brake band riveting and rivet cutting attachment, compression clutch attachment and ring gear riveting attachment. The prices of these attachments are $16, $17.50 and $15 respectively. The brake band riveting and rivet cutting attachment includes set of cutting dies, set of riveting dies, nose for holding dies, knife, and attachments to press. The compression clutch attachment may be used on any make of press having a 5 or 6 in. opening in the table. It is used for pressing gears or bushings on the end of a long shaft. It will grip shafts from ¾ to 2 in. in diameter. The ring gear riveting attachment consists of an adjustable leveling device, lower block and die, and upper nose and die.

Black & Decker 8-in. Electric Grinder

Black & Decker Mfg. Co.

Towson Heights, Baltimore, Md.

Price, 110 volts $90, 220 volts $94, Pedestal $18



This grinder comes complete with two 8 in. diameter wheels with ¾ in. face, wheel guards, toggle switch in base, and 5 ft. of electric cable with attaching plug. Motor is ½ hp. and its no load speed is 3600 r.p.m. It is furnished with either a D.C. or A.C. motor.

Moon Steel Jack

Moon Bros. Mfg. Co., St. Louis, Mo.



The No. 101 steel jack has a capacity of one ton. The lifting range is from 10 to 15½ in. The weight without handle is 3¼ lbs. The finish is baked black enamel.

Pelican Pliers

Thompson Mfg. Co., Meadville, Pa.

Price 50 cents.



A tool for removing corroded vertical, taper and straight terminal clamps. There is a wrench on the end of the handle for loosening the clamping nut on the terminal. The other handle has a screwdriver on its end which may be used for spreading the clamp.

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What Is a Commercial Vehicle?

New York Court Holds That Use and Not Construction Determines Whether Car Should Be Licensed as Passenger or Commercial Vehicle

THAT a Ford "Suburban" or "Station Wagon" is not a commercial vehicle and need not be registered as such, unless actually used for commercial purposes, was the decision of Judge Dike of the New York Supreme Court in the recently decided case of Zabriskie vs. Law et al, 118 Misc. Rept. pg. 481.

The court said, "This is a 'Ford' case. The petitioners, owners of a Ford car known usually as a 'Suburban' or 'Station Wagon,' are seeking a peremptory mandamus order compelling the state tax commission to accept and file petitioner's application in the form annexed to the petition for the registration of their motor vehicle described therein and to accept payment of fee provided by subdivision 6 of section 282 of the Highway Law assigning to such motor vehicle a distinctive number and also issuing and delivering to petitioners a certificate of registration of said car for the year 1922, and in the event of a refusal of a peremptory mandamus order that an alternative order should be made.

"The car in question is a well known type and, as stated in the brief of the petitioners, 'it is in fact known by its acquaintances simply as a 'Ford' and has not even been endowed with any pet name or nickname such as facetious owners frequently bestow on their flivvers, except when it refused to function, when it is sometimes called by other names appropriate to the occasion.' The question presented is whether the petitioners are to pay the fee appropriate to a private car, which amounts to seven dollars and sixty-three cents or that for a light auto truck or delivery wagon, which is ten dollars. The question is of importance to the many owners of these cars in the State as well as a serious question to the tax commission. This is a test case.

"The defendants claim that, inasmuch as the car in question is so constructed as to be adaptable by the removal of the rear of its two seats, for general transportation of goods, it therefore falls within the classification of paragraph 6-A of section 282 of motor vehicles constructed or specially equipped for the transportation of goods, wares and merchandise, commonly known as light automobile trucks or light delivery cars, etc. Petitioners urge that the use, as before described of their car, is not that of an automobile truck or light delivery car, and that a car so used is not 'commonly known' as such. The attorney-general in 1919 rendered an opinion upon the section then in force in which he held that in order to require commercial registration: (1) a car must be one constructed especially or equipped for the transportation of goods, wares and merchandise; (2) or be used for such purposes, and (3) commonly known as an automobile truck. The opinion proceeded to illustrate the difference recognized in other parts of the statute between owner's personal use and a generally commercial use, saying that 'the householder who takes home a ham and a box of soap in his automobile for consumption in his house is not 'transporting goods, wares and merchandise' any more than a street car becomes a freight car by reason of the fact that it carries a school girl with a box of candy.

"But evidently the tax commissioners seek a further clarification to cover this criticism of the section in question, and in the next legislative session the act was amended in its present form by the omission of the phrase referring to the use (Laws 1920 chap. 687), and it is argued that this was a direct expression of legislative intent that the construction was to be the controlling factor, so that if a car was so constructed that it might be adapted to the transportation of goods, etc., it must pay the truck license. It is, of course, the rule that an amendment 'at the heels' of a judicial or administrative construction evidencing an intent to correct or override that construction is entitled to great weight. If so, it seems the amendment fell short of carrying out the purpose.

"It is a familiar sight in the summertime to observe in every town the matinal visit of the painstaking housekeeper to the provision shops and to the railroad depots, being conveyed to and fro by automobiles and motor trucks of various kinds. The vehicles are frequently filled to overflowing with packages, bundles, bags and occasionally trunks or handbags in transit to their residences. This use does not make these vehicles *commercial.* They are still being used as a convenience for their owners, not for hire. The objects have not the character of freight for which a tariff is presumed. It is a personal use, and the element of gain to the owner by reason of his service to, and the use of his motor vehicle by others is eliminated.

"The test of the character of the use of the vehicle is taken into consideration with the form of the car. A car such as is here discussed in the instant case and which was registered under the provisions of the Highway Law section 282, subdivision 6, if purchased from the owner by a tradesman and put to commercial use would then be required to be registered under subdivision 6-A, and for failure to secure that new registration upon its change from a private to a commercial use, the new owner would be liable to the penalty provided in the article, namely, for the commission of a misdemeanor. The question is an important one, both to owners and to the state authorities and should be most carefully considered from every angle. I, therefore grant the application for the peremptory mandamus order. Order accordingly."

Note:—The decision is the first of its kind which has come to the notice of this department. Apparently, however, the same question may arise in other States than New York, as some States require these types of cars to be registered as commercial vehicles also.

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

Dealer Held Not Responsible for Repairs

A MOTOR car dealer sold a minor a car on time payments. Before all the payments have been made, the buyer returned it to the dealer's garage in a damaged condition from negligent use. The buyer instructed an outside repairman to put the car in good condition. The dealer advised this repairman before he undertook the repairs that all the payments on the car had not been made and that the title to the car remained in his name and further that he would not be responsible for any charges incurred in repairing the car. The repairman reconditioned the car and endeavored to collect the charges for his work from the dealer. The court held that the dealer was not responsible for these charges.—Indiana Reports, June, 1922.

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Repairshop Shortcuts

How Fast Will a Car Go and How Fast Will It Stop?

HAVE you ever heard the story of the instructor who was explaining the mysteries of the modern automobile to a man who had bought his first car? Well, here it is, anyhow.

"This," said the instructor, pointing to a pedal, "is the brake. If you find a big tree across the road and want to stop, you push this pedal with your right foot."

"And this," he continued, "is the accelerator. If you would stop more quickly with the same tree on the road, you would step on this."

Still hoping that the new car owner did not find it necessary to "stop suddenly," we call attention to shortcut No. 3381 which shows a very clever method of finding the right place for the hole in the brake lining without the necessity of drilling from the band side which is a nuisance, especially on the internal brake.

No. 3377—Replacing Dodge Starter-Generator Brushes—The brushes are replaced in the Dodge starter-generator without necessitating its removal by taking off the starter chain adjusting cover, loosening the locknut and backing off the V-blocks, the unit may then be turned around inside the eccentric adjustment to a handy position.—Frank L. Markel, Hillsboro, Ill.

No. 3378—Truing a Tire Rim—Several cardboard templets of common rim sizes are nailed to the wall and rims hung over nails can be compared with the circles cut out of the cardboard to catch high places.—Donald McLean, Cleveland.

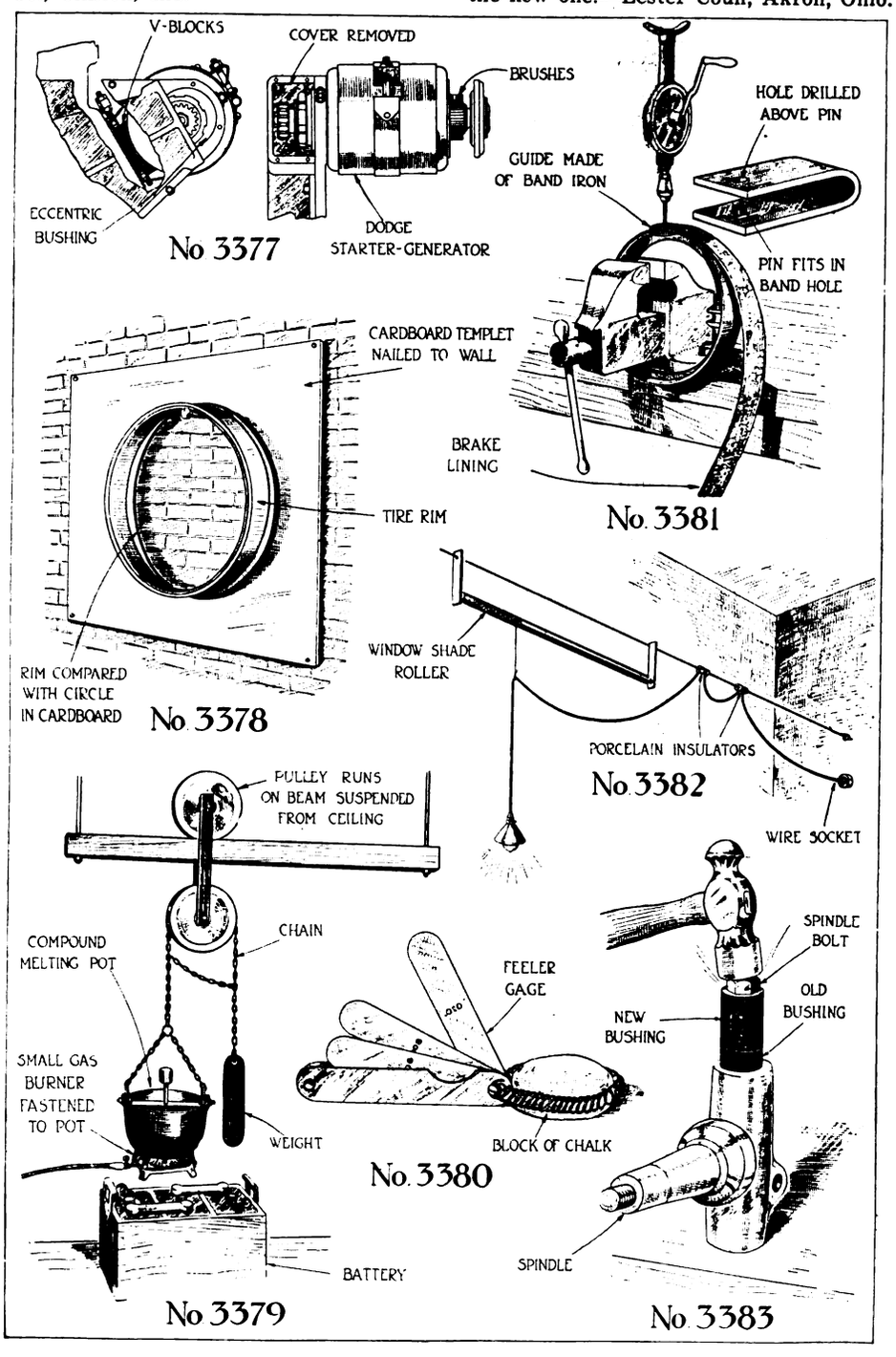
No. 3379—Handy Compound Melting Pot—An iron compound melting pot with a valve in its bottom is used. It is suspended as shown in the sketch and a gas heater attached to it. The compound can be poured onto the battery accurately as the suspension of the pot permits movement in all directions.—J. H. Hearnen, Trenton, N. J.

No. 3380—Marking Chalk on Feeler Gage—A piece of marking chalk is attached to a feeler gage with a spring to make it handy for marking tappets, bearings, brake bands, etc.—Donald McLean, Cleveland.

No. 3381—Jig for Holes in Brake Lining—Holes drilled from the lining side may be made to meet holes in the band by this jig which has a dowel in the lower flap which is directly under the hole which guides the drill. The dowel is placed in the band hole to locate the drill hole.—H. V. D. Sweet, Canajoharie, N. Y.

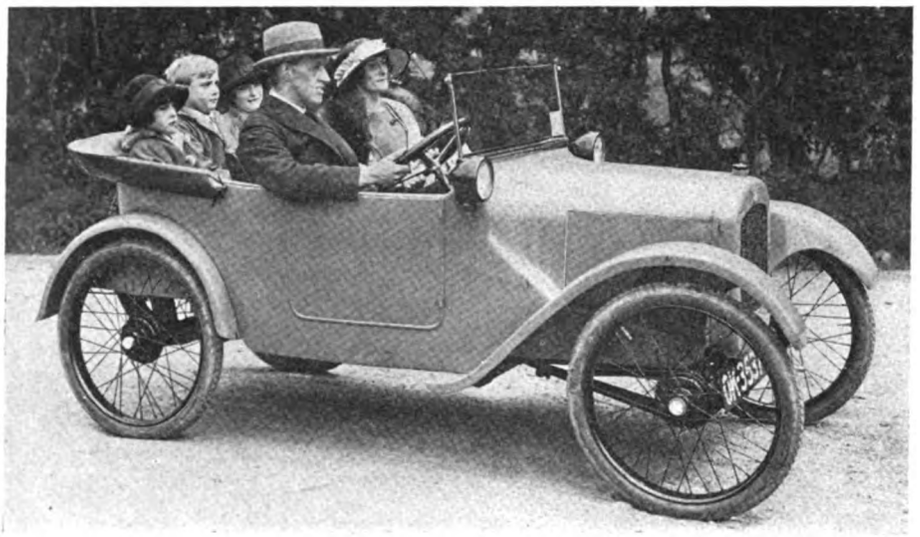
No. 3382—Adjustable Drop Light—A drop light is made adjustable along the bench and up and down by using a shade roller suspended on a wire. The string winds up on the roller and the whole roller can slide along the wire.—J. L. Horney, J. L. Horney-Roberts Battery Co., Clinton, Ind.

No. 3383—Installing a Dodge King Pin Bushing—Where a press is not available, a king pin bushing can be installed by slipping an old bushing over a king pin, followed by a new bushing. A hammer is used to drive the bushing home and the old bushing will prevent damage to the new one.—Lester Coun, Akron, Ohio.



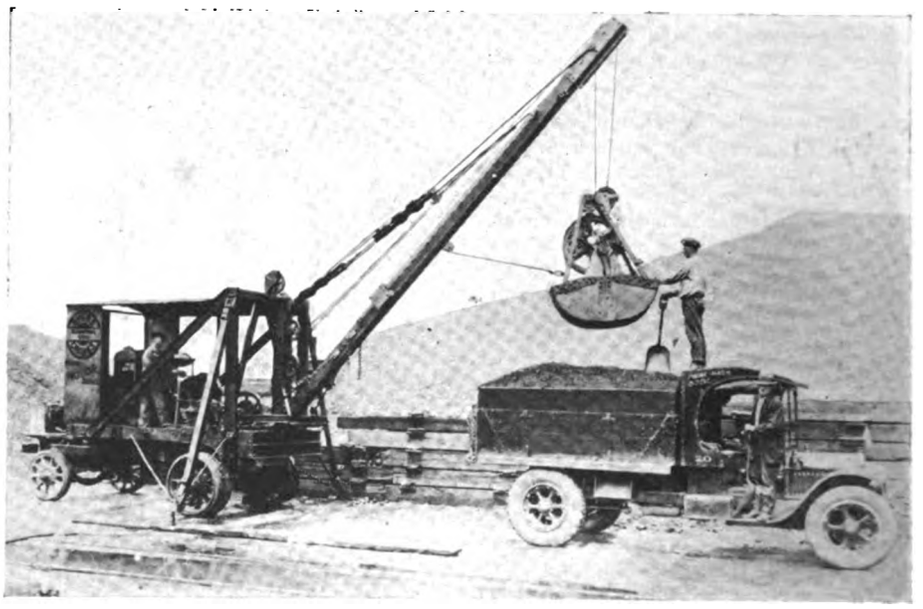
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Interesting Things Automotive



The New Austin, British Light Car

This light car with an overall length of 104 in. and width of 46 in. carries a guarantee of 42 miles to the gallon of gas. It is powered by a four-cylinder, water-cooled engine with piston displacement of 43 cu. in. Front wheel brakes are a feature. The car weighs 700 pounds. It sells in England for £225.



Portable Crane Uses Truck Chassis

A yard crane which is made portable by mounting it on a motor truck chassis is made by the Byers Machine Co., Ravenna, Ohio. When the crane is in actual use jack braces are run out at the sides to take the load off the truck springs and to prevent tipping.



A Utility Car

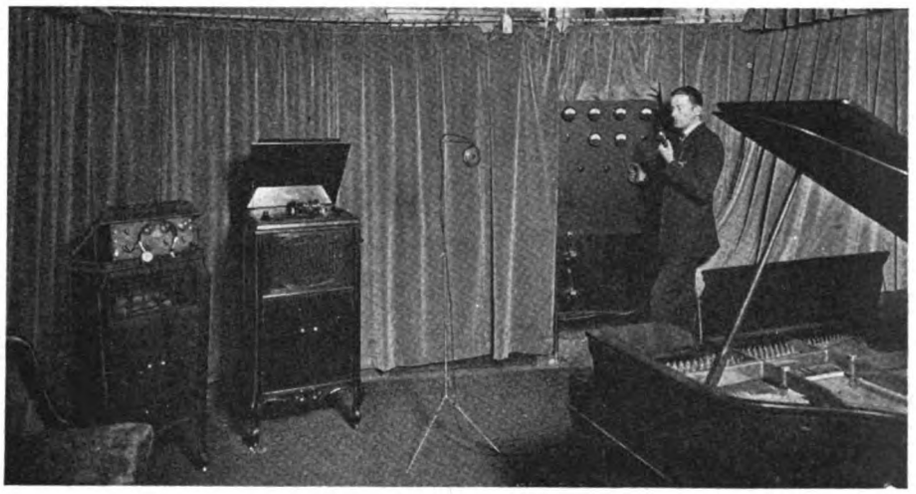
There's no railroad—hardly any dirt roads—where this car and its complement of newsies dash each morning before daylight. They meet a Texas & Pacific passenger train at Cisco, Texas, in the heart of the oil fields, and then start with a load of Fort Worth newspapers to the oil camps at Pioneer. That town is 25 miles from the nearest railroad and is reached by rough, oilfield trails but the car reaches the camps around Pioneer before dawn. The automobile is the only means of communication between Pioneer and the outside world.

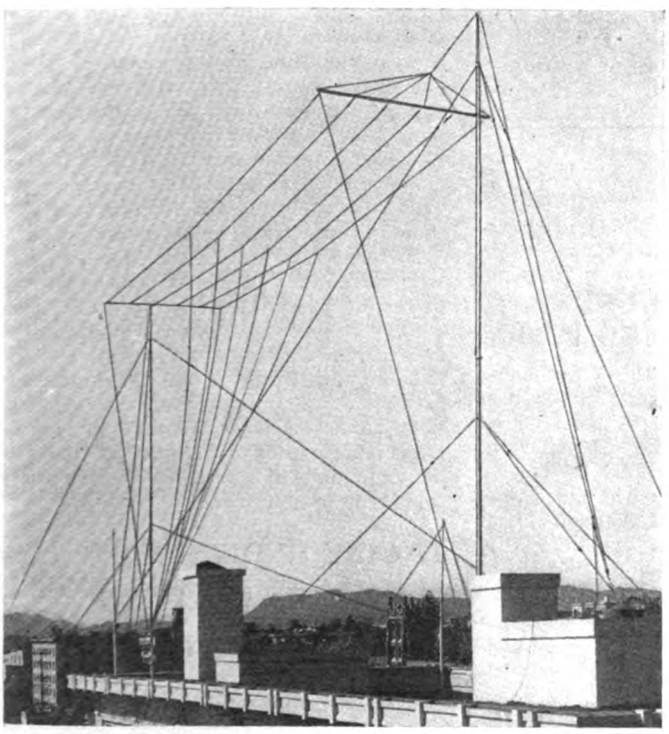
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Caught by the Camera

Dealer a Radio Broadcaster

The pictures at the right and below show the interior and exterior equipment of the radio broadcasting station maintained by Earle C. Anthony, California distributor of Packard and Durant, with headquarters in Los Angeles. Anthony uses the radio for entertainments in co-operation with a local newspaper. Incidentally it advertises his automobile business and also the Motoradio, which he is manufacturing and selling.

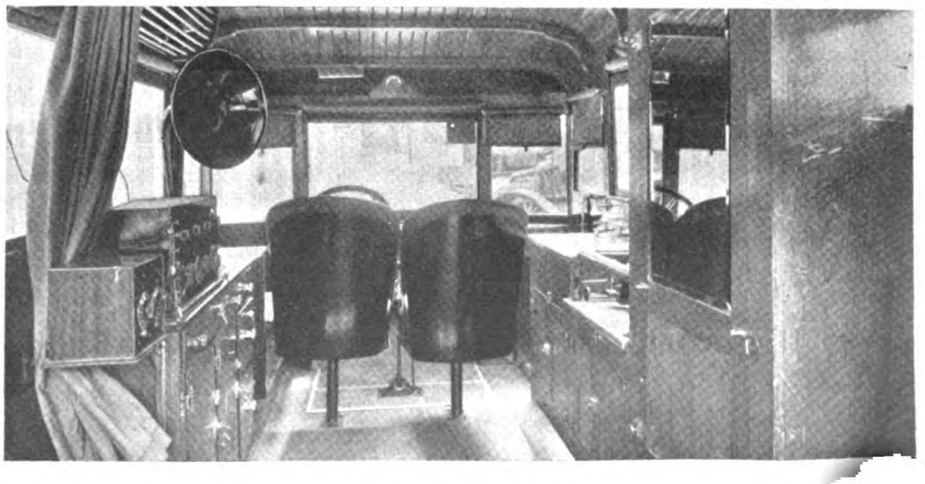




The Motoradio, mentioned above is designed particularly for use on automobiles. All that is necessary is to set up an aerial on the top of the car or string it from the car to a tree or anything convenient, then plug into the dash socket on the car for current from the regular car battery. Thousands of automobiles in use for touring and camping in California, the occupants of which at times become detached entirely from news events and entertainment, led Anthony to believe a compact portable receiving set would have a very wide market. He obtained the best available talent he could to design and build such a set and having been successful in his initial efforts, now is opening a national market for his equipment under the name of Motoradio. The device can be used in the home as well as in the car.

Auto-Bungalow

The Auto-Bungalow developed by the Reo Motor Car Co. of California is a home on wheels. This model is fitted to the Speedwagon and has a road speed of 30 to 35 m. p. h. The interior equipment includes writing desk, combination buffet and ice chest, Ottoman bed of Pullman type, clothes closet, gas stove, white enameled sink with closet for cooking utensils, hot and cold circulating water, toilet, two revolving portable leather covered chairs, portable collapsible dining table, clock, rear view mirror, two dome lights, and opaque curtains and portieres (insuring privacy).



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Programs Increased for September

PLENTY OF BUSINESS WARRANTS EXPANSION

Some Plants Announce Schedules 50 Per Cent Over Those of Past

DETROIT, Aug. 31—The industry will enter September on a generally increased production basis, some factories declaring an increase as high as 50 per cent over the totals which have been maintained since the early part of the year. The total increased production is for the most part a question of men and material, as there seems to be business enough to warrant all the output the factories can summon.

Ford, Dodge and Maxwell, in the lower-price lines, are building and selling just as many cars as can be built. Studebaker, Buick, Hudson in the middle-priced field are increasing output daily, and Hupp will make an important increase in output as new factory space is completed. Columbia Motor has just taken over the Saxon plant and is speeding up as material becomes available. Chalmers Motor will go into a large increase in production if the financing plans are approved.

Rickenbacker, Paige, Liberty, Reo and Earl are stepping up gradually. Chevrolet is prepared to go in for larger production than ever the first of the month. Oakland and Oldsmobile with new body models are increasing operations, and Gray and Durant are pushing factory additions to completion to meet the full demand of the fall season. In the high priced field all factories are at capacity and declare this will be maintained throughout the winter.

PARTS MAKERS SEE DEMAND CONTINUING

NEW YORK, Aug. 31—That automobile manufacturers are figuring on maintaining their record breaking production pace well into the fall is indicated by a survey of the parts and accessories field, which is a good barometer of the immediate future.

This survey shows that not only are the parts makers well booked with orders and specifications up to Jan. 1, and some of them beyond that, but that within the last two weeks some twelve or fifteen of the larger concerns have had their orders materially increased, which would indicate that their customers are not anticipating reduction of output.

The parts makers' orders indicate that the run right now is largely in closed cars in the medium price class, which is a seasonal reason why production should continue the way it is.

GOVERNOR FAVORS TAX ON GASOLINE

CHICAGO, Sept. 2—A state gasoline tax is proposed by Gov. Small to finance further good roads construction in Illinois. The State is now expending the proceeds of a $60,000,000 bond issue to build hard roads, and the Governor favors an additional bond issue with interest and sinking fund to be provided by a gasoline tax. The Governor said:

"I expect to recommend the law to the next session of the Legislature. The people want roads. I believe that the entire bond issue would be paid by automobiles. I believe that a truck should pay its proportion in relation to its earning capacity. A gasoline tax is the surest and fairest way of getting at a basis."

INCREASE IN AUGUST WILL EXCEED 20,000

NEW YORK, Aug. 31 — Estimates based on shipping reports for the first three weeks of this month received by the National Automobile Chamber of Commerce show that the July production of 244,444 will be exceeded by more than 20,000 by the month of August. Last year August production exceeded July by 4445, the figures being 176,340 in July and 180,785 in August, 1921. Thus July, 1922, exceeded the same month a year ago by 38 per cent, while August apparently will increase over August, 1921, by something like 50 per cent.

Production of cars and trucks for the entire industry during the first seven months of 1922 reached 1,395,066 compared with 1,668,550 for the entire year of 1921.

Big Fordson Exposition

ATLANTA, Sept. 4—The Southeastern Fordson Industrial Exposition, held here Aug. 29 to 31, proved to be the largest tractor and power farming equipment show ever held in the Southeast, attendance the first day of the show being estimated at more than 10,000.

The show opened Tuesday with a parade in which tractors, power equipment, farm implements and automotive accessories were featured, the principal idea being to display the tractor from the standpoint of its industrial uses.

RICKENBACKER PLAN HELPS RESALE VALUE

Company Will Maintain Prices and Values with That Idea Foremost

DETROIT, Sept. 4—Capt. E. V. Rickenbacker, vice-president in charge of sales for Rickenbacker Motor Car Co., said to-day that his company had determined upon a policy of maintaining prices and values, so that the Rickenbacker car would always have a high resale valuation. The resale value of a car is a most important sales point, he said, and is especially important to dealers in view of the general used car situation.

Business for the fall, winter and all of 1923 should continue at a high volume, Rickenbacker said. The industry has struck a gusher in the form of closed car business, and this with the regular run of business will keep business at peak. Rickenbacker looks for an increase in closed car demand until it will total close to 90 per cent of all car business. This growth in closed car business may come in three years, he said, in all classes.

Increase in wages in the steel industry will have the effect of stiffening car prices at present levels, he said. Possibility of more changes is remote in the face of an action of this kind, and the gradual tightening of the tension of the railroad strike. Bankers in the farm district have had their timidity in making loans to farmers overcome by the evident certainty of a return to better prices for farm produce.

ENGINE UNDERGOES CHANGE IN MAXWELL

DETROIT, Sept. 1—The Maxwell engine now has a three-bearing crankshaft instead of the two-bearing type. Beyond this change, the entire cars are exactly the same as before. The new type crankshaft has made some changes necessary in the design of the crankcase and bearing mountings, and on the new crankshaft an oil slinger is incorporated. The new shaft is unusually heavy and rigid. The lubricating system has been altered to a drilled crankshaft system with pressure instead of splash. A Stewart carbureter is the only change on the exterior of the engine, and a double row ball bearing in the rear of the gearset replaces the single row bearing.

Haynes Dealers to Meet

KOKOMO, IND., Aug. 31—The Haynes Automobile Co. will hold a business sales meeting for the entire Haynes distributor and dealer organization at the factory on Sept. 7.

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Equipment Makers Discuss Service

SOME FAVOR DEALERS DOING ELECTRIC WORK

Special Shops Favored by Others in Talks at Summer Meeting of Association

OLD ORCHARD, ME., Sept. 1—Whether the car dealer or the special electric service shop will do the repairing on starting, lighting and ignition apparatus on motor vehicles was one of the main topics considered by the Automotive Electric Association, which is composed of the manufacturers of this apparatus, at a four-day annual convention just completed here.

The manufacturers of electrical equipment are not all agreed. Some of them favor the car dealer doing this work, providing he has satisfactory equipment to make electrical tests and, further, that he has at least one workman who can meet the requirements of the electric manufacturers in his knowledge of electricity and making electrical repairs.

Would Have Special Shops Do It

The other school thinks that electrical equipment will be best serviced by special electrical shops, of which there are many throughout the country and where these shops, in some cases, are the official service stations for a dozen or more different makers of starting, lighting and ignition equipment. These stations, before they can be officially designated as such, frequently have special electrical equipment to the value of $1,000 and, not infrequently, special tools to the value of $200 or more.

One large electrical manufacturer reported making an investigation of the motor car dealers in a territory and discovered that only 1 per cent of them were competent by way of equipment and experienced electrical workmen to do electrical work. Naturally, in such a territory, all the manufacturers of electrical apparatus are backing the exclusive electrical service house where there must be experienced help.

Difficulties In Small Town

The greatest difficulty with electric service, it was stated, is in the small town of a thousand population and perhaps up to 2500, where the exclusive electric shop has had difficulty existing. In such places the motor car dealer attempts to do the electric service work, particularly during seasons when motor car sales are slack. Not infrequently this car dealer turns the electric repair work over to the electric service station when he is busy selling motor cars.

A great difficulty with the electric repairshop in the small town is held to be that the man in charge is frequently not a good merchant. He is an expert electrician, has good machine tools and has a stock of parts, but he lacks the ability to get the car owners to bring their work to him. Making better merchants or business men out of these electric service people is one of the problems that the Automotive Electric Association has in mind.

Co-operate on Registration

One plan wherein the motor car dealers co-operate with the local service station is in using the registration plan. By this plan, when a car dealer sells a car, he gives the purchaser a card of introduction to the local electric service station, which is equivalent to telling the owner that he should take the electric service to that place.

The reason that the dealer turns the service over is that he does not care to put in the necessary machine equipment and engage an expert electrician as demanded by the maker of the electric equipment on the car he sells. Most of the motor car manufacturers do not guarantee the starting, lighting, ignition and battery in their 90-day warranty, and, consequently, the makers of this electric apparatus feel that the car dealer, when he does not stand back of this apparatus, should turn the service over to the electric repairshop, which is the official representative of the maker who guarantees the electrical product.

The twelve or more manufacturers of starting and lighting equipment are engaged on a comprehensive plan of standardization which should greatly reduce the number of models of generators and starting motors, so that the problem of servicing these and carrying adequate stocks of parts for them should, in the next few years, be materially simplified.

(*Continued on page* 43)

CARAVAN SHOWS CARS AND GIVES CONCERTS

ST. LOUIS, Sept. 4—A radio caravan consisting of Overland and Willys-Knight passenger cars and Overland commercial vehicles equipped with a radio receiving set has started from the Willys-Overland factory branch in St. Louis on a two months tour of the principal towns in the St. Louis territory giving radio concerts and demonstrations.

The daily program consists of music, baseball scores, market reports and late national news.

E. T. Windles, manager of the St. Louis Willys-Overland Branch, is sponsor for the caravan. During the past week concerts and demonstrations were given within a radius of ten miles of St. Louis.

SCHRADER CHANGES METHOD OF SELLING

Will Sell Products to Tire Makers, Jobbers or Through Consignees

NEW YORK, Sept. 2—A. Schrader's Son, Inc., manufacturer of valves, gages and other tire accessories, has changed its method of selling. Instead of marketing its products under a license agreement and certain price restrictions, it has adopted a system whereby Schrader goods will be sold direct to tire manufacturers and jobbers or through the Schrader company's consignees who will sell at the same price as the Schrader company.

Suit Preceded Policy

This new policy went into effect Sept. 1 and was preceded two days earlier by a suit for a permanent injunction which was filed in the United States District Court for Eastern New York by the Department of Justice. The complaint charged violations of the Sherman anti-trust law. The government found fault with the old policy, claiming the Schrader system attempted to fix prices and control resales, which, it is charged, violated the anti-trust law, in that the issuing of licenses to wholesalers, which were revokable at the will of the Schrader company, constituted a monopoly.

In a way it was regarded in the light of a friendly suit. Some time ago, when the Department of Justice pointed out to the Schrader company that it thought the old system conflicted with the Sherman law, the Schrader people determined to make a change. This new policy of marketing its goods direct was settled upon and Sept. 1 selected as the date for putting it into effect. The Department of Justice filed the suit, however, as a sort of a precautionary measure, according to Frank M. Avery, the Schrader attorney, to prevent a possible return to the old system. This Schrader has no intention of doing, the attorney contends.

Decree Approved

"We saw officials of the government and agreed upon a form of decree to the entry of which the Schrader company would consent, and it was arranged to have the bill filed on or before Aug. 31 while the old agreements were still in force so that the court would have jurisdiction," says Avery. "Immediately after Labor Day we will enter our consent to the decree, since the Schrader company cannot have any objection to the restraint of a sales agreement which it now has discarded."

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ASSOCIATED MOTORS WILL PUSH TRAFFIC

Plant in St. Louis May Also Be Placed in Use as Assembling Base

ST. LOUIS, Sept. 4—Will I. Ohmer, chairman of the board and Louis Ruthenburg, president of the Associated Motor Industries, made their initial visit last week to the Traffic Motor Truck Corp. since the local company was merged with the Associated Motor Industries.

Ohmer stated that the Traffic Truck will retain its name and individuality and the plant will be pushed to its full capacity of production and the prospects are that it will be greatly enlarged after the manufacturing program of Associated Motor Industries is under way.

In addition, the Traffic Truck plant may be the location of one of the five assembling plants of the Associated Motor Industries. This assembling plant will not only assemble Traffic Trucks but the other cars made by Associated Motor Industries.

On account of the central location of St. Louis and its great distribution facilities, the St. Louis assembling plant is expected to be one of the largest units of the Associated Motor Industries. Guy C. Wilson, president, and Ted C. Brandle, vice-president of the Traffic Motor Truck Corp., will remain in office and will act as directors of the Associated Industries. The Traffic Truck plant is expected to maintain its present organization with the advantage of having back of it all the financial resources of the parent body.

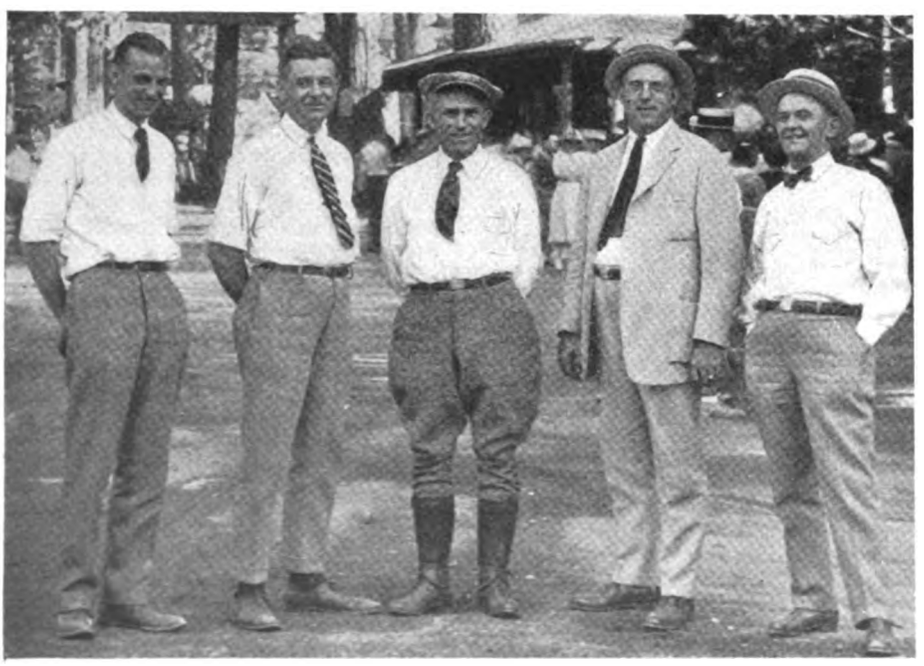
Traffic trucks will be assembled at the other assembling plants of the Associated Motor Industries as well as at St. Louis. It is the plan of operations to turn out as many as possible of the parts and to ship them in bulk to the various assembling units. These units to be at Boston, Indianapolis, Louisville and Oakland, California.

Associated Motor Industries, while putting forth its efforts to push Traffic trucks to leadership, will continue to manufacture the other trucks now made by member companies. The Jackson four-wheel drive truck and the Old Hickory truck made by the Kentucky Wagon Mfg. Co. will be continued. The passenger cars manufactured are the National, Jackson and Dixie Flyer.

DeBolt Succeeds Schillo

CHICAGO, Sept. 3—Following the death in an airplane accident recently of E. W. Schillo, president of the Schillo Motor Sales Co., Mercer and Templar distributors in Chicago, and Roy G. Keller, the company's mechanical superintendent, it is announced that the business will continue under the management of C. E. DeBolt, with Ed Jencks as mechanical superintendent.

Wouldn't You Smile If You Had a Chance to Motor Through the Yosemite Valley?



Everybody on the Pacific Coast knows these fellows, automotively speaking. There's "Bob" Williams, manager of Camp Curry, on the left; next to him Gordon Lee, chief of the automotive division of the Bureau of Foreign and Domestic Commerce of the United States Department of Commerce. Lee traveled around the Coast States quite extensively, speaking at the Washington State Automotive Trade Association's convention. When this picture was taken he was hobnobbing with men in the California Automotive Trade Association, including, at the right of Lee, George Haberfelde, president of the association; next to him, B. L. Graves, manager of the Ford Los Angeles branch, and, at the right, Robert W. Martland, secretary of the California association

TARIFF BILL LIKELY TO PROTECT TRUCKS

House Conferees Urged to Accept Senate Amendment Imposing High Duty

WASHINGTON, Sept. 5—Every effort will be made by the automobile industry to have the House conferees accept the Senate amendment to the Tariff bill, providing for the imposition of a 90 per cent ad valorem duty on the re-importations of all motor vehicles sold to the American Expeditionary forces and the allied governments. The amendment will encompass the purposes of the so-called Graham Bill which has been pending in the Senate for several months and will give the much needed protection of automotive manufacturers and dealers.

Because of the activities of American and foreign speculators in re-importing the automotive equipment manufactured in this country and sold to allied governments, truck dealers on the Pacific coast and on the Atlantic seaboard were particularly hard hit. The equipment was sold by the American Expeditionary Forces as surplus property and the foreign governments disposed of it to speculators at ridiculously low prices.

Under the existing tariff laws it was possible for the speculators to bring these products into this country without the payment of duty and sell them at prices which defied competition by American producers. This practice has agitated the automobile industry since the close of the war, but efforts to obtain the necessary legislation to prohibit these unfair methods have heretofore failed.

Senate Provision

The paragraph in the Senate Tariff Bill relating to re-importation is section 322 which reads:

That all automobiles, automobile bodies, automobile chassis, and parts thereof, including tires, exported prior to Feb. 11, 1919, from the United States of America for the use of the American Expeditionary Forces or the governments associated with the government of the United States of America in the war with Germany and Austria, and which have been sold or delivered to any foreign government, individual, partnership, corporation, or association by the United States Liquidation Commission, or by any other agents or official of the United States of America, when reimported into the United States of America shall pay a duty of 90 per centum ad valorem, the value of such articles to be fixed on a basis equivalent to the original value of such articles in the United States, under rules and regulations to be prescribed by the Secretary of the Treasury.

Heads Inland Products Sales

ST. LOUIS, Sept. 2—B. G. Brennan has been appointed general sales manager of the Inland Products Co. He has had a wide experience in merchandising and advertising and will devote his time to the sales development of the full Inland line.

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MAY PROTECT DEALER IN SEIZURE OF CARS

Court Decision Will Declare Whether Volstead Law or Revenue Act Rules

ST. LOUIS, Sept. 5—Dealers in various sections of the country who have been concerned over the seizure of motor vehicles detected in illicit transportation of intoxicating liquors will be interested in a decision which may be expected shortly in the Federal Courts involving the seizure of cars.

There is now before the Circuit Court of Appeals for the Fifth District, comprising several of the Southern States, a case on appeal from the District Court in which it is held that the National Prohibition Act (the Volstead law) supersedes a section of the Internal Revenue Act applying to confiscation of vehicles illegally carrying liquors.

Law Penalizes Dealer

The section of the Revenue Act in question provided that when a vehicle is detected carrying liquor in violation of law it would be automatically confiscated with no protection for a lien holder, regardless of his guilt or innocence in the case. Under this law, a dealer who had sold a car on time payments to a man who later used it for "bootlegging" would lose the money which the car owner still owed him. Section 26 of the Volstead law provides that when a car is seized for carrying liquors the car may be sold at judicial sale and the proceeds turned over to the United States Treasury after all bonafide liens are established. This would give a dealer protection for his mortgage on a car where he had no knowledge of the owner's wrongdoing. It has been interpreted to mean that he is entitled to the amount of his lien out of the proceeds realized from the sale of the car but not the return of the vehicle itself.

Despite the provision of the Volstead law, Federal authorities in several of the Southern States continued to confiscate cars without protection of dealers who had sold them on time. They are still operating under the original Revenue Act provision.

Lower Court Repealed Section

In the case now on appeal the District Court held that the Volstead law, insofar as it relates to liquor, provided a new system of law and repealed the section of the Revenue Act referred to. The United States attorney in the case appealed from the decision and the case is now before the Circuit Court of Appeals.

If the Circuit Court upholds the lower tribunal the case might be carried to the United States Supreme Court as a final test of the claim that the Volstead law supersedes the Revenue Act and so protects the interests of the mortgage holder who is innocent of crime.

If the case as finally adjudicated upholds the Volstead law provision, Federal authorities will have to cease confiscation of dealer rights in cars illegally operated by owners without the dealer's knowledge. If the final decision upholds the old Revenue Act provision, the National Automobile Dealers Association will resume its efforts to bring about passage of a bill introduced by Senator Dial, of South Carolina, clearing up the conflict in the statutes so as to protect the rights of innocent dealers.

FLINT PLANT OUTPUT WILL BE 550 DAILY

NEW YORK, Sept. 4—A $1,500,000 contract has been awarded by the Durant Motors Corp. for its proposed new plant at Flint, Mich., which will house the Flint car, the $1,180 member of the Durant family. Construction will start at once and it is expected the plant will be ready the first of the year. It will consist of five buildings of a floor space of 560,000 sq. ft. Its capacity will be 550 cars a day.

To Sell Empire Plant

TRENTON, N. J., Sept. 1—By order of United States District Judge Bodine the real and personal property of the Empire Tire & Rubber Corp. will be offered for public sale by the receivers, Arthur H. Woods and C. E. Murray, Jr., Sept. 13.

The Empire company has been in a receivership since March 31, 1920, and has been a going concern all this time. The plant has been particularly busy since last October, and has operated 24 hours a day.

CLEVELAND TRACTOR TO BRING OUT TRUCK

Price Not Fixed—Ready for Distribution Some Time After October

CLEVELAND, Sept. 5—The Cleveland Tractor Co. will manufacture a ton and a quarter truck; the Zeder passenger car that was scheduled to be made in the plant will be manufactured elsewhere and Fred W. Ramsey, former president of the Cleveland Metal Products Co. one of the best known business men of the city and a power in local financial circles, has become chairman of the board of directors of the tractor company.

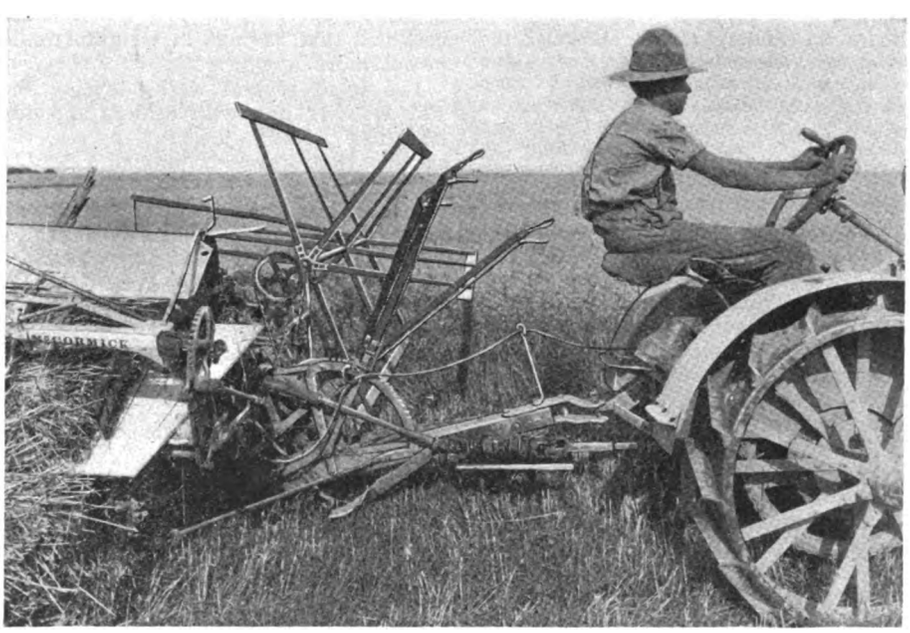
These important announcements have been made at the plant of the Cleveland Tractor Co. in this city.

The price of the new truck has not been fixed. Plans provide for the production of the truck in October and its distribution shortly after. An expansion of industry and a general revival in all lines of trade next fall and winter are regarded as certain by backers of the company and this was a factor that induced the company to get into truck manufacture.

The tractor that has been marketed by the company will be produced also.

Executives of the company state that the same engine which has been used in the tractor is adaptable to a truck and it will be used in the new product. This will enable the company to make greater use of the engine division of the plant.

New International Power Driven Binders



Power required to drive this binder is supplied directly from the tractor instead of through the intermediary of the binder main wheel. The unit consists of an 8-16 hp. tractor equipped with power take-off transmission and a 10-ft. McCormick binder. Power is transmitted from the tractor transmission to the binder of a shaft provided with universal joints to take up misalignment. The binder is equipped with two sets of control levers so that it may be operated from the seat of either the tractor or the binder

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WEST COAST MAY USE CANAL TO SHIP CARS

Dealers Hope in This Way to Lower Rates from Eastern Factories

PORTLAND, ORE., Sept. 5—As a step to cut down the heavy freight rate charged by the railroads on automobiles into the Pacific Northwest, a rate which naturally brings the retail price on an automobile sold in Portland and elsewhere in this section to a higher figure than perhaps any other point in the United States, automobile dealers are considering securing automobiles by water through the Panama Canal, and this practice may be put into execution this fall by a considerable number of the dealers.

The Automobile Dealers Association of Portland, through its secretary, Ralph J. Staehli, has been securing data for the past month relative to water shipments of automobiles and has reached the conclusion that a substantial saving can be made in this manner, which can be passed on to the ultimate purchaser.

High Rates Charged

Staehli says:

Owing to the fact that the railroads coming into Oregon charge for a higher carload minimum than for California the Pacific northwest bears freight rates on automobiles in many instances considerably higher than California, and in fact the highest in the country. There being no prospect of freight reduction, and the railroad situation being altogether unfavorable on account of strikes, the Portland dealers have been investigating water shipment, and many of them are on the point of trying it out.

Under the railway freight schedules the cost of cars, particularly closed models, has been increased sometimes as much as 20 per cent. By shipping by water we believe that this can be considerably reduced. A saving of one-third of the freight charge would be possible, our investigations have disclosed.

The cars could be handled from the eastern and middle western factories to the Atlantic seaboard by rail or canal, it is stated, and then brought through the Panama Canal to the Pacific Coast. While such shipments would take a considerably longer time than by rail, this delay would not be such an undesirable factor during the fall, winter and early spring months, although dealers would no doubt resort to rail shipments during the spring and early summer rush of buying. Some of the smaller dealers and distributors may join together in shipments in order to have the cars come by water and secure the lower rate, it was stated.

Would Have Assembling Plants

WASHINGTON, Sept. 2—A close study of the problems affecting manufacturers' distribution methods has convinced Gordon Lee, chief of the automotive division of the Department of Commerce, that it would be of an advantage to establish partial assemblage plants in the West. He believes that these plants could be operated at low maintenance cost and that savings in freights would be enormous.

Lee spent several weeks touring the Far West talking with dealers and distributors. Many jobbers express the opinion that, through partial assembly and packing in box cars, automobiles and trucks could be laid down for $30, whereas the present freight in many instances approximates $200.

Lee made a study of the automotive industries through the West Coast States by journeying via automobile from San Diego to Seattle, with the exception of one short train journey. On this trip through the Yosemite Valley, he was accompanied by George Haberfield, president, and Robert W. Martland, secretary, of the California Automotive Trades Association, as well as by Byron L. Graves, manager of the Los Angeles branch of the Ford Motor Co.

Lee called the attention of manufacturers to the fact that western jobbers and manufacturers of automotive equipment as the result of educational work being carried on in behalf of jobber and dealer by the Automotive Equipment Association, are now making an earnest attempt to follow out better business practices and eliminate wastes from methods pursued in the past.

SEES NATIONAL PARKS AS GOOD SALES FIELD

WASHINGTON, Sept. 2—National parks offer fertile fields for business for those selling automobiles and accessories, in the opinion of Gordon Lee, chief of the automotive division of the Department of Commerce, who has just returned from an extensive trip through the West.

"National parks draw thousands of tourists monthly and this demands service requirements which are not to be found in the East at any point. I visited several of the national parks and found thousands of cars from practically every State in the union. One dealer pointed out that the minute these parks become so over-crowded that the tourists are turned away, there still will be many parks to be opened up, which means service stations and equipment to care for the tourists' cars.

"Here's one example of the possibilities of automotive business in the future: With the Columbia River basin project to be put forth in the State of Washington, 1,900,000 acres of fertile and irrigable land will be released and every owner of one of the 120 acre plots will be in a position within a year or two to purchase an automobile and accessories to go with it."

FORD REPORT SHOWS INCREASED SURPLUS

Cash and Debts Receivable Gained $61,000,000 in Year Ended April 30

BOSTON, Sept. 5—Ford Motor Co., incorporated under the laws of Delaware, has filed with the Massachusetts Commissioner of Corporations its financial statement covering the year ended April 30, 1922, showing $57,000,000 added to the Ford surplus, while there is a gain of $61,000,000 in cash and debts receivable.

The statement shows a profit and loss surplus of $240,478,736 on that date against $182,877,696 on April 30, 1921. Cash on hand and debts receivable totaled $148,615,334 against $86,995,165 last year, while inventories were valued at $45,208,094 against $63,848,157.

Accounts and notes payable were reduced from $48,886,141 at the close of the fiscal year ended April 30, 1921, to $33,089,894 on the same date this year.

Balance Sheet for Two Years

The detailed balance sheet as of April 30, 1922, with comparisons for two years, follows:

ASSETS

	April 30, 1922	April 30, 1921
Real estate	$81,026,633	$71,329,719
Machinery and equipment	49,401,132	46,459,046
Inventories	45,208,094	63,848,157
Cash and debts receivable	148,615,334	86,995,165
Patent rights	110,740	81,397
Securities	15,749,953	10,361,964
Furn. fixtures, autos.	39,221,860	44,779,634
Miscellaneous invest.	500,815	501,815
Good will	20,517,986	20,517,986
Deferred charges	196,399	265,674
Stock in subsidiary companies	.....	.....
Total	$400,548,946	$345,140,557

LIABILITIES

	April 30, 1922	April 30, 1921
Capital stock	$17,264 500	$17,264,500
Accounts and notes payable	33,089 894	48 896.141
Dept. reserve, etc.	*50,829,307	*43,493,394
Accrued expenses	.....	.....
Deferred charges	853,950	3,027,120
Reserve for federal and local taxes	58,032,559	49,591,706
Profit and loss surplus	240,478,736	182,877,696
Total	$400,548,946	$345,140,557

*Includes amortization reserve.

Wheel Contract to Hayes

DETROIT, Sept. 4—Hayes Wheel Co., of Jackson, Mich., has secured the contract for supplying wheels to the Durant Motors Corp. This order takes in the complete line, including the Durant fours and sixes, the Flint and Star. It is said to be the largest order for wheels ever secured by one wheel manufacturer.

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OFFER SUGGESTIONS IN SAFETY CAMPAIGN

Oct. 8-14 May Be Set Aside as Time for National Observance

WASHINGTON, Sept. 5—Invitations to 50 representatives from each of seven groups concerned in highway safety are bringing a deluge of suggestions to the Highway Education Board for incorporation in a national safety campaign planned to retard the accident and death toll of the country due to traffic mishaps.

Almost without exception, replies indicate an eagerness for such a campaign, stressing the timeliness and need for a national movement of this nature. Groups requested to offer suggestions include automobile dealers associations, automobile clubs, pupils, teachers, superintendents of schools, chambers of commerce, and police officials.

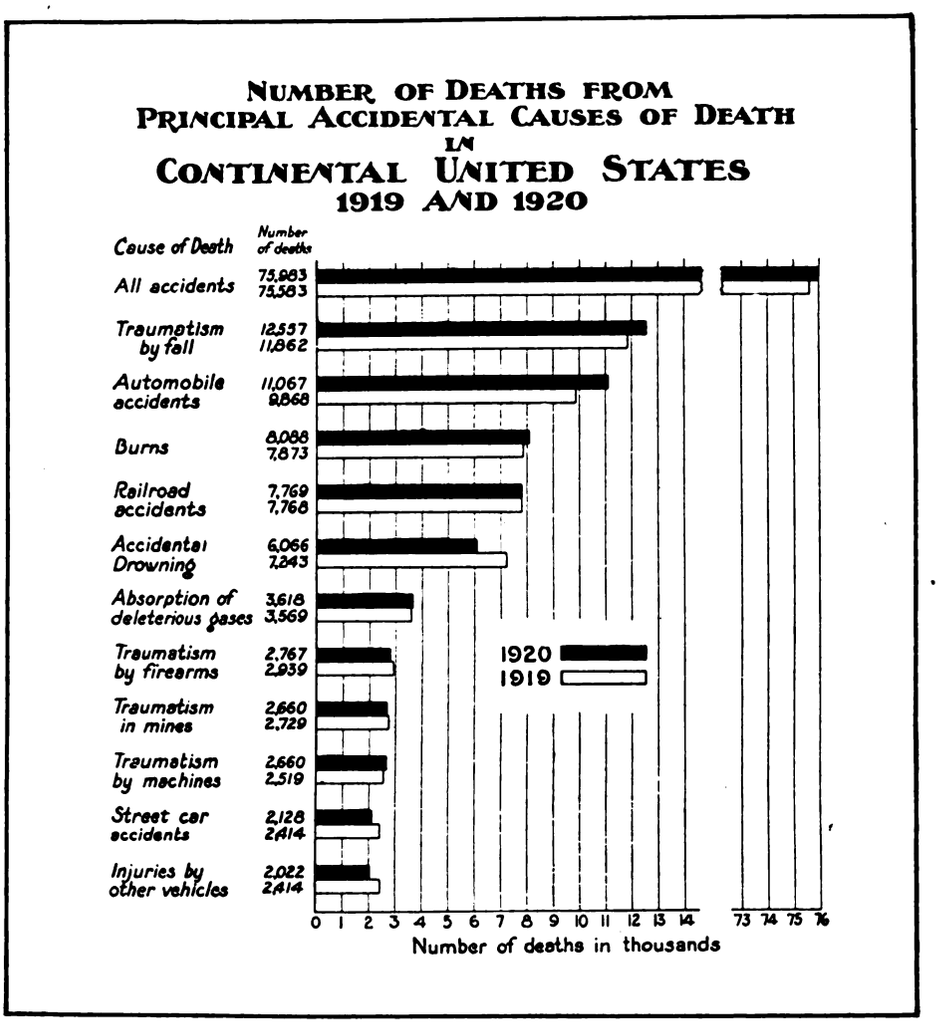
Outstanding suggestions received to date, it is said, include a national essay contest among all pupils doing class room work in the fifth to eighth grades, a national safety lesson contest among teachers, the observance of "Seven Days for Safety," and the distribution of "Pledges of Carefulness" among pedestrians and drivers alike. Oct. 8 to 14 seems the date most favorably agreed upon for the observance of "Seven Days for Safety," according to the general tenor of the letters received.

Several weeks ago the National Automobile Chamber of Commerce offered to set aside approximately $6,000 in prizes for the best safety essays and lessons if sufficient interest was indicated. If the date of Oct. 8 to 14 is definitely fixed for the observance of "Seven Days for Safety," or "National Safety Week," it is expected that those in charge of local campaigns will arrange their dates to conform, and their activities to include the salient features of the national movement.

NEW AIR COOLED CAR COMPLETED BY HOLMES

CANTON, OHIO, Sept. 2—Plans for reorganization and refinancing the Holmes Automobile Co. are being worked out by a committee consisting of Ed. Langenbach, chairman; Norman C. Raff, Charles A. Kolp, William T. Kuhns, R. V. Mitchell, I. M. Taggart and Raymond Loichot. A meeting of stockholders and others interested will be held preliminary to the stockholders' meeting to be held on Sept. 6 when final plans will be consumated.

In connection with the refinancing and re-organization plan, another announcement of special interest made during the past week was that the Holmes Company has completed a new four cylinder air cooled car which has been developed by the company during the past year under the direction of Thomas M. Kearney. It is expected that the car will sell for approximately $1,200.



76,000 ACCIDENTAL DEATHS IN 1920 ARE CHARGED AGAINST CARELESSNESS

DETROIT, Sept. 2—Seventy-six thousand accidental deaths is the astounding bill charged against Careless America during 1920, according to the report of the public accident statistics committee of the National Safety Council presented at the annual safety congress.

While the 1920 toll from all public and industrial accidents is a decrease of 3,300 over 1911, the beginning of the decade, there is only a balance of 400 on the credit side of the ledger over the 1919 total. This record is viewed with concern by the nation's leaders of organized accident prevention since the yearly downward tendency of accidental deaths in the United States during the past decade, constant up to 1919 came to a halt in 1920.

Automobile accidents are held to be in part responsible for the unfavorable experience of 1920; in that year there were 1,200 more deaths from that cause than occurred in 1919. The chief reason for this, it is pointed out, was the large increase in the number of automobile users. The automobile fatality frequency for 1920 was 30 deaths a day, a total for the year of 11,000. The 1921 estimate of automobile deaths, based on figures now available from 50 of the largest cities, indicates a considerable increase over 1920.

Over twice as many men died accidentally in 1920 as did women, the figures showing in round numbers 55,000 male fatalities as compared with 21,000 women. The latter, however, suffered greatly from domestic hazards, 6,000 having died from falls and 4,800 from burns; 2,756 died from injuries received in automobile accidents. Automobile accidents were responsible for 8,300 deaths among men while railroad mishaps caused 6,930 fatalities. One third of all automobile deaths occur among children under 15 years of age.

People died from falling accidents of all kinds at the rate of 34 a day, a higher rate than even automobiles. Burns claimed 22 lives a day, a total for the year of 8 088 and an increase of 215 over 1919. Other major causes of accidental deaths are listed in order of importance as follows: Railroad accidents, 7,769; drownings, 6,066; deaths from gassing, 3,618; firearms, 2,767; mine accidents, 2,660; machinery, 2,660; street cars, 2,128; other vehicles, 2,022; conflagrations, 1,277.

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DETROIT EDISON HAS TWO WEEKS' BUNKERS

Most Plants Rely on Company to Supply Them with Manufacturing Power

DETROIT, Sept. 4—Curtailment of power to the automotive plants in this district will be necessary if conditions do not improve within two weeks. The Detroit Edison Co. has sufficient on hand for this length of time, according to Alex. Dow, president, and will have to curtail if coal shipments are not speeded up. All plants in this city with the exception of Ford are furnished with all or the major portion of their power by this concern.

According to all authorities the question of getting coal into the Detroit district is not one of mining the coal, but of moving what has already been mined. Even this condition is not general but is confined to the so-called coal belt railroads which operate south and east of the Ohio River. These are notably the L. & N., C. & O., N. & W. and the branches of the B. & O. operating through West Virginia. The northern roads can and are handling the coal turned over to them rapidly.

All of the plants have supplies for 30 to 60 days as far as heat and special power requirements, such as hammer rooms, etc., are concerned. C. S. Mott of General Motors Corp. states that the average for the G. M. C. units in this district was better than 30 days for coal on hand. All of these concerns in the Detroit zone, however, are directly affected by what happens to the Detroit Edison Company, as they are not equipped to manufacture all of their own power, but simply to take care of their heating, compressed air and similar needs.

There is no thought of changing over to the use of fuel oil in Detroit, although the Ford Motor Co. has some temporary installations in their power plant in Highland Park which are working out very well. The same problems which affect the movement of coal also affect the movement of fuel oil as the oil would have to come in by rail, since Detroit has no pipe line.

TO USE STEEL FIRST IN NEW MARTIN CAR

SPRINGFIELD, MASS., Sept. 4—Preparations are complete for the manufacture of the Martin two-passenger car to sell for $250. Revised plans call for steel instead of aluminum construction at first, though it is hoped conditions will make it practicable to bring out the lighter car later within the desired cost limits.

C. H. Martin, president of the Martin Motor & Trailer Corp., says that the car has met all preliminary tests and it is purposed to put it in production this fall.

CHEVROLET FLAT RATES

A complete schedule of timed flat operations on the Chevrolet will be published in the next issue of Motor World. The schedules cover several hundred operations, major and minor, on both the Supreme (490) and FB models. This will be the eleventh flat rate schedule published in Motor World. The schedule has a somewhat unusual arrangement of major and minor operations to facilitate writing up repair orders.

JULY SALES FELL OFF THROUGH NEW JERSEY

NEW YORK, Sept. 6—July registrations of new automobiles and commercial cars in 21 counties of New Jersey showed a decline from the previous three months, during which there had been a consistent gain. Sherlock & Arnold, hitherto confining its sales analysis to counties in and around New York, has branched out into New Jersey and is publishing the New Jersey Automobile Sales Analysis, starting its compilation with April of this year. July sales aggregated 5672 automobiles as against 7450 in June. The recapitulation for the four months gives a total of 26,310 new cars and 5437 commercial cars.

In April there were five cars registering over the 600 mark with the rest running some distance behind. The following month saw four over the 500 mark, some distance setting apart the last in that group from the next highest. The same ratio obtained in June but in July there were only two cars exceeding that figure.

The registration figures follow:

	Automobiles	Commercial Cars
April	6,535	1,257
May	6,653	1,478
June	7,450	1,517
July	5,672	1,185
Total	26,310	5,437

Buick Expands in Detroit

DETROIT, Sept. 4—Four new sales and service stations and one authorized service station has been added to the Buick retail organization in Detroit as part of an authorized service program initiated by J. A. Coy, manager of the Detroit branch, which will establish stations in every part of the city. With the new stations there are now 10 authorized stations which include eight sales agencies.

Harper Sees Record Year

WATERLOO, IOWA, Sept. 5—Harry B. Harper, general sales manager of the Studebaker Corp., making an extended tour through the agricultural section of the country for a survey of territorial conditions and requirements, predicts that 1923 will be the biggest year in the history of the country.

CLEVELAND BOUGHT COAL FOR ALL YEAR

Had It Delivered, Too, Before Transportation Difficulties Set In

CLEVELAND, Sept. 1 — Cleveland automobile manufacturers and parts makers regard the coal situation at the present time as most serious to the industry of the city, but none interviewed is in immediate danger of shutting down on account of lack of fuel.

In many instances purchasing agents took their cues last spring and went into the market and purchased supplies for the entire year and had it delivered before transportation became a problem.

Others have purchased electric power from the Cleveland Electric Illuminating Co. as a means for avoiding trouble that comes periodically through labor troubles in the coal mining industry and in transportation. The illuminating company says only a most serious situation would cause it to curtail the amount of power for plants. Still others laid in big supplies of fuel oil and have burners installed ready for use.

Need Coal for Heating

In the plants that have electric power and fuel oil burners the only trouble possible to come from the coal situation is failure to obtain sufficient coal to heat plants, but that is considered generally a remote possibility.

The situation thus outlined applies to those manufacturers who are big and strong financially and were able to buy coal early and to change over to other sources of fuel. There are smaller concerns that have limited supplies of coal, from two weeks to a month on hand that will be forced to shut down unless relief comes.

NEW OAKLAND MODELS HAVE BODY CHANGES

DETROIT, Sept. 1 — The 1923 Oakland models show many changes in the bodies, a few minor changes in the chassis and equipment and no change in the price. The bodies are deeper with crowned fenders wider and heavier than before and the runningboards are lowered 1½ in. All models are now fitted with drum type headlamps and the closed models have heaters and rear view mirrors. The sport model is more completely equipped and better upholstered.

The chassis changes are slight. A new type Marvel carbureter is used and the exhaust heated manifold has a temperature control operated by a throttle. A new Remy distributor with semi-automatic advance is enclosed in the breaker box instead of the moving distributor head. The gearshift levers are longer and the throttle and spark controls are mounted on top of the steering column with short levers, eliminating the conventional quadrant.

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MAKERS OF EQUIPMENT TALK OVER SERVICING

Some Favor Dealers Doing Electric Work—Others Prefer Special Shops

(*Continued from page* 37)

Their plan of standardization of electric generators is this: They hope to have perhaps six different sizes of generators, to be known as Nos. 1, 2, 3, 4, 5 and 6. It is hoped that each manufacturer will confine his manufacturing efforts to practically these six sizes. No 1 would be for the small four-cylinder cars with high-speed engines. No. 2 might be for the medium-priced six-cylinder cars. No. 3 would be for the higher grade of cars. No. 4 would be for the highest-priced cars. No. 5 would serve for motor buses and No. 6 would serve for aircraft and railroad gasoline cars.

Would Be Fewer Motors

Similarly, the number of starting motors would be greatly reduced and the different manufacturers would build to these sizes.

When the number of sizes would thus be reduced, the problem of standardization would be carried further so that, probably, brushes in the different generators would be interchangeable among different makes. Bearings might be made interchangeable, as well as lubricating devices, etc. The whole plan would be not only to simplify service but greatly reduce the number of different parts.

Doubts Ford Will Close

NEW YORK, Sept. 1—Wall Street apparently believes that Henry Ford will not close his plants on Sept. 16 as he has announced he will do. To support this belief, it reported in the banking districts that one concern that supplies Ford with headlights is said to have been requested to ship immediately for delivery Sept. 12 all specifications ordered for September, while this same order is said to have been given a wheel manufacturer.

Rickenbacker to Wed

SAN FRANCISCO, Sept. 2—Edward V. Rickenbacker, former automobile racer and American overseas aviator and now vice-president of the Rickenbacker Motor Co. of Detroit, which he organized, will be married in New York on Sept. 14 to Mrs. Adelaide Durant, former wife of R. C. Durant. They expect to sail for Europe on Sept. 16 on the Majestic to spend their honeymoon. Major Rickenbacker was the premier American ace in the World War.

Piston Company Promotes Jacobs

BALTIMORE, Sept. 4—The American Hammered Piston Ring Co. announces the appointment of Joseph S. Jacobs as secretary and assistant treasurer. Jacobs joined the company in sales promotion work in 1919, when it was purchased by the Bartlett Hayward Co. and moved to Baltimore.

Later he became manager of the sales promotion department, and a year later was appointed advertising manager. C. B. Cook, former assistant, succeeds Jacobs as advertising manager. He came to the company two years ago from the staff of the Baltimore *Sun*. C. A. Grainger has been made assistant general sales manager to succeed Thomas B. Blakiston, who now is general sales manager. For the past year and a half, Grainger has been district sales manager for the company in the Gulf States district.

Charles A. Singer, Jr., Dies

NEW YORK, Sept. 1—Charles A. Singer, Jr., died suddenly in a New York hospital yesterday. For several years he was prominently identified with the company manufacturing the Palmer-Singer cars, his father being president of the concern. The company passed out of the automobile industry six years ago and since the end of the war Charles A. Singer, Jr., has been a member of the firm of Partridge, Singer & Baldwin, which is an exporter, specializing in the sale abroad of American cars.

Moon Exceeds All 1921

ST. LOUIS, Aug. 31—The Moon Motor Car Co. announces that its sales for the first seven months of this year exceed sales for the entire year of 1921 and also for the year of 1920. Sales for July were 29 per cent greater than the sales for June, which was the previous high month.

Slowing up of the demand in a few sections of the country is noted, but the company states that unfilled orders on hand Aug. 1 were sufficient to keep the factory running at capacity until October. Present output is 50 cars a day.

INDIANAPOLIS PLANTS HAVE 90 DAYS' SUPPLY

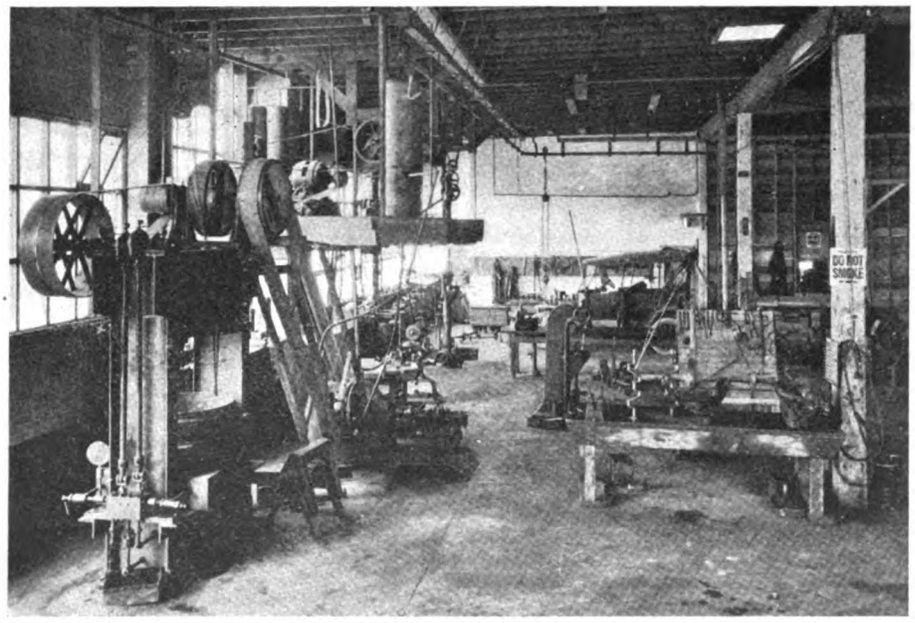
Mines, Moreover, Are Close at Hand—Situation Not Regarded Serious

INDIANAPOLIS, Sept. 4—Automotive manufacturers of Indianapolis have coal and power supplies that will last at least ninety days with coal on the way to factories and the power companies which supply most of the manufacturers with electric power.

Both the Merchants Heat & Light Co. and the Indianapolis Light & Heat Co. have adequate supplies of coal on hand and on the way to run the plants at normal for nearly three months. The Merchants Heat & Light Co. has a sixty day supply on hand. It owns a coal mine and has other shipments on the way to the city. The Indianapolis company has a ninety day supply and sees no reason to fear a fuel shortage that will necessitate any curtailment of power for manufacturing purposes.

Both concerns expect no shortage unless some turn of the rail situation brings about unexpected conditions that will stop delivery of coal now on the way or soon to be en route to the city. One of these companies felt so sure of its position a week ago that it loaned one of the automotive manufacturing companies of the city a supply of coal to tide it over a temporary shortage, which has since been turned into a surplus. The fact that Indianapolis is within sixty miles of coal mines seem to assure that there will be supplies for public utilities and power companies who even now have surplus stock.

A Profit-Making Shop



This well-equipped shop is in the Willett Bros. Garage, Ford dealer in Colville, Wash. The large amount of machinery that it contains is evidence that shop equipment will make profits for the small town dealer as well as for the city service station

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CHANGES IN THE TRADE

Mack-International Motor Truck Corp. has been appointed to handle the Mack truck in Richmond, Va.

Franklin-Bender Motor Co., Memphis, Tenn., has recently been appointed distributor for the Columbia.

Cornell Sales Co. has been appointed distributor for the I. J. Cooper battery and battery parts at Cleveland.

John B. Lyerly is acting as distributor for the Gray in Pittsfield, Mass. Lyerly also handles the Rickenbacker.

Morse Chain Co. has moved its Philadelphia office to the Franklin Trust Building. **J. A. Meaney** is district manager.

Lee Tire & Rubber Co. has opened a branch at Richmond, Va. **Frank G. Fickling** has been appointed manager.

Lifsey-Smith-Hill Co., Atlanta, has been appointed distributor throughout Georgia for the Peerless Motor Car Co.

Jack Rose Motor Service, Pittsfield, Mass., has been appointed distributor of the Stromberg carburetor in Berkshire county.

H. L. Bonnell is now in charge of the used car department of the **Pfaff Motor Car Co.,** Cincinnati distributors of the Peerless.

Farm Power Co., Springfield, Ill., has become distributor for the Allis-Chalmers tractor in the Sangamon county territory.

Wienold Motor Sales Co., Springfield, Ill., has been appointed distributor for the Mitchell car in Sangamon county territory.

O. L. Huntting Co. has taken the agency for the Rickenbacker in Springfield, Mass., operating as a branch of **Clarke & Stevens,** Boston.

Constant & Groves, Springfield, Ill., has been appointed distributor for the Hupmobile in Sangamon, Menard, Cass and Christian counties.

Inland Products Co. has opened a service station in St. Louis in charge of **Kirk M. Roberts,** district sales manager, assisted by **A. G. Haberle** and **Horace Foote.**

Lefler Motor Car Co. has been organized and incorporated at Concord, N. C., to establish an automobile agency, by **S. W. Lefler, H. C. Ridenhour** and **S. K. Patterson.** Capital is $50,000.

A. P. Becker has assumed the sales managership of the **Fuller Automobile Co.,** Cincinnati Hupmobile distributors. **A. P. Longley** is now handing Hupmobile sales in Becker's former territory.

W. G. Miller and **W. A. Thompson,** Springfield, Ill., have formed a partnership and organized the Standard Motor Service Co. The firm will distribute the Oldsmobile line in Sangamon county territory.

Harold G. Pederson, for two years factory superintendent of the Kelsey Wheel Co., Windsor plant, has resigned to join the factory staff of the Franklin Automobile Co. as assistant to the master mechanic.

Tioga Automobile Co., Philadelphia, has opened corner of Broad and Tioga Streets, to handle Overland and Willys-Overland cars. **George G. Brownlee** is secretary and treasurer of the company and **George B. Albrecht** is manager.

Monmouth Auto & Tire Co. of Newport, Ky., and **Harry Lampert** of Xenia, Ohio, have been appointed dealers for the Haynes in their respective territories. Both companies are operating under the **Jennings Motor Car Co.,** Haynes distributors at Cincinnati.

C. C. Welsong, formerly sales manager for Joseph G. Blount, Maxwell and Chalmers distributors of Atlanta, has been appointed manager of the retail sales branch of the Hanson Motor Co., manufacturers of the Hanson line, for the Atlanta territory.

F. C. Daubs and **H. F. Vishniski,** both of Chicago, have formed a partnership and organized the **Daubs-Vishniski Motor Car Co.,** with headquarters in Danville, Ill. The company has been appointed distributer of the Buick car in the Vermilion county territory.

Columbia-Westcott Co. has been organized in Charlotte, N. C. The company will distribute Columbia and Westcott cars in both North and South Carolina. **J. A. Cave** is president; **R. F. Willeford,** vice-president; **H. F. Rush,** sales manager; **C. A. Crater,** treasurer.

Buchanan Motors Corp. has recently opened in Louisville, Ky. It will distribute the Moon in this territory, with **J. A. Kauffmann** in active charge of the organization. Kauffmann was formerly superintendent of the Cumberland & Manchester Railroad at Barbourville, Ky.

Stewart-Warner Products Service Station, Inc., has been organized to distribute Stewart products in Richmond, Va. The officers of the concern are **Marvin Swithey,** president; **Thos. S. Curtis,** vice-president and general manager, and **Russel D. Council,** secretary and treasurer.

R. D. Heman Co., composed of **R. D. (Dick) Heman** and **Gerald Baker,** has opened a tire salesroom and service station in Louisville, Ky., to handle Firestone tires. Both members of the firm have been connected with the tire business in Louisville for several years.

Sharp Sales and Service Co., Springfield, Ohio, has been incorporated by **Charles F. Sharp, George Sharp** and others with a capital stock of $25,000 to sell Reo cars and speed trucks in Clark, Champaign and Logan counties. The company will be under the management of Charles Sharp.

Oak Park Franklin Motors Co., Oak Park, Ill., has been organized. Capital stock has been fixed at $10,000. The incorporators include **Charles Renfer, W. F. Schmucker** and **E. T. Marquardt.** The company will distribute the Franklin car and also do a general repair and service business.

Cecil C. Robertson, for some time manager of the Savannah branch of the **Blun-Dimmitt Co.,** and for the past two years general manager of the **G. M. Robinson Motor Co.,** Jacksonville, Fla., has been appointed sales manager of **Joseph G. Blount,** Georia distributor of Chalmers and the Maxwell.

James Joyner has been named manager for the new branch opened recently in Atlanta by the Templar Motor Sales Co., of Cleveland. He advises that it is the company's plan to conduct an extensive sales campaign over the Southeast to line up dealers organizations for the Templar.

George H. Hunt, formerly manager of **Stromberg Motor Devices,** and for the past three years sales manager of the Disteel Wheel Corp., is now in charge of Rayfield Carburetor sales to manufacturers of passenger cars and trucks. Hunt has offices at 1401-7 David-Whitney Building, Chicago.

George Abernathy announces the new firm of **Abernathy-Riddick Auto Co.** to handle the Chevrolet and Stutz line in Memphis, Tenn. The officers of the company are: **George Abernathy,** president; **J. Burke Riddick,** secretary and treasurer, who together with **J. G. Bailey** make up the directorate.

Manhattan Electrical Supply Co., Inc., announces that the executive offices are now located at 125 Church Street, New York City. **J. J. Raferty,** formerly of the Western Electric Co. has been appointed manager of the New York branch, of which **Howard N. Croop** is sales manager and **C. H. Boehler,** city sales manager.

Jerome H. Chopiska, J. V. Nigro and **Frank Chopiska,** formerly with the Chopa Piston Ring Co., Auburn, Ind., have established a new industry in La Crosse, Wis., under the name of **Lacrosse Motors Equipment Co.** It is specializing in the manufacture of a new design of piston ring, known as the LaCrosse Triple Seal.

Reliable Service Co., Eau Claire, Wis., has been appointed Haynes dealer. The partners are **Willard Enge** and **George Amentorp.**

Whitlock-McDonald Motor Co., Birmingham, Ala., Durant distributor, has been appointed factory representative by the Star Motors, Inc., with full charge of marketing the Star line of cars in its territory.

Oldsmobile Sales and Service Co. has been organized in Raleigh, N. C. to distribute Oldsmobiles in the Raleigh territory. The company will take over the Norwood garage and in addition to the distribution of Oldsmobiles will continue the Norwood storage and service. **C. E. Hanbury** and **R. E. Winstead** compose the new firm.

Frank Talbott, who was formerly general manager of **The Victor Rubber Co.,** has been appointed general manager of **The Virginia Rubber Co.,** with headquarters at Charleston, W. Va. Since leaving the Victor, Talbott has been directing the manufacture and sales end of a new tire he has invented. It is announced that the tire will be manufactured at the Virginia plant instead of at Cleveland.

R. B. Tracy, for many years with Michelin, has been appointed director of sales for the **Paul Rubber Co.,** Salisbury, N. C., which recently opened a new plant, equipped with modern machinery for the manufacture of casings and tubes. In addition, the Paul company has taken over a factory at Charleston, W. Va., where will be manufactured the Tirometer valve which shows the pressure at all times.

J. A. Clark, general manager of the Van Cortlandt Vehicle Corp., the New York distributor for the Peerless, announces the appointment of **W. R. Chandler** as retail sales manager of the New York factory branch. Chandler has been connected with the automobile industry for the past 12 years, having formerly been manager of the old Flanders Electric Co., vice-president and general manager of the Holt-Chandler Co., New York agent for the Maxwell and Pope-Hartford and general manager for the Hayes-Diefenderfer Co.

Chidester-Frint, Inc., Milwaukee, distributor of the Durant in Wisconsin and Upper Michigan, has been designated as distributor in the same territory of the new Star car. **John G. Wollaeger Co.,** Milwaukee, distributor of the Studebaker in Wisconsin, has opened a retail branch sales and service station in Milwaukee, under the management of **Charles H. Jackson.** The Wollaeger Co. will move about Nov. 1 to its new $150,000 headquarters building, on the west side of Milwaukee, where it will also maintain a retail division besides its distributing house.

Clark Osterheld, assistant general superintendent of the Stoughton (Wis.) Wagon Co., in charge of the motor truck department, resigned Aug. 15 to become president of the Stoughton Mfg. Corp., recently organized to manufacture electric water heaters and other electrical devices designed and patented by him. When the wagon concern engaged in the manufacture of trucks, several years ago, Osterheld took an important part in the work of designing and placing in production the Stoughton freight car.

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PROTEST PROPAGANDA AGAINST TRUCK USE

Disapproval Is Voiced to Methods Being Employed by Electric Railways

WASHINGTON, Sept. 4—It is expected that the Bureau of Public Roads will call upon the various state highway commissions and good road organizations throughout the country to combat the insidious propaganda against motor truck transportation. Both manufacturers and owners of motor vehicles, especially trucks, are making vigorous protests against the methods adopted by electric railways to secure freight traffic which is now transported over the highways.

The tone of the letters filed with government officials indicates that the motor transport people are willing to take their chances in competing against trolley lines for business, when the competition is conducted on legitimate lines. However, objection is made to the derogatory statements as to the destruction of highways by trucks and cost to the tax payers which has no foundation in fact.

The display of large advertisements in traction cars in Ohio, Michigan and New York is calculated to arouse public sentiment against motor truck operators and owners. Farmers and other tax payers are now wondering whether the cost of building good roads is worth while. The transportation officials point out that the majority of American tax payers are now cognizant of the fact that highways are a good investment. The reaction of this propaganda is regarded as being decidedly harmful to the good roads movement.

For instance, copies of the advertisement received by federal officials show that the traction companies are deliberately misrepresenting facts to the reading public. One advertisement reads "PROBLEM IN ECONOMICS—SHIP BY TRACTION AND SAVE THE HIGHWAYS. If a heavy truck earns 50 cents per mile and damages the Public Highways to the extent of one dollar ($1.00) per mile and the shipper of freight saves nothing and the truck owner keeps the 50 cents and the TAXPAYER pays the dollar, WHERE DOES THE TAXPAYER GET OFF?"

It is believed that the various automotive trade associations will take an active part in assisting the federal government to set the public right on the highway situation.

JUDGES ARE SELECTED IN ROADS ESSAY TEST

WASHINGTON, Sept. 2 — Names of judges appointed to award the four years' university scholarship offered in connection with the national good roads essay contest on "How Good Roads Are Developing My Community" were announced here to-day by the Highway Education Board.

The judges are Henry C. Wallace, Secretary of Agriculture; George Horace Lorimer, editor of the *Saturday Evening Post*, and Dr. John Grier Hibben, president of Princeton University. The judges have been supplied with verbatim copies of 54 essays, representing each State, as well as the District of Columbia, the Canal Zone, the Philippines, Porto Rico, Hawaii and Alaska. It is estimated by officials of the board that at least 250,000 pupils of high school grade participated in the contest, and these 54 manuscripts, therefore, represent the cream of all papers presented.

The scholarship offered is given by H. S. Firestone, Akron, a member of the Highway Education Board. It is intended to defray tuition and all reasonable expenses of the student in college and is valued at not less than $4000.

FORD SPECIAL WINS PIKE'S PEAK CLIMB

Car with Less Than 183 Cu. In. Displacement Covers Ground in 19 Min. 50 4/5 Sec.

DENVER, COL., Sept. 4—The winning of the Penrose trophy for the fastest time in the fourth annual Pike's Peak hill climb to-day was a surprise to the 5000 spectators when it went to a Ford special in the less than 183 cu. in. displacement class. The driver was Noel E. Bullock and the time was 19 min. 50 4/5 sec. for the 12 2/5 mile course of 7 to 10½ per cent grades and 60 curves.

Glen Schultz in an Essex and Roy W. Beavers in a Chevrolet took second and third in this small car event in 20 min., 41 sec. and 23 min. 3 2/5 sec. respectively.

The first three places in event No. 2 for up to 300 cu. in. displacement went to Harold Brinker in a Wills Sainte Claire, H. L. Chapin in a Dodge and Sam Marcus in a Haynes, in 20 min. 46 sec., 23 min. 25 4/5 sec. and 24 min. 18 4/5 sec.

Hudson Winner in Other Class

A Hudson driven by King Rhiley, winner of the trophy last year, won first prize to-day in the event for cars above 300 cu. in. in 20 min. 5 sec., with a Packard driven by P. B. Abbott only two seconds behind, a Mercer piloted by W. S. Haines captured third place in this large car event in 20 min. 31 sec.

Eighteen cars started and 15 finished, three being forced out by slight breakages, but there were no serious accidents.

Bullock and Rhiley are both Nebraskans, Haines hails from the Mercer factory, while most of the other contestants are from Colorado Springs, Denver and other Colorado points.

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Calendar of Trade Events

CONVENTIONS

Toledo .....September
Annual Convention of the Ohio Automotive Trades Association.

Buffalo .....Sept. 13-14-15
Annual Fall Convention of the Motor and Accessory Manufacturers Association. Lafayette Hotel.

Chicago .....Sept. 14-15
National used car conference of Trade Association Secretaries, under auspices National Association of Automobile Show and Association Managers.

Santa Barbara.....October
Annual Convention of the California Automobile Trade Association.

Chicago .....Oct. 18-19-20
National Association of Farm Equipment Manufacturers.

Chicago .....Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

SHOWS

Minneapolis, Minn.....Sept. 2-9
Minnesota State Fair.

Hartford, Conn.....Sept. 4-9
Connecticut Fair Grounds.

Spokane .....Sept. 4-9
Annual Automobile Show held in connection with the Spokane Interstate Fair. B. J. Garnet, manager.

Wilmington, Del.....Sept. 4-9
Delaware State Fair.

Indianapolis .....Sept. 4-9
Automobile and Accessory Show in conjunction with the Indiana State Fair. Automobile Show Building under the auspices of the Indianapolis Automobile Trade Association. J. B. Orman, manager.

Ottawa, Ont.....Sept. 8-18
Automobile Show in Connection with Ottawa Central Canada Exhibition.

Syracuse, N. Y.....Sept. 11-16
New York State Fair.

Jacksonville, Ill.....Sept. 16-23
Morgan County Fair, Jacksonville Automotive Dealers Association.

Cleveland.....Sept. 18-28
Exhibition of Closed Cars during the merchants and manufacturers exposition, under the auspices of the Cleveland Automobile Manufacturers & Dealers Association, Herbert Buckman, manager.

Memphis, Tenn.....Sept. 23-30
Annual Automobile Show held under auspices of the Memphis Automobile Dealers Association, Tri-State Fair Grounds.

New York.....Sept. 23-30
Closed Car Show, under Auspices of Automobile Merchants Association, Grand Central Palace.

Dallas.....Oct. 6-16
Texas State Fair.

New York City.....Oct. 7-14
Annual Electrical and Industrial Exposition, Grand Central Palace.

Detroit .....Oct. 17-21
Closed Car Salon, General Motors Building, Detroit Automobile Dealers Association, H. H. Shuart, Manager.

Washington, D. C.....Oct. 21-28
Annual Closed Car Salon held under auspices of the Washington Automobile Trade Association, Convention Hall.

Houston.....Nov. 8-18
South Texas Fair.

Jersey City.....Nov. 11-18
Third Annual Show, Fourth Regiment armory, under the auspices of the Hudson County Automobile Trade Association.

Chicago .....Nov. 13-18
Annual Show of Automotive Equipment Association.

Cincinnati .....Nov. 22-29
Second Annual Automobile Accessory and Radio Exposition, Music Hall, under the auspices of the Cincinnati Automotive Trade Association.

New York.....Dec. 2-9
Eighteenth Annual Automobile Salon, Commodore Hotel.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, auspices of the Automobile Body Builders Association.

Chicago .....Jan. 27-Feb. 3
Annual Automobile Salon, Drake Hotel.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Minneapolis .....Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Syracuse.....Feb. 26-Mar. 3
Annual Automobile Show under auspices of the Syracuse Automobile Dealers Association.

Newark, N. J.....Mar. 10-17
Annual Automobile Show under the auspices of the New Jersey Automobile Exhibition Co., Claude E. Holgate, manager.

RACES

Kansas City.....Sept. 16
Opening Meet of New Kansas City Board Speedway.

Fresno, Cal.....Sept. 30
Los Angeles.....Nov. 30
San Diego.....January

ASSOCIATION ACTIVITIES

Has Legal Department

CHICAGO, Sept. 2—The Chicago Automobile Trade Association has installed a legal department, the services of which are free to all members. An attorney is on duty at the association headquarters and gives advice on urgent questions by telephone.

Atlanta to Resume Meetings

ATLANTA, Sept. 4—Following a recess of two months during the summer the Atlanta Automobile Association will resume its regular meetings again the latter part of this month, according to Lon Credelle, president. Membership now includes approximately 90 per cent of all accessory and automobile dealers in Atlanta.

New St. Louis Directors

ST. LOUIS, Sept. 2—The board of directors of the St. Louis Automobile Dealers Association, at a meeting held recently, elected two new directors to fill the vacancies caused by the resignations of Webster Colburn, formerly of the Doris Motor Car Co., and C. A. Cole, formerly of the F. C. Meyer Motor Co.

G. W. D. Donnelly, president of the Supreme Motor Co., was elected to succeed Colburn and Fred H. Squires, branch manager for The White Co., was chosen to succeed Cole and represent the truck interest of the association.

Secretary Robert E. Lee, who has been at home ill for nearly two months, has recovered sufficiently to be at his office again.

The regular meetings and general activities of the association will be resumed in September. First of these activities will be a meeting of demonstrators and instructors who will hear lectures by representatives of the Safety Council, including W. L. Patterson, safety engineer, on the proper method of teaching new owners of automobiles how to drive safely.

Buys Reliance Plant

APPLETON, WIS., Sept. 4—Dr. D. S. Runnels, who is understood to be representing stockholders working on reorganization plans, bid in the entire property of the Reliance Motor Truck Co. of Appleton, defunct, at trustee's sale. Stockholders of the concern have made good headway in reorganization plans and believe they will be able to rehabilitate the industry quickly.

MAY GET DUTY PLANT AT ELGIN, AFTER ALL

ELGIN, ILL., Sept. 2—Persuaded to reconsider their offer to absorb the Duty Motor Truck Co. of Elgin, the American Steam Truck Co. of Chicago, will, it seems likely, shortly be in possession, the stockholders of the former company, following a bitter controversy, voting to sell out to the Chicago concern. The action of the stockholders followed several weeks of argument in which an influential minority sought to prevent it.

The Duty Company stockholders elected a new set of officers before adjournment, E. A. Bell being named president; A. J. Force, vice-president, and Marshall Newman, secretary-treasurer. These men also serve as directors and were empowered to handle the negotiations with the American Company.

Metz in Bankruptcy

BOSTON, Sept. 4—The Metz Co. of Waltham, Mass., maker of the Metz Master Six, has been petitioned into bankruptcy here by three creditors. Two of the creditors brought the proceedings as a result of judgments received against the company last June, and a third has an assigned claim.

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾-1	$1650a	3¼x5	34x5n	31x5n	W
Acason...RB	1½	1950	3¾x5½	36x3½	36x6	W
Acason...H	2½	2750	4⅜x5¾	36x4k	36x8k	W
Acason...L	3½	3450	4¾x5¾	36x5k	30x10k	W
Acason...M	5	4350	5 x6½	36x6	40x12	W
Ace...C	1½	2295	3¾x5½	34x3½k	31x5k	W
Ace...A	3½	2795	4¼x5½	36x4k	36x7	W
Acme	1	....	3½x5	35x5n	35x5n	W
Acme...30	1½	....	3¾x5	34x3½	34x5	W
Acme...40	2	....	3¾x5	34x3½	34x5	W
Acme...60	3	....	4½x5½	36x4	36x7	W
Acme...60L	3	....	4½x5½	36x4	36x7h	W
Acme...90	4½	....	4½x5½	36x5	40x10	W
Acme...125	6½	....	4¾x6	36x6	40x12	W
American...25	2½	3350	4 x6	36x4k	36x4dk	W
American...40	4	4275	4½x6	36x5k	36x5dk	W
Armleder...20	1	....	3¾x5¼	34x3½k	34x6k	W
Armleder...21	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder...40-B	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder...40-C	1½	....	4½x5¾	34x3½k	34x6k	W
Armleder..HW-B	2½	....	4¼x5½	36x4k	38x7k	W
Armleder..HW-C	2½	....	4½x5¼	36x4k	36x7k	W
Armleder..KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder..KW-C	3½	....	4½x5½	36x5k	36x5dk	W
Atlas...MD	1	1135	4½x5	32x4½n	32x4½n	W
Atterbury...20R	1½	2475	4¼x5	34x3½	34x5	W
Atterbury...22C	2½	3375	4½x5½	36x4	36x4d	W
Atterbury...22C	2½	3375	4¾x5¼	36x4	36x4d	W
Atterbury...22D	2½	3375	4¾x5¼	36x4	36x4d	W
Atterbury...22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury...22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury...8E	5	4975	4¼x6	36x5	40x6d	W
Atterbury...8E	5	5125	4¾x6	36x5	40x6	W
Autocar...21UF	1½-2	1950	4¼x4½	34x4k	34x5k	D
Autocar...21UG	1½-2	2050	4¾x4½	34x4k	34x5k	D
Autocar...27H	2	2950	4 x5½	34x5	36x7	D
Autocar...27K2	2	3075	4 x5½	34x5	36x7k	D
Autocar...26T	5	3950	4½x5½	34x6	36x12	D
Autocar...26-B	5	4100	4½x5½	34x6	36x12	D
Available...H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available...H2	2	2775	4 x5	36x3½k	36x6k	W
Available...H2½	2½	3160	4 x5	36x4k	36x8k	W
Available...H3½	3½	4175	4½x5½	36x5	40x5d	W
Available...H5	5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x4	34x5n	34x5n	1
Beck...A Jr.	1½	1285a	3½x5	34x4½n	34x4½n	1
Beck...B-30	1½	1725	3¾x5	34x5	36x6	
Beck...C-40	2	1810	3¾x5	36x6	36x6	
Beck...D-50	2½	2395	4¼x5¼	38x7	40x8	
*Bell...(Penn.)	½	1000b	3½x5	31x4n	31x4n	B
Bell...M (Iowa)	1	1495	3½x5½	35x5	35x5n	W
Bell...E (Iowa)	1½	2100	3¾x5½	34x3½	34x5	1
Bell...O (Iowa)	2½	2550	4¼x5½	34x4	34x6	1
Belmont...A	½	725	3¾x4½	31x4	31x4	B
Belmont...D	2	2575	4¼x5½	34x3½k	34x6k	1
Belmont...F	3	3500	4 x6	36x5k	36x5dk	1
Bessemer...G	1	....	3½x5	35x5n	35x5n	1
Bessemer...H-2	1½	....	3¾x5	36x3½	36x5	1
Bessemer...J-2	2½	....	4¼x5½	36x4	36x4d	1
Bessemer...K-2	4	....	4½x5½	36x5	36x10	1
Bethlehem...KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem...GN	2	1595	4 x5½	36x6k	40x8k	D
Bethlehem...HN	3	2195	4 x5½	36x6k	42x9k	D
Brinton...C	2	2500	3¾x5	34x4	34x5	W
Brinton...D	3	2975	4½x5½	36x4	36x7	W
Brockway...E	1	....	3¾x5½	35x5n	35x5n	B
Brockway...S-S	1½	....	3¾x5	36x4	36x6	W
Brockway...SK	1½	....	4¼x5½	36x4	36x6	W
Brockway...KR	2½	....	4½x5½	36x4	36x8	W
Brockway...K-5	2½	....	4½x5¼	36x4	36x8	W
Brockway...RT	3½	....	4¾x6	36x5	36x10	W
Brockway...R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway...T-4	5	....	4¾x6	36x6	40x6d	W
*Buick	½	915b	3½x4¾	31x4n	31x4n	B
Capitol...G	1½	2975	3¾x5	35x5	38x7	W
Capitol...H	2½	3700	4¼x6	36x4	36x8	W
Capitol...K	2½	4250	4¼x6	36x6	42x9	W
Capitol...M	3½	4425	4¼x6	36x5	36x10	W
Case	2	....	4¼x5¾	36x6	38x7	1
†Chevrolet	¼	510b	3⅛x4	30x3½n	30x3½n	B
*Chevrolet...G	¾	650	3¼x4	31x4n	31x4½n	B
*Chevrolet...T	1	1095	3¼x5¼	33x4n	35x5n	W
Chicago...C1	1½	....	4 x5	36x3½k	36x5k	W
Chicago...C2	2½	....	4 x5	36x4k	36x7k	W
Chicago...C3	3½	....	4½x5½	35x5	36x10	W
Chicago...D5	5	....	4½x5½	36x6	40x12	W
Clydesdale...10	¾-1½	1485	3¾x5	34x5n	31x5n	B
Clydesdale...18	¾-1½	1890	3¾x5	34x5	31x5	W
Clydesdale...20	1-1½	2385	3¾x5	34x5	31x5k	W
Clydesdale...42	1½-2	2175	3¾x5	36x3½	36x6	W
Clydesdale...65X	2½-3	3250	4½x5¼	36x4	36x8	W
Clydesdale...65EX	2½-3	3150	4½x5½	36x4	36x8	W
Clydesdale...90	3½-4½	4100	4½x5½	36x5	36x10	W
Clydesdale...120	5-6	4500	4¾x6	36x6	40x12	W
Columbia	1½	1995	4 x5	35x5	38x7n	1
Columbia...G	2½	2335	4 x5½	36x4	36x7	1
Comet	1½	1950	3¾x5	34x4	31x4	W
Commerce...T	½-1½	1150	3¾x5	31x4½n	31x4½n	B
Commerce...12	1½	1800	3¾x5	35x5n	35x5n	1
Commerce...15	2	2150	3¾x5	35x5n	36x6n	1
Commerce...18	2½	2495	4½x5¼	36x6n	40x8n	1
Commerce...25	2½	2425	4½x5½	36x4	36x7	W
Cook...51	2½	3600	4 x5½	36x6n	40x8n	W
Corbitt...E-22	1	1490	3¾x5	34x3½	31x4	W
Corbitt...D-22	1½	$2200	3¾x5	34x3½	34x5	W
Corbitt...C-22	2	2600	4½x5¼	36x3½	36x7	W
Corbitt...B-22	2½	3000	4½x5¼	36x4	36x7	W
Corbitt...R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt...A-22	3½-4	3800	4½x5½	36x5	36x10	W
Corbitt...AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder...AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder...B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder...D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder...C	2½	2750	4¾x5½	36x4	36x7	W
Day-Elder...F	3½	3150	4¾x5½	36x5	36x5d	W
Day-Elder...E	5	4250	4¼x6	36x5k	40x6dk	W
Dearborn...E	1	1600	3½x5½	35x5n	35x5n	W
Dearborn...FX	1½	2300	3¾x5½	34x4	34x5	W
Dearborn...F	1½	2180	3¾x5½	34x4	34x5	W
Dearborn...48	2	2590	3¾x5½	34x4½	34x7	W
Defiance...G	1	1695a	3¾x5	35x5n	35x5n	B
Defiance...D	1½	2095a	3¾x5	35x5n	30x6n	1
Defiance...E	2	2275a	3¾x5	35x5n	38x7n	1
Denby...31	1½	1485	3½x5	35x5n	35x5n	B
Denby...33	1½	2145	3¾x5	35x5n	38x7n	1
Denby...34	2	2395	3¾x5	36x3½	36x6	1
Denby...35	2½-3	2795	4½x5½	36x4	36x7	1
Denby...27	4	3895	4½x5½	36x5	30x5d	1
Denby...210	5	4295	4½x5½	36x6	40x6d	1
Dependable...A	¾-1	1050	3½x5½	34x5n	30x6n	W
Dependable...C	2	2350	3¾x5½	34x3½	34x5	W
Dependable...D	2½	2650	4 x5½	34x5	30x6	W
Dependable...E	3	2950	4¼x5½	36x4	36x7	W
Diamond T...O-3	1-1¼	1975	3¾x5½	36x3½n	36x4n	W
Diamond T...T	1½	2250	3¾x5½	36x3½	30x5	W
Diamond T...U	2-2½	2650	4 x5½	36x4	36x7	W
Diamond T...K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T...EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T...S	5	4500	4¾x6	36x6	40x6d	W
*Diehl	1	....	3½x5	34x4½	35x5	1
Diehl...B	1½	....	3½x5	36x6	36x6	1
Deane	2½	4100b	4¼x5¾	36x5	36x7	C
Deane	3½	5100b	4½x5¾	36x5	30x5d	C
Deane	6	6000b	5 x6½	36x6	40x6d	C
*Dodge Brothers	¾	730	3⅞x4½	32x4n	32x4n	B
Derris...K-4	2-2½	3400	4¼x5½	36x4	36x7	W
Derris...K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort	½	685a	3½x5	31x4n	31x4n	B
Double Drive...B	3	4000	4¼x5½	6	6	W
Duplex...A	2	2775	4 x5½	35x5n	38x7n	W
Duplex...E	3½	3500	4¼x5½	36x8	30x8	1
Eagle...101	1½	1875	3½x5¼	34x5	34x5	1
Eagle...100-2	2	2275	3¾x5¼	34x4k	34x7k	1
F. W. D...B	3	4200	4¾x5½	36x6	36x6	B
Fageol...1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol...2½	2½	3900	4¼x5¼	34x4	36x7	W
Fageol...3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol...5	5	5700	4½x6¼	36x6	40x6d	W
Fargo...R	2	1700	3¾x5	36x4	36x6	1
*Federal...R2	1	1375	3¾x5	33x5n	33x5n	W
Federal...SD	1½	1800	3¾x5	35x5n	30x6n	W
Federal...TE	1½	2175	4½x5¼	36x3½	36x5	W
Federal...UE	2-2½	2425	4½x5¼	36x4	36x7	W
Federal...WE	3½-4	3150	4½x5½	36x5	36x5d	W
Federal...X2	5-6	4500	4¾x6	36x6	40x6d	W
*Ford	TT	1	430	3¾x4	30x3½n	32x4½n	W
Front Drive...C	1½	2800	3¾x5½	5	4	W
G & J**...20	1	2275	3⅝x5⅛	34x5n	34x5n	W
G & J**...A	2-2½	3375	4x5¼	3dx4	30x7	W
G & J**...B	3½-4	4475	4½x5½	36x5	36x10	W
G.M.C...K16	1	1295	3½x5½	34x5n	31x5n	B
G.M.C...K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C...K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C...K41-T	2	2450	4x5½	36x4	36x8	W
G.M.C...K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C...K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C...K71-T	3½	3700	4½x6	36x5	40x12	W
G.M.C...K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C...K101-T	5	4050	4½x6	36x5	40x14	W
G.M.C...K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W	1½	1850	3¾x5½	35x5	35x5	1
*Garford...15	1	1590	3⅜x5⅛	34x5n	34x5n	W
Garford...25-B	1½	1990	3¾x5½	36x3½	36x5	W
Garford...70-H	2½	2750	4¼x5½	36x4	36x8	W
Garford...77-D	4	3750	4½x6	36x5	36x5d	W
Garford...68D	5	4500	5 x6½	36x6	40x6d	W
Garford...150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary...F	1-1½	1675	3¾x5	36x3½	36x5	W
Gary...I	2	2250	4 x5½	36x3½	36x6	W
Gary...J	2½	2650	4¼x5½	36x4	36x8	W
Gary...K	3½	3650	4½x6	36x5	40x5d	W
Gary...M	5	4100	5 x5½	36x6	40x6d	W
Gersix...M	1½	3100	4 x5½	36x3½	36x7	W
Gersix...K	2½	3500	4½x5½	36x4	36x8	W
Gersix...3	3½	$4500	4½x6	36x5	40x12	W
Graham Bros.	1	1265	3¾x4½	33x4½n	34x5n	B
Graham Bros.	1½	1325	3¾x4½	33x4½n	36x6n	B
1Gramm-Pion...10	1	1245	3½x5	33x5n	33x5n	B
1Gramm-Pion...15	1½	1750a	3¾x5	36x3½k	36x5k	1
1Gramm-Pion...65	1½	2250a	3¾x5	36x3½k	36x5	W
1Gramm-Pion...20	2	2475a	4½x5¼	36x4k	36x7k	W
1Gramm-Pion...30	3	3300a	4¼x5½	36x4k	36x4dk	W
1Gramm-Pion.75P	3½	4225a	4½x5½	36x6n	42x9n	W
1Gramm-Pion...40	4	3850a	4½x5½	36x5	36x5dk	W
1Gramm-Pion...50	5-6	4450a	4¾x6	36x6	40x6dk	W
Hahn...B2	1	1750	3½x5	34x5k	34x5k	W
Hahn...O	1½	2150	3¾x5¼	36x3½k	36x6k	W
Hahn...K	2	2550	4½x5½	36x4k	36x7k	W
Hahn...L	3	3350	4½x5½	36x5k	36x8k	W
Hahn...M	5	3850	4½x5½	36x5	36x10	W
Hahn...N	6	4250	4¾x6	36x6	40x12	W
Hal-Fur...E	1½	2350	4x5½	34x5n	38x7n	W
Hal-Fur...B	2½	3000	4¼x5½	36x6n	36x8	W
Hal-Fur...F	3½	4000	4½x5½	36x6n	40x10	W
Hall...1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall...2½	2½	3275	4¼x5½	30x4	36x6	W
Hall...3½	3½	4100	4½x5½	36x5	36x5d	W
Hall...5	5	5100	4½x5½	30x5	40x6d	W
Hall...7 chain	7	5100	4½x5½	30x5	40x6d	C
Harvey...WOA	2	2650	4½x5½	34x4	34x7	W
Harvey...WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey...WHA	3½	3950	4½x6	30x5	36x5d	W
Hawkeye...K	1½	1850	3¾x5½	34x3½k	34x5k	1
Hawkeye...M	2	2650	4¼x5	30x4k	30x6k	1
Hawkeye...N	3½	3700	4½x6¼	36x5k	36x10k	1
Hendrickson...O	1½	2200	3¾x5½	36x4n	36x5n	W
Hendrickson...N	2½	2690	4¼x5¾	30x4k	36x7k	W
Hendrickson...M	3½	3000	4¼x5	30x5k	36x5dk	W
Hendrickson...K	5	4000	5 x6¼	36x6	40x6	W
Huffman...B	1½-2	1795	3¾x5	34x3½	34x6	W
Huffman...C	1½-2	1695	3¾x5½	36x3½	36x6	I
Huffman...D	2-3	2895	4¼x5½	36x4	36x7	
Hurlburt...A-A	1-1½	1950	3¾x5	34x4	34x5n	W
Hurlburt...B-B	2-2½	2800	4¼x5½	34x3½k	34x6k	W
Hurlburt...C-C	3-3½	3475	4¾x5½	30x4	30x4d	W
Hurlburt...D-D	4-4½	4150	4½x6	36x5	36x5d	W
Hurlburt...E-E	6-6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa)...B	1	1665	3½x5	34x3½	34x4	1
Indep'd't(Iowa)...G	1½	2040	3¾x5¼	34x3½	34x5	1
Indep'd't(Ia.)...HI	2½	2040	4½x5¼	30x4	36x7	1
Indep'd't(Ohio)...F	1½	2385	3¾x5	36x3½	36x5	W
Indep'd't(Ohio)...H	2½	3085	4½x5¼	36x4	36x4d	W
Indep'd't(Ohio)...K	3½	3985	4½x5½	36x5	36x5d	W
Indiana...12	1½-2	....	3¾x5¼	34x3½k	34x5k	W
Indiana...20	2	....	4½x5½	30x4k	36x7k	W
Indiana...25	2½-3	....	4½x5½	30x4k	36x8k	W
Indiana...35	3½-4	....	4¾x5½	30x5k	36x5dk	W
Indiana...51	5-7	....	5 x6¼	36x5k	40x6dk	W
*International...S	1	1250	3½x5	34x5n	34x5n	I
International...21	1	1550	3½x5¼	36x3½	36x3½	I
International...31	1½	1650	3½x5¼	36x3½	36x4	I
International...41	2	2100	3½x5¼	36x3½	36x5	I
International...61	3	2400	4¼x5	36x4	36x6	I
International...101	5	3600	4¼x5	36x5	40x10	I
Jackson...4WD	3½	3850	4½x5½	36x7	36x7	B
Jumbo...15	1½	2295	3¾x6¼	36x3½	36x5	I
Jumbo...20	2	2520	3¾x5¼	35x5n	38x7n	I
Jumbo...25	2½	2660	4½x5½	36x4	36x7	I
Jumbo...30	3	3060	4¼x5½	36x6n	42x9n	I
Jumbo...35	3½	3900	4½x6	36x5	36x10n	I
Jumbo...40	4	4400	4½x6	38x7n	44x10	I
K-Z...1	1	1750	3½x5	34x3½	34x5	W
K-Z...1½	1½	2075	3¾x5	36x4	36x6	W
K-Z...2½	2½	2550	4½x5¼	36x4	36x8	W
K-Z...3½	3½	3350	4½x5½	36x5	40x10	W
K-Z...5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo...T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo...G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo...LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo...NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo...HD	3	3350	4¼x6	30x5	36x10	W
Kalamazoo...SK	4	3845	4¼x6	36x5	36x12	W
Kalamazoo...OK	5	4350	4½x6	36x6	40x6d	W
2Kelly-S...K-31	1½	2700	3¾x5½	36x3½	36x6	C
2Kelly-S...K-34	1½	2700	3¾x5½	36x3½	36x6	W
2Kelly-S...K-38	2½	2900	3¾x5½	36x4	36x4d	W
2Kelly-S...K-35	2½	2900	3¾x5½	36x4	36x4d	C
2Kelly-S...K-40	3½	3900	4½x6½	36x5	40x5d	C
2Kelly-S...K-41	3½	3900	4½x6½	36x5	36x10	I
2Kelly-S...K-42	3½	3900	4½x6½	36x5	40x5d	W
2Kelly-S...K-50	5	4400	4½x6½	36x6	40x6d	C
2Kelly-S...K-60	6	4600	4½x6½	36x6	40x7d	C
2Kelly-S...K-61	5-7	4800	4½x6½	36x6	36x7d	I
Keystone...40	2	2175	3¾x5½	31x5n	38x7n	I
Kimball...AB	2	3675	4 x6	36x4	36x7	W
Kimball...AC	2½	3975	4¼x6	36x4	39x8	W
Kimball...AK	3	4500	4½x6	36x4	36x10	W
Kimball...AE	4	5000	4¾x6	36x5	40x12	W
Kimball...AF	5	5500	5 x6	36x6	40x7d	W
*Kissel...Express	1	1595	3¾x5½	34x5n	34x5n	W
Kissel...Utility	1½	1975	3¾x5½	36x3½	36x5	W
Kissel...Freighter	2½	2875	4¼x5½	36x4	36x7	W
Kissel...H. D.	4	3675	4¼x5½	36x5	36x5d	W
Kleiber...AA	1	2200	4¼x5¼	31x3½k	34x5k	W
Kleiber...A	1½	3100	4¼x5¼	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

1—Gramm-Pioneer. 2—Kelly-Springfield.

Passenger car specifications on page 50

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5½	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x8k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....D	1½	2150	3½x5	34x3½	34x5	W
Koehler.....M	2½	3175	4 x5½	36x4	36x7	W
Koehler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Koehler.....F	3½	4470	4½x5½	36x5	36x10	W
Koehler,MT.Trac	5	3275	4 x5½	36x4	36x7	W
Krebs.....23	¾	1260	3¾x5	34x4½	34x4½	B
Krebs.....24	1	1565	3¾x5	34x5	34x5	W
Krebs.....45	1½	2125	4½x5½	36x4	36x7	W
Krebs.....75	2½	2375	4½x5½	36x4	36x8	W
Krebs.....110	3½	2975	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1025	3¼x4½	34x5n	34x5n	B
Larrabee.....U	1½	2400	3¾x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½-3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5-7	4800	4¼x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	5½x6	10x7	40x14	I
Mack...AB D.R.	1½	3150	4 x5	36x4	36x3½d	D
Mack...AB Chain	1½	3000	4 x5	36x4	36x3½d	C
Mack...AB Chain	2	3300	4 x5	36x4	36x4d	C
Mack....AB D.R.	2	3750	4 x5	36x4	36x4d	D
Mack....AB D.R.	2½	3850	4 x5	36x4	36x4d	D
Mack...AB Chain	2½	3100	4 x5	36x4	36x4d	C
Mack...AC Chain	3½	4950	5 x6	36x5	40x5d	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3100	4 x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Mapleleaf....**	1½	3000	3¾x5½	34x5n	36x6n	W
Mapleleaf....AA**	2	3600	4 x5½	36x4	36x7	W
Mapleleaf...BB**	3	4050	4½x5½	36x4	36x4d	W
Mapleleaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Mapleleaf...DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2200	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x5	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4½x5½	34x4	36x7	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x5d	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3½x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1¼	2090	3¾x5	31x3½	36x5	W
Menominee....H	1½	2175	4 x5	36x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3890	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4¾x6	36x6	40x12	W
Moline.....10	1½	1985	3½x5	31x5n	30x6n	I
*Moreland...R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2890	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-5	4600	4¾x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3¾x5½	34x3k	34x4k	I
Nash.....3018	2-2½	2150	3¾x5½	34x4k	34x7k	I
Nash.....Quad	2-2½	2750	4½x5½	36x5k	36x5k	I
Nash..3018, LWB	2-2½	2200	3¾x5¾	34x4k	34x7k	I
Nash..Quad. LWB	2-2½	2800	4½x5½	36x5k	36x5k	I
Nash.....5018	2½	2250	3¾x5½	34x4k	34x7k	I
*Nelson.....G2	1½	....	4½x5½	36x3½	36x6	W
*Nelson.....G3	2½	....	4½x5½	36x4	36x7	W
*Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
*Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5½	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	3	3060	4½x5½	36x4k	36x7k	W
Noble.....A21	1¼	1840	3¾x5½	34x5	34x5	W
Noble.....B31	1½-2	2180	3¾x5¼	36x4	36x7	W
Noble.....DS1	2½-3	2950	4¼x5½	36x4	36x8	W
Noble.....E71	3½-5	3800	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3¾x5¼	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4¼x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4¼x5¼	34x4	36x6	W
Northwestern.WS	2½	3590	4½x5½	36x4	36x8	W
Norwalk.....2SE	1	1595	3½x5	31x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	31x3½	31x3½d	W
Norwalk,35E.Spec	1½	2285	3¾x5¼	31x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	30x3½	36x5	W
Ogden.....E	2½	....	4¼x5¼	36x4	36x8	W

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Old Hickory...W	1	$1775	3¾x5	36x3½k	36x4k	W
Old Reliable.....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable.....B	2½	3500	4¼x6	34x4	36x4d	W
Old Reliable.....C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable.....D	5	5000	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6½	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5½	35x5n	35x5n	I
Olympic.....A	2½	3200	4¼x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	2½	3300	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	3250	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	3400	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3850	4 x5⅛	38x7n	38x7n	B
Oshkosh.....BB	2½	4000	4 x5⅛	38x7n	38x7n	B
*Overland 4	½	450	3½x4	30x3½n	30x3½n	B
Packard.....2A	2-3	3100	4¼x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4¼x5½	30x6n	40x8n	W
Packard.....ED	3½-4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige.....54-20	2½	2420	4¼x5½	34x4	34x8	W
Paige.....51-18	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot.....Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot.....Lincoln	2	2050	4 x5¼	34x3½	34x5	W
Patriot .Washgt'n	3	2900	4½x5½	36x4	36x7	W
Pierce-Arrow.....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow.....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow.....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3¾x5	36x4	36x6	
Pittsburgher.....	3	3800	4½x5½	36x5k	36x8	W
Power.....F	2	3150	4 x5¼	36x5	36x7	W
Power.....C	3½	4250	4¼x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier.....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	31x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	31x3½	31x5	W
Rainier.....R-28	2	....	4½x5½	34x4	31x6	W
Rainier.....R-20	2½-3	....	4½x5½	34x4	31x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	36x6	40x6d	W
Ranger...TK-20-2	1½	2450	3¾x5	30x6n	38x7n	W
'Reo.....F	¾-1½	1245	4½x4½	31x4½n	31x4½n	B
Reliance.....10A	1½	2400	4 x5¼	36x3½	36x5	I
Reliance.....20B	2½	3100	4¼x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	B
Republic.....10	1	1395	3¾x5	34x3	34x4	I
Republic..10 Exp	1	1695	3¾x5	34x5n	34x5n	I
Republic.....11X	1½	1795	3¾x5	31x4	31x6	I
Republic.....19	2½	2195	4½x5½	30x4	30x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rowe.....CW	1½	3000	3¾x5	30x6n	36x6n	W
Rowe....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rowe....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rowe....G.P.W.	3	5250	3½x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4½x6	30x5	36x6d	W
Rowe.....F. W.	5	5500	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4-3½x4	32x4n	32x4n	B
Samson.....25	1¼	....	4-3½x5½	35x5n	35x5n	B
Sanford....W-15	1½-2	2150b	3¾x5	36x3½k	36x5k	
Sanford.....25	2½-3½	....	4½x5½	30x4	30x4d	W
Sanford.....35	3½-5	....	4½x5½	30x5	36x5d	W
Sanford.....50	5-7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ton	3	3800	4¼x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4100	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5¼	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½-2½	2250	3¾x5	34x3½	31x5	W
Selden.....31	1½-2½	3350	4½x5¼	34x5n	38x7n	W
Selden.....50	2½-3½	3250	4½x5¼	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....73	3½-5	3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4¾x6	36x6	40x12	W
Seneca.....M	½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3½x4½	32x4½n	32x4½n	B
*Service.....15	1¼	....	3½x5	34x4½n	35x5n	B
Service.....21	1½	....	3¾x5½	34x3½	31x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4½x5½	35x5n	38x7n	W
Service.....52	3	....	4½x5½	36x4	36x8	W
Service.....72	3½	....	4½x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	$1450	3¾x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5¼	34x4	36x6	W
Signal.....J	2½	2375	4½x5½	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x5d	W
Signal.....R	5	3900	4¾x6	36x6	40x6d	W
Southern.....10	1	2090	3¾x5	34x3½	34x4	W
Southern.....15	1½	2590	3¾x5½	36x6n	34x4	W
Southern.....20	2	2990	4¾x5¼	36x6n	40x8k	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	31x5k	W
Standard.....76	2½-3	2400	4½x5¼	36x4k	36x7k	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x10	W
Standard.....5-K	5-7	4400	4¾x6	36x6	40x12	W
*Star.....	½	610b	3½x4¼	30x3½n	30x3½n	B
Sterling.....1½	1½	2885	4 x5½	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5½	36x4k	36x6k	W
Sterling.....2½	2½	3290	4½x5½	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6½	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6¼	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6¼	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6¼	36x6	40x7d	C
*Stewart...Utility	¼-1½	1245	3½x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3½x5½	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3¾x5	34x3½	34x5	I
Stewart.....7	2-2½	2190	4½x5¼	34x4	34x7	I
Stewart.....7-X	2½-3	2390	4½x5½	34x4	34x7	I
Stewart.....10	3½-4	3190	4½x5½	36x5	36x5d	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x5d	I
*Stewart.....	1¼	1245	4-3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1240	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1700	3¾x5¼	34x5n	34x5n	W
Stoughton.....B	1½	2150	3¾x5¼	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....F	3	3150	4¼x5½	36x6d	36x5d	W
Sullivan.....E	2	2800	4¼x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Thomart.....	1¼	1795a	4 x5¼	34x5	34x5	C
Tiffin.....GW	1½	2100	4½x5¼	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5¼	36x4	36x3½d	W
Tiffin.....PW	3½	3600	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4¼x5½	36x4k	36x5k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000a	4½x5¼	35x5n	38x7n	W
Tower.....H	2½	2475a	4½x5¼	36x4	36x7	W
Tower.....G	3½	3175a	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3¾x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5½	34x3½k	34x4k	I
Transport.....?S	2	1885	3¾x5	36x3½k	36x6k	I
Transport.....?S	3	2385	4½x5¼	36x4k	36x8k	I
Transport.....69	3½	2585	4½x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Traylor.....B	1½	2390	3¾x5½	34x3½	34x5	W
Traylor.....C	2-2½	2850	4 x5½	36x4	36x7	W
Traylor.....D	3-3½	3300	4½x5½	36x4	36x8k	W
Traylor.....F	5-6	4700	4½x6	30x6	40x6d	W
*Triangle.....AA	1	1285	3½x5	34x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3¾x5½	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5½	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5½	36x4k	36x7k	I
Twin City...B.W.	2	2750	4 x5½	36x6	40x8	I
Twin City...A W.	3½	3950	4½x6	36x5	40x5d	W
*Twin City.....B	3½	....	5½x6	36x6	36x6	I
*Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4½x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4½x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4½x5½	36x4	36x4d	W
Ultimate.....BL	3	3300	4½x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
Union.....FW	2½	3100	4 x6	36x5k	36x8k	D
Union.....HW	4	4650	4½x6	36x6	40x12	D
United.....A	1½	2145	3¾x5¼	36x3½k	31x5k	W
United.....B	2½	3150	4½x5½	36x4k	36x7k	W
United.....C	3½	3975	4½x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States .U	1¼	1800	3½x5½	34x5n	34x5n	B
UnitedStates,NW	1½-2	2375	3¾x5	36x5	36x3½	W
United States...N	1½-2	2175	3¾x5	36x3½k	36x5k	I
United States...R	3	3300	4 x5¼	36x4	36x4d	W
United States...S	4	4075	4½x5½	36x5	36x5d	W
United States...T	5-7	4975	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Veteran.....M**	1½	2699	3¾x5¼	35x5n	35x5n	W
Veteran.....P**	2	3699	4¼x5½	36x4	36x7	W
Veteran.....R**	3	4200	4¼x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	½	1050	3½x4½	31x4n	31x4n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express, truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Vim	30	1½	$1175	3½x4½	32x4½	32x4½	W
*Vim	50	1½-3¼	995	4 x5	32x4n	32x4n	B
Vim	31	1	1975	3¾x5½	35x5n	35x5n	W
Vim	22	2	3150	3¾x5½	36x4	36x6	W
Vim	23	3	3950	4¼x5½	36x5	36x5d	W
Walker-JohnsonA		2	2250	3¾x5	34x3½	34x6	W
Walker-Johnson B		3	2750	4½x5½	36x4	36x8	W
Walker	M	2½	3850	4½x5¾	36x4	36x8	D
Walker	S	5	4850	4½x6½	36x6	40x6d	W
*Watson	C	1	1465a	3¾x5½	35x5n	35x5n	W
Watson	N	3½	4250	4½x5½	36x5	36x10	W
Western	W1½	1½	2550	4½x5¼	36x3½k	36x5k	W
Western	L1½	1½	2550	3¾x5	30x3½k	36x5k	W
Western	W2½	2½	3250	4½x5¼	36x4	36x7	W
Western	L2½	2½	3250	4½x6	36x4	36x7	W
Western	W3½	3½	4250	4½x6	36x5	40x5d	W
*White	15	¾	2400	3¾x5½	34x5n	34x5n	B
White	20	2	$3250	3¾x5½	36x4k	36x7k	D
White	40	3½	4200	3¾x5¾	36x5	40x5d	D
White	45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick	E	1	1225	3¾x5	34x5n	34x5n	W
White Hick	H	1½	1375	3¾x5	36x3½	36x5	W
White Hick	K	2½	1675	4½x5¼	36x4	36x5	W
Wichita	K	2	1875	3¾x5½	36x3½	36x4k	W
Wichita	M	1	2400	3¾x5½	36x3½k	36x6k	W
Wichita	RX	3	3200	4½x5¾	36x4k	36x8k	W
Wichita	O	4	$3500	4½x6¼	36x5k	36x5k	W
Wilcox	AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox	BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox	D	2½	3000	4¼x5	36x4k	36x3½kk	W
Wilcox	E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox	F	5	4350	4¾x6½	36x5	40x6d	W
Wilson	F	1½	2270	3¾x5	36x3½	36x5	W
Wilson	EA	2½	2825	4½x5½	36x4	36x7	W
Wilson	G	3½	3685	4½x5½	36x5	36x5	W
Wilson	H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin	A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin	B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin	C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin	D	3½	3000	4½x5½	36x6n	40x8	W
Wisconsin	E	5	3500	4½x6½	36x6	36x10	W
Wisconsin	F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will	N	1½	2450	3¾x5	36x3½k	36x5k	W
Witt-Will	P	2½	2900	4½x5½	36x3½k	36x7k	W

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Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm.	15-25	1185	4	Midw.	4-4½x5½	Gas.	3
Allis-Chalm.	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm.	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork	2-G	1595	4	Own	4-4¼x6	GorK	3
Allwork	C	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T.	15-30	1900	4	Clim.	4-5 x6½	G,K	4
Aultman-T.	22-45	2810	4	Own	4-5½x8	G,K	6
Aultman-T.	30-60	4000	4	Own	4-7 x9	G,K,D	9-10
Autocar. B-3	12-21	1250	4	Here.	4-4 x5½	Gas.	2-3
Avery,SR.Cul	5-10	....	4	Own	4-3 x4	G,K	..
Avery .Cult-C		....	3	Own	6-3 x4	G,K	..
Avery	B	5-10	....	4	Own	4-3 x4	G,K	2
Avery	C		....	4	Own	6-3 x4	G,K	..
Avery		8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery		12-20	....	4	Own	4-4½x6	G,K,D	3-4
§Avery			....	*	Own	4-4x5½	G,K,D	3
Avery		12-25	....	4	Own	2-6½x7	G,K,D	3-4
Avery		14-28	....	4	Own	4-4½	G,K,D	3-4
Avery		18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery		25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery		45-65	....	4	Own	4-7½x8	G,K,D	8-10
Bates Mule	H	15-25	....	4	Mklw	4-4½x5¼	Gas.	3
Bates Mule	F	18-25	....	*2	Midw	4-4½x5¼	Gas.	3
‡Bates Mule	G	25-35	....	*2	Midw	4-4½x6	Gas.	..
Bear		25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman	G	2-4	240	4	Own	1-3½x4½	Gas.	....
Best		30	....	*2	Own	4-4¾x6½	G,K,D	4
Best		60	....	*2	Own	4-6½x8½	G,K,D	8-9
Bering		5-10	395	4	LeR.	4-3½x4½	G	..
Bering	1921	....	1850	3	Wauk	4-4⅜x5¾	GorK	2
**Bryan		15-30	....	4	Own	2-4 x5	K.	3
Capital		15-30	1000	2	Own	4-4¼x6	Gas.	3
Case		12-20	1050	4	Own	4-4½x5	G,K,D	3
Case		12-20	....	....	....	4-4½x5	....	2
Case		15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case		22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case		40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar	T35	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar	5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar	10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur		5-2½	345	2	N Way	2-4¼x4½	GorK	1
Chicago	40	40	2500	4	Own	4-4½x6	Gas.	4
Cletrac	F	9-16	595	*2	Own	4-3¼x4½	G,K,D	2
Cletrac	W	12-20	1345	*2	Own	4-4 x5½	G,K,D	2-3
Dakota	4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Depue	A	20-30	2500	4	Buda	4-4½x6	Gas.	4
Dil	D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dil	R.W.	20	2980	4	Midw.	4-4½x6	Gas.	3
Do-It-All	A	3-6	495	..	Own	1-4½x5	Gas.	1
Eagle	F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle	H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B	AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol	D	9-18	1525	4	Lve.	4-3½x5	Gas.	2
Farm Horse	B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Farquhar		15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar		18-35	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar		25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch..4 Drive		20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson		-18	$ 395	4	Own	4-4x5	G,K	2
Franklin	G	18-30	4000	*2	Clim.	4-5 x6½	G or K	3-4
Franklin	C	18-30	3350	*2	Clim.	4-5 x6½	G or K	3-4
Franklin	G2	18-30	4350	2	Clim.	4-5 x6½	G or K	3-4
Frick	A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick	C	15-28	....	4	Beav.	4-4½x6	G,K	3-4
Grain Belt	A	18-30	2150	4	Wauk.	4-4¾x6¾	G or K	4
Gray		20-36	1975	3	Wauk.	4-4½x6¾	Gas.	4
Gray		22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. Western	St	20-30	1950	4	Beav.	4-4½x6	K	4
Hart-Parr	20	20	765	4	Own	2-5¼x6½	K.D.	2
Hart-Parr	30	30	895	4	Own	2-6½x7	K.D.	3
‡Hart-Parr		....	1695	4	Own	6½x7	K.D.	..
Heider	D	9-16	870	4	Wauk	4-4¼x5¾	G,K	2
Heider	C	12-20	995	4	Wauk	4-4½x6¾	G,K	3
Heider	Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4		12-25	985	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4		15-30	1885	4	Midw.	4-4½x6	Gas	3
Illinois	C	15-30	....	4	Clim.	4-5 x6½	G,K	4
Indiana	F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International		8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan		10-20	†700	4	Own	2-6½x8	G,K,D	3
International		15-30	1750	4	Own	4-5½x8	G,K,D	4
J-T	N	25-40	3000	*2	Clim.	4-5x6½	G,K,D	3-4
¶Kinkade		1½	190	1	Own	1-3 x3	Gas.	....
La Crosse		12-24	985	2	Own	2-6 x7	G,K	3
Lauson	S	12-25	1295	4	Midw.	4-4½x5¼	Gas.	3
Lauson	21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lauson Road		15-30	2000	4	Beav.	4-4¾x6	K	....
Leader	B	12-18	685	4	Own	2-6 x6½	G,K,D	2-3
Leader	N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader	GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn	H4J	40-	4500	*	Cont.	4-4½x5½	Gas	4
Linn	W	60	5000	*	Wauk	4-5 x6¼	Gas	6
Little Giant	B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant	A	26-35	3300	4	Own	1-5½x6	K	6
Lombard	1922	35-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard	1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar	1922	2	210	2	Evin	1-2⅝x2½	Gas.	..
Minne	All-P	12-25	800	4	Own	4-4½x7	G or K	3
Minne.	Gen.P	17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne.	Med.D	22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD		35-70	3850	4	Own	4-7½x9	G or K	8-9
Mohawk	1922	8-16	650	2	Light	4-3¼x4½	K or G	1-2
Moline Univ	D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch.		9-18	....	2	Own	4-3½x5	Gas.	2-3
‡Monarch		20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Moter Maculi		1½	195	2	Own	1-2¾x3½	Gas.	..
NB	1	3-6	425	4	Own	2-3¾x4	Gas.	1
Nichols-Shep.		20-42	2650	4	Own	8 x10	G or K	3-6
Nichols Shep.		25-50	3000	4	Own	9 x12	G or K	4-7
Nichols-Shep.		35-70	3650	4	Own	-10½x14	G or K	8-10
Nilson Senior		20-40	1975	5	Wauk	4-5 x6¼	G,K	4
Oil Pull	K	12-20	....	4	Own	2-6 x8	K,D	3
Oil Pull	H	16-30	....	4	Own	2-7 x8½	K,D	4
Oil Pull	G	20-40	....	4	Own	2-8 x10	K,D	5-6
Oil Pull	E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar	K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Peoria	L	12-25	1600	4	Clim.	4-5 x6½	G,K	3
Pioneer	G	18-36	1750	4	Own	4-5½x6	G,K,D	4
Pioneer	C	40-75	3550	4	Own	4-7 x8	Gas.	10
Plowman	A	15-30	1205	4	Buda	4-4½x6	G,K	3-4
Reliable		10-20	390	4	Own	2-6 x7	Ker.	2
Rex		12-25	1600	4	Wauk	4-4¼x5¾	G or K	3
Russell		12-24	1500	4	Own	4-4¼x5¾	G or K	2-3
Russell		15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell		20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell		30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson	M	....	445	4	Own	4-4 x5½	G,K	2
Sandusky	J	10-20	1250	4	Own	4-4¼x5¼	G,K,D	2
Sandusky	E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
¶Shelby		1	150	3	B & S	1-2½x2½	G	..
Shelby	D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby	C	9-18	....	4	Wauk	4-3¾x5¼	G or K	2
Steady Pull		12-24	1485	4	Own	4-4 x5	Gas.	3
Tioga	3	18-32	....	4	Wisc.	4-4½x6	Gas.	3-4
Toro Cultivator		6	750	3	LeR	4-3½x4½	Gas.	2
ToroTractor'22		6-10	495	3	LeR	4-3½x4½	Gas.	2
Townsend		10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend		15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend		25-50	2500	2	Own	4-8½x10	Ker.	4-8
Traction Meter		40-50	....	4	....	8-3½x5	Gas.	4-5
Trayler	TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar	10	25-40	3750	*2	Wauk	4-5 x6¼	G or K	4
Twin City		12-20	1200	4	Own	4-4¼x6	G,K	3
Twin City		20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City		40-65	4750	4	Own	4-7½x9	G,K	8-10
Uncle Sam	C20	12-20	1295	4	Weid.	4-4 x5½	G	2-3
Uncle Sam	B19	20-30	1985	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam	D21	20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utilitor	501	2½-4	295	4	Own	1-3½x4½	G	1
Utilitor	501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis	K	15-25	....	4	Own	4-4¼x5¾	G,K	3
Waterloo	N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore	21-22	12-25	1185	4	Wauk	4-4 x5¾	G,K	3
Whitney	D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita	T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin	E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin	F	20-40	2050	4	Wauk	4-5 x6¼	G or K	4
Wisconsin	H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba	12-20	12-20	2400	*2	Wisc.	4-4½x6¾	G,K,D	3
Yuba	15-25	15-25	2750	*2	Wisc.	4-4¼x6	G,K,D	..
Yuba	20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba	25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba		25-40	4750	*2	Yuba	4-5½x7	D	..
Zelle		12-25	....	4	Buda	4-4¼x5½	G or K	3

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont.—Continental. Dom.—Domas Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor. ¶Garden Tractur. **Steam Tractor

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Specifications of Current Passenger Car Models

NAME AND MODEL	Engine Make	Cylinders Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Ace.....F	G-B..	4-3½x5	114	32x4	$1295	$1295	....	....	$2295
Ace.....L	H-S..	6-3¼x5	117	32x4	2260	2260	....	....	3680
Ace.....C	Cont..	6-3⅝x5½	123	33x4½	2975	2975	....	....	4500
Ambassador.....R	Cont..	6-3⅝x5¼	136	33x5	....	b4500	$4500	....	6500
American.....D-66	H-S...	6-3½x5	127	32x4½	b1885	1785	1850	....	2485
Anderson...Aluminum 6	Cont..	6-3¼x4½	114	32x4	....	1195	....	....	....
Anderson.....Series 40	Cont..	6-3¼x4½	120	33x4	2195	1650	1795	$2450	2550
Apperson.....8-21-S	Own..	8-3½x5	130	34x4½	....	2620	2645	3625	3695
Auburn.....6-51	Cont..	6-3⅜x4½	121	32x4	1575	1475	....	2275	2345
Auburn.....6-51	Cont..	6-3⅜x4½	121	32x4½	....	n1995	1545	....	....
Bay State.....	Cont..	6-3½x4½	121	32x4	1800	1800	....	2400	2500
Ball.....4-32	H-S...	4-3½x5	114	31x4	1095	1095	....	....	....
Ball.....6-50	H-S...	6-3¼x5	124	32x4	1545	1545	....	....	....
Biddle.....B1 & B5	Buda..	4-3¾x5¼	121	32x4	2950	b2950	....	3950	3950
Brewster.....91	Own..	4-4 x5½	125	32x4½	5000	5000	....	....	7000
Buick..1922-34-5-6-7-38	Own..	4-3⅜x4¾	109	31x4	865	885	u 725	1175	{1395 / 1325e
Buick.....1922-41-4-5-47	Own..	6-3⅜x4½	118	33x4t	1175	1195	u975	1935e	1985
Buick.1922-48-9-50-4-55	Own..	6-3⅜x4½	124	34x4½	n1625v	n1675v	1435	1895	2195
Cadillac.....61	Own..	8-3½x5½	132	33x5	3100	3150	3150	b3875	4100
Case.....X	Cont..	6-3⅜x4½	122	32x4½	1750	1790	....	2550	2690
Case.....W	Cont..	6-3⅝x5¼	129	34x4½	....	2200	2250	2850	3250
Chalmers.....1922	Own..	6-3¼x4½	117	32x4	1185	1185	....	1595	2295
Chalmers.....1922	Own..	6-3¼x4½	122	32x4	....	....	1345	....	....
Chandler.....Six	Own..	6-3½x5	123	33x4	1495	b1495	1645	b1995	2295
Chevrolet.....Superior	Own..	4-3½x4	102	30x3½	510	525	u425	{b840 / k680	860
Chevrolet.....FB	Own..	4-3½x5¼	110	33x4	865	885	....	1325	1395
Cleveland.....41	Own..	6-3 x4½	112	32x4	1085	1095	n1260	1495	1585
Cole.....890	Nort..	8-3½x4½	127¼	33x5	2685	b2685n	2685	b3385	3685
Columbia.....De Luxe	Cont..	6-3⅜x4¼	115	32x4	1475	1475	b1475n	b1925	1995
Columbia.....Light Six	Cont..	6-3⅛x4¼	115	31x4	995	985	....	....	1395
Comet.....C-53	Cont..	6-3½x5¼	125	33x4½	....	1985	2085	....	2985
Crawford.....22-6-60	Cont..	6-3⅝x5¼	122½	32x4	3000	3000	3000	....	4500
Crawford-Dagmar...6-60	Cont..	6-3⅝x5¼	135	33x5	....	n3500	....	....	....
Daniels.....D-19	Own..	8-3½x5¼	132	33x5	a4350	b4350	4350	5250	6000
Davis.....71	Cont..	6-3⅛x4¼	114	31x4	....	1295	....	....	....
Davis.....61-67	Cont..	6-3⅜x4½	120	32x4	1595	1595	b1695	2095	2195
Dixie Flyer.....H-S-70	H-S...	4-3½x5	112	32x4	1175	1175	b1295	1545	1595
Dodge Brothers.....	Own..	4-3⅞x4½	114	32x4	850	880	....	980h	1440
Durris.....6-80	Own..	6-4 x5	132	33x5	....	b3900	3950	4985b	5750
Dort.....19-14	D-Ly..	4-3½x5	108	31x4	885	885	....	{1265 / 1045k	{1385 / 1095k
Driggs.....	Own..	4-2⅝x4½	104	30x3½	1275	1275	....	....	1975
Duesenberg...Straight 8	Own..	8-2⅞x5	134	33x5	6500	6500	6750	7800	7800
Du Pont.....A	Own..	4-3½x5⅛	124	32x4½	3000	3200	....	3800	4000
Durant.....A-22	Cont..	4-3⅞x4¼	109	31x4	n890	890	....	1365	1365
Durant.....B-22	Anst..	6-3¼x4½	123½	32x4½	1600	1650	....	2250	2400
Earl.....40	Own..	4-3 x5¼	112	32x4	1485	1095	950u	b1395	1795
Elcar.....K-4	Lyc...	4-3½x5	118	33x4	1095	1095	n1095	1345	....
Elcar.....7-R	Cont..	6-3¼x4½	118	33x4	1395	1395	n1395	2065	2165
Elgin.....K-1	Falls..	6-3¼x4¼	118	33x4	1345	1295	b1345	2195	2195
Essex.....	Own..	4-3⅜x5	108½	32x4	....	1095	....	1195k	{1895 / 1295k
Ford.....T	Own..	4-3⅜x4	100	30x3½	r319	s348	u285	580	645
Franklin.....9-B	Own..	6-3¼x4	115	32x4	1900	1950	u1750	2750	2850
Gardner.....T-R & G	Lyc...	4-3½x5	112	32x4	895	895	....	1095k	{1595 / 1345k
Grant.....	Own..	6-3¼x4½	116	32x4	1385	1385	....	1895	1945
Gray.....	Own..	4-3⅝x4	100	30x3½	....	490	....	....	760
H.C.S.....Series 3	Weid..	4-3⅝x5½	120	32x4½	2475	2475	....	3250	3475
Halladay.....4	Own..	4-3½x5	115	32x4	1095	1095	....	1990	2085
Halladay.....6	Own..	6-3¼x5	115	32x4	1595	1595	....	2295	2395
Handley-Knight.....	Own..	4-4⅛x4½	125	32x4½	....	....	2650	3450	3450
Hansen.....30	Cont..	6-3¼x4¼	114	31x4	....	995	....	....	....
Hanson Six.....60	Cont..	6-3⅜x4½	121	32x4	1595	1595	1795	b2475	2585
Hatfield.....A-42	H-S...	4-3½x5	115	32x4	....	1345	b1345	1950	1950
Haynes.....75	Own..	6-3½x5	132	34x4½	2395	b2395	2395	....	3395
Haynes.....55	Own..	6-3½x5	121	32x4½	1545	1495	....	2095	2395
Holmes.....Series 4	Own..	6-3½x4¼	126	34x4½	....	b2500	2500	b3300	3600
Hudson.....Super 6	Own..	6-3½x5	126	34x4½	....	b1645	1695	2570	{2650 / 1745k
Huffman.....	Cont..	6-3⅜x4½	120	32x4	1395	1395	....	....	2295
Hupmobile.....Series R	Own..	4-3¼x5½	112	32x4	1150	1150	u1025	{1635 / 1335k	1785
Jackson.....638	Cont..	6-3¼x4½	121	32x4½	....	1485	b1685	2985	2985
Jewett.....Six	Own..	6-3¼x5	112	31x4	a995	995	....	b1445	1465
Jordan.....MX	Own..	6-3⅛x4¾	120	32x4	1895	1795	....	2785	2785
Kelsey.....4	Grav..	4-3½x5	111	32x3½	....	985	....	....	1450
Kelsey.....6	Walk'r	4-3¾x4½	118	32x4	....	1525	....	....	2175
Kenworthy.....8-90	Own..	8-3 x5½	130	32x4½	5000	5000	5250	6000	6000
King.....K	Own..	8-3 x5	120	32x4½	1795	1795	b1795	2400	2550
Kissel.....45	Own..	6-3⅛x5½	124	32x4½	n2385	1885	2385	b2975	3075
Kline Kar.....6-55-K	Cont..	6-3¼x4½	121	33x4	1690	1690	1690	2750	2890
LaFayette.....	Own..	8-3½x5¼	132	33x5	3985	b4090	4090	5500	5500
Leach.....999	Own..	6-3¾x5¼	134	32x4½	5500	5500	5500	5500	5500
Lexington.....23	Anst..	6-3½x4½	128	32x4½	1695	1695 / 1995n	1795	b2345	2545
Liberty.....10-D	Own..	6-3½x5	117	32x4	1575	1395	1575n	2085 / 1695k	2215

NAME AND MODEL	Engine Make	Cylinders Bore and Stroke	WB	Tires	7-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Lincoln.....	Own..	8-3⅜x5	136	33x5	$3800	b3800	$3800	$4400	$4700
Locomobile.....48	Own..	6-4½x5½	142	35x5	....	b7600	7600	10500	11000
Maibohm.....B	Own..	6-3½x4½	116	32x4	1395	1395	b1495	2165	2165
Marmon.....34	Own..	6-3⅜x5⅛	136	32x4½	3385	b3185	3185	3985	4385
Maxwell.....	Own..	4-3⅝x4½	109	31x4	885	885	....	1235	1335
McFarlan.....1922	Own..	6-4½x6	140	33x5	6300	b6300	6300	7500	7500
Mercer.....Series 5	Own..	4-3¾x6¾	132	32x4½	3950	b3950	c3950	4850	5250
Merit.....	Cont..	6-3⅜x4½	119	32x4	1895	1895	....	....	....
Mitchell.....F-50	Own..	6-3½x5	120	33x4	a1590	1590	b1690n	b2050	2275
Mitchell.....F-50	Own..	6-3½x5	127	32x4½	....	....	1850	....	....
Monroe.....1922-S-9	Own..	4-3¼x4½	115	32x3½	950	950	....	....	....
Moon.....6-40	Cont..	6-3½x4¼	115	31x4	....	1295	....	....	1695
Moon.....6-58	Cont..	6-3⅝x4½	128	33x4½	1785	1785	1795	2785	2785
Nash.....691-96-97	Own..	6-3½x5	121	33x4	1210	1240	b1315n	....	....
Nash.....692-94-95	Own..	6-3½x5	127	34x4½	....	....	1390	b1890	2190
Nash Four.....41-4	Own..	4-3⅝x5	112	33x4	915	935	....	n1385	1545
								{1195k	{1275k
National.....BB	Own..	6-3½x5¼	130	32x4½	a2475	b2475	2375	b3725	3825
Nema.....3C	Cont..	6-3¼x4½	128	32x4½	2500	b2500	c2600	....	3500
Nema.....1D	Bea..	6-3½x5¼	128	32x4½	3000	b3100	c3200	....	5500
Norwalk.....430-KS	Lyc...	4-3½x5	116	32x3½	....	1035	....	....	....
Oakland.....6-44	Own..	6-2¾x4¾	115	32x4	975	{995 / u795	b1165n	{b1445 / 1185k	1545
Ogren.....6 T D Luxe	Cont..	6-3⅝x5¼	134	33x5	b3750	3750	3850	4500	4800
Oldsmobile.....43 A	Own..	4-3½x5¼	115	32x4	1145	1145	b1265	1645	1795
Oldsmobile.....46	Own..	8-2⅞x4¾	122	33x4½	....	b1735	1735	....	2635
Oldsmobile.....47	Own..	8-2⅞x4½	115	32x4	1595	1595	b1595	2145	2295
Overland.....4	Own..	4-3⅜x4	100	30x3½	550	550	....	850	895
Packard.....Single-Six	Own..	6-3⅜x5	126	33x4½	2485	2485	u2250	3175	3275
Packard.....Single-Six	Own..	6-3⅜x5	133	33x4½	....	u2350	2685	....	3525
Packard.....Twin-Six	Own..	12-3 x5	136	35x5	3850	3850	3850	5240	5400
Paige.....6-44	Own..	6-3½x5	119	32x4	1465	1465	u1290	1995	2245
Paige.....6-66	Cont..	6-3¾x5	131	33x4½	a2495	n2245	2195	3100	3155
Paterson.....22-6-52	Cont..	6-3⅜x4½	120	32x4½	....	1390	1425	2395	2395
Peerless.....56-S-7	Own..	8-3¼x5	128	33x5	....	b2990	2900	b3400	3900
Pierce-Arrow.....	Own..	6-4 x5½	138	33x5	5250	b5250	5250	6800	7000
Pilot.....6-50	H-S...	6-3½x5	126	32x4½	2050	2000	2050	2950	3000
Premier.....6-D	Own..	6-3⅜x5½	126¾	33x5	3150	b3100	3250	4300	5100
Premocar.....6-40-A	Falls..	6-3⅛x4¼	117	32x4	1095	1095	....	1750	1825
R & V Knight.....R	Own..	4-3¾x5	116	32x4	....	1635	....	2385	2475
R & V Knight.....J	Own..	6-3½x4½	127	32x4½	2475	b2475	2475	3015	3105
Roo Series.....T6 & U6	Own..	6-3⅞x5	120	33x4	1595	n1645	1485	b2355	2435
ReVere.....C	Dues.	4-4½x6	131	32x4½	3200	3200	3200	....	4000
Rickenbacker.....A	Own..	6-3½x4¾	117	32x4	....	1485	....	1985	1985
Reamer.....6-54-E	Cont..	6-3½x5¼	128	32x4¼	2850	b2585	2785	3850	3850
Reamer.....4-75-E	Dues..	4-4½x6	128	32x4½	3985	b3585	b3750n	....	b4650
Rolls-Royce.....	Own..	6-4½x4¾	143½	33x5	....	10,900	....	....	....
Saxon.....125	Own..	4-3½x5	112	32x4	1195	1195	....	1795	1795
Sayers Six.....DP	Cont..	6-3½x4½	118	33x4	1645	1645	....	2645	2645
Seneca.....L-2 & O-2	Lyc...	4-3½x5	108	30x3½	875	875	....	....	....
Seneca.....50 & 51	Lyc...	4-3½x5	112	31x4	1095	1095	....	....	....
Sperling.....A	Supr..	4-3⅜x5	114	32x4	980	980	....	1685	1685
Standard.....98	Own..	8-3¼x5	127	34x4½	2150	b2500	2500	2750	3200
Stanley.....	Own..	2-4 x5	130	32x4½	2700	2700	2700	3775	3950
Stanwood Six.....	Cont..	6-3¼x4½	118	33x4	1765	1765	....	2750	....
Star.....	Cont..	4-3½x4¼	102	30x3½	r319	s348	u285	580	645
Stearns-Knight....SKL4	Own..	4-3⅞x5⅝	125	34x4½	2250	2250	2450	3150	3450
Stearns-Knight.....6	Own..	6-3⅜x5	130	34x4½	2700	2700	2850	3350	3700
Stephens.....90	Own..	6-3¼x4½	122	33x4½	1575	b1595	c1625	2450	2550
Stevens-Duryea.....E	Own..	6-4⅞x5½	138	35x5	7250	b6900	6800	u5600	b6900
Studebaker....Light Six	Own..	6-3½x4½	112	32x4	975	975	u785	1225	1550
Studebaker..Special Six	Own..	6-3½x5	119	32x4	1250	1275	b1275	1875	2050
Studebaker.....Big Six	Own..	6-3⅞x5	126	33x4½	u1300	1650	n1785	2275	2475
Stutz.....	Own..	4-4⅜x6	130	32x4½	2450	b2790	c2640	3490	4450
Templar.....A-445	Own..	4-3⅜x5½	118	32x4	2025	2125	b2175	2650	2785
Tulsa.....E-1-2-3	H-S...	4-3½x5	117	33x4	1175	1175	....	....	....
Velie.....48	Cont..	6-3¼x4½	115	32x4	1585	1595	b1800	2485	2485
Velie.....34	Falls..	6-3¼x4½	112	32x3½	1235	1235	....	1750	2085
Velie.....58	Own..	6-3½x4¼	115	32x4	1275	1275	....	2185	2185
Washington.....C	Cont..	6-3⅝x4½	120	32x4	....	1785	....	....	2285
Westcott.....C-48	Cont..	6-3½x5¼	125	32x4½	....	....	1890	....	2890
Westcott.....A-44	Cont..	6-3¼x4½	120	32x4	....	1690	n1890	....	2690
Wills Sainte Claire..A-68	Own..	8-3¼x4	121	32x4½	2475	2475	....	3275	3475
Willys-Knight.....20	Own..	4-3⅝x4½	118	32x4	1350	1375	....	1875	2095
Winton.....40	Own..	6-3¾x5½	132	35x5	3400	n3600	3400	b4450	4550

a—3-passenger, b—4-passenger, c—6-passenger, n—Sport, h—All Metal Type, k—Soft Top Type, u—Chassis Price, r—Price without starter and demountable rims. Price with starter and demountable rims $414. s—Price without starter and demountable rims. Price with starter and demountable rims $443. t—Model 47-34x4½ Tires. v—Tire Sizes 32x4½. e—Touring Sedan.

Engine Make: Anst—Ansted. Bea—Beaver. Cont—Continental. Curt—Curtis. D.Ly—Dort Lycoming. G-B—Grey Beal. H-S—Herschell-Spillman. Lyc—Lycoming. Nort—Northway. Roch—Rochester. Rut—Rutenberg. Supr—Supreme. Weid—Weidely. Wisc—Wisconsin

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NEW YORK, SEPTEMBER 13, 1922

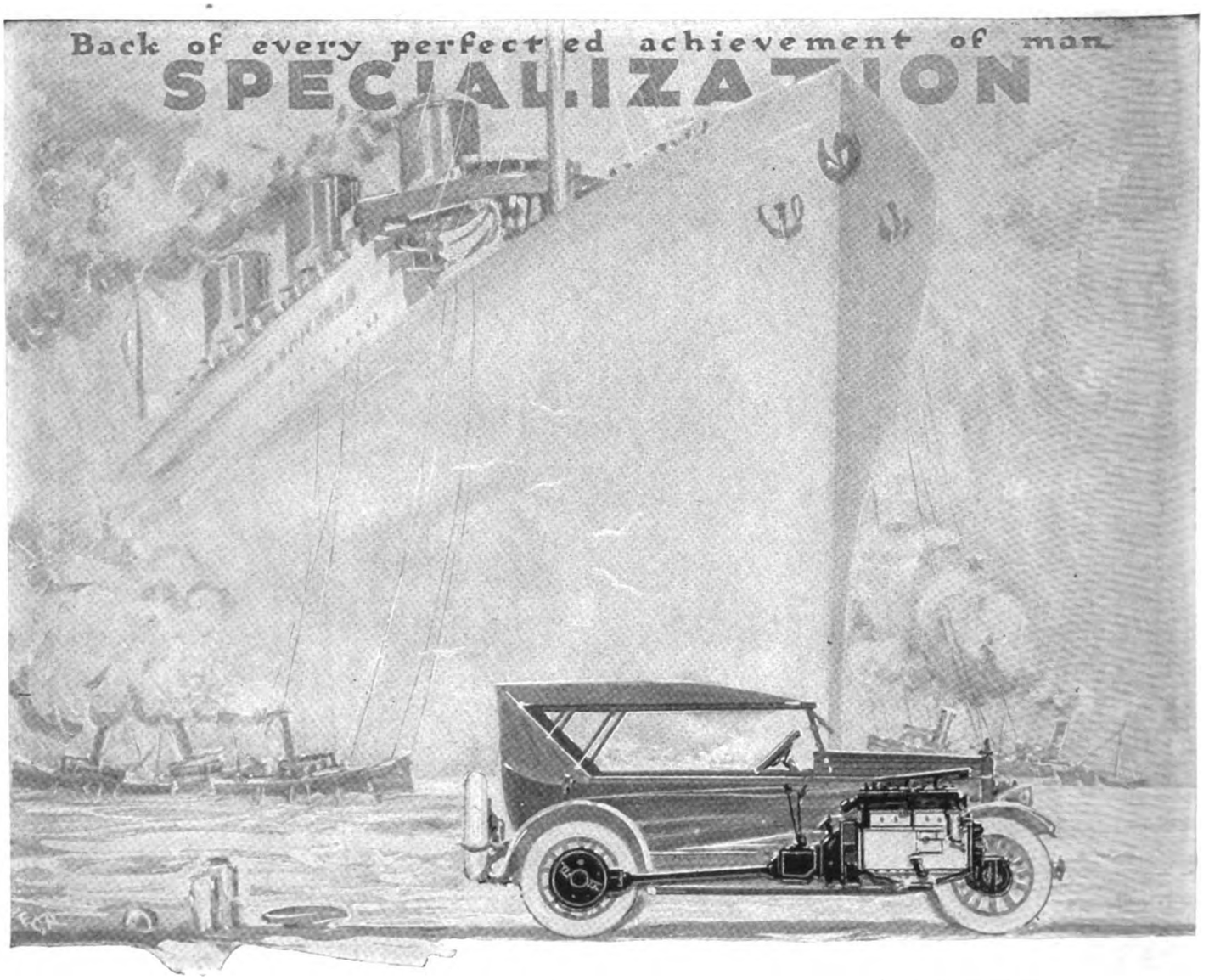
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H E Osmond
Osmond Jordan Co
Milwaukee

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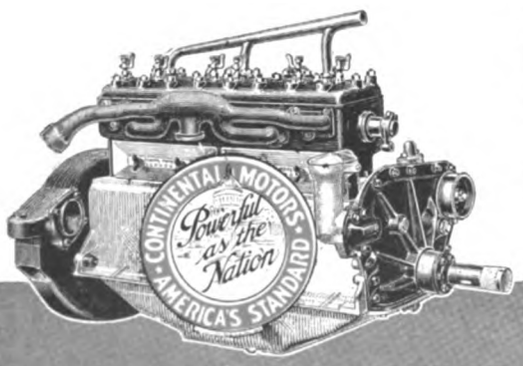
What the SPECIALIZED car actually gives the purchaser

Travelers upon the *S. S. Majestic* are conscious of a feeling of absolute reliance born of the knowledge that each vital part of the great ship is the product of a highly specialized marine, mechanical or electrical engineering force—each fitted to solve *one* problem *well.*

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Offices: Detroit, U. S. A. *Factories: Detroit and Muskegon*
Largest Exclusive Motor Manufacturers in the World

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MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

Reg. U. S. Pat. Off.

239 West 39th St., New York City Phone Bryant 8760
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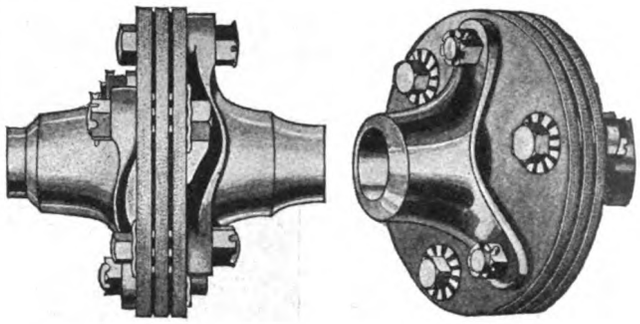
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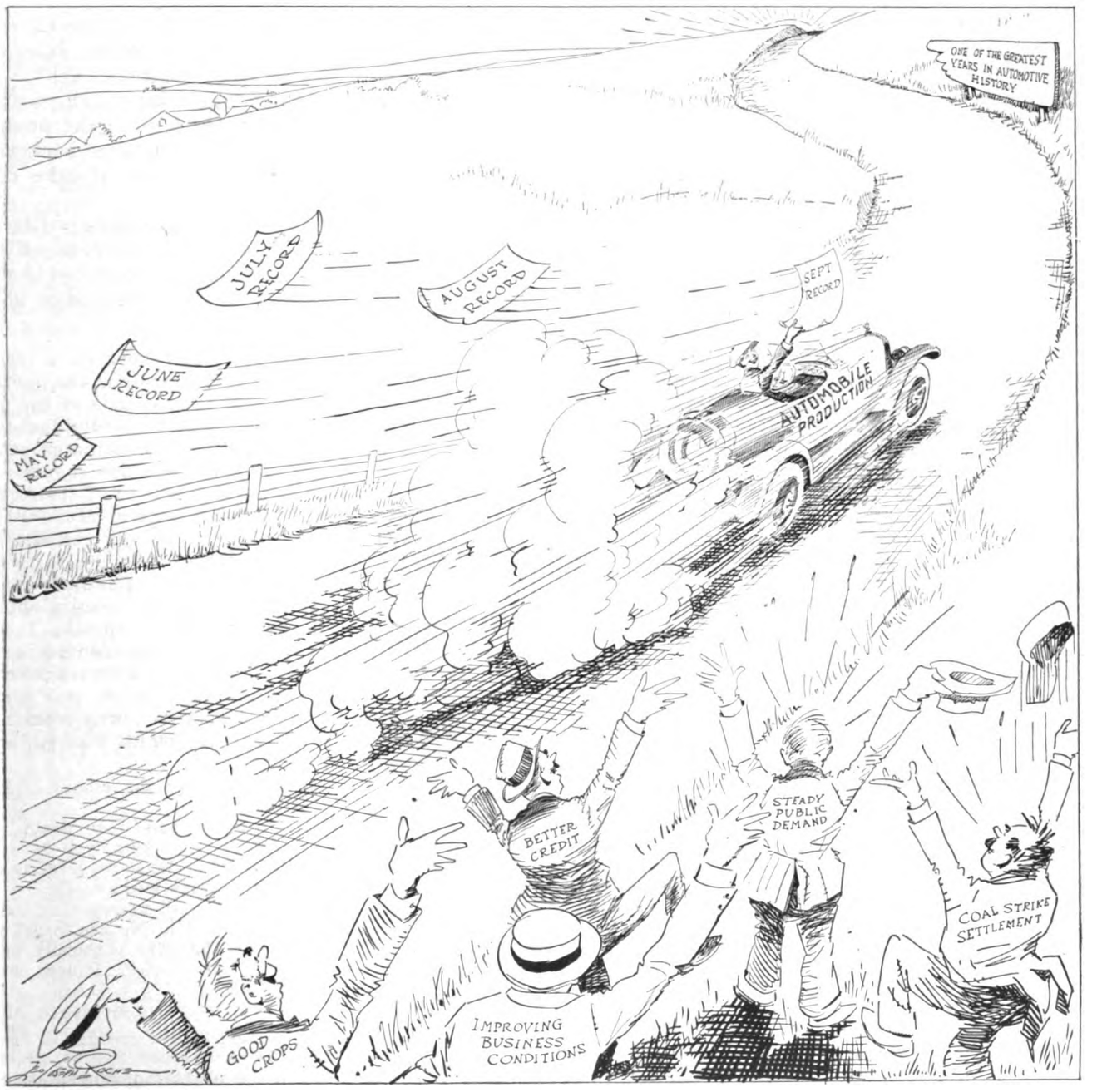
Visitors are Always Welcome at the Works

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

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Speeding Him On



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Making the Sales Manager Job a Real Help to Salesmen

A System That Leads, Inspires and Assists Salesmen Without Driving Them—Some of the Things Wilson Does to Help His Men Get Results

By DONALD D. BLANCHARD

THE sales manager's job is to help his salesmen sell more automobiles.

This describes the view W. O. Wilson has of his position as retail sales manager of the Cleveland Automobile Sales Corp., Cleveland Six dealer in New York City. His attitude toward his sales force is always "How can I help them sell more cars?" rather than "How can I make them sell more cars?"

This spirit of helpfulness is evidenced by the assistance he gives his salesmen in closing tough prospects. For this purpose, he has a man on his staff who does nothing but work with the salesmen on the prospects with whom they are having difficulty. This "closing" man is an expert salesman with a large background of successful automobile selling experience. He knows how to uncover the hidden element of sales resistance. He can answer the objections which have stumped the salesmen.

This man is paid a straight salary plus a commission on each car which he assists in selling. His commission and salary do not affect the salesmen's compensation. He is there to help the salesmen sell more cars which means more money for them and, because he does help them in their work, his services are used freely. The salesmen get their 5 per cent on all sales whether they are made with his assistance or not.

SIX out of ten orders are obtained with the assistance of the closing man. Each morning the salesmen turn in lists of prospects on whom they desire his assistance. The closing man calls on these prospects with the salesmen. He makes no calls except at the request of a salesman. All the prospects he visits have received at least one previous call from a salesman. None of his time is wasted on prospects who are not in the immediate market for cars. To facilitate his work, the company provides a car and driver for his exclusive use.

The salesmen are learning salesmanship from this closing man. Inasmuch as he is always accompanied by a salesman, the salesmen have an opportunity to observe how this specialist handles different types of prospects and how objections are overcome.

In many organizations the work done by this closing man is handled by the sales manager. Up to the time this man was added to the sales staff, Wilson had been handling as much of this work as he could. However, his position as sales manager is essentially an executive one and he feels that all his time and effort should be devoted to the direction of the sales work. He could not give the salesmen as much assistance with their tough prospects as he thought they ought to have. So he hired the closing man to take over this portion of the work.



W. O. WILSON

Retail Sales Manager, Cleveland Automobile Sales Corp., New York City

The salesmen work on a monthly quota. Wilson assigns the quota for the month on the basis of the previous records of the individual salesmen and on the anticipated demand for cars during the month. The salesmen are notified of their quotas by personal letters from Wilson. These letters always contain some message that shows the sales manager's interest. Sometimes it is a compliment on the results obtained during the previous month. In other cases, the letter will contain a word of advice or some encouragement.

The following letter was written to a salesman who was working so hard that his health was suffering:

Dear Mr. Jones:

Your quota for the month is fifteen (15) sales.

Don't work yourself to death. Life is too short. You know you have May, June and July. What we want to do is to strike a happy medium.

Don't try to sell twenty cars, but sell 12 or 15 in April. No use to put yourself out of business physically by the middle of the summer. It does not pay in the long run.

Such a letter is evidence of the close relationship between Wilson and his sales force, and of his interest in the welfare of the salesmen.

A second letter written to a sales-

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man who was not producing the results that he should, does not criticize the salesman for his past record but instead points out how he can improve it.

Dear Mr. Brown:

I have set a quota of ten sales for you for the month of March. This may seem that I am asking a good deal, but I don't believe so.

You have seen what the car will do. You saw what it could do on that short hill under extreme, unreasonable conditions. I should never have asked that motor to go up that hill at high gear, but still it did it.

I wonder if you have any fear in your heart about the success of your work? Honestly, why should there be? I know that you feel convinced that the car is O. K., and I know that you think the price is right. You know that a great many people need new cars—must have them, in fact.

What if there is competition? We can easily hold our own in any unbiased comparison and under any fair test. What we must do is demand that we have this unbiased comparison and secure a fair test. If we do, we shall win.

You have absolutely nothing to fear. You are selling the customer the best automobile he can buy for the price. You are doing him an absolute favor by bringing the CLEVELAND SIX to his attention, and after he has had months of good service from it, he will thank you for selling him the car.

A salesman's responsibility is a big one. He is something like a doctor. I know one salesman in Wall Street who sells bonds, and his clientele leave him thousands of dollars to invest because of their confidence in him. We are not asking a favor of a customer when we ask him to buy. We are doing him a service.

Do you doubt this? If you do, you ought not to try to sell Cleveland cars at all. You ought to stop this moment and look elsewhere for a job. But you don't doubt it, for you can't.

Now remember, I know the car. I know our competition, and I know the background of the character of almost every car on the market and I know you. I know that you can sell the CLEVELAND SIX. I have told you this many times, or I should have never employed you, so that you need have no fear of the outcome.

I want you to do this every morning before starting out. Spend a half hour selling yourself. Take up every objection that you can think of that could be raised and meet it fairly, fully and enthusiastically until you know in your own heart that this objection has not a foot to stand on.

When you have done this, go straight to the hardest prospect you have. Carry to him the conviction and enthusiasm that you feel. Remember that you are his friend. Yours is entirely a friendly mission—you are there to do him good. He will give you a hearing, and after that you know it is simply a matter of accepting his order.

When you are through with him and aglow with your success, sail right into the next man on your list. He will be easy enough then.

I tell you, Brown, you have it in you to do this and more.

Now go to it.

The very best of luck to you.

The quotas are in numbers of cars, no distinction being made between the different body models. A cash bonus is paid to every salesman that makes or exceeds his quota. At the present time a special commission of $25 is paid on each coupe or roadster sold. This is likely to be discontinued shortly as the demand for these models is improving.

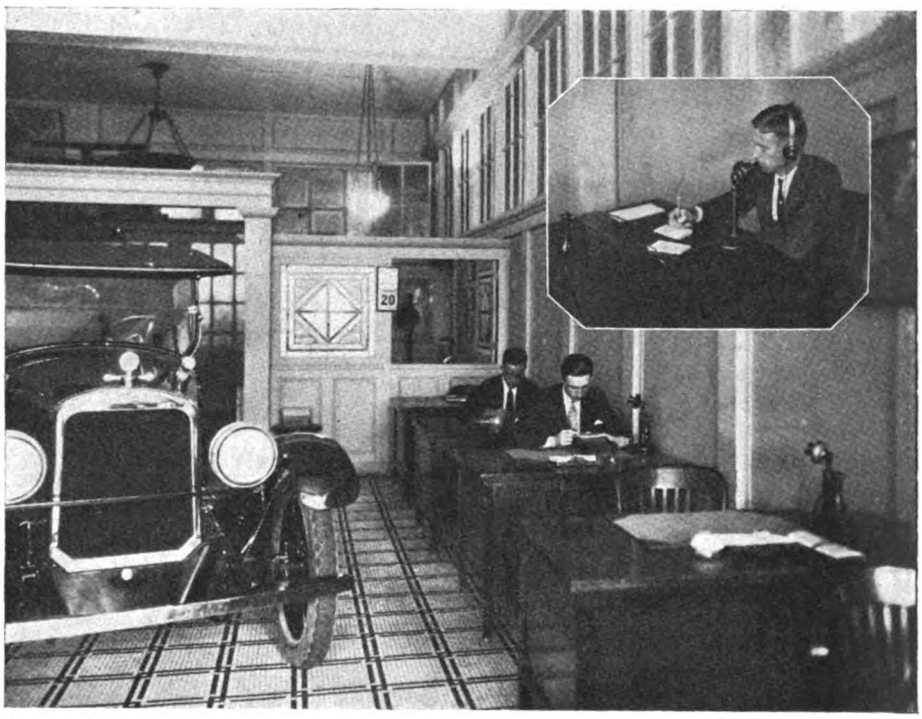
Sales meetings are held periodically. In these meetings the salesmen are quizzed on the specifications and construction of the Cleveland and competitive makes of cars. Difficult points that the salesmen have encountered in their work are also discussed. As part of the educational work, Wilson had his salesmen read the "How I Sold My Toughest Prospect" stories, which were published in Motor World of April 26, 1922.

As soon as a salesman turns in an order Wilson writes the buyer a letter of thanks. A second letter is mailed after the car has been delivered. This letter shows the new owner that the Cleveland company's interest in him continues. It makes some suggestions on how the car should be operated. It also tells the owner about the service station that is maintained for his use.

Salesmen on the floor operate on the "turn" system—that is, if there are two men on duty, the first person to enter the salesroom is handled by one, the second by the other salesman, the third by the first salesman and so on. This avoids arguments as to the ownership of prospects. In fact, the best of feeling exists between the salesmen at all times. Wilson insists on their acting fairly with each other and will not countenance any discord.

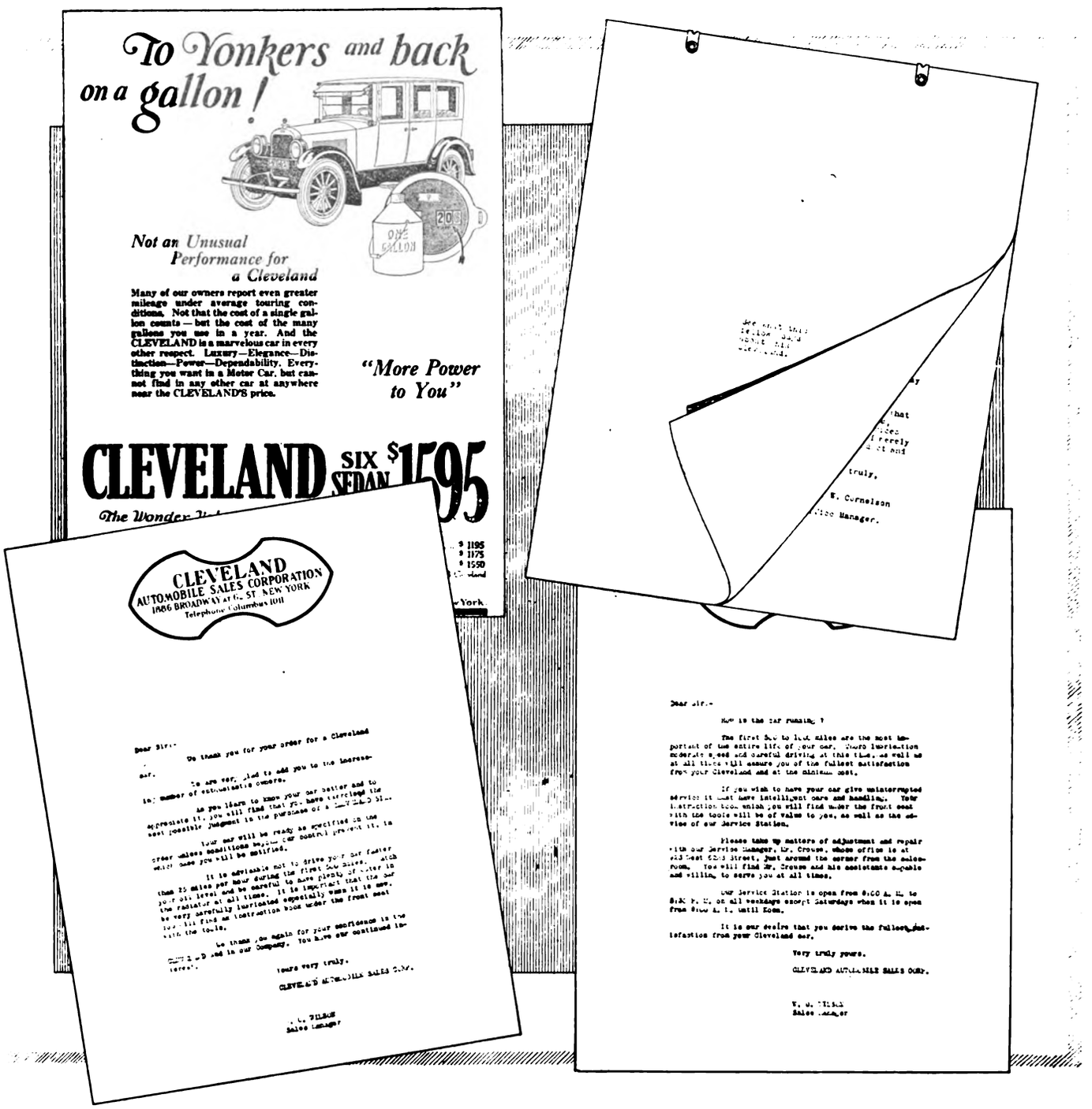
Wilson has arranged his office so that it commands a view of the entrance to the salesroom. It is at the rear of the display space. A portion of the wall surrounding it, is constructed so that it may be swung back, leaving an opening through which Wilson can see the entrance without leaving his chair. The purpose of this opening is not to enable him to watch the salesmen on duty, but to make it possible for him to see that every person entering the salesroom receives prompt attention. If the salesmen on the floor are busy Wilson goes out to meet the newcomer himself.

Arranged to Help Salesmen Sell



This is the view the prospect gets on entering the Cleveland salesroom in New York. The sales manager can be seen through the opening in the wall of his office at the rear. From this point, he commands a view of the entrance to the salesroom. The insert shows the telephone man at work getting prospects

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Some Effective Newspaper and Direct Mail Advertising

The advertisement in the upper left hand corner has a local appeal that puts it across. "To Yonkers and back on a gallon" gives a New Yorker a definite idea of the gasoline consumption. How Wilson sends out testimonial letters is shown at the upper right. Below, the letter on the left goes to the customer on receipt of his order and the one on the right is mailed after delivery of the car

Prospects for salesmen to work on are secured largely from owners and through newspaper advertising. Salesmen keep in close touch with their customers by telephone and personal visits. Factory and local copy is used in the newspapers. One of the advertisements written for Wilson is reproduced. "To Yonkers and back on a gallon!" is the heading on this ad. That headline tells a New Yorker a lot more about the gasoline economy of the Cleveland than a statement of the gasoline mileage would.

The sales department helps the salesmen with direct-by-mail advertising to their prospects. The material used for this purpose consists of catalogs, folders and testimonial letters. Each salesman is furnished with a complete set of this material together with an index showing what the set contains. Each item is designated by a letter or number. In asking the clerical force to send a piece of advertising material to one of his prospects, the salesman refers to it by its symbol.

In addition to the factory catalog, this company has one of its own. The text is multigraphed and the pages are bound in a stiff paper cover. It gives a detailed mechanical description of the car and features the points that the sales de-

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partment wishes particularly to bring to the attention of the prospect.

A novel stunt is used to get the prospect to read testimonial letters that come to him through the mail. The original testimonial letter is copied on a sheet of plain white paper. Another sheet of paper is clipped to the front of it. This sheet bears nothing but the following short sentence: "See what this fellow says about his Cleveland."

Wilson is conducting an experiment to determine the usefulness of the telephone as a means of securing prospects for further solicitation by salesmen. He employs a man at a small salary to make the telephone canvass. This man is provided with a telephone which is connected directly with the central station instead of going through the private exchange as do the other phones in the office. The telephone company details a special operator to look after his calls. The telephone is provided with a head piece so that the man's hands will be free.

This canvass will cover telephone subscribers on Manhattan Island. The names, addresses and telephone numbers of the people to be called are taken from the telephone directory and transferred to 3 x 5-in. cards. The telephone man calls these numbers in order and makes notations of the results of the calls on the cards. If he gets a "Busy" or a "Doesn't answer" he goes on to the next name.

The telephone man has been provided with several stock questions. After these have been answered he uses his own ingenuity in securing further information. If he can not get either the man called or his wife the conversation usually ends.

Let us assume that he is calling Mr. Jones at Morningside 1817.

He gives the operator the number and as soon as the connection is made he says: "Is this Mr. Jones?" or, if a woman answers "Is this Mrs. Jones?" If the answer is "No," the central office operator, who is listening in, breaks the connection. If the answer is "Yes," the telephone man says: "This is the Cleveland Automobile Sales Corp. Are you going to buy a new car this year?" If the answer is "No," he says "Thank you" and the operator breaks the connection.

However, if the answer is "Yes," the telephone man asks "How soon?" and "What type of car are you interested in?"

All this information is listed on Mr. Jones' card. If he says he wants a car now, he is listed as an immediate prospect. If he will be in the market some months hence, he is put down as a future prospect.

In a six-week period the telephone man made 4792 calls. He reached the party called in 1826 instances. From these contacts he secured 125 immediate prospects and 26 future prospects. This does not seem like a very large percentage of results, but it should be remembered that the telephone directory and not a selected list of names was used as the basis of the canvass.

Using Models to Sell Shop Equipment

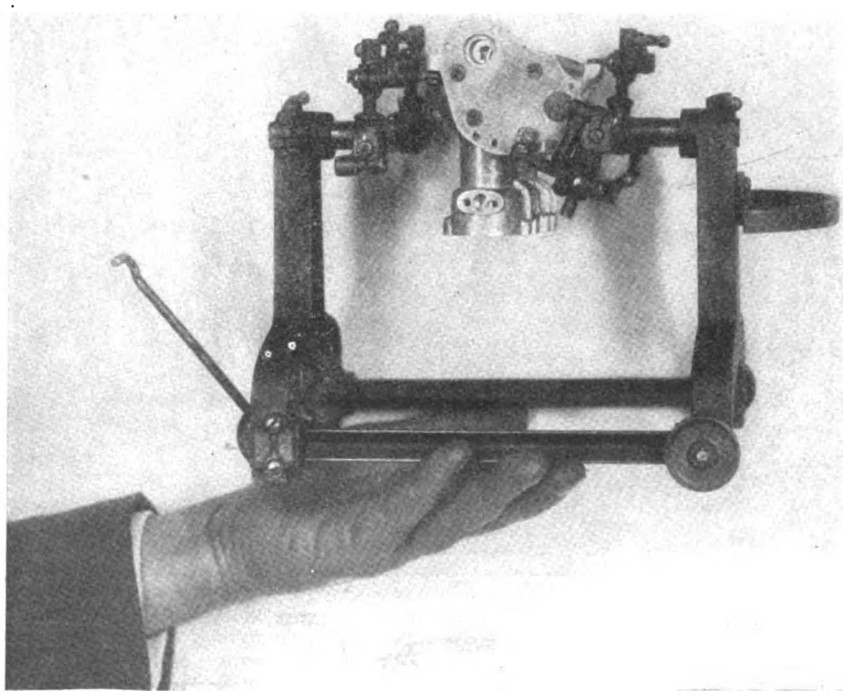
Miniatures of Machines Too Large to Be Taken to Customers More Effective Than Catalogs in This Instance

SELLING shop equipment of the heavier kind presents many difficulties in the way of demonstration. It is very difficult to illustrate the points of a machine from a photograph, and it is not always possible, or convenient, to carry the machine around to demonstrate its purposes.

The Canedy-Otto Mfg. Co., Chicago Heights, Ill., has solved the problem of demonstration by making small models of the machines. The salesmen carry these models with them and as the models are exact replicas of the large machines, the model can be set on the desk and the different parts and levers operated to show just what it will do.

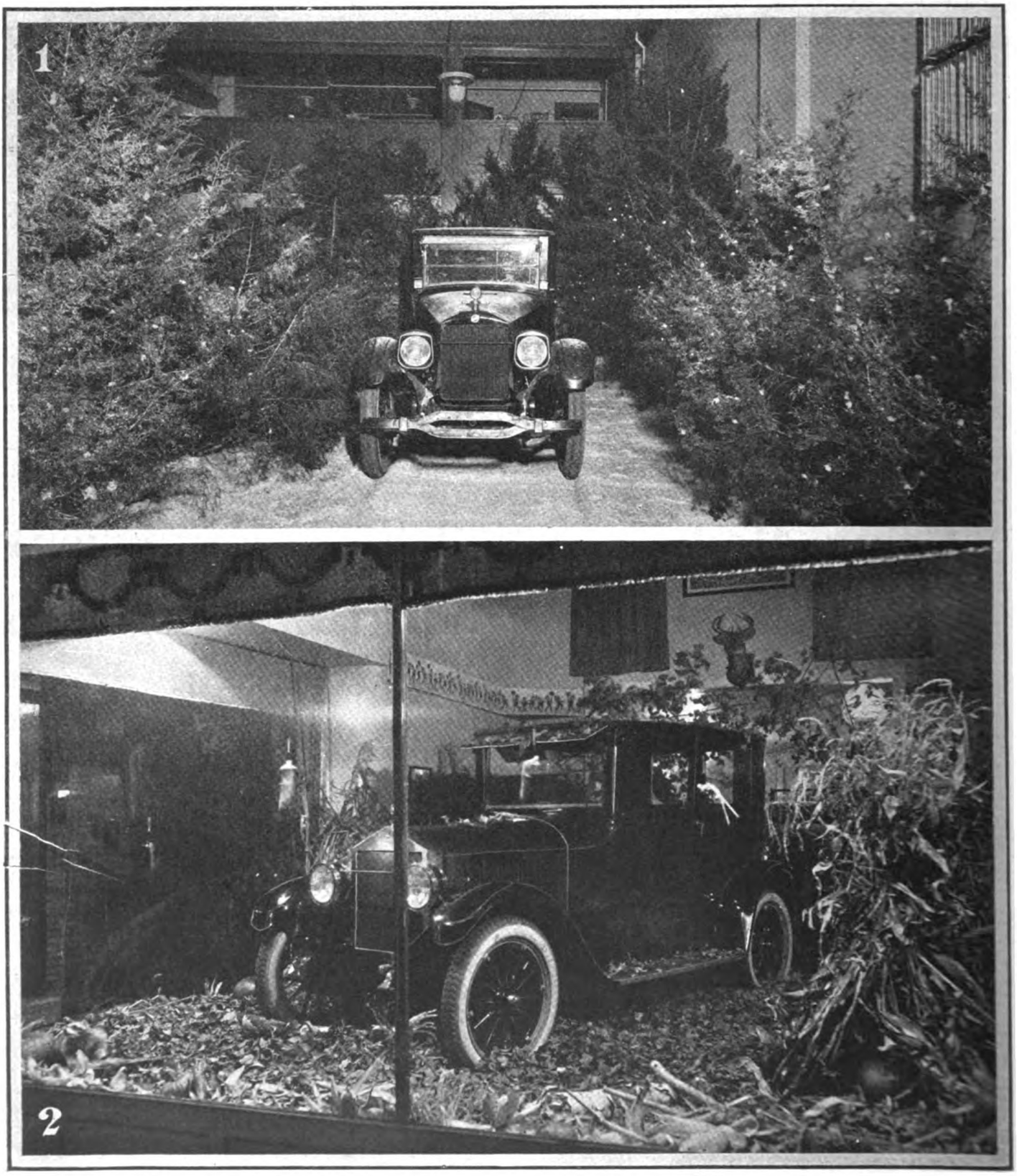
W. F. Wendel, Eastern sales manager, is using the model idea on several of the units which the company now manufactures.

The engine stand, which is illustrated, weighs only a few pounds and is about 9 inches in overall length. A tiny engine cylinder casting has been made to go in this, and it is possible for the salesman to demonstrate exactly how the stand will handle an engine under all conditions.



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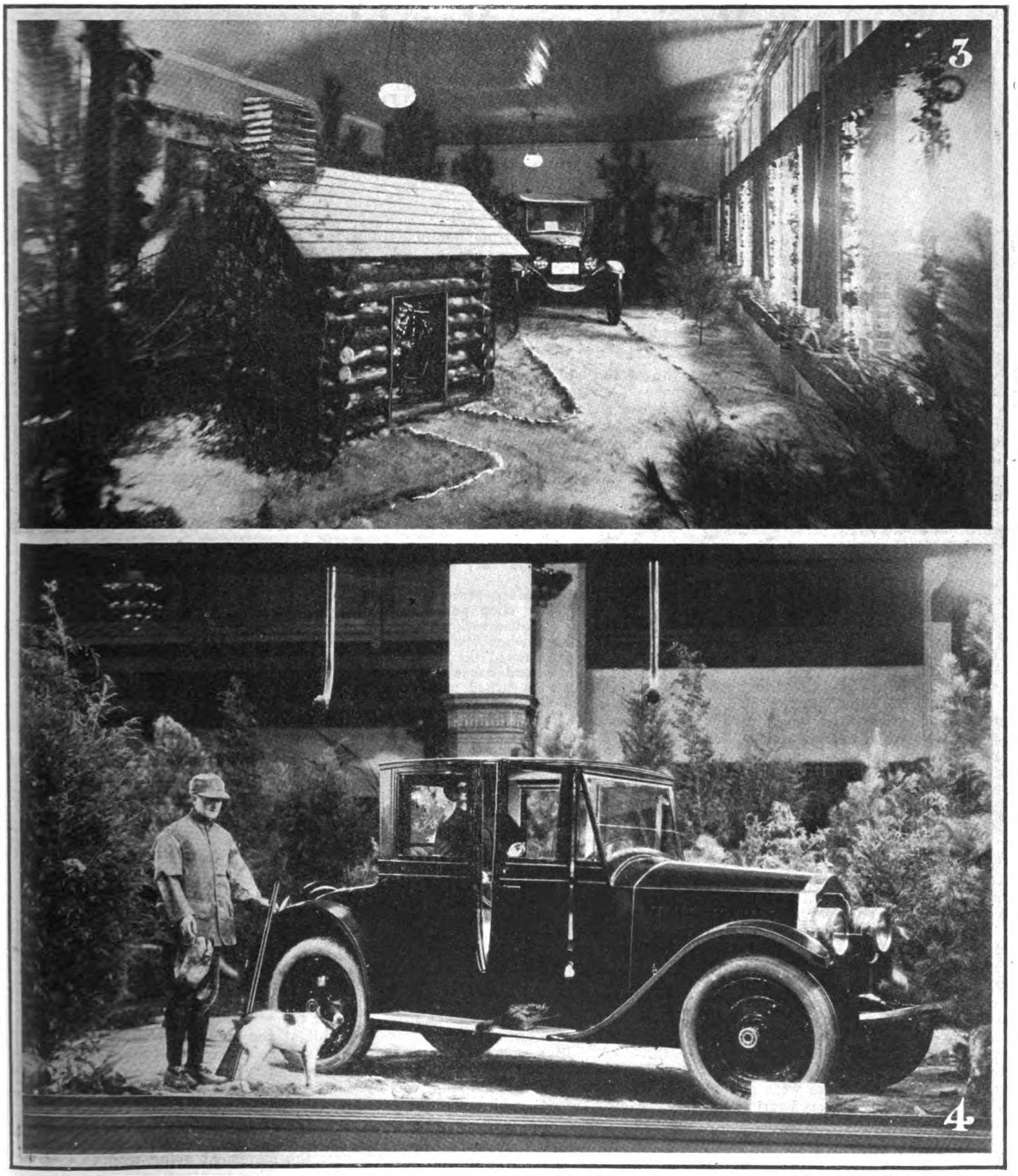
Putting Autumn Atmosphere Into



IT is always good merchandising to present the motor car in surroundings that reflect dominant thoughts of the times. This fall will offer an opportunity to display the car in a way that blends it into such thoughts as harvests, hunting, etc. It will provide a refreshing change to present the car right after Labor Day in surroundings that carry the suggestion of enjoying an automobile in the cool, crisp autumn days that are coming. Here are

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Window and Salesroom Display



some displays that carried the idea strongly last year: 1—Trail in the Pines, by the Rust Motor Co., Studebaker dealer, Charlotte, N. C. 2—Harvest scene with a suggestion of Hallowe'en, by the Bridgeford Auto Sales Co., Moon dealer, Rochester, N. Y. 3—"Cabin in the Pines," by Overland-Columbia Co., Columbia, S. C. 4—A hunting scene window, by the Packard Co., of Philadelphia, featuring a single six coupe

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Cooperative Service Advertising Brings Business in Brooklyn

Newspaper Campaign Increases Business During Dull Season and Gives Prestige to Participants and Organization Which Promoted It

BROOKLYN service stations succeeded last winter in taking most of the "sag" out of business and brought into the shops enough winter overhaul and repair work to keep them operating at a profit through the usually "lean" months.

The Brooklyn plan is particularly interesting at this time because in a few weeks the winter slackening of repair work will begin to evidence itself in the service stations unless something is done to sell the public on the advisability of having overhaul work done during the winter months instead of when the usual spring rush begins.

IN the fall the members of the Automotive Service Association of Brooklyn decided on a campaign of publicity to bring work into the shops during the late fall and winter. They foresaw that unless something were done the winter would be the leanest the service stations had had in many years. They wanted first of all to get more business and make more profits. Secondly, they wanted to keep their mechanical organizations together and unless there was work to be done this would be impossible because the men would have to be laid off and would drift around and would not be available when the spring business started up again.

Accordingly a campaign of publicity was laid out and the interest of the dealers secured. The campaign consisted of a number of insertions of quarter page size in Brooklyn daily newspapers, these to be signed by the association, a direct mail campaign by the members and various other methods of keeping the campaign before the public.

Educational Copy

The newspaper advertising was in the nature of educational copy to tell car owners of the real value of service and the benefits they could get from having their repair work done early in the fall and winter. Such subjects as depreciation, the greater sales value of overhauled cars and the opportunity to have careful painstaking work done during the dull season were taken up one by one.

Backing up this newspaper campaign was a folder campaign. One thousand or more copies were supplied to each firm in the plan and these were mailed out by the firms, the leaflets bearing the imprint of the firm. As the participants in the plan consisted not only of car dealers but of battery firms, equipment firms, radiator repair firms and others along these lines, each car owner in the territory received one or more of the leaflets, these bearing different imprints and so the car owner could not fail to have his attention called to the campaign in some way or other.

In addition to these two principal methods, some of the firms in the plan wrote circular letters and all members were supplied with blue stickers printed in gold, these being used on invoices, letters, etc. Blue enameled signs and window transparencies were also used.

The financing of the campaign was by subscription of $75 per firm. For this money, the firm received its supply of leaflets, stickers, etc., without any extra charge. Larger quantities were charged extra. Approximately $3,000 was subscribed to the fund and not quite all of it was spent, the balance was returned to the subscribers.

In addition to the regular campaign, some of the firms devoted a larger proportion of their individual advertising to service and did other promotion work for themselves which not only backed the campaign up but also took the fullest possible advantage of the other forms of publicity.

Business Was Increased

The actual increase of business over the previous winter was marked and considering the fact that it would have fallen very much below the previous winter without any campaign of the kind, the subscribers feel that the campaign has been a real money maker for them and that they made a very profitable investment.

The prestige of the Automotive Service Association has been greatly increased and the name has become known to the car owners of Brooklyn. As a consequence of this, the members of the association have gained because the fact that they are identified with the organization has made a good impression on the minds of the car owners.

One fact which has been a feature in the campaign is that service has never been properly advertised or given a great deal of space. The placing of the copy in the hands of competent advertising men has resulted in copy with a real appeal and a punch. Automobile sections of the papers have given a good deal of space to the winter service idea and the service organization had an exhibit at the automobile show.

Aside from the actual mechanical part of the advertising copy, no outside help was employed on the campaign. The subscriptions were secured by members of the organization and the officers and members did all the work necessary to get the movement going and to keep it going. The expenses were practically nothing except for the actual space used in the papers and the printing expense for the other advertising features.

Keeping the Shops Busy in Winter

IF some of this work only had come in last January and February!

How many dealers, service managers and repair shop proprietors have made that observation in late April and May when the rush of spring business taxed the capacity of their shops and caused profitable work to be turned away because of inability to handle it in the time allowed by customers.

To remedy this condition service stations in some cities, among them Brooklyn, have gone to the public early in the winter with an educational publicity campaign designed to sell the idea of having repair and overhaul work done during the winter months when the service stations are best situated to handle it satisfactorily.

Read how Brooklyn ran its winter service work campaign last year. Think and talk about a similar campaign in your city this fall and winter.

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How Brooklyn Sold the Winter Overhaul Idea

How to Increase the Resale Value of Your Car

THERE is every reason why the car owner should take the very best care of his investment at all times. But there are two reasons in particular why every car owner should make an extra effort to fight depreciation; the pleasure and satisfaction of driving a car that is in first class condition and its increased value from a resale standpoint.

The Service Stations and Repair Shops of Brooklyn maintain the necessary facilities in machine equipment, shop space, and mechanical aid to furnish prompt and efficient service to overhaul your car and make repairs and adjustments.

Membership in the Automotive Service Association of Brooklyn carries with it the assurance of

—accurate workmanship

—speedy service

—mechanical precision

Do not wait until all repair organizations are running to capacity under the pressure of rush work. Take or send your car today,—it will enable them to serve you better.

AUTOMOTIVE SERVICE ASSOCIATION
OF BROOKLYN

1

Are you trying to get power from a leaky motor?

THE average motor car is a fearful waster of power, because most of the useful energy released by the combustion and expansion of fuel and air in the cylinders, is lost through leakage and only a very small proportion is ever applied to the wheels. Power losses in a car are due to many causes, but some of the main reasons, are:

Carbon in cylinders	*Leaky valves*
Leaky spark plugs	*Worn cylinders*
Loose piston rings	*Leaky gaskets*
Faulty lubrication	*Slipping clutch*

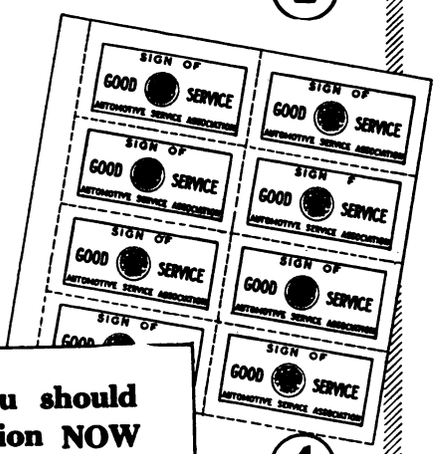
Improper adjustment of carburetor, chassis parts, etc.

Go to a service station or repair shop today, and have them give your car a thorough inspection. Now is the time to have it overhauled so that the motor will run smoothly, gears work perfectly, knocks be eliminated, and all bolts be tight.

AUTOMOTIVE SERVICE ASSOCIATION
OF BROOKLYN

ACCURATE WORKMANSHIP SPEEDY SERVICE MECHANICAL PRECISION

2



4

Here are THREE BIG REASONS why you should have your car put in good operating condition NOW

1

SAVES TIME

Service stations and repair shops are equipped now to handle all adjustments and repairs which your car may require before putting it to the heavy strains and stresses caused by winter conditions.

Members of the Automotive Service Association have shops which are equipped with up-to-date labor-saving devices and can save you time.

Bring your car in to-day and avoid delays during the spring rush.

2

FUTURE BILLS REDUCED

A regular inspection of your car assures you that all adjustments can be taken care of before they develop into large repairs.

By having your service man look over your car at regular intervals, you will be saved the annoyance and inconvenience of so-called roadside repairs.

3

CAR'S LIFE INCREASED

Regular inspection of your motor will prolong the life of your car. It is one sure way of avoiding those unfortunate mishaps that so often mar the pleasure of driving. Minor adjustments and repairs taken care of as they are needed tend to keep the entire car in good condition and increases its resale value.

The life of the car is lengthened and greater satisfaction derived by the owner if he will follow our few suggestions.

DETROIT CADILLAC MOTOR CAR CORP.
LAFAYETTE AND FLATBUSH AVES.
BROOKLYN, N. Y.

Such Conditions Demand Immediate Action

3

Here are some of the forms used by the Brooklyn Automotive Service Association in getting some of the spring rush work into the service stations and repair shops to bolster up the usual winter lull. 1, 2—Two ads in the series which ran in Brooklyn newspapers. 3—Pamphlets printed by association and supplied to individual dealers with their names on them. 4—Stickers used on envelopes, bills, statements, etc.

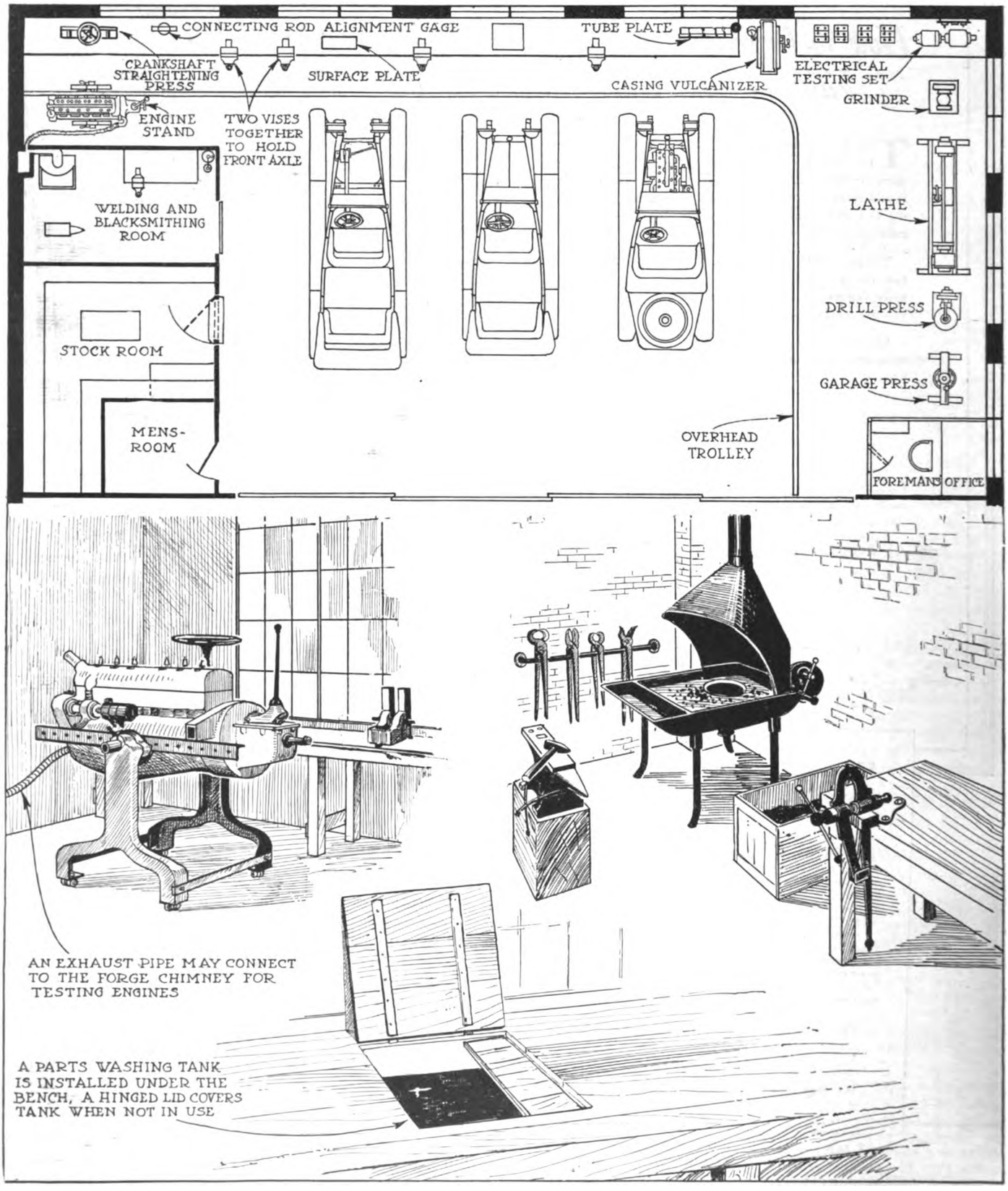
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The Foundation of Shop Profits

By J. HOWARD PILE

STORY No. 1.—The dealer or repairman CAN MAKE SHOP PROFITS. The automotive repair business is a good business if properly conducted. This and three succeeding stories will suggest fundamentals of profit making in the repair business.

The plan and detail illustrations on this and the opposite page have been worked out for a repairshop 25 x 50 ft. The rest of the building is not shown. This would allow all of the equipment shown here and leave room for three cars in the repair department alone. The shop would be separated from the rest of the building by sliding doors. The plan has been worked out with the idea of getting the most necessary equip-



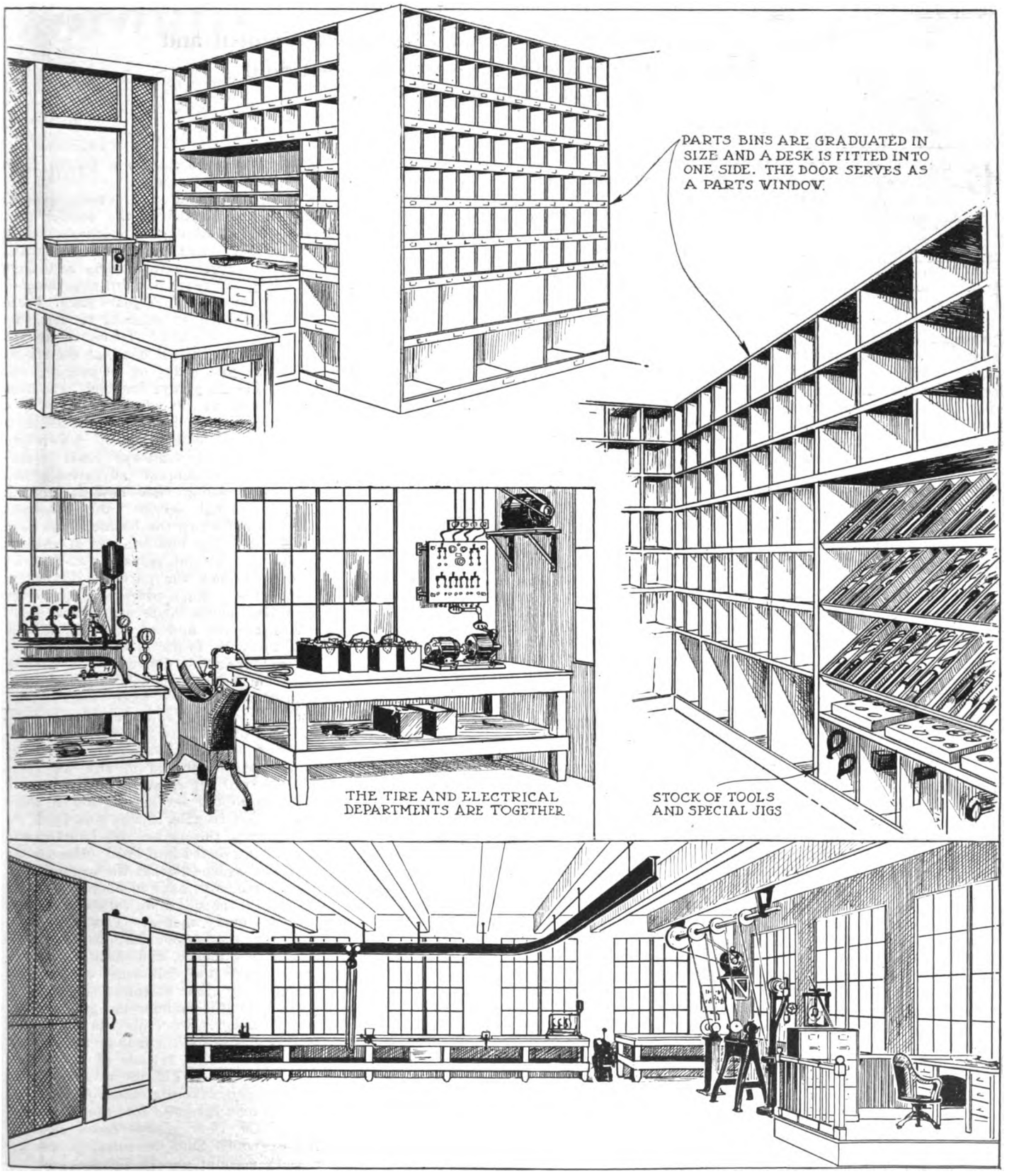
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Four Picture Stories

1—Layout and Equipment *3—Records*
2—Arrangement *4—Getting the Business*

ment into an average sized shop. The stockroom, the source of a great many leaks and losses, has been fitted up to hold parts and tools and jigs and can also serve as an office for a stock clerk or for the foreman. As most city fire laws require a blacksmith and welding shop to be walled off, this has been done. The bench arrangement along the wall allows for engine work at the left, axle and general work at the center and tire and electrical work at the right. The grinding wheel is convenient to the tire man and the machinist. The overhead trolley can run from the garage proper through the sliding doors and into the shop.

NEXT WEEK—Arrangement of Tools and Parts.



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Do You Sell Accessories With Every Car Purchased?

Here's a Merchandising Plan That Presents Equipment and Parts to the Car Buyer As Necessities—It Sold $65,000 Worth Last Year

BUILDING an accessory business with a volume of more than $65,000 a year as a mere adjunct to its plan of marketing Ford cars in Indianapolis is one of the achievements of the Wangelin-Sharp Co., one of the largest Ford dealers in Indiana in point of output. Here is an "Ask-'Em-To-Buy" campaign that was flourishing even before the well known A. E. A. slogan and propaganda was started. A few specific plans and selling policies have helped bring about such a result for this firm which was not established until 1917. The one thing, however, that stands out in its success in many lines is the thoroughgoing organization, the sound policies and a veteran staff trained so that they have become part of the policies themselves. Whether Harry Sharp or Harry Wangelin are about the establishment or not, the place operates like a smooth running machine. It never seems to need the boss on the job to keep the engine from stalling. This leaves Wangelin and Sharp free to devise improvements that will make the business engine even more efficient. From such conditions arose policies and ideas that assured the success of an "Ask-'Em-To-Buy" accessories campaign.

Each phase of the sale of a new or used car, the accessory end, the service and parts side of the business, is so dovetailed into the general merchandising policies that govern the establishment that it is difficult to pick out this or that detail and place upon it responsibility for success in any one division of sales. In the accessory end, for instance, the mere fact that fifty per cent of all new car sales and a very much larger per cent of used car sales are on the part payment plan necessitates some sort of anti-theft control for the car. Here enters the locking steering wheel, the big leader in each month's accessory sales. It is considered necessary to include such equipment on the part payment car. The salesmen are trained to see it, and it is so logically shown to the prospect that sales are made as a matter of course. Another insurance device that is a popular seller is the loud horn, whose warning will be heard above the roar of city traffic. It commands respect and lessens danger of collision. These two devices are found to be included in a surprising number of sales. Dash light and speedometers are other accessories that insure safe driving of the part payment car. They are especially useful to the new and untrained driver who forms a large class of purchasers of Fords. Especially where they buy on the installment plan these are logical devices to sell. Keen witted salesmen trained to give "personal service" to buyers and owners of this class help boost the accessory records every month. It goes without saying that extra tires are sold in quantities.

By and large the records show that somewhere near $30 worth of accessories are sold with each new car that leaves the establishment. The men are trained toward this because they understand the policies of the concern, and because they see the urgency of certain type of protective devices. Beyond this the few salesmen still on a commission basis are given the same commission for accessories that they receive on car sales. Accessory contests with prizes, open to all who equal or surpass five sales per month, also keep the ball rolling. Particularly for these on straight salary basis is this an incentive. Some months the leaders in such contests achieve records of fifty dollars worth of accessories with each new car. Since they must sell five to become contenders for one of several prizes that means in excess of $200 in accessory sales a month from each man so successful.

Continuity and the same general policies have ruled in the service end. None but Ford expert mechanics were admitted to membership at the start. Now the approximately thirty men have a total of 129 years of Ford experience—a little more than four years each. There never has been an attempt to drum up trade for the shop. There is always plenty to do and it is done, as the record of 47 pay jobs a day on an average will show. The shop pays for itself, and does more than $4,000 of labor repairs a month. Here comes in the "Genuine Ford Parts" campaign, of which the establishment has always made a specialty in its general advertising and window dressing. See how it keys in with "personal service" the dominant idea around which the business has been developed. The one window devoted to display of material, parts and accessories is dressed now for parts and now for accessories. Each dressing lasts for some time and is made very attractive.

The service end of the business is tied up with every sale. At the end of ten days after delivery of a car the salesman making the sale is given a slip with the customer's name and address and is expected to call upon him at once. His first object is to find whether or not the car is giving satisfaction. He is then supposed to aid in any way possible toward better use of the car, have it taken to the service station if there is the least trouble, and to find from the new owner the names of friends who may be interested in a Ford. Here is the source of prospects that the organization always seems to have in abundance. Incidentally, the salesman follows this first visit up every month. The car is expected at the service station for inspection once a month, and these salesmens' visits make the following out of this practice by the customer difficult to dodge. In this manner the good will of every owner is won, his car is kept in fine condition, and the man or woman who can resist telling friends of such "personal service" is difficult to find. Then *the salesman is told of these friends who hope to own cars and like the Wangelin-Sharp Co. type of "personal service."* All of which adds to sales, to the accessory account and to service work.

How a Car Dealer Sells Accessories

EVERY day in the year there's an accessory or a parts display in one of the windows of the Wangelin-Sharp Co., Ford dealer in Indianapolis. The sale of accessories is EXPECTED to accompany the sale of every car—locking devices and other safety anti-theft items being pushed particularly as necessities, especially on cars bought on the time basis. This plan, which presents accessories as necessities averages $30 to every car sold and is instrumental in building up an accessory business of $65,000 a year.

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Canada Optimistic as National Show Closes in Toronto

Bumper Crops and Brighter Outlook in Western Provinces Indicate Good Fall Business



Transportation Building which was devoted exclusively to car exhibits at Canada's Only National Motor Show held in conjunction with the Canadian National Exhibition, August 26th to September 11th

Toronto, Sept. 8.

THE temper of Canada's only national motor show this year as revealed by the trade and industry present was in striking contrast with that of the past two years and has never been more salutarily optimistic. Current business as well as prospects are generally described as from good to excellent.

While Ontario and, to a less degree, Quebec have been the best automotive markets in the Dominion during the past two years, the record-breaking improvements in Ontario and Quebec are spreading, and much better business is confidently looked for in the West. Even the banks are now forecasting that the West will this year garner the best crops since the bumper harvest of 1915. That means the liquidation of much capital frozen in credit to the advantage of the whole country. By and large, crops throughout the Dominion are excellent and general business is rapidly recuperating. Building is booming. The output of gold from the Ontario mines alone exceeds that of the Yukon by much—indeed outreaches the combined output of the mines of the United States. Everywhere a wholesome confidence in continued improvement with an era of development and prosperity ahead is manifest.

While a decided improvement in business was looked for this year by the trade and industry, none anticipated what has been realized by many of the leading Ontario distributors — sales eclipsing all records. How the Canadian automotive industry fared is perhaps best indicated by the fact that R. S. McLaughlin, president of the Automotive Industries of Canada (the N. A. C. C. of the Dominion) and of General Motors of Canada, Limited, recently estimated the car production for the current year at 100,000, which eclipses the peak year of 1920.

During the week just elapsed the attendance at the National Motor Show has established a new record, and it is predicted that when the show closes approximately 750,000 people will have viewed the new season models.

Only three English makes of cars are shown: A. C., Rolls-Royce and Vauxhall. All sixteen Canadian makes are displayed. The balance are of United States manufacture. Of all only one is radical in design, the three cylinder, four cycle air cooled Glen car of Toronto.

The automotive equipment exhibits are much more attractive, numerous and better accommodated than ever before. Located with the trucks in the huge west wing of the new exhibition coliseum, they have enjoyed the attention of many times the number of people who saw them in former years. The tractors are under canvas in the so-called tented city, and the motorboats and motorcycles are located in the Sports Building. The feeling is general that the exhibits of the various ramifications of the industry should be under one roof, and negotiations are under way looking to the erection of the long wanted automotive palace, where all can be shown without congestion. Should these efforts prove abortive, it has been suggested that the coliseum be given over in entirety to the 1923 Canadian National Motor Show.

That Canada's automotive investment exceeds $600,000,000; that motor vehicles carry at least five times the number of passengers transported by all the railroads combined in Canada, and that the Canadian automotive industry will produce approximately 100,000 cars this year and export from forty to fifty thousand (a percentage not even remotely approached by any other country), that Canada with over half a million cars and trucks ranks second only to the United States in motorization; that every unit entering Canadian made cars will be made in the Dominion in the near future, and that the country's motor population will double and triple within a few years, are some of the high lights of the very interesting and at times witty address by R. S. (Sam) McLaughlin, president of the Automotive Industries of Canada, delivered at the Directors' Luncheon of the Canadian National Exhibition, Automotive Day (August 26), at which were foregathered as guests the leaders in the consumer trade and industrial activities of the Dominion's automotivedom.

The address was broadcasted by radio, thousands of Exhibition visitors hearing it at the magnavox stations.

The Hon. F. C. Biggs, Minister of Public Highways of Ontario, in the course of his address won a very hearty applause when he declared that the Province proposed to build adequate roads despite adverse criticism.

Dr. P. E. Doolittle, president of the Canadian Automobile Association, congratulated the Minister on the progress made in road work.

After dealing with the need for more accommodation for Canada's National Automobile Show, so that all models of all makes could be suitably displayed, and suggesting that the huge new Coliseum be given over to automotive industry displays next year, and that thus the various products of the different branches of the industry—cars, trucks, tractors, airplanes, automotive equipment, motorcycles, motorboats, etc.—would, as they should, be displayed under one roof, and then briefly touching on the need for good roads, President McLaughlin dealt with the Canadian automotive industries' great and growing importance in the Dominion's "scheme of things entire," bringing out the points mentioned at the beginning of this article.

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Editorial Notes

How to Buy

AN Eastern jobber who found himself a few weeks ago with $30,000 worth of obsolete and slow-moving stock on his shelves made an investigation of stocks in the hands of 100 typical dealers in his territory and found they had enough stagnant merchandise on hand to finance their wholesale purchases of automotive equipment for 60 days if the stocks could have been turned into cash.

This is a striking single example of a condition which is widespread and which is proving a serious obstacle in the way of profits in the wholesaling and retailing of automotive equipment.

It is not likely that it will ever be possible for a merchant in any line of business to avoid losses on unsalable goods, but it is possible by careful buying to keep these losses down and to keep stocks in a fluid condition which will simplify the task of providing working capital for the business.

One of the outstanding reasons why some jobbers find themselves periodically overstocked on certain lines of goods is that they are prone to listen too readily to the glib talk of some manufacturers' sales representatives who go around the country selling large orders on the basis of special discounts. The same sort of offers from salesmen of some jobbers tempt dealers and garagemen here and there to load up their shelves with orders too large to be turned over readily, and in some cases inferior quality in the goods themselves, which the retailer has overlooked in his scramble for a lower price, is an additional factor of sales resistance.

There are a great many honest jobbers who, while watching quantity as well as quality in their own purchases, do their best to assist retailers in acquiring only readily moveable stocks. These are the kind of jobbers dealers and garagemen should buy from. The fact that turnover is the basis of profit in merchandising is much more widely recognized to-day than it was a few years ago, but there is still much to be learned, and it appears that both wholesalers and retailers in the automotive equipment field have much studying to do.

Accidents and Automobile Sales

THE National Safety Council has prepared an analysis of fatal accidents in 1920, the most recent year for which complete figures are available, and motor vehicles are charged with responsibility for 11,000 deaths. Out of a total of 76,000 this is a figure which will prompt serious thought in the industry, both from a humanitarian and an economic viewpoint.

There is no one in the industry who would not like to see this motor vehicle death rate cut down, for the sole reason that a life is a life and every one saved is an achievement for the good of the community. This reason alone should impel automotive men to take an active interest in improvement of traffic conditions, with the object of reducing the accident toll. However, the industry has an additional interest in the thought that accidents create fear of motor vehicle transportation and so set up a definite sales resistance factor.

It is to the credit of thousands of workers for better and safer traffic that traffic accidents in 1921 will show something like a 5 per cent decrease as compared with 1920, according to incomplete figures now at hand. However, the total of fatalities due to automobiles is expected to be larger than in 1920 because of the large increase in the number of vehicles on the highways.

Taken all in all, the accident statistics suggest the need of continued and even more extensive study of accident causes and consequent action to eliminate them. For several months Motor World has been presenting information on traffic control. This policy will be continued because Motor World believes that automotive men must be in the foreground in urging, planning and carrying out traffic reforms which will not only reduce the accident toll but make the use of automobiles and trucks on the highways safer, pleasanter and more convenient, thus stimulating expansion of the business.

Another Record

BY building more than a million automobiles in four months—May, June, July and August—the industry has established another production record. As June was the greatest single month in the history of the industry, so these four months, in the aggregate, stand at the head of the production list for any four months' period. The year 1922 may prove to be the biggest year, though a Ford shutdown and a possible extensive curtailment of railroad freight service may prevent this outcome.

While the general public stands by wondering how the automotive industry can go forward with such tremendous strides when other industries are recovering only gradually, though steadily, from conditions of a year and two years ago, the men in the industry, particularly the men who sell cars, know the reason for the big business that is being done. The people want cars. They are buying them about as fast as the factories are building them. There are no excessive stocks in factory or dealer warehouses. The great business of 1922 is a going business. And it is a going business because the automobile, whether used for business or recreation, is a utility.

The production and sales records so far this year give promise of continued prosperity for the rest of 1922 for the men in the trade. The promise is emphasized by the unmistakable evidence of a growing demand for closed cars, which naturally will become more active as the cold months approach.

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Must Possess Car to Attach Lien in New York

Garageman Who Allowed Car to Go to Paint Shop Gave Up Right to Lien—A Case to Remember

By DONALD D. BLANCHARD

EDITOR Motor World:—As a subscriber of your magazine I would appreciate a little information regarding an account with which I seem unable to cope.

The debtor, who is out of the city, owes me for storage, including the labor of washing and polishing the car, gasoline, oil, tires, tubes, etc.

His car at the present time is in the hands of a painter who is awaiting his removal of the car, it having been painted by him and as yet not paid for.

What can I do to protect myself in the way of filing a lien against the car? Were I to take the matter up in an attempt to serve a summons on him I would have to await his return to the city. This I am afraid of for I fear he will return and remove his car from the paint shop and after that will take the same out of the State without my knowledge.

I would appreciate very much any suggestions you may make. C. N. G., Forest Hills, N. Y.

Answer:—Unfortunately when you gave up the possession of the car you gave up any right to lien that you had. The only way your right to a lien for storage, repairs, etc., can be revived is by the owner voluntarily bringing the car into your garage again. That is the law of New York State. In New Jersey they have a different law providing that a garageman may repossess himself of a car in whatever part of the State he may find it.

What you say about service of a summons is true unless you can show that the car owner left with intent to defraud his creditors, etc., which is a difficult thing to show in any case.

The paint shop proprietor can hold the car until his bill is paid. Why not arrange to have him notify you when he learns of the owner's return. If you have any real reason to believe he will take the car out of the State you can attach it but in any event you will need the services of an attorney.

Car Must Be Adapted to Purpose for Which Sold

EDITOR Motor World:—I have read your articles in the Motor World, of which I am a subscriber, but did not think that I would ever have to refer to you for advice. I would appreciate it very much if you would give me your opinion regarding the following:

On July 29 I bought a —— car from the —— Co., of Baltimore, the local —— dealer. They gave me an allowance on my old —— car, which I turned in to them two or three days prior to my taking delivery on the new car. On Aug. 3 I took the car from their showroom and went about one block when I heard a severe knock in the motor. I took the car back and told the general manager about it. He sent me to their service station where the car was examined by their mechanics and shop foreman, who diagnosed the knock as caused by the main bearings. I then had a mechanic that I know, and who has been working on ——— cars for a very long time, examine the car and he said that there was no doubt about the car knocking, but that he could not say whether it was caused by the main bearings or connecting bearings unless the car was torn down.

I then went back to the —— Co. and took the manager out in the car. He claimed that it was only a gas knock. I have been driving a car for twelve years and a —— for the past three years and I think I ought to know something about a car.

I consented to try the car out that night, Aug. 3. On Friday, Aug. 4, I went back to them and told them that the car was knocking worse than ever. I left the car with them asking them to either give me a new car, return my money, or give me a written guarantee that unless the knock would disappear after going 500 miles, they would install a new motor in the car. I gave them an option of doing one of the three, which they refused. I think the car is a lemon and always will be and I don't think I am compelled to take it legally.

As it is absolutely necessary that I have a car in my business and as they refused to loan me one, I am hiring a car at their expense.

Any data that you can give me regarding any similar cases that you may know of, will be greatly appreciated.

P. S.—I wrote to the —— factory regarding this controversy and they refused to do anything for me, telling me that their local agent was perfectly competent of taking care of me, which they have refused to do.—A Reader, Baltimore, Md.

Answer:—In the absence of any knowledge of just what your contract contained in the way of warranties and guarantees it is rather difficult to give you much help in this matter. If there is no guarantee in the contract the courts, and you will undoubtedly have to apply to the courts for redress, will imply a warranty on the part of the manufacturer or his agent that the car is reasonably adapted to the purpose for which it was made and sold.

You had better take your contract to a local attorney at once, let him examine it and advise you if he thinks it well to rescind the contract and sue for the return of the purchase money.

You might call his attention to the case of Franklin Motor Car Co. vs. Ratliff decided just a short while ago and reported in 92 Southern Reporter at page 450, wherein it was held that even though the contract contained the so-called usual "standard warranty" and provided "The only guarantee under which this car is sold is the regular standard automobile manufacturers' guarantee," the court might nevertheless assume there was an implied warranty that the car was reasonably adapted for the purpose for which it was made and sold.

If the car was sold to you in a defective condition, my opinion is your local attorney will be able to help you.

If the standard guarantee is contained in your agreement, it will not help you any, as under it the manufacturer would only be obliged to replace parts becoming defective after delivery to you with other parts shipped to them at your expense and after you yourself have had the car taken down to get the defective parts out.

Owner Loses Rights

That the owner of an automobile who allows the party from whom he receives title to retain possession of the car and use it personally is precluded by his conduct from denying the authority of the person from whom he bought it, and whom he allowed to retain it, to sell it was the decision of the court in the lately decided case of Hier vs. Wightman, 233 N. Y., pg. 144.

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

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A Flat Rate Schedule for Chevrolet Cars

Both Supreme (490) and FB Models Covered in List of Timed Labor Operations Developed by the Factory

A SCHEDULE of flat rate operations containing ninety-seven major operations for the Supreme (490) Model and ninety-one major operations for the FB model has been worked out by the Chevrolet Motor Co. This arrangement of this schedule is somewhat new and is calculated to shorten the time of estimating and to prevent mistakes of time duplication where two or more specific repair operations require the dismantling of the same units.

In using the schedule for estimating, the specific repair to be made is looked for under the head of its major operation. The time given for the major operation then has added to it the time for the necessary minor operations which in the schedule are given by letter. The major operations are numbered.

This is an example of how the list is used: Inspection shows that the connecting rods are loose, valves need to be reground and reseated and that No. 3 cylinder has a loose piston pin.

First—Determine which of these repairs will necessitate the removal of the greatest number of parts. Reference to the schedule shows that replacing the No. 3 piston pin requires the removal of the cylinder head, underpan and oil pan and all repairs which require the removal of these parts are listed as minor operations known by letter, including grind and reseat valves, tighten connecting rod bearings and replace piston pin. So the repair order would be made up as follows:

	Hours
Operation No. 9—Remove cylinder head, underpan and oil pan	2.2
(a) Grind and reseat valves	1.5
(c) Tighten connecting rod bearing	1.0
(e) Replace No. 3 piston pin	.5
Total	5.2

In the event that more than one piston pin had to be replaced, the total price would include operation (e) times the number of piston pins to be replaced.

Flat Rates for Supreme (490) Model

Front Axle

	Labor Hours
1. Remove and Install 1 Front Wheel, pack with grease and adjust	.5
(a)—Replace Inner Bearing. (Ball Type) 1—Inner Stationary Cone 1—Inner Bearing Complete 1—Felt Retainer Complete Or	.2
(a)—Replace Inner Bearing. (Roller Type) 1—Inner Bearing Cup 1—Inner Bearing Cone 1—Felt Retainer Complete	.2
(b)—Replace Outer Bearing. (Ball Type) 1—Adjusting Cone 1—Outer Bearing Complete Or	.2
(b)—Replace Outer Bearing. (Roller Type) 1—Outer Bearing Cup 1—Outer Bearing Cone	.2
(c)—Replace Steering Knuckle	.3
(d)—Rebush Steering Knuckle	.4
(e)—Replace Steering Knuckle King Bolt	.3
(f)—Replace Front Wheel Hub	.5
2. Remove Front Axle from under car, dismantle "I"-beam, rebuild and install under car	1.2
(a)—Straighten Front Axle "I"-Beam.	1.6
3. Remove and Install Steering Tie Rod	.4
(a)—Straighten Tie Rod	.2
(b)—Replace Tie Rod Bolts	.2
(c)—Replace Plain Arm	.2
(d)—Rebush Both Plain Arms	.2
4. Tram Front Wheels	.5

Engine

	Labor Hours
5. Remove and Install Cylinder Head	1.0
2—Carbureter Gaskets 1—Cylinder Head Gasket 1—Water Outlet Gasket	
(a)—Grind and Re-seat Valves	1.5
2—Valves 1—Valve Spring	
6. Remove and Install Rocker Shaft Assembly	.2
(a)—Replace Rocker Arm	.2
(b)—Rebush one Rocker Arm	.3
(c)—Replace one Valve Lifter	.1
1—Valve Lifter 1—Valve Lifter Lock	
7. Adjust Push Rods	.5
8. Remove Underpan, Oil Pan and replace	1.0
5—Qts. Cylinder Oil 2—Oil Pan Gaskets	
(a)—Tighten Crank Shaft Bearings	1.5
(b)—Tighten Conecting Rod Bearings.	1.0
(c)—Flush Oil Pan and Clean Oil Lines	.2
9. Remove Cylinder Head, Underpan, Oil Pan and replace	2.2
2—Carbureter Gaskets 1—Cylinder Head Gasket 1—Water Outlet Gasket 2—Oil Pan Gasket 5—Qts. Cylinder Oil	
(a)—Grind and Re-seat Valves	1.5
2—Valves 1—Valve Spring	
(b)—Tighten Crank Shaft Bearings	1.5
(c)—Tighten Connecting Rod Bearings	1.0
(d)—Replace one Connecting Rod Bearing	1.5
6—Connecting Rod Shims 1—Connecting Rod Bolt 1—Standard Connecting Rod Bolt Nut 1—Upper Connecting Rod Bearing 1—Lower Connecting Rod Bearing	
(e)—Replace one Piston Pin	.5
(f)—Replace three Piston Rings	.5
(g)—Replace one Piston	1.2
(h)—Ream one Cylinder and fit oversize Piston	1.5
1—Piston 3—Piston Rings 1—Piston Pin	
(k)—Replace Connecting Rod	.5
(l)—Flush Oil Pan and Clean Oil lines	.2
10. Remove Engine from Chassis. Completely dismantle and re-assemble and re-install	12.0
2—Carbureter Gaskets 1—Cylinder Head Gasket 1—Water Outlet Gasket 2—Oil Pan Gaskets 5—Qts. Cylinder Oil	
(a)—Grind and Re-seat Valves	1.5
2—Valves 1—Valve Spring	
(b)—Replace one Connecting Rod Bearing	1.5
6—Connecting Rod Shims 1—Connecting Rod Bolt 1—Standard Connecting Rod Bolt Nut 1—Upper Connecting Rod Bearing 1—Lower Connecting Rod Bearing	
(c)—Replace one Connecting Rod	.5
(d)—Replace one Piston Pin	.5
(e)—Ream one Cylinder and fit oversize Piston	1.5
1—Piston 1—Piston Ring 1—Piston Pin	
(f)—Replace Center Crankshaft Bearing	1.5
(g)—Replace Rear Crankshaft Bearing	1.5
(h)—Replace Front Crankshaft Bearing	1.5
(k)—Replace Cylinder Block	2.0
(l)—Replace Crankshaft	1.5
18—Connecting Rod Shims 18—Crankshaft Bearing Shims 1—Crankshaft	
(m)—Replace Flywheel	.5
1—Flywheel 1—Thrust Ball Race 1—Tension Rod 7—Standard Balls	
(n)—Replace Camshaft	1.0
1—Camshaft Thrust Bearing 1—Camshaft	
(o)—Adjust Camshaft for End Play	.3
(p)—Replace Camshaft Gear	.6
(r)—Replace Crankshaft Gear	.2
(s)—Replace Clutch Cone	.4
(t)—Replace Clutch Leather	.6
(u)—Replace Clutch Thrust Bearing	.6
1—Clutch Tension Rod 1—Clutch Ball Race 7—Standard Balls	
11. Remove Engine from Chassis and reinstall	3.0
12. Remove and Reinstall Radiator	.6
(a)—Replace Radiator Shell	.4
(b)—Replace Fan Drive Pulley	.2
(c)—Replace Water Pump and Fanshaft	.4
1—Water Pump and Fanshaft 2—Standard Woodruff Key No. 6 1—Packing Nut 2—Gaskets	
(d)—Replace Water Pump Bushing	.5
(e)—Replace Water Pump Body	.4
1—Water Pump Body 2—Water Pump Gaskets 1—Standard Woodruff Key No. 6	
(f)—Replace Fan	.4
(g)—Replace Water Pump Rotor	.3
(h)—Replace Water Pump Packing Nut	.3
13. Remove and Reinstall Timing Gear Cover (includes removing and installing Radiator)	1.5
(a)—Replace Camshaft	.5
1—Camshaft Thrust Bearing 1—Camshaft	
(b)—Adjust Camshaft for end play	.5
(c)—Replace Camshaft Gear	.5
(d)—Replace Crankshaft Gear	.2
(e)—Replace Camshaft Thrust Bearing	.4
14. Replace Fan Belt (Radiator in Place)	.3
15. Replace Fan Drive Pulley (Radiator in place)	.3

Oil Pump

	Labor Hours
16. Remove and Reinstall Oil Pump	.3
(a)—Replace Oil Pump Drive Gear	.3
(b)—Replace Oil Pump Drive and Idler Gears	.3
(c)—Replace Oil Pump Body	.3
(d)—Replace Oil Pump Drive Shaft	.2
17. Replace Oil Pressure Gage	.2

Clutch

	Labor Hours
18. Eliminate Grabbing Clutch by adjusting expanders	.6
19. Eliminate Slipping Clutch by adjusting expanders	.6
20. Replace Clutch Collar	.8
21. Clean and lubricate Clutch Facing	.4
22. Remove and Reinstall Clutch Spring (includes removal of Gearset)	2.7
23. Remove and Install Clutch Cone (includes removal of Gearset)	3.5
(a)—Replace Clutch Cone Leather	.3
(b)—Replace Clutch Hub	.3

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Gearset

Labor Hours

24. Remove Gearset from Chassis and re-install 2.5
(a)—Replace High and Intermediate Sliding Gear 6
(b)—Replace Lower and Reverse Slidind Gear 6
(c)—Replace Idler Gears..... 1.0
(d)—Replace Idler Gear Bushings..... .4
(e)—Replace Spline Shaft..... .7
(f)—Replace Spline Shaft Bearing.... .6
(g)—Replace Countershaft..... 1.0
(h)—Replace Countershaft Bushings.. .4
(k)—Replace Idler Gear Shaft..... .4
(l)—Replace Main Drive Gear..... .4
(m)—Replace Main Drive Gear Bushing .6
(n)—Replace Main Drive Gear Bearing .6
25. Remove Gears from Countershaft and re-install 4
26. Remove and Reinstall Gear Case Cover 4
(a)—Replace Either Shifter Shaft..... .4
(b)—Replace Either Shifter Fork..... .4
(c)—Replace Gear Case Cover..... .8
27. Align Gearset with Engine..... 1.0
28. Remove Flywheel and Reinstall (Engine in Chassis) 3.2
(a)—Replace Flywheel .....
1—Flywheel
1—Clutch Tension Rod
1—Clutch Ball Race
7—Standard Balls
(b)—Replace Clutch Thrust Bearing.. .2
1—Clutch Tension Rod
1—Clutch Ball Race
7—Standard Balls
29. Replace one Gearset Support..... 1.0

Rear Axle

30. Remove Rear Axle Unit from Under Car, Completely Disassemble, Inspect All Parts and Rebuild—Re-install Under Car 4.0
(a)—Replace Pinion Gear
(b)—Replace Ring Gear
(c)—Replace Thrust Bearing
(d)—Replace One Axle Shaft
(e)—Replace Differential Case (Plain Half)
(f)—Replace Differential Case (Bevel Ring Half)
(g)—Replace One Side Pinion Gear
(h)—Replace One Main Shaft Inner Bearing
(k)—Replace One Main Shaft Inner Bearing Sleeve
(l)—Replace one Differential Spider
(m)—Replace one Differential Spider Gear
(n)—Make change over from Straight tooth Gear Type to Spiral Bevel Gear Type
(o)—Replace Propeller Shaft
(p)—Replace Propeller Shaft Hyatt Bearings
(q)—Replace Propeller Shaft Bearing—Rear
(r)—Replace Propeller Shaft Bearing—Front
(s)—Replace Propeller Shaft Key
(t)—Replace Rear Axle Housing
(u)—Replace Fibre Thrust Washers
(v)—Replace Propeller Shaft Housing
(w)—Replace Universal Joint
(x)—Replace Universal Joint Housing
(y)—Replace Speedometer Gears
(z)—Replace Propeller Shaft Housing Bushing
31. Remove and Reinstall Rear Axle Assembly 1.5
(a)—Replace Universal Joint..... .5
(b)—Replace Universal Joint Housing .2
(c)—Replace Speedometer Gears..... .6
32. Remove and Reinstall one Rear Wheel .3
(a)—Reline Service Brake..... 1.0
(b)—Replace Rear Axle Truss Rod... .2
(c)—Reline Emergency Brake..... 1.0
(d)—Clean Brakes, Wheels and Replace Felt Washers 1.0
(e)—Replace Wheel Hub 5
(f)—Replace Hub Roller Bearing..... .4
(g)—Replace Hub Roller Bearing Outer Race 3
(h)—Replace Brake Operating Cam 5
1—Inside Boss
1—Brake Operating Cam
(k)—Loosen Frozen Brake Operating Cam 7
33. Install Hand Brake Lever Assembly. 1.0

Body

34. Replace Front Fender..... 1.0
35. Replace Rear Fender 9
36. Replace Runningboard 8
37. Replace Runningboard Apron..... 1.0
38. Replace Radiator Splash Guard..... .3
39. Replace Door..... .4

Labor Hours

40. Replace Top 2.0
41. Replace Windshield 4
42. Replace Lower Windshield Glass.... .6
43. Replace Upper Windshield Glass.... .6
44. Fit Doors by Shimming Body..... 1.0
45. Replace One Door Lock..... 1.4
46. Take Rattles Out of Sedan Doors.... 1.5
47. Install One Complete Bumper 1.0
48. Replace One Door Hinge..... 1.0
49. Tighten Body Bolts..... .5
50. Replace Under Pan..... .5
51. Replace Hood 4
52. Replace One Head Lamp Complete (Black Enameled Rim, 1916-1920) Single Contact 2
53. Replace One Head Lamp Complete (Nickel Plated Rim, 1916-17-18)..... .2
54. Replace One Head Lamp Complete (Black Enameled Rim Single Contact 1919-20) 2
55. Replace One Head Lamp Complete Adjustable (Single Contact) (1920-21-22) 2
56. Replace Tail Lamp (On License Plate) 2
57. Replace Tail Lamp (On Tire Carrier) .2
58. Replace Tire Carrier, Touring, Roadster, Coupe, Sedan, and Light Delivery 5
59. Replace One Hood Fastener..... .1
60. Replace Lamp Bracket, All Types... .2

Chassis

61. Remove and Reinstall One Front Spring 1.0
(a)—Replace Front Spring Bracket.... 2.0
62. Remove and Reinstall One Rear Spring 1.5
(a)—Replace Rear Spring Bracket..... 2.5
63. Remove One Front Spring, Disassemble for Replacing Leaves, Assemble and Reinstall 1.5
64. Remove One Rear Spring, Disassemble for Replacing Leaves, Assemble and Re-install 2.0
65. Rivet Spring Bracket to Frame (when loose) 1.0
66. Replace Front Motor Arm 2.6
67. Replace Spring Center Bolt, (Front). .3
68. Replace Spring Center Bolt, (Rear).. 1.0
69. Tighten All Spring Bolts 5

Steering Gear

70. Remove and Reinstall Complete Steering Gear 1.5
(a)—Replace Steering Gear Case..... 1.0
(b)—Replace Steering Main Shaft Assembly 1.0
(c)—Replace Steering Gear Sector Gear .4
(d)—Replace Steering Gear Countershaft Gear 4
71. Remove and Reinstall Steering Wheel 2
(a)—Replace Mast Jacket Bushings 2
(b)—Replace Mast Jacket..... .6

Generator

72. Remove and Reinstall Generator..... .8
(a)—Replace Generator Gear..... .4
(b)—Replace Generator Brushes..... .5
(c)—Turn Down Eccentric Commutator 1.0
(d)—Lower Mica between Segments.. .6
(e)—Replace Generator Radial Bearing (Drive End) 6
(f)—Replace Armature 5
(g)—Replace Generator Radial Bearing (Commutator End) 4
73. Remove and Reinstall Igniter Assembly (Check Timing and Reset)... .8
(a)—Eliminate Lost Motion in Breaker Plate 4
(b)—Replace Generator Head..... .5
(c)—Replace Igniter Gear..... .4
(d)—Replace Igniter Housing..... .5
(e)—Replace Igniter Shaft 5

Starting Motor

74. Remove and Reinstall Starting Motor .5
(a)—Replace Bearing Adapters 8
(b)—Replace Brushes 5
(c)—Replace Armature 5
(d)—Replace Bendix Drive Gear..... .4
(e)—Replace Bendix Drive Shaft..... .6
(f)—Replace Bendix Drive Spring..... .3
(g)—Replace Bendix Drive Assembly Complete 6
75. Align Starting Motor with Flywheel. .5

Carbureter

76. Remove Carbureter, Disassemble, Clean and Inspect All Parts, Reassemble and Install 1.0
(a)—Repair Carbureter for Leak..... .3
1—Needle Valve
1—Needle Valve Seat
77. Remove and Reinstall Carbureter.... .5
78. Disassemble Vacuum Tank, Clean and Reassemble, Including Cleaning Line to Carbureter and Carbureter Screen 5
(a)—Install New Float in Vacuum Tank 4
(b)—Repair Vacuum Tank Float..... .5
79. Clean Gasoline Tank and Carbureter. 1.0
80. Remove and Reinstall Gasoline Tank .6
(a)—Clean Gasoline Tank 2

Electrical Group

81. Remove and Reinstall Wiring Harness 1.6
82. Remove and Reinstall Lighting and Ignition Switch 5
83. Remove and Reinstall Starting Switch 5
84. Replace Ammeter 3
85. Locate and Repair Short Circuit in Wiring 1.2
86. Remove and Reinstall Starting Cable (Battery to Switch) 4
87. Remove and Reinstall Battery Cable (Battery to Engine) 4
88. Replace Coil 3
89. Replace Battery Box 5

General Lubrication

90. Change Oil in Engine 2
91. Lubricate Gearset 2
92. Lubricate Rear Axle 2
93. Lubricate Clutch Throw-Out Collar .2
94. Refill All Chassis Grease Cups and Oil Cups, Including the Packing and Adjusting of Front Wheel Bearings..... 1.4
95. Graphite All Spring Leaves (Spread Leaves Only) 1.0
96. Oil All Springs to Take Out Squeaks. .2
97. Take Out All Squeaks and Rattles.. 2.0

Flat Rates for Model "FB"

1. Remove and Install 1 Front Wheel, Pack with Grease and Adjust..... .5
(a)—Replace Inner Ball Bearing..... .2
1—Inner Cone
1—Inner Ball Cup
1—Ball Retainer Assembly
1—Felt Retainer
1—Ball Cup Felt
(b)—Replace Outer Ball Bearing..... .2
1—Outer Ball Race
1—Outer Cone
1—Ball Retainer Assembly
(c)—Replace Steering Knuckle..... .3
(d)—Rebush Steering Knuckle..... .4
(e)—Replace Steering Knuckle King Bolt 3
(f)—Replace Front Wheel Hub..... .5
2. Remove Front Axle from Under Car, Dismantle "I"-Beam, Rebuild and Install Under Car 1.7
(a)—Straighten Front Axle "I"-Beam. 1.6
3. Remove and Install Steering Tie Rod .4
(a)—Straighten Tie Rod 2
(b)—Replace Plain Arm 2
(c)—Rebush Both Plain Arms..... .2
(d)—Replace Steering and Third Arm with Bushing and Ball 4
4. Tram Front Wheels 5

Engine

5. Remove and Install Cylinder Head.. 1.5
1—Carbureter Gasket
1—Water Outlet Gasket
1—Cylinder Head Gasket
(a)—Grind and Re-seat Valves 1.5
1—Valve Spring
2—Valves
(b)—Replace Single Port Cylinder Head with 3-port Exhaust Type..... .5
6. Remove and Install Rocker Shaft Assembly 3
(a)—Replace Rocker Arm 2
(b)—Rebush One Rocker Arm..... .3
(c)—Replace One Valve Lifter..... .2
1—Valve Lifter
1—Valve Lifter Lock
7. Adjust Push Rods 5
8. Remove Lower Oil Pan and Connecting Rod Troughs and Replace..... .5
1—Oil Pan Gasket
6—Qts. Cylinder Oil
(a)—Tighten Connecting Rod Bearings 1.5
(b)—Flush Oil Pan and Clean Oil Lines .2
9. Remove Lower Oil Pan, Lower Crank Case and Replace 1.0
6—Qts. Cylinder Oil
1—Oil Pan Gasket
1—Lower Crankcase Casket
(a)—Tighten Crankshaft Bearings.... 2.0
(b)—Flush Oil Pan Lower Crankcase and Clean Oil Lines 2
10. Remove Cylinder Head, Lower Oil Pan, Lower Crankcase, Baffle Plates and Replace (Same as Operations No. 5 and No. 9)..... 2.5
(a)—Grind and Re-seat Valves 1.5
2—Valves
1—Valve Spring
(b)—Replace Cylinder Head, three-port Exhaust Type 5

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Labor Hours

(c)—Tighten Crankshaft Bearings..... 2.0
(d)—Tighten Connecting Rod Bearings 1.5
(e)—Replace One Connecting Rod Bearing 1.5
2—Connecting Rod Bearing, Upper and Lower
(f)—Replace One Piston Pin..... .5
(g)—Replace Three Piston Rings..... .5
(h)—Replace One Piston..... 1.2
(k)—Ream One Cylinder and fit oversize Piston 1.5
1—Piston
3—Piston Rings
1—428 Piston Pin
(l)—Replace Connecting Rod..... .5
(m)—Flush Oil Pan and Clean Oil Lines .2
11. Remove Engine from Chassis, Completely Dismantle, Re-assemble and Reinstall 15.0
(a)—Grind and Re-seat Valves..... 1.5
2—Valves
1—Valve Spring
(b)—Replace Single Port Cylinder Head with three Port Exhaust Type.. .5
(c)—Replace One Connecting Rod Bearing 1.5
2—Connecting Rod Bearing, Lower and Upper
(d)—Replace One Connecting Rod..... .5
(e)—Replace One Piston Pin..... .5
(f)—Ream One Cylinder and fit Oversize Piston..... 1.5
1—Piston
3—Piston Rings
1—Piston Pin
(g)—Replace Center Crankshaft Bearing 2.0
(h)—Replace Rear Crankshaft Bearing 2.0
(k)—Replace Front Crankshaft Bearing 2.0
(l)—Replace Cylinder Block..... 2.0
(m)—Replace Crankshaft 1.0
(n)—Replace Flywheel 2
(o)—Replace Camshaft 4
(p)—Adjust Camshaft for end play.... .3
(r)—Replace Camshaft Gear 6
(s)—Replace Crankshaft Gear 3
(t)—Replace Clutch Cone..... .4
(u)—Replace Clutch Leather..... .6
(v)—Replace Clutch Thrust Bearing... .3
12. Remove Engine from Chassis and Reinstall 4.0
5—Qts. Cylinder Oil
13. Remove and Reinstall Radiator 6
(a)—Replace Radiator Shell 4
(b)—Replace Fan Drive Pulley..... .2
(c)—Replace Fan Belt 3
(d)—Replace Water Pump and Fanshaft 4
1—Water Pump and Fanshaft
2—Standard Woodruff Key No. 6
1—Packing Nut
2—Gaskets
(e)—Replace Water Pump Bushing.... .5
(f)—Replace Water Pump Body..... .5
1—Water Pump Body
1—Standard Woodruff Key
2—Water Pump Gasket
(g)—Replace Fan 4
(h)—Replace Water Pump Rotor..... .3
(k)—Replace Water Pump Packing Nut .3
14. Remove and Reinstall Timing Gear Cover (Includes Removing and Installing Radiator) 1.5
(a)—Replace Camshaft 5
1—Camshaft Thrust Bearing
1—Camshaft
(b)—Adjust Camshaft for end play.... .5
(c)—Replace Camshaft Gear..... .4
(d)—Replace Crankshaft Gear 3
(e)—Replace Fan Belt 3
(f)—Replace Camshaft Thrust Bearing .2
15. Replace Fan Belt (Radiator in Place) .4
16. Replace Fan Drive Pulley (Radiator in Place) 3

Oil Pump

17. Remove and Reinstall Oil Pump..... .3
(a)—Replace Oil Pump Drive Gear..... .3
(b)—Replace Oil Pump Drive and Idler Gears 3
(c)—Replace Oil Pump Body..... .3
(d)—Replace Oil Pump Drive Shaft.... .2
18. Replace Oil Pressure Gage..... .2

Clutch

19. Eliminate Grabbing Clutch by Adjusting Expanders 8
20. Eliminate Slipping Clutch by Adjusting Expanders 8
21. Replace Clutch Insert 1.0
22. Clean and Lubricate Clutch Facing.. .6
23. Remove and Reinstall Clutch Spring (Includes removal of Gearset)..... 2.7
(a)—Replace Clutch Thrust Bearing.... .8
24. Replace Clutch Collar and Insert (Includes removal and Reinstalling of Transmission) 2.8
25. Remove and Install Clutch Cone (Includes removal and Reinstalling of Transmission) 3.0
(a)—Replace Clutch Cone..... .3
(b)—Replace Clutch Cone Leather 5
(c)—Replace Clutch Hub 5
(d)—Replace Flywheel 5

Gearset

Labor Hours

26. Remove Gearset from Chassis and Reinstall 1.5
(a)—Replace High and Intermediate Sliding Gear 1.2
(b)—Replace Low and Reverse Sliding Gear 1.2
(c)—Replace Idler Gear 6
(d)—Replace Idler Gear Bushing..... .8
(e)—Replace Spline Shaft..... 1.0
(f)—Replace Spline Shaft Bearing..... 1.0
(g)—Replace Countershaft 1.0
(h)—Replace Countershaft Bushing.... 1.2
(k)—Replace Idler Gear Shaft..... .6
(l)—Replace Main Drive Gear..... .6
(m)—Replace Main Drive Gear Bushing .8
(n)—Replace Main Drive Gear Bearing. .6
27. Remove Gears from Countershaft Sleeve and Reinstall..... .6
28. Remove and Reinstall Transmission Gear Case Cover..... .4
(a)—Replace either Shifter Shaft..... .4
(b)—Replace either Shifter Fork..... .4
(c)—Replace Gear Case Cover..... .8
29. Replace Flywheel (Engine in Chassis) 3.2

Rear Axle

30. Remove Rear Axle Unit from under car, completely Disassemble, Inspect all parts and Rebuild. Reinstall under car 5.0
(a)—Replace Pinion Gear
(b)—Replace Ring Gear
(c)—Replace Thrust Bearing
(d)—Replace One Axle Shaft
(e)—Replace Differential Case (Plain Half)
(f)—Replace Differential Case (Bevel Ring Half)
(g)—Replace One Side Pinion Gear
(h)—Replace One Main Shaft Inner Bearing
(k)—Replace One Main Shaft Inner Bearing Sleeve
(l)—Replace One Differential Spider
(m)—Replace One Differential Spider Gear
(n)—Replace Propeller Shaft
(o)—Replace Propeller Shaft Bushing
(p)—Replace Propeller Shaft Bearing, Rear
(q)—Replace Propeller Shaft Bearing, Front
(r)—Replace Propeller Shaft Adjusting Sleeve
(s)—Replace Propeller Shaft Key
(t)—Replace Rear Axle Housing
(u)—Replace Propeller Shaft Housing
31. Remove and Reinstall Rear Axle Assembly 1.5
(a)—Replace Universal Joint 5
(b)—Replace Universal Joint Housing .2
(c)—Replace Speedometer Gears 6
32. Remove and Reinstall One Rear Wheel 3
(a)—Reline Service Brake 1.0
(b)—Replace Rear Axle Truss Rod.... .3
(c)—Reline Emergency Brake 1.0
(d)—Clean Brakes, Wheels and Replace Felt Washers 1.1
(e)—Replace Wheel Hub 5
(f)—Replace Hub Roller Bearing 2
(g)—Replace Hub Roller Bearing Outer Race 5
(h)—Replace Brake Operating Cam.... .5
(k)—Loosen Frozen Brake Operating Cam 1.0

Body

33. Replace Front Fender 1.0
34. Replace Rear Fender 1.0
35. Replace Runningboard 8
36. Replace Runningboard Apron 1.0
37. Replace Radiator Splash Guard..... .3
38. Replace Door 4
39. Replace Top 2.0
40. Replace Windshield 4
41. Replace Lower Windshield Glass..... .6
42. Replace Upper Windshield Glass 6
43. Fit Doors by Shimming Body..... 1.0
44. Replace One Door Lock..... 1.4
45. Take Rattle Out of Sedan Doors..... 1.5
46. Install One Complete Bumper..... 1.0
47. Replace One Door Hinge..... 1.0
48. Tighten Body Bolts 6
49. Replace Hood 4
50. Replace One Head Lamp Complete... .2
51. Replace Tail Lamp 2
52. Replace One Hood Fastener (either type) 1
53. Replace Lamp Bracket..... .2
54. Replace Tire Carrier—All Models.... .5
55. Replace Tire Carrier Bar Assembly.. .5
56. Replace Tire Carrier Tie Bar (Part No. 47,372)..... .5

Chassis

57. Remove and Install One Front Spring 1.0
(a)—Replace One Front Spring Bracket 2.0
58. Remove and Install One Rear Spring. 1.0
(a)—Replace One Rear Spring Bracket.. 2.0

Labor Hours

59. Remove One Front Spring, Disassemble for Replacing Leaves, Assemble and Reinstall 1.5
60. Remove One Rear Spring, Disassemble for Replacing Leaves, Assemble and Reinstall 2.0
61. Rivet Spring Bracket to Frame, (when loose) 1.0
62. Replace Rear Spring U Bolt..... 1.0
63. Replace Spring Center Bolt—Rear... .8
64. Tighten All Spring Bolts..... .5

Steering Gear

65. Remove Complete Steering Gear and Reinstall in Car 2.0
(a)—Replace Steering Gear Housing... .5
(b)—Replace Steering Gear Main Tube .5
(c)—Replace Steering Gear Worm Wheel 6
(d)—Replace Stering Gear Worm Wheel Shaft Bushing 1.0
(e)—Take up Lost Motion in Steering Gear 5
2—Ball Thrust
2—Worm Ball Race
(f)—Replace Steering Wheel..... .5
66. Take up Lost Motion in Steering Connecting Rod and Front End Steering Mechanism 1.0

Generator

67. Remove and Reinstall Generator..... .8
(a)—Replace Generator Gear..... .4
(b)—Replace Generator Brushes..... .5
(c)—Turn Down Eccentric Commutator 1.0
(d)—Lower Mica between segments.... .6
(e)—Replace Generator Radial Bearing (Drive End) 6
(f)—Replace Armature 5
(g)—Replace Generator Radial Bearing (Commutator End) 4
68. Remove and Reinstall Igniter Assembly, Check Timing and Reset..... .8
(a)—Eliminate lost motion in Breaker Plate 4
(b)—Replace Generator Head..... .5
(c)—Replace Igniter Gear 4
(d)—Replace Igniter Housing..... .5
(e)—Replace Igniter Shaft 5

Starting Motor

69. Remove and Reinstall Starting Motor..5
(a)—Replace Bearing Adapters 8
(b)—Replace Brushes 5
(c)—Replace Armature 5
(d)—Replace Bendix Drive Gear 4
(e)—Replace Bendix Drive Shaft 6
(f)—Replace Bendix Drive Spring..... .3
(g)—Replace Bendix Drive Assembly Complete 6
70. Align Starting Motor with Flywheel. .5

Carbureter

71. Remove Carbureter, disassemble, clean and inspect all parts, reassemble and install 1.0
(a)—Repair Carbureter for Leaks..... .3
72. Disassemble Vacuum Tank, clean and reassemble, including cleaning Line to Carbureter and Carbureter Screen 5
73. Clean Gasoline Tank, Vacuum Tank and Carbureter 1.0
74. Remove and Reinstall Gasoline Tank .6
(a)—Clean Gasoline Tank..... .2

Electrical Group

75. Remove and Reinstall Wiring Harness 1.6
76. Remove and Reinstall Light and Ignition Switch 5
77. Remove and Reinstall Starting Switch 5
78. Replace Ammeter 3
79. Locate and Repair Short Circuit in Wiring 1.2
80. Remove and Reinstall Horn..... .3
81. Replace Starting Cable (Battery to Switch) 4
82. Replace Battery Cable (Battery to Motor) 4
83. Remove and Reinstall Coil 3
84. Replace Battery Box 5

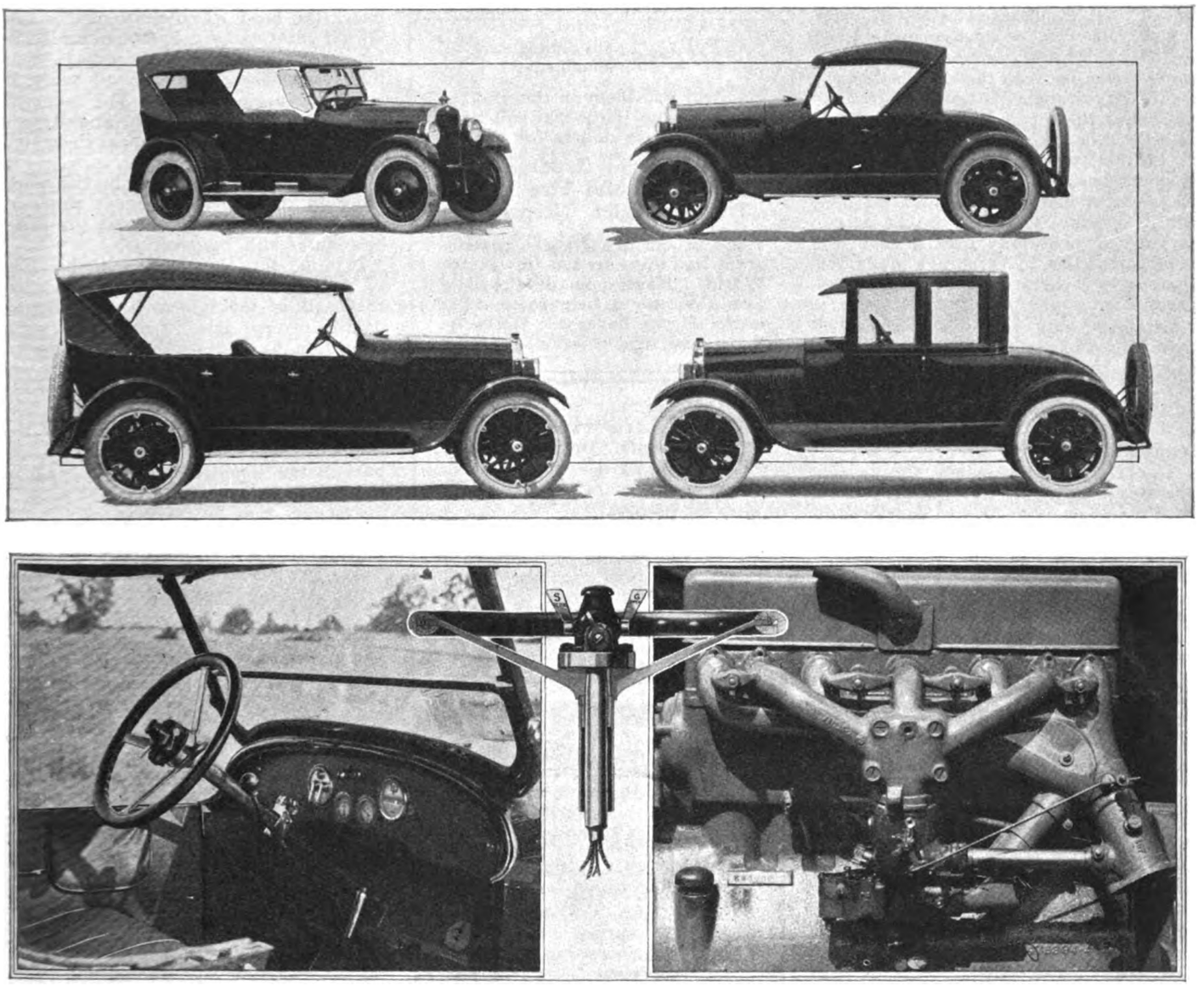
General Lubrication

85. Change Oil in Engine 2
86. Lubricate Gearset 2
87. Lubricate Rear Axle 2
88. Refill all Chassis Grease Cups, and Oil Cups including the Packing and Adjusting of Front Wheel Bearings.. 1.4
89. Graphite all Spring Leaves (spread leaves only) 1.0
90. Oil all Springs to take out squeaks.. .2
91. Take out all squeaks and rattles..... 2.0

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Oakland 1923 Series Has New Line of Bodies

Elimination of Spark and Throttle Control Quadrant and Introduction of Exhaust Heated Intake Manifold Controlled by Throttle Are New Chassis Features



The upper views show, from left to right, the sport phaeton, roadster, phaeton and coupe. The lower left view shows the new spark and throttle controls on the steering wheel together with the headlight dimmer. A section of the mechanism is shown at the center. At the lower right is shown the new intake heater controlled by the throttle opening

THE 1923 series Oakland cars are featured by an entirely new line of bodies with deeper lines accentuated by heavier and more fully crowned fenders and by a runningboard which is 1½ in. lower than formerly. While the change in exterior appearance is striking, the cars for 1923 are not radically different from the previous model in mechanical detail. Probably the most important change is in the introduction of the new exhaust heated intake manifold in which the exhaust temperature is controlled by the throttle.

The damper is interconnected with the throttle in such a way that the heat is decreased as the throttle is opened thus giving the desired effect for easy starting without affecting the output of the engine at higher speeds by unduly expanding the mixture. The new Marvel carbureter has also been adopted and it is claimed that this also is a material factor in improving starting and general carburetion.

A number of detail refinements from the standpoint of comfort will be found throughout the entire car. There is now a lever on the steering column for dimming the headlights. Another innovation is the new hand control for the spark and throttle instead of the usual quadrant. The gearshift lever has been lengthened and the new steering wheels are considerably more dished.

Another mechanical change is the adoption of the new type Remy distributor head in which the advance is taken care of inside of the breaker box instead of by moving the whole head as formerly. The cars have drum lamps and nickel plated radiator and other parts. The rear windows and windshield are now of bevel glass and in the closed cars a heater, rear view mirror, windshield wiper and snubbers are standard equipment. No changes have been made in the prices.

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Every Job Geared to Increase Sales

Co-operation in Los Angeles Service Station Produces Increasing Business in Accessories and Parts

MUCH business is lost by automobile dealers and operators of service stations because of lack of co-operation between the various departments. The repair department probably will make the repairs on a car that are called for on the work order and let it go at that, without any thought to developing business for the accessory department or being on the alert for new car prospects. The clerk in the accessory department may turn a deaf ear to opportunities to encourage trade for the repair department, or for other departments.

Establishments that have organized their forces along the lines of absolute co-operation have found greatly increased business in their various departments, but there is still tremendous room for development in that direction in the retail trade as a whole.

The Shepherd Campbell Co., which operates a complete automotive service station in Los Angeles, has developed a system for driving hard for business that has brought results beyond all expectations during the last few months. The big idea behind the scheme is co-operation. The man whose job it is to oil and grease cars on the racks has been given to know that he is expected to be constantly on the lookout for business for the battery department, the tire department, the upholstery repair department, accessory department, etc. Likewise, the employees in the other departments must swing all business possible to the oil and grease racks.

In order to obtain a close-up view as to how the system of the Shepherd Campbell Co. works out, let us follow a car through as it is driven in. Mr. ———, Los Angeles, comes along and tells the foreman he wants work done as follows: Motor and transmission cleaned; crank case drained and flushed out; oil transmission cleaned and filled. The foreman informs Mr. ——— just what the bill will be and the owner then authorizes the work done by signing the work order with his name and address. If Mr. —— is in a hurry for the car, the company absolutely guarantees that it will be ready for him at the time stipulated. Unless the foreman is certain that delivery can be made at the hour requested, he will not accept the job, as it is a firm policy of the company to keep all promises.

Mr. ——— says that he wants his car at 6 p. m. The foreman consults his work schedule for the racks and finds that he can accommodate the owner.

The work order goes to the oil racks and is turned over to employee Moore.

When Moore has finished the job as called for on the work order he checks off the list of items and then proceeds to look for "facts" that will interest other departments. On the reverse side of his work order he writes:

"No wind deflectors."

"No rear bumper."

"Will need new front tire in about three weeks."

"Rip in upholstery in rear."

In order to encourage repeat business for the oil racks, employee Moore places a small sticker at some prominent spot under the hood which contains the following information: Speedometer reading when crank case was drained; what the speedometer should read when it should be drained again. The name of the Shepherd Campbell Co. and its address, of course, also appear on the sticker.

Employee Moore turns in the work order to the general office at the conclusion of the job and follows the same procedure with the next job.

It is the duty of one clerk in the office to write or circularize car owners on the basis of the information appearing on the reverse side of all work orders turned in by the various departments. In three weeks she will probably write a special letter to Mr. ——— calling his attention to the condition of his right front tire and inviting inspection of the company's tire stock. She may also suggest in the same letter that the rip in the upholstery be repaired.

The fact that Mr. ———s' car is not equipped with wind deflectors or a rear bumper is noted on separate cards. There is a "bumper prospect" file and a "wind deflector prospect" file. The lists of owners appearing in these files are circularized when special selling campaigns are launched to promote the sale of these articles. If two or more circular letters do not bring the prospect in and a sale is made, the cards of these particular owners are removed from the files and destroyed. In other words, it is the intention of the Shepherd Campbell Co. to keep their files filled with actual, live prospects, and in furtherance of this intention they have been eminently successful.

In order to develop new trade, the company has scheduled various special jobs which are advertised through circular letters. Typical of these circular letters is the following:

Perhaps we never told you that for $3.00 we thoroughly clean touring cars, inside and out, take all the grease off the springs, axles and running gears and re-enamel underneath the fender pans, axles and springs—stopping the rust and making the car like new underneath. Vacuum cleaners are used on your cushions, and all the nickel on the car is polished and the top cleaned off.

We would be glad to give you a demonstration, or take care of your car if it needs it. Then, too, we clean the motor and transmission for a small extra charge, and call and get your car and deliver same at no additional expense.

We just thought we would drop you a line and let you know about this part of our service.

As a result of the vigorous program of co-operation and hard-hitting merchandising, the Shepherd Campbell Co. has more than doubled its business during the past four months.

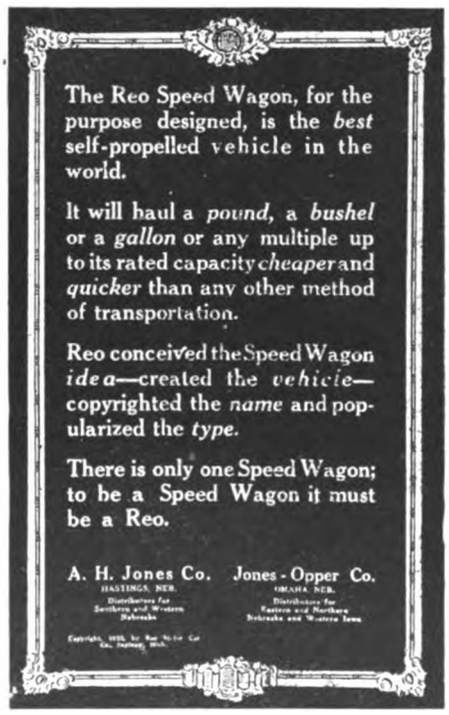
Ideas On Selling and Management

You will find them on this and the opposite page—ideas that will make dollars or save dollars for the

Car Dealer Truck Dealer
Equipment and Tire Dealer
Tractor Dealer Repairman

Some of our readers are contributors to this section of Motor World. Have you developed a plan that might help some other men? If you have, will you write it out and send it in?

An Effective Ad



The small daily ad with a strong merchandising talk is an effective means of selling. Here is a Reo ad of this type that is particularly attractive and compels attention

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Road Service Charge Increases Sales

Dealer Gives Coupon Good for One Dollar in Trade in Exchange for One Dollar Fee for Emergency Work

GOOD-BYE, free service to non-patrons of tire and battery stations!

Kansas City, Kansas, has taken the step.

In the past six months the Jennings Brothers, pioneer tire and battery service firm, have taken in $5,000 on their charges of a dollar for tire and battery road service to non-customers.

Better than that, their sales of tubes alone have increased more than 100 per cent. The increase seems due very largely to their method of handling the charge of a dollar for road service, the dollar entitling payer to credit for that amount on tubes, casings or batteries.

Better than that, a new tire dealer in Kansas City, Kansas, the Osgood-Robinson Tire Company, Goodyear exclusive agents, has generously admitted the wisdom of the Jennings plan, and has adopted it from the first day of its service in Kansas City, Kansas.

Even better, other tire and battery service stations are making charges for service in Kansas City, Kansas, and the plan may be extended to Kansas City, Mo.

"'Free service' has been a menace to the business and the cause of downfall of some of the best tire men in the country," said Harry Jennings, of Jennings Brothers.

"Our plan of a dollar charge for a service call has made our road service a dividend payer instead of a liability. It's building business for us. And the public likes it—the public is willing to pay, especially since the customer gets a coupon redeemable in merchandise."

The Jennings Service instituted this plan six months ago. Whenever a service call on tires or batteries did not involve a sale of merchandise, the person served was charged a dollar. In return for the dollar, besides the service, the "customer" received a coupon, good for a dollar on a purchase of casings, tubes or batteries if used within a year. If the person calling for road service bought a tube, casing or battery at the time, the dollar charge was not made.

The coupon used is on "Safety" paper; it is always signed by Harry Jennings or the brother Frank, signed in ink. The coupon is dated when given to the "customer."

Some of the people used to kick when, having called on Jennings for "free" service, they found they had to pay for having the service man take a tire from their cars that they had bought elsewhere and put it on a wheel. But most of them appreciated that they had been getting service unjustly from this (and other) companies, who received no compensation in business.



Service Charge Receipt and Coupon

This is the form of the receipt and coupon used by Kansas City tire and battery dealers to eliminate free road service. A charge of a dollar is made for road service and the customer is handed this receipt-coupon which entitles the customer to a dollar's trade when used in purchasing merchandise at the dealer's store. The lower illustration shows the face and the upper the back of the service charge receipt

One experience in paying the dollar was enough to convince the "customer" that the charge was not in fact a real charge for service, because he could get the dollar back in value.

And many callers for service who pay the dollar and get a coupon seem worried until they exchange the coupon as part payment on something. The coupon burns their pockets. So that, especially in the first months of the system, the coupons came back into the store quickly—and the sales of merchandise jumped accordingly.

Now customers do not hurry so fast to "cash" the coupons. Some wait until they have collected four or five, for they are as good as cash.

The plan could not have been so markedly successful had not the Jennings Brothers so extensive a reputation for road service in the community. The brothers were the first tire and battery men in the city twenty years ago; they have advertised very aggressively in all those years, and everybody knows them. They actually give real service — they maintain 14 service cars.

"We'd rather have three men sitting around idle, than have a motorist wait ten minutes for service," said Mr. Jennings. And they attain a record of always getting to a call in five minutes after the call comes, in reasonable distance.

The station is open twenty-four hours a day.

The Osgood-Robinson Tire Co., exclusively tire sales and service, has adopted the dollar charge and the coupon redeemable in merchandise. The dollar is charged, except to regular customers, whether any merchandise is bought at the time of the road service or not.

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The Care and Adjustment of Ball Bearings

Smooth Running Parts Depend on the Careful Adjustment and Proper Lubrication of the Parts—Common Shop Methods That Destroy Bearings

THERE are three general types of ball bearings used on automobiles, radial, thrust and combined radial and thrust. Radial bearings are intended to take only loads at right angles to the shaft on which they are mounted. Thrust bearings are intended to take only loads parallel with the shaft, and combined bearings take loads in both directions. As a rule the repairman will have little to worry about in the installation of the various kinds of bearings, because the designer of the car or of the part will have taken care of that.

Trouble with ball bearings is usually caused by improper adjustment or improper mounting, although sometimes the cause of the trouble is insufficient or improper lubrication.

A radial ball bearing is constructed with a certain amount of clearance which is necessary to its proper working. This type of bearing is non-adjustable. A new bearing of this type would show a side clearance which at first thought might be considered excessive, but when the angle of the race is considered, it will be found that the end clearance or shake is only a very slight fraction of the side shake. Some of this clearance will be taken up when the bearing is mounted. The inner race or cone will be slightly expanded when it is driven on the shaft, and the outer race or cup will be slightly contracted when driven in the housing. The balance of the clearance is necessary to allow for expansion due to heat, slight misalignment and lubricant.

Bearings kept in stock should be kept in the oiled paper in which they were wrapped at the factory, and this paper should be left undisturbed until it is necessary to use the bearing. Removal of the paper allows dust and dirt to get into the bearing and also permits finger-marks or moisture to get at the bearings which results in rust, a very destructive agent to anti-friction bearings of any kind.

Washing the Bearings

In overhauling the ball bearings or parts fitted with ball bearings, a thorough cleaning is necessary. It is not sufficient to slosh the bearings around in dirty kerosene which may be filled with metal particles. The correct method of washing is to use a hot alkali solution followed by a bath in clean kerosene or gasoline. If the bearing is to remain out of the car for any length of time it should be dipped in a mixture of melted vaseline and kerosene. Before this dipping, however, it should be inspected, and if in bad condition, rejected. If O.K., it can then be dipped and laid away. It should also be wrapped in oiled paper.

Grit is one of the greatest enemies of ball bearings. This is particularly true when the car has been taken down on account of breakage, as the fragments of the broken parts may get into the bearings when they are replaced and quickly ruin them.

Another source of trouble is from the flaking of aluminum gear cases. Whenever such a casing is taken down for overhauling, it should be thoroughly cleaned and then shellacked which will prevent further flaking.

The lubricant used in the bearing depends largely on the size of the bearing and the load on the bearing. Very small bearings, such as those used on magnetos, use a very light spindle oil, while gearset and rear axle bearings require a heavy lubricant like 600-W or non-fluid oils. This lubricant should be free of acids and alkali.

Better Mechanics

Article No. 257

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.

Removing Ball Bearings

More damage is done in removing and installing ball bearings than in probably any other way. The surfaces of the races and the balls themselves are very carefully made, ground and inspected and are true to within very close limits. A bearing which is true concentrically to within a fraction of a thousandth of an inch can very easily be thrown several hundredths out of line by careless removal or installation. Pounding the races, even with the aid of brass on soft metal is liable to do considerable damage. Ball bearings should always be pulled with a puller which will distribute the force or strain equally around the bearing. This applies only to cases where the inner race or cone is to be pulled. The entire bearing should never be pulled by applying pressure to the free race. This is liable to chip the balls or damage the races. In cases where it is necessary to pull the whole bearing, a split clamp is used, this being placed behind the bearing in such a way that the pressure of the puller will be exerted on the bearing which is sticking and not on the free one. If the outer bearing is sticking, a short piece of steel or iron with a hole in the middle can be used with a bolt and nut.

Whenever possible, the bearing should be taken apart for inspection and examination. This is done after the washing process. The balls and races can be examined for pits, rust and wear. Any sign of pitting either in the balls or races renders a complete replacement of the entire assembly advisable. Satisfaction in a ball bearing depends on the accuracy of the finished surfaces beyond the ability of the eye to detect. Hence, if the defect is visible on any part, it is evident that there will be defects on the adjacent parts, even if these defects cannot be seen with the naked eye. Therefore, a new bearing should be substituted.

Ball Replacement

Where one or more balls are damaged or broken, an entire new set should be substituted. Ball bearings in the smaller sizes are ground to within one or two ten-thousands of an inch of the same diameter, and if a new ball is put in with a number of old balls that may be worn as much as one or two thousandths, the new balls will have to carry the entire load, and this will result either in rapid wear or in the breaking of the new balls. In emergency repairs it is sometimes necessary to temporarily replace one or two balls, and although the practice is not recommended, the balls can be measured with a micrometer to get balls nearest of a size.

Where two ball bearings work together, the destruction of one frequently affects the other, although the defect may not be apparent. It is best, therefore, to make careful tests of the apparently unaffected bearing before putting the assembly back in the car. If the bearing is a small one, it would pay to replace it anyway, as the labor cost of replacing it later may be more than the cost of the new bearing.

Ball Bearing Replacement

The mounting of many ball bearings is such that the inner race has a light drive fit on the shaft, and the outer bearing is a push fit in its housing. In forcing the inner race on the shaft, the pressure must be applied evenly all around the face of the race. A number of pieces of pipe of different diameters and about 10 in. long serve very well for this purpose. The larger sizes may have a piece of steel shafting welded into them so that the hammer can hit in the center of the race driver. In any case the inner diameter of the pipe should be a little larger than the shaft

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diameter and smaller than the outside diameter of the race. In some cases it is the outer race that is a drive fit, and in that case the force is applied to the outer race in very much the same way.

The fit of the race is very important. If the race drives too hard, there is something the matter, and inspection made and the difficulty remedied. If the cone drives on the shaft too hard, it will be expanded slightly and the metal will be put under a tension that will make breakage easy. If the cup is too tight a fit it will be contracted. The contraction of the cup and the expansion of the cone, through too tight fitting, will close up the clearance for the balls. Nicks or dents in the housing or on the shaft will also throw the bearing out of line.

Adjusting Ball Bearings

Ball bearings of the radial type cannot be adjusted, and when worn have to be replaced. Only bearings of the cone and cup type can be adjusted. The bearing must be neither too loose nor too tight. The following rules apply to adjustment:

1—Pack the bearing with lubricant.

2—Bring the adjusting nut up tight. This will assure the seating of all parts of the bearing. The nut must not be drawn so tight that it will injure the bearings.

3—Back off the nut slightly.

4—Spin the wheel. After a start the wheel should turn freely and come to a stop after several part swings each side, the heaviest part of the wheel stopping at the bottom. This will be the tire valve.

5—Test the bearing for end play and looseness.

6—Lock the adjusting nut by whatever locking means is provided.

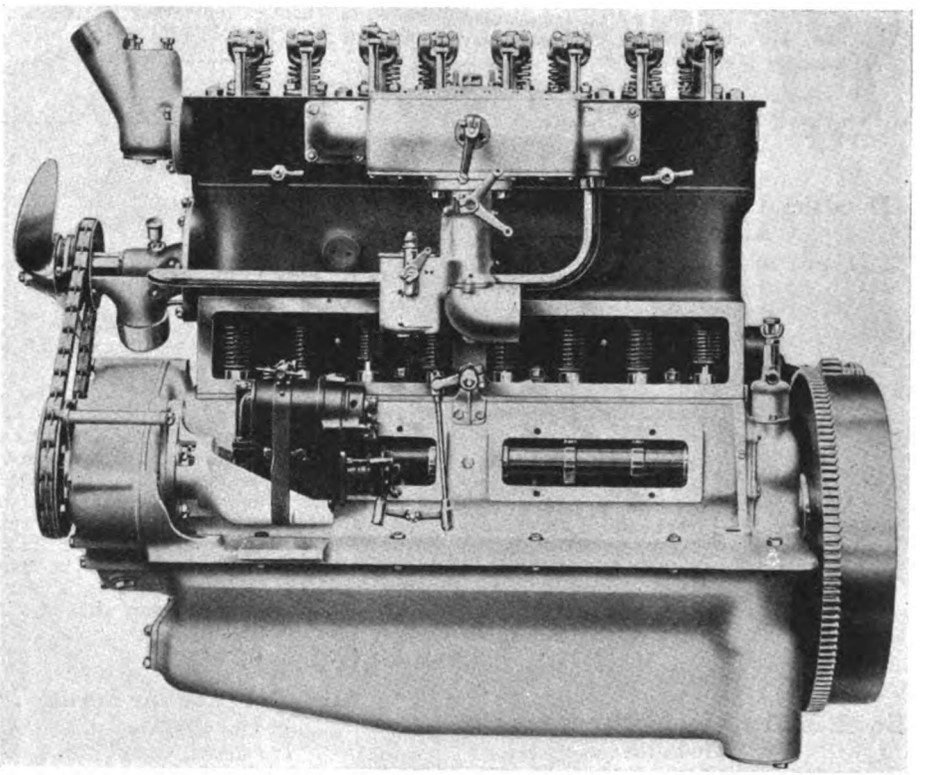
7—Check the adjustment again after locking.

Cole Has Changes in Frame, Intake Manifold and Spring Suspension

THE new model Cole 890, which is now ready for delivery has several changes in the chassis and power plant and changes in the design of the body. The new bodies have been called "Etruscan" and have a three-quarter running board with individual type fenders.

Six wheels are standard on all models, the two extras being mounted in the space between the front end of the running board and the front fender. An option of wire, disk or wood wheels is to be had. A cowl ventilator has been added, and with this addition the lower part of the windshield has been made stationary as the ventilator performs the same function. A trunk rack and body bars have also been added to the equipment.

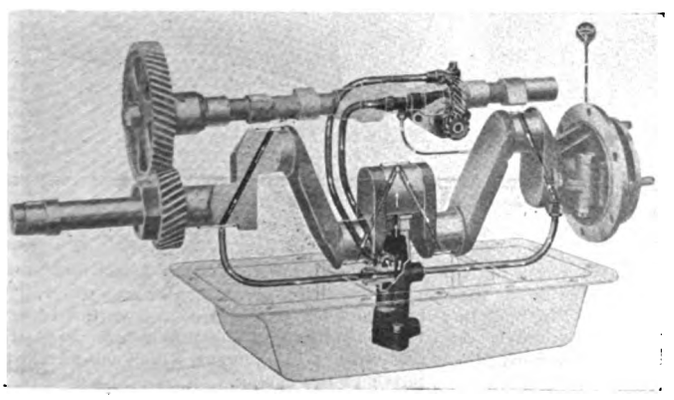
The manifolding system has been changed to a type called the "Envelope." In this the intake manifold is entirely inside the exhaust manifold, from the carbureter to the blocks. The suspension has been changed. The springs are the same design as before, but the material in the leaves is different, and Lovejoy hydraulic shock absorbers have been added. A new type M Gemmer steering gear is used, and the wheel has a laminated walnut rim with finger grips on the inside and hand grips on the outside. The spider is also of walnut. A new type Johnson Model R carbureter is used.



British Vauxhall Engine Now Has Overhead Valves

A new model Vauxhall car, just brought out, has a rather unusual engine. It has four cylinders with overhead valves and is claimed to have the smooth running qualities of a six due to the Lanchester harmonic balancer or vibration damper. Aside from the new engine the car is much the same as the model that it supersedes. The new job is called the 23-60 *hp. and develops* 15 *hp. at* 500 *r.p.m. The cylinder dimensions are* 3¾ *x* 5½ *in. The price is* £1150, *or about* $5130 *at current exchange rates*

New Maxwell Engine Oiling



The new engines of the Maxwell cars, details of which were given in the Sept. 6 issue of MOTOR WORLD, *have the lubrication system considerably changed. The phantom view shows the oiling circuit*

Franklin Series 10-A Has a New Victoria Coupe

IN addition to the changes in the engine and chassis, which were fully described in the Aug. 30 issue of Motor World, the new Franklin models show the addition of an entirely new body, the Victoria Coupe, which is a three-passenger job. The price is $2,750. Most noticeable among the other minor changes is the location of the front license plate bracket which is a forging extending over in front of the left front wheel, so as to remove any interference of air supply to the cooling system. Watson stabilizers are also standard equipment on all models.

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Equipment to Sell

New Devices for the Car and Truck

Helmet Parking Lamp

Williamson Mfg. Co.,
Baltimore, Md.

Price $2.50.



The shell of this lamp is made of polished aluminum and the lenses are secured by spinning the metal over the edges of the glasses. The weight of the lamp is 4 oz. Price does not include switch and bulb.

Doc-Hick-Ee Automatic Electric Air Regulator

Detroit Motor Casting Co., Detroit.

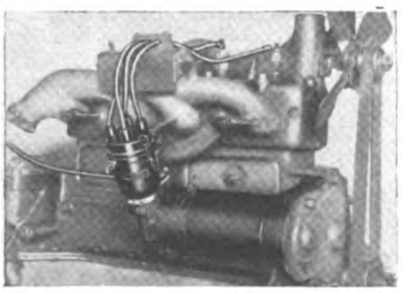


The device is claimed to increase engine efficiency, flexibility and economy. It is attached to the intake manifold and connected with the ground wire leading from the generator. It operates similarly to the generator cut-out switch. It governs the mixture of gas and air at all engine speeds. The quantity of air is reduced when the engine is throttled down and increased when the throttle is opened.

Bosch Battery Ignition System for Overlands

American Bosch Magneto Corp.,
Springfield, Mass.

Price, $24.50.



The Bosch battery ignition system consists of a timer-distributor, coil, and mounting accessories. It replaces the regular coil and distributor head. The timer-distributor is attached to the rear of the generator in place of the standard fitting and connected with the spark control wire from the dash. A governor makes the advancing of the spark automatic but the hand advance can be used to advance or retard the whole range of spark time. The governor is designed for the particular engine and is so constructed that it times the spark correctly at every point of throttle opening.

King Quality Piston Pins

King Sewing Machine Co., Buffalo, N. Y.

These piston pins are made in all types and sizes, and several over-sizes are carried in stock. They are packed in sets of four, six or eight pins in clearly marked boxes. They are also furnished in the semi-finished state for dealers operating a regrinding business.

Pelton Piston Ring

Pelton Piston Ring Co.,
5432 West Grand River Avenue, Detroit.



A two-piece piston ring. The lowered part is beveled and fits into a similar bevel on the inside of the upper part. The outside of the upper part is cylindrical. The lower portion is fitted with spring expanders. These rings fit in grooves .032 in. overwidth and cylinders .040 in. oversize. They are made in diameters from 2 to 6⅛ in., and in 3/16, ¼ and 5/16 in. widths. Prices range from $1.25 to $2.25.

Atlas Radiator for Fords

Steidle Mfg. Co.,
Cincinnati, Ohio.

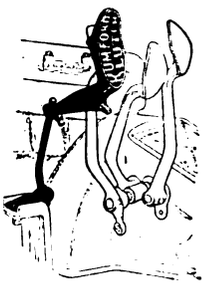


A heavy steel member which is integral with the bracket supports adds strength to this radiator. The brass core is of the honeycomb type. The shell is finished in black japan and the core in gray enamel. A nickel-silver bar cap is furnished with the radiator.

Kumfort Klutch

E. G. Overly, Greenburg, Pa.

Price $3.50



This device holds the clutch pedal on the Ford in low gear or neutral. It is operated entirely with the foot. It is useful when climbing long hills in low gear or when coasting down hill in neutral.

Helmet Traffic Signal

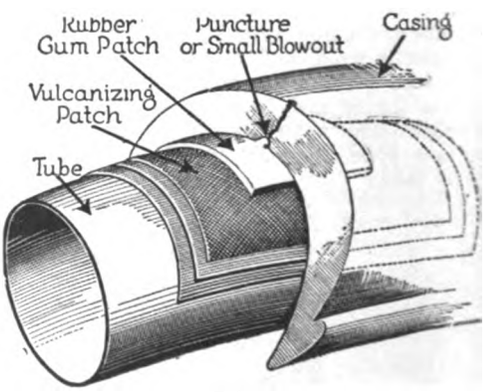
Williamson Mfg. Co.,
Baltimore, Md.



This signal shows "stop" and right and left arrows. The "stop" signal is operated by a switch on the brake pedal. The arrows are operated by button switches which are located on the floor for foot operation or on the steering column. The shell of the signal is pressed steel, black enamelled and nickel trimmed. The switch on the brake pedal is mounted so that the brake may be applied without lighting the "stop" signal.

Va-Car Inside Tire Plaster Patch

Virginia-Carolina Rubber Co., Inc.,
Richmond, Va.



Prices

No. 0 for nail holes.....25 cents
No. 1 for cuts to ½ in.....50 cents
No. 2 for blowouts to 1 in.....60 cents
No. 3 for blowouts to 1½ in.....70 cents
No. 4 for blowouts to 2 in.....80 cents

The patches are for patching the inside of the casing after a puncture or blowout to prevent the entry of sand, dirt and water. The center of the patch is coated with a layer of tread rubber and the patch is covered with self-vulcanizing cement which vulcanizes the patch to the casing.

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Repairshop Shortcuts

Here's Something to Think Over

IN spite of the fact that Motor World has published almost 3400 repairshop shortcuts, there must be thousands more in use that have not yet been sent in. Here are some subjects that would be acceptable: 1—*Best and quickest method of washing wire wheels.* 2—*How to remove road tar from the body without harming the varnish.* 3—*How to take the squeak out of a wooden wheel.* 4—*How to true up a wire wheel.* 5—*How to CORRECTLY pack a water pump.* 6—*Quickest method of replacing clincher tires.*

These are simply a few ideas selected at random which have not been satisfactorily covered in this department. If the suggestions will help, shoot in your ideas and experiences. Shortcuts which are accepted will be paid for at the rate of $1 each or $6 for half a dozen.

No. 3384—Cleaning Out Oil Grooves.—Oil grooves in bearings can be cleaned out or deepened with a portable electric drill using a drill that has been ground to scrape instead of cut. This is the same character of grinding as is used for drilling brass.—H. V. D. Sweet, Canajoharie, N. Y.

No. 3385—Repairing a Worn Pump Shaft.—A pump shaft which has been cut or worn at the packing point can be repaired by brazing metal to build up the shaft, then turning it down to size.—Joseph T. Walter, Apache Garage, Phoenix, Ariz.

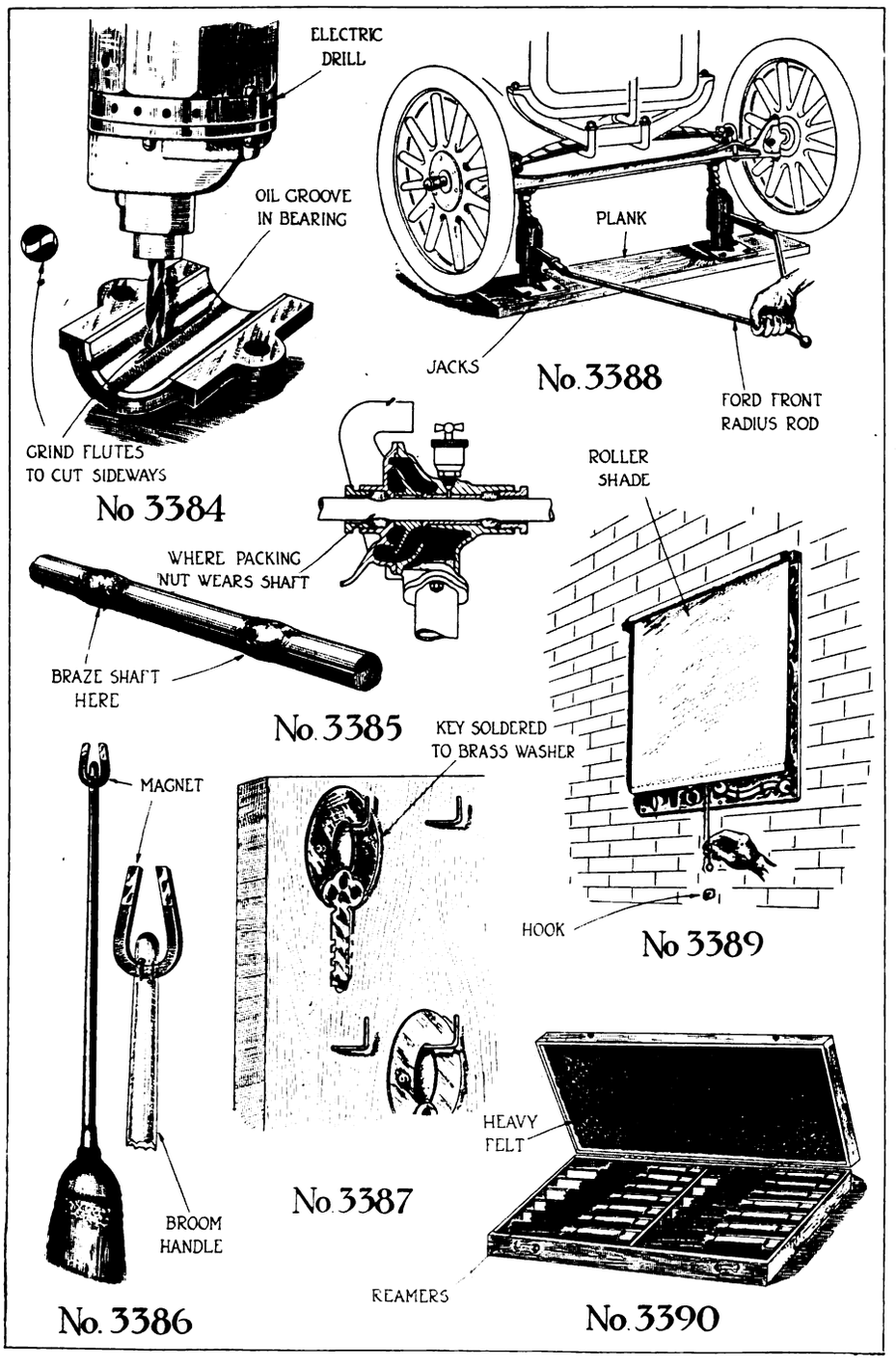
No. 3386—Magnet for Bolts and Nuts.—A horseshoe magnet mounted on the handle of the shop broom saves time in locating bolts, nuts and washers that fall on the floor or roll under the bench. As the broom is always in a handy place the magnet is instantly available.—Arthur G. Raabe, Long Island City, N. Y.

No. 3387—To Prevent Loss of Switch Keys.—Washers are soldered to switch keys used by mechanics and the mechanic's number is stamped on the washer. This will usually prevent keys being taken by customers and will identify the key.—Joe Lasser, Lasser Motor Co., Elizabeth, N. J.

No. 3388—Quick-Acting Jack Set.—A quick-acting jack set is made by mounting two jacks on a board and using a Ford front radius rod for the handle as it will operate both jacks at once.—Arthur G. Raabe, Long Island City, N. Y.

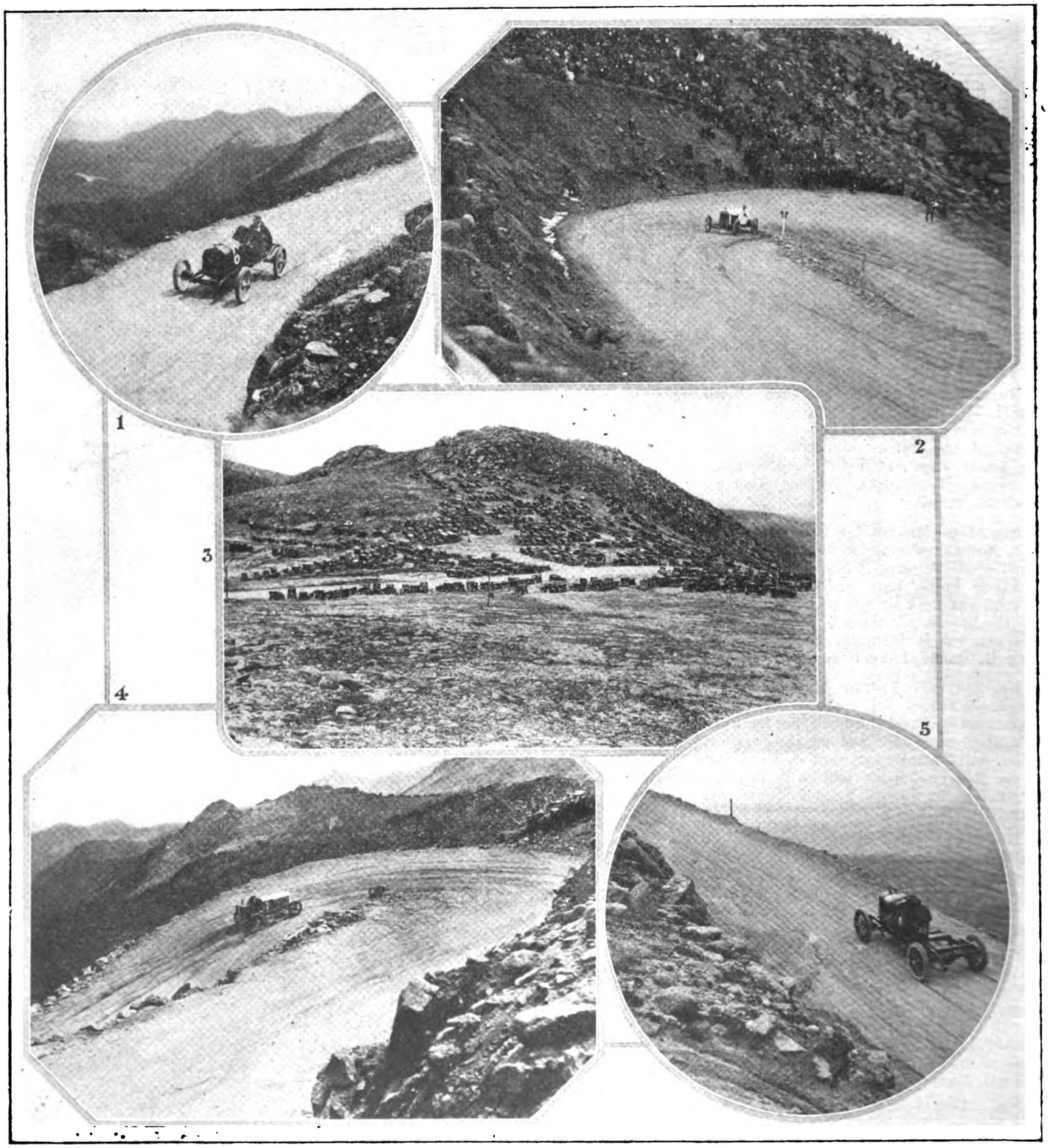
No. 3389—Cover for Wall Tool Rack.—Where tools are hung on the wall or on a rack on the wall, they can be covered at night by mounting a window shade over the rack. The shade can be pulled down to protect them from dust and to make the place look tidy.—Arthur G. Raabe, Long Island City, N. Y.

No. 3390—Rust Preventative for Reamer and Tap Sets.—Reamer, tap and die sets are prevented from becoming rusty by fastening a piece of heavy felt to the lid of the case and keeping this felt well oiled. The oil will creep in a film over the tools and keep them in good condition.—C. M. Jenkins, Dodge City, Kan.



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Interesting Scenes at the Pike's Peak Climb



ABOVE are a few of the stirring scenes along the course as they battled up Pike's Peak in the National Hill Climb Races on Pike's Peak Automobile Highway, Colorado Springs, Sept. 4. 1—Dodge Special. H. L. Chapin, Marsheffel Motor Co., Colorado Springs, Col. Second place in Event No. 2. Time: 23-min., 25 4-5 sec. 2—Hudson Special. King Rhiley, winner first place Event No. 3. Time: 20 min., 05 sec. 3—One of the parking places at Mile 14, National Hill Climb Races on Pike's Peak Automobile Highway. 4—Mercer Special. W. S. Haines. Third place in Event No. 3, National Hill Climb Races. Time: 20 min., 31 sec. 5—A stretch of Pike's Peak Auto Highway

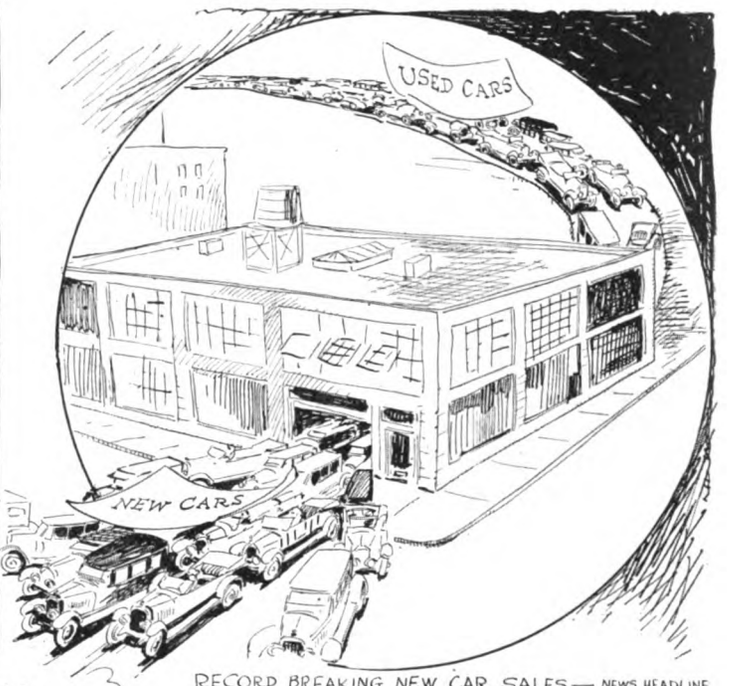
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Along the Automotive Newsway

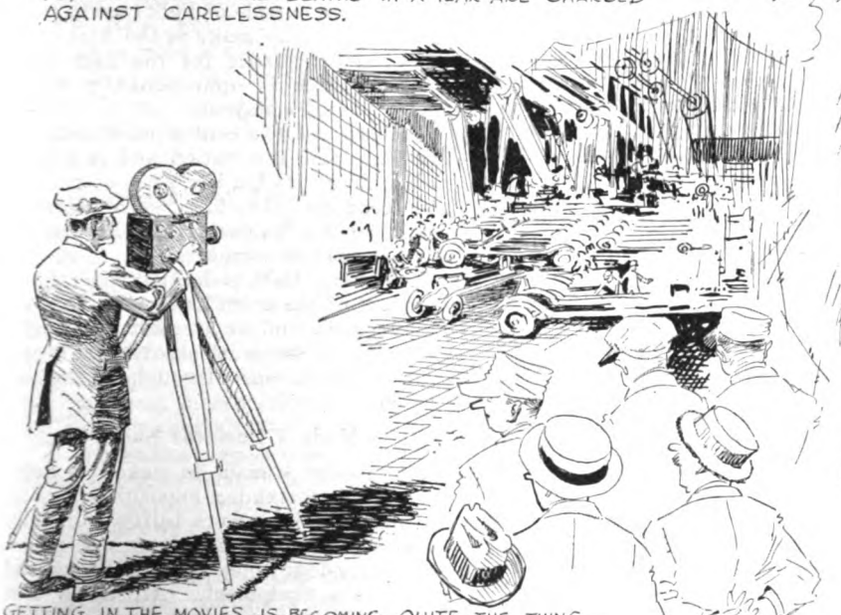
By Leo Roche



76,000 ACCIDENTAL DEATHS IN A YEAR ARE CHARGED AGAINST CARELESSNESS.



RECORD BREAKING NEW CAR SALES — NEWS HEADLINE BUT DEALERS SHOULD'NT FORGET THERE'S A BACK DOOR



GETTING IN THE MOVIES IS BECOMING QUITE THE THING. CADILLAC AND STUDEBAKER PRODUCTION METHODS ARE BEING FILMED BY THE AUTOMOTIVE DIV. OF THE DEPT. OF COMMERCE.



A $1,500,000 CONTRACT HAS BEEN AWARDED BY THE DURANT MOTORS INC, FOR ITS PROPOSED NEW FLINT PLANT.



CAR REGISTRATIONS IN THE PROVINCE OF ONTARIO FOR 1921 SHOW FARMERS TO BE FAR IN THE LEAD AS OWNERS OF AUTOMOBILES, WITH TRADESMEN RUNNING THEM A POOR SECOND



WITH AN ESTIMATED COTTON CROP OF 10,000,000 BALES THE TRACTOR OUTLOOK IN THE SOUTH IS THE BEST IT HAS BEEN IN THREE YEARS.

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Dealers Report Trade Excellent

FALL BUYING STARTS EARLY IN CLEVELAND

Good Conditions Exist in Birmingham, Philadelphia, Los Angeles and Milwaukee

NEW YORK, Sept. 11—Conditions generally are excellent in the automobile trade as indicated by reports received from various and widely separated sections of the country.

Cleveland

In Cleveland August was a better month for retail sales than was July. There are evidences that the fall buying season has opened at least two or three weeks earlier than usual. The fact that some dealers are oversold and that the public knows it, is assigned as one reason for the early start. Records in the office of the county clerk show that transfers during August numbered 9000, or approximately 500 more than in the previous month. This includes a number of declarations of ownership by dealers who received their cars from local factories, but the bulk represents sales of used and new cars.

Birmingham

Birmingham reports that shipment of automobiles are being received more promptly, and that just as quickly as cars are delivered to the dealers they can be sold. The recent announcement of the United States Steel Corp. of an increase in the wages of common labor followed by similar announcements of coal operators in Alabama and independent iron and furnace concerns has affected about 50,000 men in Birmingham directly and caused the entire city to put on "boom" optimism.

Philadelphia

Automobile dealers in Philadelphia report a good demand for all classes of cars, the trend being toward closed models, as was expected. According to the Bureau of Building Inspection, garage construction was better during August than in any month in the history of the bureau, the total reaching $362,915 for 164 operations.

Los Angeles

August showed very little diminution in the demand for motor vehicles in Los Angeles. Sales ran somewhat behind those of July, but this is customary during August. Several dealers were unable to make deliveries and that was another reason for the falling off in sales. Dealers claim they can get no encouragement from the factories, and at least two firms claim to be from thirty to sixty days behind their orders.

Unless every indication fails, this year will prove the biggest on record in Southern California. Dealers in the surrounding small towns again are active, and there is a marked demand for representation, especially among the better known lines of passenger cars.

Through the organization of finance companies, dealers in that section are finding it easier to get their time paper handled. The banks are showing no particular desire to lend their money, but it is a known fact that the very banks which have refused to accommodate the dealers have organized and financed funding companies which serve the purpose but absolve the banks direct from the risk and are able to charge a higher rate of interest.

Milwaukee

Milwaukee reports show that the past week was one of the best this year regarding both distributors' and dealers' business. This was due to the genuine stimulation of the big motor show in conjunction with the annual Wisconsin State fair, held in West Allis, a suburb. Hundreds of dealers from all parts of Wisconsin and Upper Michigan, the Milwaukee distributing territory, came to the city, many of them bringing pros-

(*Continued on page* 40)

OWNERS ENTERTAINED BY DEALERS ON COAST

SAN FRANCISCO, Sept. 12—Two of the cleverest and most profitable automotive advertising stunts put over in Northern California in years were the motor trip and barbecue given to more than 800 owners of Hupmobiles by the Greer-Robbins Co., distributor of that car, and the barbecue and picnic given to the owners and drivers of Reo Speed Wagons by the Reo Motor Car Co. of California, attended by more than 300. Both events were preceded by parades through the main streets of San Francisco, followed by short drives to the scenes of the picnics and barbecues.

The two events had nothing to do with each other, and were arranged and carried out by each company at different locations, but the management of both organizations consider the day's outing one of the best and most effective pieces of advertising they ever have undertaken.

FAIR GIVES MESSAGE TO 359,000 IOWANS

Some Actual Business Done at Show—Farmer Returning as Buying Factor

DES MOINES, Sept. 8—The annual Des Moines early fall show, held last week in connection with the Iowa State fair, demonstrated the fact that, while the Iowa farmer is still a long ways removed from being the buying factor that he was before the financial bubble burst, he is on the way back.

Attendance at the show was the biggest in its history, and interest was entirely to the satisfaction of the dealers and distributors who had space.

The State fair show is more than a Des Moines show, for more than 200,000 Iowans from outside of Polk county made their annual pilgrimage to the State fair, the total attendance for the fair being 359,000, which is approximately 60,000 above that of last year.

The fair show is controlled directly by the State fair association and is housed in Machinery Hall, a big, semi-open brick and concrete structure. For several years the Des Moines dealers have given it wholehearted support.

Machinery Hall is located directly in the path of the main traffic through the fair grounds, and as a result practically every person takes a look over the motor show, which is open throughout the entire day.

Made a Business Show

No attempt is made to make it a decorative or entertaining exposition.

This year there were thirty-four lines of passenger cars shown, nine truck lines and thirty-four lines of accessories and automotive equipment. All three Des Moines tire factories had large exhibits.

Some actual business was done, sales bearing out the opinions expressed by conservative Des Moines distributors that there is a growing tendency toward buying cars at a price above that which has been the most popular in Iowa for several years. During the past sixty days there has been a noticeable increase in the amount of registrations by cars other than Ford, which up to that time occupied an overwhelming percentage.

With but few exceptions August was a banner business month for Des Moines distributors and dealers, keeping well up with July. During the last week of the month, however, there was an appreciable slowing-up in retail business, and some dealers are beginning to catch up with orders. Leaders in the trade look for a gradual seasonal letting down of

(*Continued on page* 40)

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Jobbers Narrow Distribution Lines

EASTERN CONVENTION SHOWS GAIN IN TREND

Reports Indicate That Business on Seaboard Is Running Ahead of Last Year

ATLANTIC CITY, Sept. 10—Automotive equipment business along the Atlantic seaboard is running ahead of last year, according to informal reports made by jobbers attending the fall meeting of the Eastern Automotive Equipment Association. New England jobbers reported the biggest increase in business, in some cases running as high as 30 per cent over last year in dollars and cents. The Pennsylvania and New Jersey districts also reported good sales. In the New York City territory jobbers have had little, if any, improvement over the business in 1921 and competition, particularly on a price basis, has been keener than previously.

Stranahan and Sherman Speak

The meeting, presided over by Wallace G. Page of the American Motor Equipment Co. of Boston, president of the association, was addressed informally by Robert A. Stranahan, chairman of the merchandising committee of the Automotive Equipment Association, and Ray W. Sherman, merchandising director of the same organization.

Stranahan urged constant campaigning by jobbers to assist dealers in getting more rapid turn-over of goods as the most important requirement in the process of building up business. "Help dealers become better merchants and they become better credit risks," he said. He put emphasis upon development of retail selling plans for the use of the dealer as the biggest task of jobbers to-day.

Sherman talked with the jobbers about local and district arrangements for presentation of the "Ask 'em to Buy" and "Shop Profits" films and about holding sales promotion meetings.

It developed that jobbers in the New England territory co-operatively have a sales promotion campaign well under way in connection with the Automotive Equipment Association movement. Plans are being developed in Pennsylvania, New Jersey and some of the other eastern territories.

The meeting showed a steady gain in the trend toward narrowing distribution lines. Several jobbers reported that they had cut down the number of competing makes of articles they are handling in various lines and had increased rather than lost business as a result. They reported also that quite a number of manufacturers were leaning toward reduction of the number of jobbers handling their lines in given territories, with the result that competing makes of numerous lines of merchandise are now being pushed by competing jobbers instead of all jobbers handling virtually all makes and giving no particularly aggressive attention to any. It was the general opinion of the meeting that this standardization of lines will continue and will benefit both manufacturers and jobbers.

The association's next meeting will be held in New York during the New York show.

How Do YOU Do It?

HOW do YOU make shop profits in winter?

Will you tell the story in 500 words, or less, and send it in to Motor World?

The story will naturally divide itself into two parts:

1—What kind of work do you get to keep your shop and your men busy in cold weather?

2—How do you get the work?

These must be FACT stories, with your name and the name of your company and town. Put the story in simple language and write it with a typewriter on one side of the paper.

Mail the story to Motor World not later than September 23 and earlier than that if you can. If yours is the best story—the most practical description of a practical method of making shop profits in winter—Motor World will send you a check for $50. For the second best story we will pay $25, for the third $10, and for all stories good enough to print, $5. The editors of Motor World will be the judges.

Please remember—500 words or less. And if you are a car, truck or tractor dealer, a little bit out of touch with the intimate details of the shop, pass this offer on to your service manager and give him a chance to compete.

Stars Being Delivered

NEW YORK, Sept. 9—Actual deliveries of Star cars to purchasers are now being made. The Star is in production at three plants now—Lansing, Leaside and Long Island City.

AMPLE FUEL SUPPLY NOW ASSURED FORD

May Not Close—Price Paid for Coal Thought to Be Less Than $4.50 Ton

DETROIT, Sept. 9—Announcement in Detroit to-day of an agreement entered into between the Ford Motor Co. and the American Export & Inland Coal Co., Cincinnati, by which the Ford company is assured of ample fuel for power purposes, makes it evident that if the contemplated closing of the plants is put through on Sept. 16, it will not be because of fuel shortage.

No intimation has been given by executives of the company as to the course of action now that fuel has been eliminated as a cause for closing. It is confidently expected in the city that Henry Ford will revoke the closing order, as the reason given for closing, inability to get coal at reasonable prices, has been removed.

Plenty of Coal at $4.50

There has been no statement made as to the price stipulated in the agreement, but from the buying head of one of the largest companies in the industry it has been learned that plenty of coal is now obtainable at $4.50 a ton, the price which Ford set as a reasonable figure. With the tremendous buying power of the Ford company and the amount of the tonnage involved in the agreement, about 4,000,000 tons, it is certain that the $4.50 figure was not exceeded.

Under the agreement the Ford company will begin the receipt of from 250 to 300 cars daily. Orders have been given by Ford executives to rush shipments forward as rapidly as cars can be loaded.

Earl Turner Elected

OLD ORCHARD, ME., Sept. 8—Earl Turner, assistant secretary of the Automotive Electric Association, has been made manager, this being one of the final acts of the four-day summer meeting of the association, held here. The association offices are at 5363 Hamilton Avenue, N.E., Cleveland, Ohio.

Truck Official Optimistic

MARION, IND., Sept. 11—John A. Rhue, treasurer of the Indiana Truck Corp., has returned from an extended trip through Missouri, Kansas, Oklahoma and Texas. Rhue reports that he was impressed with the improvement in business and states that he anticipates a good fall and winter.

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NEW YORK WILL UNITE ON LEGISLATIVE WORK

Conference Called by Automobile Merchants Association for September 25

NEW YORK Sept. 12—Representatives of automotive trade associations in New York State have been invited to a conference arranged for Sept. 25 by the Automobile Merchants Association of New York to discuss plans for united action on legislative problems during the coming sessions of the State Senate and Assembly.

Arrangements for the meeting are being made by Thomas F. Moore, executive secretary of the New York Association. It is planned to take up various suggestions for proposed legislation and decide upon a program which would protect the interests of the industry while promoting those of the public, and then to seek co-operation with a central authority representing the automobile clubs, when the legislature convenes.

FORD FILES FINANCIAL STATEMENT TO JUNE 30

LANSING, MICH., Sept. 8—The annual financial statement of the Ford Motor Co. has been filed with the secretary of state. The statement is of June 30, 1922, when the company's surplus was $289,935,296, and its holdings in the State of Michigan were valued at $215,415,662. These figures show a decrease of $49,456,560 from the surplus given in the company's statement filed in Massachusetts as of April 30, 1922.

The Michigan statement gives Ford's cash on hand and in the bank, $145,885,669; plant, land improvements, buildings, fixtures and structures, $81,626,015; machinery, tools and equipment, $39,531,079, and good will, $20,517 985.

Included in the Ford statements are the returns from the Dearborn Publishing Co. and the Lincoln Motors Co. The assets of the former are listed at $124,961, while a single item of $250,000 cash is shown as the total asset of Lincoln Motors.

MERCER DIRECTORS CHOOSE SMITH HEAD

NEW YORK, Sept. 7—At a meeting of the board of directors of the Mercer Motors Co., Trenton, N. J., George P. Smith, of Smith & Gallatin, brokers of New York City, was elected president to fill a vacancy which has existed since the company severed relations with Hares Motors.

R. W. Barnum was chosen vice-president in charge of production and finance to succeed H. E. Barthel, resigned. Barnum was formerly vice-president and general manager of the Barnum-Richardson Co., iron manufacturers of Lime Rock and East Canaan, Conn., and for the last three years has served as general manager of the body department of Mercer Motors in New Haven.

PARK SITES GIVEN AS DODGE MEMORIAL

DETROIT, Sept. 8 — Dodge Brothers, Inc., has donated 11 tracts of forest and lake sites to the State of Michigan for motorist, picnic and camping parks. The parks total 627 acres of natural woods and lakes. All the sites are within 50 miles of Detroit.

The purpose of the donation is to provide a memorial to the late John F. and Horace E. Dodge and to "give motorists places where they may have their picnics, games and bathing without being constantly driven from pillar to pillar by indignant owners of private property." Ten of the eleven parks have large lakes or river frontage and the other is a rugged, almost mountainous parcel noted for its natural scenery.

The parks will be known as Dodge Brothers State Parks Nos. 1, 2, etc. The presentation was made in a formal letter to Governor Alex. J. Grosbeck by Chairman Howard E. Bloomer of the Board of Directors of Dodge Brothers.

W. A. Smith was elected vice-president in charge of sales and service. He has been connected with the company in various capacities for the last twelve years, and for the last year and a half has served as general sales manager.

DAVIS MODELS HAVE ADDED REFINEMENTS

RICHMOND, IND., Sept. 11—Added refinements and extra equipment, which will be standard for the Davis model 71 phaeton and model 74 sedan in the future have been announced by the George W. Davis Motor Car Co. of this city. There will be no increase in the price of these models.

The phaeton is finished in either midnight blue or royal blue, at the option of the buyer, and equipped with either aluminum military steps and skirt fenders, or with regular runningboards. Snubbers, both front and rear, polished aluminum luggage rods on the rear body panel, front bumper and brown Spanish leather upholstery are now standard on this model.

The sedan is now equipped with snubbers, front and rear, and front bumper.

Lincoln Receiver Report

DETROIT, Sept. 11—The report of the receiver for the old Lincoln Motor Co. has been filed, covering operations from Nov. 4, 1921, to Feb. 4, 1922. In that period the operating loss was $76,584. Cash on hand Aug. 1 was $5,176,119; filed claims, $8,737,272; verified claims, $5,835,717; claims reduced, $1 385,217, and claims still to be adjudicated, $1,516,337. The Liberty motor tax account with the Government remains unsettled.

AUGUST PRODUCTION AGGREGATED 272,000

Second Biggest Month in History of Industry—12 Per Cent Over July Output

NEW YORK, Sept. 12—With reports 99 per cent complete August production of motor vehicles totaled 272,000, according to the National Automobile Chamber of Commerce. This total gives August, 1922, the honor of being the second greatest production month in the history of the industry and 12 per cent over July, 1922, which had ranked second in June, 1922, the record holder.

This sensational report makes the fourth consecutive month that the production record has been smashed and is remarkable from the fact that May, June, July and August, 1922, now occupy positions of honor at the top of the record list. June heads the list with 289,000; August is second with 272,000; May is third with 256,000, and July fourth with 246,000. The total production for the four months is 1,073,000, more cars and trucks than the industry ever manufactured in any one year up until 1916, when the million mark first was reached.

Compared with August, 1921, the latter month looks like a pygmy, for this year's August is 53 per cent greater than the one 12 months ago.

RICKENBACKER FORMS FINANCING COMPANY

DETROIT, Sept. 8—Rickenbacker Co., Inc., has been formed as a financing company for the Rickenbacker Motor Car Co. and will handle all financing business of the manufacturing company. This according to B. F. Everitt, president of the manufacturing company, applies to the handling of sales and such other business as may arise from time to time.

The capital stock of the financing company is $100,000 at $10 a share; paid in cash. Stockholders are E. V. Rickenbacker, 260 shares; B. F. Everitt, 260 shares; R. M. Chambers, 160 shares; R. H. Hood, 160 shares, and H. L. Cunningham, 160 shares.

Cadillac to Have Closed Car Week

DETROIT, Sept. 12—A national closed car week has been arranged for by Cadillac distributors and dealers in many cities in the United States and Canada for Sept. 17-23.

Robbins Joins Bearings Co.

DETROIT, Sept. 11—A. W. Robbins, formerly of the Standard Roller Bearing Co. and the Bearings Service Co., now is associated with the Bearings Co. of America.

Petition Against Master Trucks

CHICAGO, Sept. 8—A petition in bankruptcy has been filed against the Master Trucks, Inc., by the Maremont Mfg. Co., Up-to-Date Machine Co. and the Auto Body Co., all of Chicago.

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JOBBERS AND DEALERS IN DETROIT TO MEET

Program to Stimulate Winter Sales Will Be Outlined at Proposed Dinner

DETROIT, Sept. 9—Plans are under way in this city for the staging of a large accessory dealer dinner early in October at which a program for stimulating winter sales would be outlined. V. E. Vining, sales manager of the Kales Stamping Co., talked to a meeting of jobbers and dealers this week, and a later meeting will be held when it is expected the plans for the dinner will be completed.

The movement will be directed entirely to stimulating sales in the Detroit district as only dealers in this section will be in attendance. Specific merchandising ideas will be unfolded which dealers will be urged to adopt in going after business which the winter season will open. All jobbers in the district will be asked to bring in a number of dealers in proportion to the number of their salesmen.

New Cincinnati Garage

CINCINNATI, Sept. 12—The Federal Garage is Cincinnati's newest automobile and truck storehouse of importance. Built on the site of the former Interurban Terminal Station, it has the largest ground floor garage space in the city, measuring 110 by 236 feet, and having a capacity of 500 cars.

The Federal, which was opened for business Sept. 1, has a ramp from the first floor to the mezzanine, and two large elevators from the basement to all floors.

ANDERSON LIST CUT FROM $155 to $455

ROCK HILL, S. C., Sept. 10—Lower prices are announced by the Anderson Motor Co., the reductions ranging from $155 up to $455. The new list is as follows:

Series 40	Old Price	New Price
5-pass. phaeton	$1,650	$1,495
Convertible roadster	1,650	1,495
7-pass. phaeton	1,795	1,595
4-pass. sport	1,750	1,595
2-pass. speedster	2,195	1,785
4-pass. ultra sport	2,395	1,945
4-pass. coupe	2,450	1,995
5-pass. sedan	2,550	1,995

Durant Carload Leaves Oakland

OAKLAND, CAL., Sept. 12—The first carload of automobiles built at the new plant of the Durant Motor Co. in Oakland was shipped to Seattle late in August, to W. S. Dulmage, distributor of the Durant car in the State of Washington. Officials of the Durant company were present at the loading of the first car. Following the first shipment, sixteen more carloads of Durants were shipped to Dulmage for distribution in his territory.

50,000 MEN HEARD A. E. A. SALES STORY

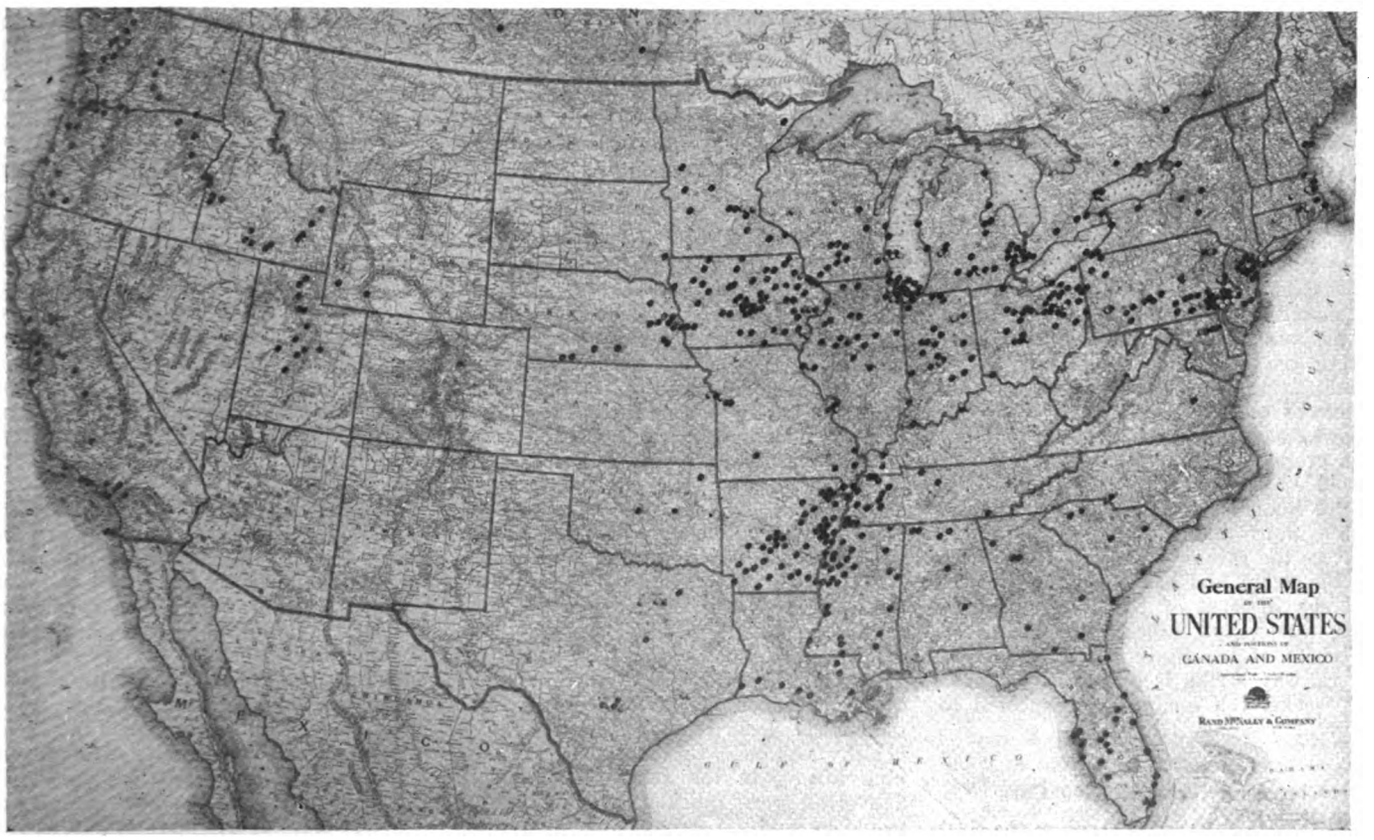
That Is Record Made Since Merchandising Campaign Opened Aug. 1, 1921

CHICAGO, Sept. 10—Fifty thousand men in the trade have heard the sales promotion story of the Automotive Equipment Association and have seen the films which visualize it, according to a summary of the work since its inception, Aug. 1, 1921. Seven hundred meetings have been held. Sometimes there were five in the audience, once there were 1700, several times there were 500, and the average was about 70.

The campaign, conducted by Ray W. Sherman, merchandising director of the association, has covered many sections of the United States and Canada, as a glance at the accompanying map will show. It is hoped that the campaign eventually can be carried into all selling territories and the association is anxious that dealers desiring to have sales promotion meetings in their town ask their jobbers to arrange them. Application may also be made direct to the association at 1818 City Hall Square Building, Chicago.

During the second year of the work, the "Ask 'em to Buy" motion picture story of Dan Morgan's rise to financial success is being supplemented by another picture, which is entitled "Shop Profits."

Where A. E. A. Sales Promotion Meetings Have Been Held



Each pin on the map indicates a place where one or more of the "Ask 'em to Buy" and "Shop Profits" meetings have been held

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NEW BUSINESS SEDAN ANNOUNCED BY DODGE

Will Sell for $1,195—Steel Used for Entire Body Construction

DETROIT, Sept. 8—A new all-steel business sedan is just announced by Dodge Brothers. It will sell for $1,195, or $250 under the price of the previous sedan model.

The feature of the new body model is the use of steel for the entire body construction with the exception of the roof which is of fabric construction not subject to rumble. The finish is baked enamel instead of the 18 hand-rubbing and painting operations formerly used and this makes it possible to mature the jobs in five days instead of ten. The upholstery is leather.

The rear seat cushion, rear side and back cushions are separate units, converting the entire rear section of the car into a spacious compartment. The front seat tilts forward, affording clearance through the rear doors. This gives a door opening large enough to admit a trunk or parcel 22 in. wide by 48 in. high. The plate glass window in the rear is unusually large, being 16 by 28 in. The rear quarter windows are 20 by 23 in., while the rear doors have a window opening of approximately 19 by 21 in. The front doors have an opening of 19 by 20 in. The car is fitted with artillery wheels, cord tires, window regulators, windshield cleaner, dome light, heater, Yale door locks and the usual closed car equipment. The Yale lock operates with a thumb turn on the inside and a key on the outside.

FAIR GIVES MESSAGE TO 359,000 IOWANS

(*Continued from page* 36)

city trade. They expect, however, that there will be a good demand from the farmer and small town buyer for cars during the month of September which should bring that month's business far in excess of last September.

Iowa, as usual, is expecting bumper corn crops, and the small grain already moved is beginning to make itself felt in the financial conditions. No considerable improvement is looked for, however, as the farmer is taking a low price for his grain and has obligations which will absorb most of the money secured from this year's crops. Conditions in the cities of the State are good, and if the railway strike is solved in the next few weeks, fall business is expected to be brisk in general lines.

Cleveland Shipped 6600 Cars

CLEVELAND, Sept. 11—For the first seven months of the year the Cleveland Automobile Co. shipped about 6600 cars and for August and so far in September shipments have been at the rate of 275 a week. It is expected that the total production for the year will total 10,000 cars.

After inventory adjustments and other charges were deducted, net profits for the first seven months are reported to be in excess of $1,000,000.

LONDON MAKERS HOLD "INSPECTION RALLIES"

LONDON, Aug. 28 (*By Mail*)—The makers of Arrol-Johnston cars this year have instituted a series of area "inspection rallies," publicly inviting all owners of their cars, especially those in the district, to attend at an announced avenue, take refreshment as the maker's guests and allow their cars to be inspected and tried individually by a staff of testers on the spot.

Actual repairs are not done at these rallies, but a written report is furnished as to the "tune" of each car with recommendations as to what should be done to it if anything amiss is noticed. The object is, of course, to render an additional type of service to owners and at the same time to secure publicity in an unusual form.

DEALERS REPORTING TRADE IS EXCELLENT

(*Continued from page* 36)

pects who desired to see the new models before placing orders.

Motor truck business, likewise, was, helped along by the comprehensive display of commercial vehicles, which again took the form of a little village, called "Trucktown," as for the last two years. The results of this year's State fair show were eminently satisfactory, especially as it appears that the farmers are again becoming a buying factor, both in passenger and commercial cars. Exhibitors of farm machinery said that tractors and power operating equipment aroused more interest than in 1920 or 1921, and some actual sales were made on the ground.

Upstate dealers said that there was a slowing up in demand in cities, but rural districts were producing some good business, in passenger cars especially. April, May and June of this year represent probably the biggest and best selling period on record. July showed a falling off which was relieved to some extent in August by price reductions and the appearance of 1923 models. September is looked upon to produce a healthy volume. Closed types are running strong in the sales ratio, and if deliveries were quicker, probably more would be sold. A great many buyers do not want to wait anywhere from 30 to 90 days before the car is placed in their hands.

HAYNES BODY MODELS SHOWN TO DEALERS

Advertising Policy and Crop Situation Discussed at Factory Meeting

KOKOMO, IND., Sept. 7—The new Haynes body models were exhibited for the first time here to-day at the first dealers' meeting held by this company in recent years. Dealer meetings are announced as a part of the policy of G. U. Radoye, who recently was placed in charge of both sales and advertising for the Haynes Automobile Co.

There were two topics for the meeting, the morning session being devoted to the national advertising policy behind the Haynes cars. On this subject C. C. Parlin of the Curtis Publishing Co. and H. A. Groth of the Rankin advertising agency were the chief speakers. Opportunities for connecting local sales situations with the national advertising were discussed at considerable length. Groth called attention to an analysis of the United States by counties recently prepared by his agency and subject to call for any Haynes dealer or distributor who wished to make an intensive campaign of his territory.

Parlin discussed the economics of the present national crop and manufacturing situation, and his conclusion was that as a result of the third bumper crop in successive years and the recent rise in prices, the money is in the country and the dealers should be able to continue the present high rate of sales with less than the usual seasonal drops.

Radoye then presented a series of charts showing the strong sales points of the Haynes cars.

The afternoon session was given over largely to engineers who explained certain parts of the cars.

FOUR SPORT MODELS IN HAYNES NEW LINE

KOKOMO, IND., Sept. 10—Four new sport models have been added to the Haynes line for 1923. These consist of a five passenger sport phaeton, two passenger sport roadster, three passenger sport coupe and five passenger sport sedan.

The cars are finished in maroon and have de luxe equipment, including six disk wheels, polished protection bars on the back of the body, front and rear bumpers, nickel plated radiator, ornamental radiator cap and headlamps, Motometer, windshield wings on open models, sunshade, etc. These sport bodies are mounted on the 121 in. wheelbase, Model 55 chassis. Individual steps are standard equipment. The fenders are crowned higher than before.

The list prices of the new models are: 5 passenger sport phaeton, $1,895; 7 passenger sport roadster, $1,895; 3 passenger sport coupelet, $2,195; 5 passenger sport sedan, $2,695.

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FREIGHT RATES CUT ON BODY SHIPMENTS

Reductions Affecting All Parts of Country Range from 20 to 67 Per Cent

NEW YORK, Sept. 11—A substantial reduction in freight rates on automobile bodies, ranging from 20 to 67 per cent, is announced by the Consolidated Freight Classification, which represents all of the railroads of the country. The new rates are effective about Nov. 15.

These reductions are the result of 18 months' effort on the part of the Motor and Accessory Manufacturers Association, the National Automobile Chamber of Commerce and the Automobile Body Builders Association to convince the railroads that automobile bodies should take the same ratings as horse drawn vehicles. Representing the traffic department of the Motor and Accessories Manufacturers Association, Herman Deuster appeared before the classification committee four times before the contention of the automotive industry was approved.

Dealers Benefited

Automobile dealers who sell chassis and fit special bodies will be financially affected by the new rates, for they will mean a considerable saving. For instance, a San Francisco dealer selling a Ford chassis and ordering a sport body from a body factory at Owensboro, Ky., would have to pay $96.20 freight under the present classification. Under the new rates the charge would be $32.10, which would mean a saving of $64.10. In the case of special bodies, there would be no saving unless the dealer filled the car.

There are three divisions of railroad territory represented in the rate classification. "Official" represents all of the carriers east of the Mississippi and north of the Ohio river and the Mason and Dixon line. "Southern" is everything east of the Mississippi and south of "official," while "Western" is everything west of the Mississippi.

New Classification

The following table shows the percentage of reductions in the various classifications:

	Official	Southern	Western
In boxes or crates, see Note: Packages exceeding 54 in. in height, actual weight, but not less than 1,000 lbs. each, L. C. L.	*	*	20%
Packages exceeding 44 in. but not exceeding 54 in. in height, actual weight, but not less than 1,000 lbs. each, L. C. L.	25%	33⅓%	33⅓%
Packages exceeding 36 in. but not exceeding 44 in. in height, L. C. L.	50%	50%	50%
Packages exceeding 34 in. but not exceeding 36 in. in height, L. C. L.	33⅓%	50%	50%
Packages not exceeding 34 in. in height, L. C. L.	50%	66.7%	66.7%
Loose or in packages, C.L., min. wt. 10,000 lbs., subject to Rule 34	†20%	†20%	†20%

NOTE: The height measurement of the package, or of the body if shipped loose, is to be taken with the body in its natural upright position.

*No change.
†Estimate.

VANCOUVER SETS UP PARK FOR MOTORISTS

VANCOUVER, B. C., Sept. 10—A new automobile tourist camp has been prepared in this city for visiting motorists and is already being extensively patronized.

One hundred and sixty acres have been set aside for this purpose, for the accommodation of two hundred automobiles and tents, all parking spaces being under the shelter of trees.

Cooking and dining shelters, each with a large cook stove and dining tables, have been built in different parts of the ground, with shower baths, laundry facilities and every other convenience.

LOCOMOBILE TO ADD TO DEALER FORCES

BRIDGEPORT, CONN., Sept. 10—The reorganized Locomobile Co. of America, now headed by W. C. Durant, has issued a statement to its branches and dealers outlining its plans under the new leadership. No radical changes are contemplated either in policy or design of the product, it is stated. The Locomobile as now known, with its 48 h.p. low-speed six-cylinder engine and four-speed transmission, will be continued.

"In a market of unsettled prices for motor cars, it is interesting to note that the company states there is no price reduction in view, but that on the contrary an increase in price is not an improbability," says the statement. "As to the marketing of the car, the familiar policy of the company in handling its product through its own branches will be continued. This system of branch houses will be amplified by direct dealers for territory not covered by branches."

ROLLS-ROYCE FACTORY TO KEEP AT CAPACITY

SPRINGFIELD, MASS., Sept. 12—A circular to preferred stockholders of Rolls-Royce of America, Inc., states that since the reduction in the price of the chassis in March sales have increased so fast that at present the company's unfilled orders are such as to tax the capacity of the plant for the remainder of the year.

With the present equipment the company can turn out 10 cars a week, and with a comparatively insignificant capital expenditure for equipment the output can be raised to 750 cars a year.

PRICE QUOTATIONS ANNOY LOS ANGELES

Public Wants Advertisements to Show Cost of Cars When Delivered

LOS ANGELES, Sept. 10—The public has begun to protest against the practice of Los Angeles motor car dealers advertising factory prices only. Letters have been printed in newspapers signed by motorists calling attention to the misleading information derived from the advertising.

The freight differential between factory and local prices is quite high. In many instances it is more than $200. This means that when a prospective buyer reads an advertisement and learns the advertised price is $1,495, he is told later that it means the price in Cleveland, Detroit or some other eastern manufacturing center, but in Los Angeles the car costs $1,735 or some such figure. Many of the dealers use very large display type setting up the price and below it type of very inconspicuous size, stating "Freight and war tax extra" or "F.O.B. Detroit."

Hold Factories to Blame

When asked why they advertised in this way, some dealers said it was because the factories will not permit them to change the prices to correspond to the actual cost delivered in Los Angeles. They admit they are caused a lot of grief by this kind of advertising, but owing to the fact that the factory usually pays a percentage of the cost of advertising they are not privileged to make the change.

Other dealers are frank enough to say they advertise factory prices because they are so much lower than delivery prices, and if they can get a prospect to look at the car and take a ride in it, they don't have much difficulty in selling the freight charge, when, if they advertised actual delivery prices, the prospect might not come into the place.

GEORGE FRITZ CHOSEN ASSOCIATION MANAGER

CHICAGO, Sept. 7—George Fritz, formerly manager of the Research Club, an organization of automotive jobbers, has been appointed business manager of the Association of Automotive Equipment Manufacturers.

This association will establish headquarters immediately in Chicago's Loop district and will conduct an active campaign to extend its membership throughout the United States. It was organized about a year ago, and its membership now includes about 80 manufacturers of automotive equipment in Chicago, St. Louis, Milwaukee and a number of other cities.

W. E. Green, who has been secretary of the association since its organization, will continue in that capacity.

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BEARINGS SERVICE WILL BE DISSOLVED

Separate Companies to Take Over Work—Organization Formed in 1916

DETROIT, Sept. 9—The Bearings Service Co., as an active organization, will be dissolved Dec. 31, 1922, according to Alfred K. Hebner, president and general manager.

The company was incorporated June 26, 1916, and has been the concern acting through 32 direct branches and approximately 1000 distributors as the service department of the Timken Roller Bearing Co., the Hyatt Roller Bearing Co. and the New Departure Manufacturing Co. for the service distribution of Timken, Hyatt and New Departure bearings.

Hebner issued the following statement:

Although the same mutually friendly attitude exists among the manufacturing principals through whose efforts the Bearings Service Co. was brought into existence, with automotive service activities and policies becoming more and more important in the industry as they have during the past several years, there has been a growing mutual realization between the Timken Roller Bearing Co. and the General Motors Corp., whose interests have been represented in the Bearings Service Co., that the best ultimate goal would be secured by each through a separation of their bearings service program.

New Companies Formed

To this end on and after Oct. 1, 1922, the servicing of Hyatt and New Departure bearings, the manufacturers of which are units of the General Motors Corp., will be handled by the United Motors Service, Inc., and a new company to be known as the Timken Roller Bearing Sales & Service Co. will care for the servicing of Timken bearings.

Until Jan. 1, 1923, when the Timken Roller Bearing Sales & Service Co. will be in operation, the Bearings Service Co. will continue the servicing of Timken bearings as heretofore at all its 32 direct branches located in the following cities: Atlanta, Boston, Chicago, Detroit, Los Angeles, Minneapolis, New York, San Francisco, Seattle, Kansas City, Dallas, Cleveland, Denver, Indianapolis, Birmingham, Richmond, Philadelphia, St. Louis, New Orleans, Pittsburgh, Omaha, Portland, Toronto, Winnipeg, Brooklyn, Fresno, Milwaukee, Salt Lake City, Baltimore, Buffalo, Newark, Oklahoma City.

In addition, in any of these cities where the United Motors Service, Inc., does not have branches the Bearings Service Co.'s branches up to Jan. 1, 1923, will sell for service Hyatt and New Departure bearings.

To indicate the continued mutually friendly attitude in service affairs between the manufacturers of Timken, Hyatt and New Departure bearings, the United Motors Service, Inc., will appoint as service distributors of Hyatt and New Departure bearings the direct branches of the Timken Roller Bearing Sales & Service Co. in cities where the United Motors Service, Inc., has no direct branches, and, conversely, the Timken Roller Bearing Sales & Service Co. will appoint direct branches of the United Motors Service, Inc., as its service distributors for Timken bearings in such cases.

These arrangements will result in the public obtaining just as good, if not better, service on all these three bearing lines, Hyatt, Timken and New Departure, than has been available in the past through the Bearings Service Co.

NEW YORK DEALERS SELECT SHOW SPACE

NEW YORK, Sept. 11—Fifty different makes will be represented in the closed car show of the Automobile Merchants' Association which will be held in Grand Central Palace Sept. 23-30. The spaces were auctioned off and there was lively bidding for preferred positions, participated in by nearly all of New York's dealers.

This will be the third annual show run by the dealers themselves and the second annual closed car show.

The admission fee will be 75 cents and it is hoped to break last year's attendance figures of 150,000.

Mayor Hylan is expected to make the opening address on Saturday night, Sept. 23.

Farmers Lead Toronto Buyers

TORONTO, ONT., Sept. 11—An analysis of car registrations in the Province of Ontario for the year 1921 shows farmers to be far in the lead as owners of passenger cars, with tradesmen running them a poor second. In the aggregate, farmers lead all classes as owners of self-propelled vehicles, as they possess 65,904 of the passenger and commercial cars registered in the province.

WEST WILL CONSIDER UNIFORM VEHICLE LAW

Conference of Officials of Seven States Will Probably Be Held This Month

PORTLAND, ORE., Sept. 8—Discussion of appropriate legislation dealing with regulation of motor vehicle traffic on the highways, with a particular view to uniformity throughout the Pacific coast, is the subject of a proposed conference of officials of the seven western States and British Columbia which probably will be held in Portland late this month.

Letters suggesting the conference were sent out this week by Sam A. Kozer, secretary of State of Oregon and in charge of motor vehicle control, following an exchange of ideas with L. D. McArdle, director of efficiency, and Fred J. Dibble, director of the bureau of licenses, of the State of Washington.

Officials to whom invitations have been sent by Kozer and who probably will be in attendance at the conference are: Charles J. Chenu, superintendent of the motor vehicle department of California; Robert O. Jones, secretary of state of Idaho; Charles T. Stewart, secretary of state of Montana; George Brodigan, secretary of state of Nevada; H. E. Crockett, secretary of state of Utah.

PRODUCTION STARTED ON "COURIER" MODELS

SANDUSKY, OHIO, Sept. 10—The Courier Motors Co., which is the Arrow Motors Co., acquiring the assets of the former Maibohm Co., reports that production is under way on six-cylinder models of the "Courier," which are custom built and painted. It is stated that enough orders are on hand to keep the plants at capacity for several months.

The officers of the company are: President, A. C. Burch, former vice-president and director of sales of the Clydesdale Motor Truck Co.; vice-president, O. O. Brace, president of the Sandusky Nut Co.; treasurer, E. E. Ernst, and secretary and general counsel, J. G. Pyle.

New York Dealers at the Boosters'



The annual boosters' outing of the Automobile Merchants' Association was held at Fred J. Wagner's farm at Smith- weather conditions, a representative crowd attended. The sports, handled by W. A. Allen, were unique, consisting the car parked nearest to a secret stake, while the owner of the best looking car was suitably rewarded. Among warth, W. G. Goldman, A. V. Hines, C. A. Opel and J. A. Clarke. The committee in charge

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BORDINO WINS RACE ON MILAN SPEEDWAY

Captures Italian Grand Prix, Covering 500 Mi. in 5 Hr., 43 Min., 13 Sec.

MILAN, ITALY, Sept. 10 (*By Cable*)—Bordino in a Fiat won the Italian Grand Prix on the Monza speedway to-day. The distance was 500 miles and the winning time was 5 hr. 43 min. 13 sec. F. Nazzaro, winner of the French Grand Prix, also driving a Fiat was second, two laps behind. The race was for 122 cu. in. cars, with prizes totaling 300,000 liras.

Opens Speedway

MILAN, ITALY, Sept. 10 (*By Cable*)—The opening meet on Italy's first automobile speedway was a complete success. The new track, which is 6.2 miles to the lap, is located within six miles of Milan and was built by the Automobile Club of Milan so that Italy's automobile industry might have a suitable course on which to try out cars and also promote sporting events of an international caliber.

This was the first of two races scheduled for September, the other being the Italian 500 mm. Grand Prix for cars of 122 cu. in. piston displacement for which are entered thirty-eight cars, representing France, Italy, Germany, Austria and England.

The race was for 91 cu. in. cars, the winner being Bordino, who competed in several California races in the United States last winter. He drove his Fiat to victory over the 373 miles in 4:28:38. Lampiano, Fiat, was second, in 4:34:12 3/5; Salamano, Fiat, third in 4:35:48; Ramassotto, Chiribiri, Pocher and Haiden in Austro-Daimlers were still running when the race was called off. Nine cars started.

Oldsmobile Has New Home

NEW YORK, Sept. 11—The Cutting Larson Co., Inc., eastern distributor for the Oldsmobile, has moved into its new eight-story Oldsmobile building, at 311-323 West Sixty-sixth Street, near West End Avenue. It is eight stories high, of reinforced concrete, making it 100 per cent fireproof, and giving a total floor space of about 110,000 sq. ft., 120 feet front on West Sixty-sixth Street. The building and land represent an investment of about a half a million.

In going into the new Oldsmobile home, the Cutting Larson Co. will have ample room for its executive offices, salesroom, displaying new cars and trucks, parts, service and delivery departments, and in addition to this it will maintain its own paint and trim shops, also blacksmith and machine shops.

MILLER BUILDS RACER 27 INCHES IN WIDTH

LOS ANGELES, Sept. 8—Harry Miller, veteran builder of racing cars, has announced that he now has under construction at his plant here the first of two 122-cubic inch displacement engines which he expects to enter in the 1923 race at Indianapolis. The new engines will have eight cylinders all in line.

The chassis that will carry the Miller engines will be 104-in. in wheelbase, but will have a narrower frame and the body will be only 27-in. wide, accommodating a driver only. The bore of the cylinders will be 2 11/32-in. with a stroke of approximately 3½-in Although the parts will be smaller, the motor will be similar in design to that which Jimmy Murphy has used in his car this season.

The entire car will weigh about 1400 lbs., and the power plant is expected to develop from 90 to 95 horsepower. With the exception of the wheels, tires and electric units, the cars will be built complete in Miller's shop.

C. A. Shaler on Full Time

WAUPUN, WIS., Sept. 12—The C. A. Shaler Co., manufacturer of tire repair tools, equipment, vulcanizers, etc., and headlight lenses, is now operating full time in its new factory, and to handle the overflow of orders is erecting a shop addition and an office building.

The original plant was destroyed by fire in March, and the industry has been entirely rebuilt at an investment of more than $350,000. The main building is 150 x 300 ft. and is employing 150 persons, the largest number in the history of the company.

ASSOCIATED MOTORS ASSETS, $9,564,555

Current Liabilities Total $1,210,060; Cash Is Stated to Be $1,365,939

CHICAGO, Sept. 11—A condensed balance sheet of the Associated Motors Industries as of July, 15, 1922, shows this holding company to have current assets of $9,564,555 as compared with current liabilities of $1,210,060. Cash is given at $1,365,939.

The Associated Motor Industries was formed to effect the consolidation of approximately 20 companies active in the automotive or associated industries. These companies have been divided into three groups. The first group is made up of eight companies—National Motor Car & Vehicle Corp., Indianapolis; Traffic Motor Truck Corp., St. Louis; Recording and Computing Machines Co., Dayton; Covert Gear Co., Lockport, N. Y.; Kentucky Wagon Manufacturing Co., Louisville; Jackson Motors Corp., Jackson; Saginaw Sheet Metal Works, Saginaw, and M & T Corp., Atlantic, Mass.

The identity of the companies included in the other two groups will be announced later. When all conveyances are completed, the Associated Motor Industries states that the combined assets will aggregate approximately $80,000,000.

The aggregate depreciated value of the fixed assets derived from appraisal is given at $10,135,378.

OHIO FAIR FURNISHES LIVE PROSPECT LIST

COLUMBUS, Sept. 8—Success marked the annual fall show under the auspices of the Columbus Automobile Show Co., held at the Ohio state fair grounds. A display of passenger cars was much larger than in former fall shows, and one large building 100 by 400 feet was taken up with the display Only passenger cars were in the building, as space elsewhere was provided for trucks.

Business at the Fair was better than last year, according to the dealers and manufacturers in charge of the various exhibits.

Outing, Wagner's Farm, Sept. 7



town, L. I., Sept. 7, the feature being a clambake which followed an afternoon of field sports. Despite adverse of balloon races, arrow chases, nail driving, obstruction rice, card sailing, archery and golf. A prize was given for those who won prizes were: Sam Marks, George Rich. Walter Allen, W. M. Whelan, A. N. Mathews, Otto Braunwas: Otto Braunwarth, J. C. Nichols, J. Hall, Fred Phillips, C. G. Percival and W. A. Allen

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CHANGES IN THE TRADE

W. H. Wortmann, Kewanee, Ill., has taken the agency of the Traffic truck.

Weldon Garage has been designated as distributor for the Star in Greenfield, Mass.

Olivier Bros. has been appointed dealer for the Ford and Lincoln cars in Holyoke, Mass.

Tri-State Tire Co., Memphis, Tenn., has been appointed distributor for the Ajax tires. Russell Blair is president of the company.

R. L. O'Bryan has bought an interest in the **Curtis Co.**, Houston, Texas. The company will carry a complete line of tires, tubes and accessories.

C H. Burke has been appointed manager of the Redner Automobile Co., Milwaukee, Wis., distributor of the Peerless. Burke is a Chicago man.

Bishop Motor Car Co., Cincinnati distributor of the Jordan and the Liberty, has opened a branch in Dayton, Ohio. E. D. Hensley is sales manager.

Earl Motors, Inc., is establishing a sales branch in Birmingham, which is to have as its territory the entire state of Alabama. Tunstall Bryars is manager.

Edward J. Tallant has been appointed sales manager for Ford and Lincoln passenger cars, Ford trucks and Fordson tractors by the **Koelle-Greenwood Motor Co.**, Germantown, Philadelphia.

Paul Rubber Co. of Charlotte, N. C. has appointed A. K. Buxton as district manager of North and South Carolina. Buxton has recently been general manager of the A. & P. Tire Stores Association.

Tampa Cadillac Co. has been organized at Tampa, Fla., and established a distributing agency there for the Cadillac. G. Henry Davis is president; W. R. Rogers, vice-president, and D. Bryon Logan, secretary.

Gorman Motor Sales Co., of which **W. A. Gorman** is president, has purchased the **H. & S. Overland plant**, Moline, Ill., and in addition to the Overland and Willys-Knight lines will show a complete Studebaker line.

Edwards Motor Co. of Milwaukee has been incorporated with a capital stock of $200,000 by Frank J. Edwards, head of the present **Edwards Motor Car Co.**, Dodge Brothers distributor and dealer. A new sales and service building costing $125,000 is being erected.

Posner-Ormand Tire Co. has been incorporated to be a strictly tire business in Birmingham, Ala. The incorporators and officers are Banks Ormond, president; F. O. Denson, vice-president and N. L. Posner, secretary and treasurer.

Stutz Wisconsin Co., Milwaukee, has been organized by **William M. Maxwell. Herbert A. Stolte** has been appointed manager of retail sales, and **James Hutton**, service manager. The local dealership will be operated as the **William M. Maxwell Co.**

Patton & Gay, Inc., has established a new retail tire store in Atlanta, handling several well-known makes but specializing in the Kelly-Springfield line. Edward S. Gay, Thomas V. Patton and Vance Hunter are the owners of the new company.

William R. Grundman has severed his connection as service and general manager of Walter S. Halliwell, Inc., handling Mercer and Moon cars and the Winther truck in East Hartford, Conn., to become associated with the Road Test Department of Mercer Motors Co., Trenton, N. J.

Waukesha Auto Sales Co., Waukesha, Wis., Buick and Chevrolet dealer, has divided its business. The present sales and service building will be maintained as an exclusively Chevrolet station, while the Buick will be handled and serviced under the name of **Andrews-Buick Co. William Steinemann** is manager of the Buick division.

Earl B. Stone, for the last three and a half years with the Cleveland Tractor Co. as road salesman, assistant advertising manager, district sales manager and advertising manager, has joined the staff of Hoyt's Service, Inc., advertising agency, at its Cleveland office.

Star Motor Co. of Alabama, Birmingham, a branch of the Whitlock-McDonald Motor Co., Durant distributor, announces several new agents in Alabama. The **Mattox Auto Co. of Fayette** has been awarded the territory of Fayette, Lamar, Marion and Winston counties. The **Creel Motor Co.** of Jasper will handle the sales of the new Star in Walker county.

L. Frank Saddlery Co., San Antonio, Tex., announces the change of its name to the **Straus-Frank Co.**, which better defines its status as automotive equipment jobber as well as manufacturer of saddlery and harness. There will be no change in the personnel of the company or its policies. **D. J. Straus** is president and treasurer and **S. Wallach**, secretary and assistant treasurer.

Walter F. Wright Co. will succeed the Willys-Overland distributing branch in Cleveland. The company has taken a five-year lease at approximately $69,000 on the plant formerly occupied by the F. Carris Franklin Co. at 3622 Prospect Avenue. The plant at 6604 Euclid Avenue, which had been occupied by the Willys-Overland distributing branch, was sold last week to a real estate broker here.

Walter B. Zimmerman has purchased all the stock of the **Standard Motor Car Co.**, Columbus, central Ohio agents for the Hudson and Essex lines. The Standard company was established about twelve years ago by the late Harry J. Schwartz. Zimmerman was formerly associated with his father and brother in the Dodge Brothers agency. The **Walter B. Zimmerman Co.** has been chartered to take over the business and the Standard company has been dissolved.

Fred Van Demark, Buick dealer in Schenectady, N. Y., has started the erection of a new home at State Street and Waldorf Place, that city, due to an expansion in business. When completed it will be one of the largest salesrooms and service stations in the city. It will be two stories high in one part and the main floor will have a capacity of 130 cars. The construction of the sides on both frontages will be of tapestry brick. The second floor will be used as stock and store rooms.

Cadillac Makes More Closed Cars

DETROIT, Sept. 11—Statistics made public by the Cadillac Motor Car Co. show that in the last eight years Cadillac production of closed cars has increased from 7 per cent of the total to more than 54 per cent of the total.

The increase has been a steady one, averaging a gain of nearly 8 per cent each year. It covers the last six series produced by Cadillac. The greatest per cent gain in closed bodies was from the period of July, 1916, through June, 1917, showing a gain of 14 per cent.

CHANGES ARE MADE IN COAST SECTION

Trade in San Francisco and Vicinity Has Shifts in Its Personnel

SAN FRANCISCO, Sept. 9—T. P. Heehan has been appointed wholesale manager of the Victory Motor Sales Co., Paige and Jewett dealers, Oakland. Heehan formerly was in charge of the advertising and publicity for the Omara Green Co., Ford and Lincoln dealers in Denver.

E. L. Bee, for five years manager of the Keaton Tire & Rubber Co., and C. A. Holman, who was identified with Keaton also for five years, have purchased the Keaton branch on the east side of San Francisco Bay, and are operating it as the Oakland Rim & Tire Co., distributing Keaton tires in Eastbay cities.

F. E. Granger has been appointed distributor and direct factory dealer, for the Kissel in Santa Clara County.

The Pioneer Motor Co. of San Francisco, whose stock was acquired by R. H. Collins, when he purchased the Peerless plant, has been reorganized by A. K. McLuney, named for the job by Collins. McLuney becomes president of the reorganized Pioneer; E. J. Gilbert, secretary and treasurer; J. P. McNaughton, cashier; W. B. Doan, retail sales manager; F. L. Kimball, wholesale manager, and H. R. Schmidlapp, service manager.

Other Changes

The Haynes Auto Sales Co. has opened a branch in Oakland in charge of M. S. Bury, who has been selling Haynes cars for seven years.

Cy Russell and C. R. Wilcox have been appointed Wills Sainte Claire dealers in Alameda and Contra Costa counties.

Lloyd Brothers, owner of the Oakland Garage, Inc., in Oakland, has introduced the Auburn and the Dorris cars to the mainland side of San Francisco Bay, as agent for these two lines.

N. J. Garibaldi, who has been connected with the sales force of Don Neher, Ford dealer in Oakland, since Jan. 1, has been made sales manager of the organization.

Norman Whichello has been appointed sales manager of the truck division of L. M. Field, Inc., Northern California distributor of Selden trucks.

Marcus D. Skaggs has been appointed special representative of the B. F. Goodrich Co. at San Francisco.

H. M. Chambers has been appointed district manager of the Traffic Motor Truck Co. of San Francisco.

New Stutz Advertising Head

INDIANAPOLIS, Sept. 10—Herbert R. Hyman has been appointed advertising manager of the Stutz Motor Car Co. of America, now under control of Charles M. Schwab.

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ASSOCIATION ACTIVITIES

Planning Ohio Convention

COLUMBUS, Sept. 10—The sixth annual convention of the Ohio Automotive Trade Association will be held in Toledo Dec. 6 to 8. Delegates' headquarters will be at the Hotel Secor, while the sessions will be held in the assembly rooms of the La Salle-Koch Co.

In place of the automotive equipment exhibit heretofore held, educational exhibits will be made in the stores of the local jobbers. This is in charge of a special committee which will establish uniformity, agree upon decorations and prevent duplication in products being shown. The idea will be to make it possible for visiting automotive merchants to view the latest and best garage equipment as well as inspect the accessories.

Questionnaires will be sent to all the members for suggestions of subjects to be discussed in the convention sessions. Speakers and leaders in discussions will be selected to carry out these suggestions.

The Toledo Automotive Trades Association will be the host and E. J. Shover, secretary-manager of the State association, will be active in the convention management.

Alameda Elects Officers

BERKELEY, CAL., Sept. 11 — Nelson Scotchler, Ford dealer in Berkeley, was elected head of the Alameda County Automobile Trade Association at the annual election and dinner of this branch of the California Automobile Trade Association. William Mackay of Mackay & Austin and Jack Bowers of Brask Brothers & Bowers, both Oakland firms, are the new vice-presidents. Charles Hebrank of Hebrank, Hunter, Peacock & Co., also of Oakland, continues as treasurer of the county organization. Robert W. Martland, secretary-manager of the county association—which position he also holds with the State association—was unanimously re-elected, as he probably will be for the next hundred years or so.

David Jones, retiring president of the Alameda County association, was presented with a memorial gift by the members, and his services as head of the organization given well-earned praise in several speeches. Martland read his annual report summarizing the activities of the allied crafts for the year and outlining the plans to be followed at the next session of the State Legislature at Sacramento.

Houston Maps Out Program

HOUSTON, TEX., Sept. 10—One of the most rousing meetings of the automotive men here was held this week by the Houston Automotive Trades Association. President C. W. Manford issued a special appeal for every man engaged in any line of the automobile business in Houston to attend, and most of them were out.

The big points in the program discussed was getting behind a $6,000,000 bond issue for roads about Houston; giving moral and financial support to probe of thefts and prosecutions of persons stealing cars, tires or parts; inaugurating a credit department with a card index showing the record of every customer in the county as to ability and inclination to pay debts, and naming a committee to fight unfavorable legislation, city, national or state.

Memphis Secretary to Resign

MEMPHIS, TENN., Sept. 8—Henry W. Osinach, secretary of the Memphis Automobile Dealers Association, has been appointed general agent for a life insurance company at Memphis and will establish an office in the U. and P. Bank Building. He will continue with the dealers' association until after the Automobile Show at the Tri-State Fair, Sept. 23-30.

Arranging Michigan Circuit

DETROIT, Sept. 8—M. L. Garlock, president of the Michigan Automotive Trade Association, has arranged a conference of the representatives of dealer organizations in 21 State cities, on Sept. 20, to consider dates and plans for the 1923 automobile show circuit.

The meeting will be held in the offices of the M. A. T. A. in the Hotel Addison. Luncheon will be served at 1 p. m. in the D. A. D. A. clubrooms and the meeting convened at 2 o'clock. A meeting of the board of directors of the M. A. T. A. will follow the show conference.

The following cities have been invited to send representatives: Ann Arbor, Ypsilanti, Jackson, Kalamazoo, Battle Creek, Benton Harbor, Muskegon, Grand Rapids, Lansing, Pontiac, Flint, Saginaw, Bay City, Cadillac, Traverse City, Port Huron, Mt. Clemens, Cheboygan, Alpena, Mount Pleasant and Owosso.

Los Angeles to Hold Show

LOS ANGELES, Sept. 9—The Motor Car Dealers Association will hold a show Nov. 11 to 19. This will be the first show in this city for two years. Announcement of the location has not been made, owing to the difficulty in obtaining a building of sufficient size. The new Shrine Temple may be sufficiently near completion by that time to accommodate the show. Otherwise it is probable tents will have to be used.

Clam Bake for New York

NEW YORK, Sept. 11—The Automotive Service Association of New York will hold its third annual clambake and outing at Glenwood-on-the-Sound on Sept. 24. It is expected that nearly 200 members and guests will be present. The clambakers will drive down from New York as a caravan, and, aside from the delights of the luscious clam, there will be ball games, athletic events for men, women and children and aquatic sports.

New York Association Moves

NEW YORK, Sept. 10—The rooms and offices of the Automobile Merchants Association have been moved from 1845 Broadway to the Hotel Embassy, 2030 Broadway, at Seventieth Street.

Picnic in Victoria, B. C.

VICTORIA, B. C., Sept. 12—The automotive dealers of Victoria held a monster picnic recently when more than 800 people attended. Every automotive dealer in the city was represented.

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Hudson (New Super Six).....May 10, 1922-22
Hudson Sedan .....Aug. 2, 1922-40
Jewett (Roadster).....June 14, 1922-38
Jewett (Sedan).....Mar. 15, 1922-36
Jewett (Coupe) .....July 19, 1922-38
Jordan (Blue Boy Phaeton)..Sept. 6, 1922-19
Kissel (Phaeton).....Mar. 24, 1922-32
Lexington 7-passenger Phaeton.....May 3, 1922-41
Lexington (Supreme 7-pass. Phaeton).May 3, 1922-41
Liberty Coupe.....July 19, 1922-26
Liberty (Special Roadster)...Apr. 19, 1922-39
Marmon (7-pass. Phaeton)..Aug. 23, 1922-38
Marmon (4-pass. Speedster).Mar. 15, 1922-19
Merit .....Feb. 1, 1922-31
Mitchell .....Aug. 30, 1922-22
Mitchell (5-pass. Phaeton)..Aug. 16, 1922-25
Mitchell (De Luxe Sport Model)....Mar. 29, 1922-31
Moon (7-pass. Phaeton).....Aug. 16, 1922-25
Moon 6-40 (Sedan).....June 28, 1922-28
Nash (5-pass. Sedan).....Sept. 6, 1922-19
Oakland (2-pass. Coupe)....June 28, 1922-28
Oldsmobile (Brougham).....Aug. 30, 1922-43
Oldsmobile Light Eight.....July 19, 1922-26
Oldsmobile Model 47 (Phaeton) .....Mar. 15, 1922-37
Oldsmobile (New Body).....July 26, 1922-17
Packard (New single six)....May 3, 1922-23
Peerless .....Aug. 23, 1922-18
Reo (Phaeton).....Aug. 9, 1922-31
Seneca (Phaeton and Roadster)...June 28, 1922-29
Star .....June 21, 1922-30
Star (Details).....June 28, 1922-28
Star .....Mar. 15, 1922-14
Stearns-Knight Six.....July 12, 1922-29
Studebaker (Big Six Speedster).....May 24, 1922-43
Stutz (1922 model).....Apr. 5, 1922-32
Westcott 7-pass. Phaeton....Aug. 9, 1922-30
Wills Sainte Claire (Brougham)..Aug. 30, 1922-42
Wills Sainte Claire (Sedan and Town Car)....Mar. 8, 1922-36

TRUCKS

Buick (Special Delivery).....Mar. 29, 1922-31
Denby (Model 35).....May 10, 1922-23
F W D (3-ton Roadbuilder)..Mar. 8, 1922-41
Federal Express Chassis.....July 19, 1922-26
Indiana (One Ton Speed)....Aug. 30, 1922-26
Mack .....June 21, 1922-42
Milburn Electric (1 and 1½-ton).....Mar. 8, 1922-31
Overland (½-ton).....Apr. 19, 1922-41
Standard (Model 75).....July 5, 1922-43
Stewart Utility Wagon.....July 12, 1922-30
Transport (1, 1½, 2, 3, 3½ and 5-ton).May 17, 1922-22
United States (1¼-ton).....Mar. 8, 1922-37
Vim (Speed Truck).....Aug. 30, 1922-24

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Calendar of Trade Events

CONVENTIONS

Chicago .....Sept. 14-15
National used car conference of Trade Association Secretaries, under auspices National Association of Automobile Show and Association Managers.

Santa Barbara.....October
Annual Convention of the California Automobile Trade Association.

Chicago .....Oct. 18-19-20
National Association of Farm Equipment Manufacturers.

Chicago .....Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

Toledo.....Dec. 6-8
Annual Convention of the Ohio Automotive Trades Association.

SHOWS

Ottawa, Ont.....Sept. 8-18
Automobile Show in Connection with Ottawa Central Canada Exhibition.

Syracuse, N. Y.....Sept. 11-16
New York State Fair.

Jacksonville, Ill.....Sept. 16-23
Morgan County Fair, Jacksonville Automotive Dealers Association.

Cleveland.....Sept. 18-28
Exhibition of Closed Cars during the merchants and manufacturers exposition, under the auspices of the Cleveland Automobile Manufacturers & Dealers Association, Herbert Buckman, manager.

Memphis, Tenn.....Sept. 23-30
Annual Automobile Show held under auspices of the Memphis Automobile Dealers Association, Tri-State Fair Grounds.

New York.....Sept. 23-30
Closed Car Show, under Auspices of Automobile Merchants Association, Grand Central Palace.

Dallas.....Oct. 6-16
Texas State Fair.

New York City.....Oct. 7-14
Annual Electrical and Industrial Exposition, Grand Central Palace.

Detroit .....Oct. 17-21
Closed Car Salon, General Motors Building, Detroit Automobile Dealers Association, H. H. Shuart, Manager.

Washington, D. C.....Oct. 21-28
Annual Closed Car Salon held under auspices of the Washington Automobile Trade Association, Convention Hall.

Houston.....Nov. 8-18
South Texas Fair.

Jersey City.....Nov. 11-18
Third Annual Show, Fourth Regiment armory, under the auspices of the Hudson County Automobile Trade Association.

Chicago .....Nov. 13-18
Annual Show of Automotive Equipment Association.

Los Angeles.....Nov. 11-19
Automobile Show, Motor Car Dealers Association, Burt Roberts, manager.

Cincinnati .....Nov. 22-29
Second Annual Automobile Accessory and Radio Exposition, Music Hall, under the auspices of the Cincinnati Automotive Trade Association.

New York.....Dec. 2-9
Eighteenth Annual Automobile Salon, Commodore Hotel.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, auspices of the Automobile Body Builders Association.

Chicago .....Jan. 27-Feb. 3
Annual Automobile Salon, Drake Hotel.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Minneapolis .....Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Syracuse.....Feb. 26-Mar. 3
Annual Automobile Show under auspices of the Syracuse Automobile Dealers Association.

Newark, N. J.....Mar. 10-17
Annual Automobile Show under the auspices of the New Jersey Automobile Exhibition Co., Claude E. Holgate, manager.

RACES

Kansas City.....Sept. 16
Opening Meet of New Kansas City Board Speedway.

Fresno, Cal.....Sept. 30

Los Angeles.....Nov. 30

San Diego.....January

DODGE WILL INCREASE MANUFACTURING ROOM

DETROIT, MICH., Sept. 7—Dodge Brothers will begin at once the construction of a factory addition which will give the company an increased capacity of about 350 cars daily, making a total daily plant capacity of about 1000 cars.

The building is expected to be completed by Jan. 1. It will be eight stories in height and will cost about $1,500,000.

Total sales of Dodge cars in 1922 will reach about 160,000 as compared with a previous high yearly total of 141,000.

Vice-president A. T. Waterfall, in a statement accompanying the announcement of the new building plans, said that the new building is made necessary by the increased business of the recent past and is an evidence of the confidence of Dodge executives in its continuance.

Record Franklin Driveaway

SYRACUSE, N. Y., Sept. 8—Following a visit to the factory of more than 200 dealers from 24 States and Canada, there was a record driveaway of Franklin cars of the new series just announced. Representing a retail value of nearly $7,000,000, 250 cars took part in the parade through the city that marked the start of the driveaway, the largest single day's movement of cars out of the Franklin plant.

From now on all cars shipped from the Franklin factory will be of the series 10 type. Franklin officials announce that the production schedule for the new car is the largest ever set by the company.

AUGUST WAS BIGGEST IN OVERLAND HISTORY

TOLEDO, Sept. 12—Willys-Overland reports the biggest August in its history, shipments of 14,007 Overlands and Willys-Knights being recorded as against the previous best August of 11,718 in 1917. August, 1922, deliveries were greater than in any single month since June, 1920, when 14,033 were delivered.

August profits are reported to have been $1,500,000, while the three months since the company's May 31 statement are said to have averaged $1,000,000 a month. It is expected that the company's $16,000,000 debt will be wiped out without interfering with current profits through the formation of a real estate company to take over the branches worth around $16,000,000.

Warner Buys Gear Plant

SYRACUSE, N. Y., Sept. 7—T. W. Warner, president of the Warner Corp. of Muncie, Ind., and Toledo, Ohio, has bought the New Process Gear division of the Willys Corp. at court sale. He was the only bidder and the price paid was $1,904,000, which was $4,000 more than the court's upset price.

BUICK MAKES SHIFTS IN SALES DEPARTMENT

FLINT, MICH., Sept. 8—Promotions in the Buick sales department have been announced by E. T. Strong, general sales manager. Those who have been advanced are J. A. Coy, who has been made district sales manager for Michigan; James Dickson, Jr., Detroit branch manager in charge of wholesale distribution of cars outside Detroit, and E. M. Steger, sales manager in charge of all sales in the city of Detroit.

Coy has been with Buick eleven years, four and one-half of which he served as branch manager in Buffalo and five years as branch manager of Detroit. The Michigan district over which he will have charge comprises the Detroit and Battle Creek branch territories and the Saginaw distributor territory. Coy's headquarters will remain in Detroit.

Dickson has been with the International Harvester Co. for 16 years. He was sent to Detroit from Toledo, where he was assistant manager of the Harvester company's branch. His headquarters will be in Detroit.

Steger has been with Buick two years. In his new position he will have charge not only of retail sales at the Detroit branch, but also of sales for the six Buick city dealers. Steger will be located at the Detroit sales office in the General Motors Building.

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾-1	$1650a	3¾x5	34x5n	34x5n	W
Acason RB	1½	1950	3¾x5¼	36x3½	36x6	W
Acason H	2½	2750	4⅜x5¾	36x4k	36x8k	W
Acason L	3½	3450	4⅜x5¾	36x5k	36x10k	W
Acason M	5	4350	5 x6¼	36x6	40x12	W
Ace C	1½	2295	3¾x5⅛	34x3½k	34x5k	W
Ace A	2½	2795	4¼x5½	36x4k	36x7	W
Acme 20	1	....	3¾x5	35x5n	35x5n	W
Acme 3J	1½	....	3¾x5	34x3½	31x5	W
Acme 4B	2	....	3¾x5	34x3½	31x5	W
Acme 6J	3	....	4½x5¼	36x4	36x7	W
Acme 6JL	3	....	4½x5½	36x4	36x7k	W
Acme 9J	4½	....	4½x5½	36x5	40x10	W
Acme 12S	6¼	....	4¾x6	36x6	40x12	W
American 25	2½	3350	4 x6	36x4k	36x4dk	W
American 4J	4	4275	4½x6	36x5k	36x5dk	W
Armleder 2J	1	....	3¾x5¼	34x3½k	34x6k	W
Armleder 21	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder 40-B	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder 40-C	1½	....	4½x5¼	34x3½k	34x6k	W
Armleder HW-B	2½	....	4¼x5½	36x4k	38x7k	W
Armleder HW-C	2½	....	4½x5¼	36x4k	36x7k	W
Armleder KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder KW-C	3½	....	4½x5½	36x5k	36x5dk	W
Atlas MD	1	1185	3½x5	32x4½n	32x4½n	W
Atterbury 28R	1½	2475	3¾x5	34x3½	31x5	W
Atterbury 22C	2½	3375	4½x5¼	36x4	36x4d	W
Atterbury 22C	2½	3375	4¼x5¼	36x4	36x4d	W
Atterbury 22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury 22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury 8E	5	4975	4¾x6	36x5	40x6d	W
Atterbury 8E	5	5125	4¾x6	36x5	40x6	W
Autocar 21UF	1½-2	1950	4¾x4½t	34x4k	34x5k	D
Autocar 21UG	1½-2	2050	4¾x4½t	34x4k	34x5k	D
Autocar 27H	2	2950	4 x5½	34x5	36x7	D
Autocar 27K2	2	3075	4 x5½	34x5	36x7k	D
Autocar 28Y	5	3950	4¼x5½	34x6	36x12	D
Autocar 28-B	5	4100	4¼x5½	34x6	36x12	D
Available H1½	1½	2175	4 x5	36x3½k	36x5k	W
Available H2	2	2775	4 x5	36x3½k	36x6k	W
Available H2½	2½	3160	4 x5	36x4k	36x8k	W
Available H3½	3½	4175	4½x5½	36x5	40x5d	W
Available H5	5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x4a	34x5n	34x5n	I
Beck A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	I
Beck B-3J	1½	1725	3¾x5	34x5	36x6	
Beck C-40	2	1810	3¾x5	36x6	36x6	
Beck D-50	2½	2395	4¼x5¼	38x7	40x8	
*Bell (Pean.)	½	1000b	3½x5	31x4n	31x4n	B
Bell M (Iowa)	1	1495	3½x5½	35x5	35x5n	W
Bell E (Iowa)	1½	2100	3¾x5¼	34x3½	34x5	I
Bell O (Iowa)	2½	2550	4½x5½	31x4	31x6	I
Bessemer G	1	....	3½x5	35x5n	35x5n	I
Bessemer H-2	1½	....	3¾x5	36x3¼	36x5	I
Bessemer J-2	2½	....	4¼x5¼	36x1	36x4d	I
Bessemer K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem CN	2	1595	4 x3¼	34x4½k	34x6k	I
Bethlehem HN	3	2195	4 x5¼	36x4k	36x8k	I
Brinton C	2	2500	3¾x5	34x1	31x5	W
Brinton D	3	2975	4¼x5¼	36x4	36x7	W
Brockway E	1	....	3¾x5⅛	35x5n	35x5n	B
Brockway S-5	1½	....	3¾x5	36x4	36x6	W
Brockway SK	1½	....	4¼x5¼	36x4	36x6	W
Brockway KR	2½	....	4½x5½	36x4	36x8	W
Brockway K-5	2½	....	4½x5¼	36x4	36x8	W
Brockway RT	3½	....	4¾x6	36x5	36x10	W
Brockway R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway T-4	5	....	4¾x6	36x6	40x6d	W
*Buick	½	945b	3⅜x4¾	31x4n	31x4n	B
Case 2	2	....	4¼x5¾	36x6	38x7	I
*Chevrolet ½	½	510b	3¼x4	30x3½n	30x3½n	B
*Chevrolet G	¾	650	3¼x4	34x4n	34x4½n	B
*Chevrolet T	1	1095	3¼x5¼	33x4n	35x8n	W
Chicago C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago C3½	3½	....	4½x5½	36x5	35x10	W
Chicago D5	5	....	4½x5½	36x6	40x12	W
Clydesdale 10	¾-1½	1485	3¾x5	34x5n	34x5n	B
Clydesdale 18	¾-1½	1890	3¾x5	34x5	34x5	W
Clydesdale 20	1-1½	2385	3¾x5	34x5	34x5k	W
Clydesdale 42	1½-2	2475	3¾x5	36x3½	36x6	W
Clydesdale 65X	2½-3	3250	4½x5¼	36x4	36x8	W
Clydesdale 65EX	2½-3	3450	4½x5½	36x4	36x8	W
Clydesdale 90	3½-4½	4100	4½x5½	36x5	35x10	W
Clydesdale 120	5-6	4500	4¾x6	36x6	40x12	W
Comet T	1½	1950	3¾x5	31x4	34x4	W
Commerce T	¾-1½	1450	3¾x5	31x4½n	31x4½n	B
Commerce 12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce 16	2	2150	3¾x5	35x5n	36x6n	I
Commerce 18	2½	2495	4½x5¼	36x6n	40x8n	I
Commerce 25	2½	2425	4½x5½	36x4	36x7	W
Cook 51	2½	3600	4 x5⅛	36x6n	40x8n	W
Corbitt E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt D-22	1½	2200	3¾x5	34x3½	34x5	W
Corbitt C-22	2	2600	4½x5¼	36x3½	36x7	W
Corbitt B-22	2½	3000	4½x5¼	36x4	36x7	W
Corbitt R-22	3	$3200	4½x5½	36x4	36x8	W
Corbitt A-22	3½-4	3800	4½x5½	36x5	36x10	W
Corbitt AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn E	1	1600	3½x5½	35x5n	35x5n	W
Dearborn FX	1½	2300	3¾x5½	34x4	34x5	W
Dearborn F	1½	2180	3¾x5½	34x4	34x5	W
Dearborn 48	2	2590	3¾x5½	34x4½n	34x7	W
Defiance G	1	1695a	3¾x5	35x5n	35-5n	B
Defiance D	1½	2095a	3¾x5	35x5n	36x6n	I
Defiance E	2	2275a	3¾x5	35x5n	38x7n	I
Denby 31	1¼	1485	3½x5	35x5n	35x5n	B
Denby 33	1½	2145	3¾x5	35x5n	38x7n	I
Denby 34	2	2395	3¾x5	36x3½	36x6	I
Denby 35	2½-3	2795	4½x5¼	36x4	36x7	I
Denby 27	4	3895	4½x5½	36x5	36x5d	I
Denby 210	5	4295	4½x5½	36x6	40x6d	I
Dependable A	¾-1	1650	3⅝x5½	34x5n	36x6n	W
Dependable C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable D	2½	2650	4 x5¼	34x5	36x6	W
Dependable E	3	2950	4¼x5½	36x4	36x7	W
Diamond T O-3	1-1¼	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T U	2-2½	2650	4 x5¼	36x4	36x7	W
Diamond T K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T S	5	4500	4¾x6	36x6	40x6d	W
Deane	2½	4100b	4¼x5¾	36x5	36x7	C
Deane	3½	5100b	4⅝x5¾	36x5	36x5d	C
Deane	6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers	¾	730	3⅞x4½	32x4n	32x4n	B
Dorris K-4	2-2½	3400	4¼x5½	36x4	36x7	W
Dorris K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort 1J3	½	685a	3½x5	34x4n	34x4n	B
Double Drive B	3	4000	4¼x5½	6	6	W
Duplex A	2	2775	4 x5¼	35x5n	38x7n	W
Duplex E	3½	3500	4¼x5½	36x8	36x8	I
Duty 22	2	1590	3½x5	34x3½	34x5	I
Eagle 191	1½	1875	3⅝x5½	34x5	34x5	I
Eagle 193-2	2	2275	3¾x5¾	34x4k	34x7k	I
F. W. D. B	3	4200	4¾x5½	36x6	36x6	B
Fageol 1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol 2½	2½	3900	4¼x5¾	34x4	36x7	W
Fageol 3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol 5	5	5700	4½x6¼	36x6	40x6d	W
Fargo R	2	1700	3¾x5	36x4	36x6	I
*Federal	1½	1375	3¾x5	—x5n	—x5n	
Federal SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal TE	1½	2175	4½x5¼	36x3½	36x5	W
Federal UE	2-2½	2425	4¼x5½	36x4	36x7	W
Federal WE	3½-4	3150	4½x5½	36x5	36x5d	W
Federal X2	5-6	4500	4¾x6	36x6	40x6d	W
*Ford TT	1	430	3¾x4	30x3½n	32x4½n	W
Front Drive C	1½	2800	3¾x5½	5	4	W
G & J** 20	1	2275	3⅝x5⅛	34x5n	34x5n	W
G & J** A	2-2½	3375	1 x5¼	36x4	36x7	W
G & J** B	3½-4	4475	4½x5½	36x5	36x10	W
G.M.C. K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C. K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K-41T	5†	2150	4 x5½	36x4	36x8	W
G.M.C. K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C. K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C. K-71T	10†	3700	4½x6	36x5	40x12	W
G.M.C. K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C. K-101T	15†	4050	4½x6	36x5	40x14	W
G.M.C. K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W.	1½	1850	3¾x5½	35x5	35x5	I
*Garford 15	1	1590	3⅝x5⅛	34x5n	34x5n	W
Garford 25-B	1½	1990	3¾x5¼	36x3½	36x5	W
Garford 70-H	2½	2750	4¼x5½	36x4	36x8	W
Garford 77-D	4	3750	4½x6	36x5	36x5d	W
Garford 68-D	5	4500	5 x6½	36x6	40x6d	W
Garford 150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary F	1-1½	1675	3¾x5	36x3½	36x5	W
Gary I	2	2250	4 x5½	36x3½	36x6	W
Gary J	2½	2650	4¼x5½	36x4	36x8	W
Gary K	3½	3650	4½x6	36x5	40x5d	W
Gary M	5	4100	5 x6½	36x6	40x6d	W
Gersix M	1½	3100	4 x5½	36x3½	36x7	W
Gersix K	2½	$3500	4½x5½	36x4	36x8	W
Gersix	3½	4500	4½x6	36x5	40x12	W
Graham Bros.	1	1265	3⅞x4½	33x4½n	34x5n	B
Graham Bros.	1½	1325	3⅞x4½	33x4½n	36x6n	B
1Gramm-Pion. 10	1	1245	3½x5	33x5n	33x5n	B
1Gramm-Pion. 15	1½	1750a	3¾x5	36x3½k	36x5k	I
1Gramm-Pion. 65	1½	2250a	3¾x5	36x3½k	36x5	W
1Gramm-Pion. 20	2	2475a	4½x5¼	36x4k	36x7k	W
1Gramm-Pion. 30	3	3300a	4¼x5½	36x4k	36x4dk	W
1Gramm-Pion. 75P	3½	4225a	4½x5½	36x6n	42x9n	W
1Gramm-Pion. 40	4	3850a	4½x5½	36x5	36x5dk	W
1Gramm-Pion. 50	5-6	4150a	4¾x6	36x6	40x6dk	W
Hal-Fur E	1½	2350	4x5½	34x5n	38x7n	W
Hal-Fur B	2½	3000	4¼x5½	36x6n	36x8	W
Hal-Fur F	3½	4000	4½x5½	36x6n	40x10	W
Hall 1½	1½	3100	3¾x5	35x5n	38x7n	W
Hall 2½	2½	3275	4½x5¼	36x1	36x6	W
Hall 3½	3½	4100	4½x5½	36x5	36x5d	W
Hall 5	5	5100	4½x5½	36x5	40x6d	W
Hall 7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey WOA	2	2650	4¼x5½	34x4	34x7	W
Harvey WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye K	1½	1850	3¾x5½	34x3½k	34x5k	I
Hawkeye M	2	2650	4¼x5	36x4k	36x6k	I
Hawkeye N	3½	3700	4½x6¾	36x5k	36x10k	I
Hendrickson O	1½	2200	3⅝x5½	36x4n	36x6n	W
Hendrickson N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson M	3½	3000	4¼x5	36x5k	36x5dk	W
Hendrickson K	5	4000	5 x6¼	36x6	40x6	W
Huffman B	1½-2	1795	3¾x5	34x3½	34x6	W
Huffman C	1½-2	1695	3¾x5½	36x3½	36x6	I
Huffman D	2-3	2895	4½x5½	36x4	36x7	
Hurlburt A-A	1-1½	1950	3¾x5	34x5n	34x5n	W
Hurlburt B-B	2-2½	2800	4¼x5½	36x4	36x4d	W
Hurlburt C-C	3-3½	3475	4¼x5½	36x5	36x5d	W
Hurlburt D-D	4-4½	4150	4½x6	36x5	36x6d	W
Hurlburt E-E	6-6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa) B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa) G	1½	2040	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.) HI	2½	2940	4½x5¼	36x4	36x7	I
Indep'd't(Ohio) F	1½	2385	3¾x5	36x3½	36x5	W
Indep'd't(Ohio) H	2½	3085	4¼x5¼	36x4	36x4d	W
Indep'd't(Ohio) K	3½	3985	4½x5½	36x5	36x5d	W
Indiana 12	1½-2	....	3¾x5¼	34x3½k	34x5k	W
Indiana 20	2	....	4½x5½	36x4k	36x7k	W
Indiana 25	2½-3	....	4½x5½	36x4k	36x8k	W
Indiana 35	3½-4	....	4⅝x5½	36x5k	36x5dk	W
Indiana 51	5-7	....	5 x6¼	36x5k	40x6dk	W
*International S	1	1250	3½x5	34x5n	34x5n	I
International 21	1	1550	3½x5¼	36x3½	36x3½	I
International 31	1½	1650	3½x5¼	36x3½	36x4	I
International 41	2	2100	3½x5¼	36x3½	36x5	I
International 61	3	2400	4¼x5	36x4	36x6	I
International 101	5	3600	4¼x5	36x5	40x10	I
Jackson 4WD	3½	3850	4½x5½	36x7	36x7	B
K-Z 1	1	1750	3½x5	34x3½	34x5	W
K-Z 1½	1½	2075	3¾x5	36x4	36x6	W
K-Z 2½	2½	2550	4¼x5¼	36x4	36x8	W
K-Z 3½	3½	3350	4½x5½	36x5	40x10	W
K-Z 5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo SK	4	3845	4½x6	36x5	36x12	W
Kalamazoo OK	5	4350	4½x6	36x6	40x6d	W
2Kelly-S K-31	1½	2700	3¾x5¼	36x3½	36x6	C
2Kelly-S K-34	1½	2700	3¾x5¼	36x3½	36x6	W
2Kelly-S K-38	2½	2900	3¾x5¼	36x4	36x4d	W
2Kelly-S K-35	2½	2900	3¾x5¼	36x4	36x4d	C
2Kelly-S K-40	3½	3900	4½x6½	36x5	40x5d	C
2Kelly-S K-41	3½	3900	4½x6½	36x5	36x10	I
2Kelly-S K-42	3½	3900	4½x6½	36x5	40x5d	W
2Kelly-S K-50	5	4400	4½x6½	36x6	40x6d	C
2Kelly-S K-60	6	4600	4½x6½	36x6	40x7d	C
2Kelly-S K-61	5-7	4800	4½x6½	36x6	36x7d	I
Kimball AB	2	3675	4 x6	36x4	36x7	W
Kimball AC	2½	3975	4¼x6	36x4	36x8	W
Kimball AK	3	4500	4½x6	36x4	36x10	W
Kimball AE	4	5000	4¾x6	36x5	40x12	W
Kimball AF	5	5500	5 x6	36x6	40x7d	W
*Kissel Express	1	1585	3⅞x5½	34x5n	34x5n	W
Kissel Utility	1½	1975	3⅞x5½	36x3½	36x5	W
Kissel Freighter	2½	2875	4¼x5½	36x4	36x7	W
Kissel H. D.	4	3675	4¼x5½	36x5	36x5d	W
Kleiber AA	1	2200	4¼x5¼	34x3½k	34x5k	W
Kleiber A	1½	3100	4½x5¼	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor. †Capacity with semi-trailer.

1—Gramm-Pioneer. 2—Kelly-Springfield.

For Passenger Car Specifications see page 50

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5½	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Keebler.....D	1½	2150	3½x5	34x3½	34x5	W
Keebler.....M	2½	3175	4 x5½	36x4	36x7	W
Keebler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Keebler.....F	3½	4470	4½x5½	36x5	36x10	W
Keebler,MT. Trac	5	3275	4 x5⅛	30x4	36x7	W
Krebs.....23	¾	1260	3¾x5	34x4½	34x4½	B
Krebs.....24	1	1565	3¾x5	31x5	34x5	W
Krebs.....45	1½	2125	4½x5½	36x4	36x7	W
Krebs.....75	2½	2375	4½x5½	36x4	36x8	W
Krebs.....110	3½	2975	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1925	3¼x4½	34x5n	34x5n	B
Larrabee.....U	1½	2100	3¾x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½-3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5-7	4800	4½x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack...AB D.R.	1½	3150	4 x5	30x4	36x3½	D
Mack...AB Chain	1½	3000	4 x5	30x4	36x3½	C
Mack...AB Chain	2	3300	4 x5	30x4	36x4d	C
Mack....AB D.R.	2	3750	4 x5	30x4	36x4d	D
Mack....AB D.R	2½	3850	4 x5	36x4	36x4d	D
Mack...AB Chain	2½	3400	4 x5	30x4	36x4d	C
Mack...AC Chain	3½	4950	5 x6	36x5	40x5d	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	30x7	40x7d	C
Mack Trac....AB	5	3400	4 x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	30x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	30x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	30x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Mapleleaf....**	1½	3000	3¾x5½	34x5n	36x6n	W
Mapleleaf....AA**	2	3600	4 x5½	30x4	36x7	W
Mapleleaf...BB**	3	4050	4½x5½	30x4	36x4d	W
Mapleleaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Mapleleaf...DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x5	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4½x5½	34x4	36x7	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x5d	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x6	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3¾x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1¼	2000	3¼x5	34x3½	30x5	W
Menominee....H	1½	2475	4 x5	36x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3890	4½x6	36x5	36x10	W
Menominee....J-3	5	4250	4¾x6	30x6	40x12	W
Meline.....10	1½	1985	3½x5	34x5n	36x6n	I
*Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	30x3½	36x6k	W
Moreland.....EX	2	2800	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-5	4600	4¾x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3¾x5¼	34x3k	34x4k	I
Nash.....3018	2-2½	2150	3¾x5¼	34x4k	34x7k	I
Nash.....Quad	2-2½	2750	4½x5½	36x5k	36x5k	I
Nash..3018, LWB	2-2½	2200	3¾x5¼	34x4k	34x7k	I
Nash,Quad.LWB	2-2½	2800	4½x5½	36x5k	36x5k	I
Nash.....5018	2½	2250	3¾x5¼	34x4k	34x7k	I
†Nelson.....G2	1½	....	4½x5¼	36x3½	36x6	W
†Nelson.....G3	2½	....	4½x5¼	36x4	36x7	W
†Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
†Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5¼	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3090	4½x5½	36x4k	36x7k	W
Noble.....A21	1¼	1840	3¾x5¼	34x5	34x5	W
Noble.....B31	1½-2	2480	3¾x5¼	36x4	36x7	W
Noble.....D51	2½-3	2950	4½x5½	36x4	36x8	W
Noble.....E71	3½-5	3800	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3¾x5¼	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4½x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4¼x5¼	34x4	36x6	W
Northwestern.WS	2½	3590	4¼x5½	36x4	36x8	W
Norwalk.....25E	1	1565	3½x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E.Spec	1½	2285	3¾x5¼	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	30x3½	36x5	W
Ogden.....E	2½	....	4¼x5¼	36x4	36x8	W

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Old Hickory...W	1	$1775	3¾x5	36x3½k	36x4k	W
Old Reliable,...A	1½	2350	4 x5	34x4	36x6	W
Old Reliable,...B	2½	3500	4¼x6	34x4	36x4d	W
Old Reliable,...C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6¼	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5¼	35x5n	35x5n	I
Olympic.....A	2½	3200	4¼x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	2½	3200	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	3250	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	3400	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3850	4 x5⅛	38x7n	38x7n	B
Oshkosh.....BB	2½	4000	4 x5⅛	38x7n	38x7n	B
*Overland.....4	½	450	3¾x4	30x3½n	30x3½n	B
Packard.....EC	2-3	3100	4½x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4½x5½	36x6n	40x8n	W
Packard.....ED	3½-4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige.....S2-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige.....S4-20	2½	2420	4¼x5½	34x4	34x8	W
Paige.....S1-13	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot... Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot... Lincoln	2	2050	4 x5¼	34x3½	34x5	W
Patriot .Washg'n	3	2900	4½x5½	36x4	30x7	W
Pierce-Arrow.....	2	3200	4 x5½	30x4	36x4d	W
Pierce-Arrow.....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow.....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3½x5	36x4	30x6	W
Pittsburgher.....	3	3800	4½x5¼	36x5k	36x8	W
Power.....F	2	3150	4 x5¼	36x5	36x7	W
Power.....C	3½	....	4½x5½	36x5	40x10	W
Premecar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier.....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4¼x5¼	34x4	34x6	W
Rainier.....R-20	2½-3	....	4½x5¼	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	36x6	40x6d	W
Ranger..TK-20-2	1½	2450	3¾x5	30x6n	38x7n	W
*Reo.....F	1¼-1½	1245	4½x4½	31x4½n	31x4½n	B
Reliance.....10A	1½	2400	4 x5½	36x3½	30x5	I
Reliance.....20B	2½	3100	4¼x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3¾x5	34x3	34x4	I
Republic..10 Exp	1	1695	3¾x5	34x5n	34x5n	I
Republic.....11X	1½	1795	3¾x5	34x4	34x6	I
Republic.....19	2½	2195	4½x5¼	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rowe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rowe....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rowe....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rowe....G.P.W.	3	5250	3¼x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4¼x6	36x5	36x6d	W
Rowe.....F. W.	5	5500	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4-3½x4	32x4n	32x4n	B
Samson.....25	1¼	....	4-3½x5½	35x5n	35x5n	B
Sanford....W-15	1½-2	2150b	3¾x5	36x3½k	36x5k	W
Sanford.....25	2½-3½	....	4½x5¼	36x4	36x4d	W
Sanford.....35	3½-5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5-7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ton	3	3300	4¼x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4¾x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5¼	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½-2½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½-2½	3350	4¼x5¼	34x5a	38x7n	W
Selden.....50	2½-3½	3250	4¼x5¼	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4¾x6	36x6	40x12	W
Seneca.....M	1½	820	3¼x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3¼x4½	32x4½n	32x4½n	B
*Service.....15	1¼	....	3½x5	34x4½n	35x5n	B

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4¼x5½	35x5n	38x7n	W
Service.....52	3	....	4¼x5½	36x4	36x8	W
Service.....72	3½	....	4¼x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	$1450	3¾x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5¼	34x4	36x6	W
Signal.....J	2½	2375	4½x5¼	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x5d	W
Signal.....R	5	3900	4¾x6	36x6	40x6d	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½	34x5k	W
Standard.....76	2½-3	2400	4½x5¼	36x4k	36x7k	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x10	W
Standard.....5-K	5-7	4400	4¾x6	36x6	40x12	W
*Star.....	½	610b	3½x1¾	30x3½n	30x3½n	B
Sterling.....1½	1½	2885	4 x5¼	36x3½k	36x5k	W
Sterling.....Z	2	3085	4 x5¾	36x4k	36x6k	W
Sterling.....2½	2½	3290	4⅜x5¾	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6¼	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6¼	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6¼	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6¼	36x6	40x7d	C
*Stewart...Utility	1¼-1½	1245	3⅜x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3⅜x5½	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3¾x5	34x3½	34x5	I
Stewart.....7	2-2½	2190	4½x5¼	34x4	34x7	I
Stewart.....7-X	2½-3	2390	4¼x5½	34x4	34x7	I
Stewart.....10	3½-4	3190	4½x5½	36x5	36x5d	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x5d	I
*Stewart.....	1¼	1245	4-3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1240	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3¾x5¼	34x5n	34x5n	W
Stoughton.....B	1½	2150	3¾x5¼	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....F	3	3150	4¼x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4¼x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Theomart.....	1¼	1795	4 x5½	34x5	34x5	C
Tiffin.....GW	1½	2100	4½x5¼	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5¼	36x4	36x3½d	W
Tiffin.....PW	3½	3600a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4¼x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4½x5¼	35x5n	38x7n	W
Tower.....H	2½	2475	4½x5¼	36x4	36x7	W
Tower.....G	3½	3475	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595a	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595a	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3¾x5	36x4	36x7	I
*Transport....1S	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5⅛	34x3½k	34x4k	I
Transport.....3S	2	1885a	3¾x5	36x3½k	36x6k	I
Transport.....5S	3	2385	4½x5¼	36x4k	36x8k	I
Transport.....60	3½	2585	4¼x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Trayler.....B	1½	2390	3¾x5½	34x3½	34x5	W
Trayler.....C	2-2½	2850	4 x5½	36x4	36x7	W
Trayler.....D	3-3½	2300	4¼x5½	36x4	36x8k	W
Trayler.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1295	3¼x5	31x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3¾x5¼	34x3½k	34x6k	I
Triangle.....C	2-2½	2295	3¾x5¼	36x4k	36x7k	I
Triangle.....B	2½-3	2595	4 x5½	36x4k	36x7k	I
Twin City...B.W.	2	2750	4 x5½	36x6	40x8	I
Twin City...AW.	3½	3950	4¼x6	36x5	40x5d	W
†Twin City.....B	3½	....	5⅛x6	36x6	36x6	I
†Twin City.....A	5	....	5⅛x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4¼x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4¼x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4¼x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4¼x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
United.....A	1½	2445	3¾x5¼	36x3½k	34x5k	W
United.....B	2½	3150	4¼x5½	36x4k	36x7k	W
United.....C	3½	3975	4¼x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States..N	1¼	1800	3⅜x5½	34x5n	34x5n	B
UnitedStates,NW	1½-2	2375	3¾x5	36x5	36x3½	W
United States...N	1½-2	2175	3¾x5	36x3½k	36x5k	I
United States...R	3	3300	4 x5¼	36x4	36x4d	W
United States...S	4	4075	4½x5½	36x5	36x5d	W
United States...T	5-7	4975	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Veteran.....M**	1½	2699	3¾x5¼	35x5n	35x5n	W
Veteran.....P**	2	3699	4¼x5½	36x4	36x7	W
Veteran.....R**	3	4200	4¼x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	½	1050	3½x4½	31x4n	31x4n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl, s—6 cyl, t—2 cyl.; all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. c—express, truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Vim.....30	1½	$1175	3½x4½	32x4½	32x4½	W
*Vim.....50	½-¾	995	4 x5	32x4n	32x4n	B
Vim.....31	1	1975	3¾x5¼	35x5n	35x5n	W
Vim.....22	2	3150	3¾x5¼	36x4	36x6	W
Vim.....23	3	3950	4½x5½	36x5	36x5d	W
Walker-JohnsonA	2	2250	3½x5	34x3½	34x8	W
Walker-Johnson B	3	2750	4¼x5¼	36x4	36x8	W
Walker.....M	2½	3850	4¼x5¾	36x4	36x8	D
Walker.....S	5	4850	4½x6¼	36x6	40x6d	W
*Watson.....C	1	1465n	3¾x5½	35x5n	35x5n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2550	4½x5¼	36x3½k	36x5k	W
Western....L1½	1½	2550	3¾x5	36x3½k	36x5k	W
Western....W2½	2½	3250	4¼x5¼	36x4	36x7	W
Western....L2½	2½	3250	4¼x6	36x4	36x7	W
Western....W3½	3½	4250	4½x6	36x5	40x5d	W
*White.....15	¾	2400	3¾x5½	34x5n	34x5n	B
White.....20	2	$3250	3¾x5½	36x4k	36x7k	D
White.....40	3½	4200	3¾x5¾	36x5	40x5d	D
White.....45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick....E	1	1225	3¾x5	34x5n	34x5n	W
White Hick....H	1½	1375	3¾x5	36x3½	36x5	W
White Hick....K	2½	1675	4½x5½	36x4	36x5	W
Wichita.....K	2	1875	3¾x5½	36x3½	36x4k	W
Wichita.....M	1	2400	3¾x5¼	36x3½k	36x6k	W
Wichita.....RX	3	3200	4½x5¾	36x4k	36x8k	W
Wichita.....O	4	$3500	4½x6½	36x5k	36x5k	W
Wilcox.....AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4¼x5	36x4k	36x3½dk	W
Wilcox.....E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox.....F	5	4350	4½x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¾x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4½x5¼	36x4	36x7	W
Wilson.....G	3½	3685	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4½x6	36x6	40x6	W
*Wisconsin....A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin.....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin.....C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin.....D	3½	3000	4¾x5¾	36x6n	40x8	W
Wisconsin.....E	5	3500	4½x6½	36x6	36x10	W
Witt-Will.....N	1½	2450	3¾x5	36x3½k	36x5k	W
Witt-Will.....P	2½	2900	4½x5½	36x3½k	36x7k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm.	15-25	1185	4	Midw.	4-4½x5¼	Gas.	3
Allis-Chalm.	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
†Allis-Chalm.	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork 2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO 1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T.	15-30	1900	4	Clim.	4-5 x6½	G,K	4
Aultman-T.	22-45	2810	4	Own	4-5½x8	G,K	6
Aultman-T.	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Autocar. B-3	12-21	1250	4	Herc.	4-4 x5½	Gas.	2-3
Avery,SR.Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4½x6	G,K,D	3-4
§Avery.....	....	....	*	Own	4-4x5½	G,K,D	3
Avery.....	12-25	....	4	Own	2-6½x7	G,K,D	3-4
Avery.....	14-28	....	4	Own	4-4½	G,K,D	3-4
Avery.....	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7½x8	G,K,D	8-10
Bates Mule .H	15-25	....	4	Midw	4-4½x5¼	Gas.	3
Bates Mule .F	18-25	....	*2	Midw	4-4½x5¼	Gas.	3
‡Bates MuleG	25-35	....	*2	Midw	4-4½x6	Gas.	..
Bear.....	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman...G	2-4	240	4	Own	1-3½x4½	Gas.	..
Best.....	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best.....	60	....	*2	Own	4-6½x8½	G,K,D	8-9
Bering.....	5-10	395	4	LeR.	4-3½x4½	G	..
Bering ..1921	....	195)	3	Wauk	4-4¾x5¾	GorK	2
**Bryan.....	15-30	....	4	Own	2-4 x5	K.	3
Capital.....	15-30	1000	2	Own	4-4¾x6	Gas.	3
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	3
Case.....	12-20	....	..	....	4-4½x5	..	2
Case.....	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case.....	22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case.....	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T35	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar .5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur.....	5-2½	345	2	N Way	2-4½x4½	GorK	1
Chicago....40	40	2500	4	Own	4-4½x6	Gas.	4
Cletrac..... F	9-16	595	*2	Own	4-3½x4½	G,K,D	2
Cletrac..... W	12-20	1315	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom,	4-4¾x6	Gas.	3
Dupee.....A	20-30	2500	4	Buda	4-4½x6	Gas.	4
Dill.....D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dill.....R.W.	20	2980	4	Midw.	4-4½x6	Gas.	3
Do-it-All....A	3-6	495	..	Own	1-4½x5	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B.....AA	12-20	1095	4	Own	4-4½x5	G,K,D	3
Fageol.....D	9-18	1525	4	Lyc.	4-3½x5	Gas.	2
Farm Horse.B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Farquhar.....	15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar.....	18-35	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar.....	25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch..4 Drive	20-35	1950	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	$ 395	4	Own	4-4x5	G,K	2
Franklin....G	18-30	4000	*2	Clim.	4-5 x6½	G or K	3-4
Franklin....C	18-30	3350	*2	Clim.	4-5 x6½	G or K	3-4
Franklin...G2	18-30	4350	2	Clim.	4-5 x6½	G or K	3-4
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4½x6	G,K	3-4
Grain Belt...A	18-30	2150	4	Wauk.	4-4¾x6¾	G or K	4
Gray.....	20-36	1975	3	Wauk.	4-4½x6¼	Gas.	4
Gray.....	22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. Western Si	20-30	1950	4	Beav.	4-4½x6	K	4
Hart-Parr..20	20	765	4	Own	2-5¼x6½	K,D.	2
Hart-Parr..30	30	895	4	Own	2-6½x7	K,D.	3
‡Hart-Parr....	....	1695	4	Own	6½x7	K.D.	..
Heider.....D	9-16	870	4	Wauk	4-4¼x5½	G,K	3
Heider.....C	12-20	995	4	Wauk	4-4½x6¾	G,K	3
Heider...Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4	12-25	985	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4	15-30	1885	4	Midw.	4-4½x6	Gas	3
Illinois.....C	15-30	....	4	Clim.	4-5 x6½	G,K	4
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International .	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5½x8	G,K,D	4
J-T.....N	25-40	3000	*2	Clim.	4-5x6½	G,K,D	3-4
¶Kinkade....	1½	190	1	Own	1-3 x3	Gas.	....
La Crosse....	12-24	985	2	Own	2-6 x7	G,K	3
Lauson.....S	12-25	1295	4	Midw	4-4½x5¼	Gas.	3
Lauson.....21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lauson Read	15-30	2000	4	Beav.	4-4¾x6	K	..
Leader.....B	12-18	685	4	Own	2-6 x6¼	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader....GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn.....111J	40-	4500	*	Cont	4-4½x5½	Gas	4
Linn.....W	60	5000	*	Wauk	4-5 x6¼	Gas.	6
Little Giant,.B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant. A	26-35	3300	4	Own	1-5½x6	K	6
Lombard.1922	85-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2¾x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Med.D	22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD	35-70	3850	4	Own	4-7½x9	G or K	8-9
Mohawk .1922	8-16	650	2	Light	4-3½x4½	K or G	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch..	9-18	....	2	Own	4-3½x5	Gas.	2-3
‡Monarch....	20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Motor Macult,	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	425	4	Own	2-3¾x4	Gas.	1
Nichols-Shep.	20-42	2650	4	Own	8 x10	G or K	3-6
Nichols Shep.	25-50	3000	4	Own	9 x12	G or K	4-7
Nichols-Shep.	35-70	3650	4	Own	-10½x14	G or K	8-10
Nilsen Senior..	20-40	1975	5	Wauk	4-5 x6¼	G,K	4
Oil Pull.....K	12-20	....	4	Own	2-6 x8	K,D	3
Oil Pull.....H	16-30	....	4	Own	2-7 x8½	K,D	4
Oil Pull ....G	20-40	....	4	Own	2-8 x10	K,D	5-6
Oil Pull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar ..K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Peoria.....L	12-25	1600	4	Clim.	4-5 x6½	G,K	3
Pioneer.....G	18-36	1750	4	Own	4-5½x6	G,K,D	4
Pioneer.....C	40-75	3550	4	Own	4-7 x8	Gas.	10
Plowman....A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable.....	10-20	390	4	Own	2-6 x7	Ker.	2
Rex.....	12-25	1600	4	Wauk	4-4¼x5¾	G or K	3
Russell.....	12-24	1500	4	Own	4-4¼x5¾	G or K	2-3
Russell.....	15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson....M	....	445	4	Own	4-4 x5½	G,K	2
Sandusky,...J	10-20	1250	4	Own	4-4¼x5½	G,K,D	2
Sandusky...E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
¶Shelby.....	1	150	3	B & S	1-2½x2½	G	..
Shelby.....D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby.....C	9-18	....	4	Wauk	4-3¾x5¼	G or K	2
Steady Pull..	12-21	1485	4	Own	4-4 x5	Gas.	3
Tioga.....3	18-32	....	4	Wisc.	4-4½x6	Gas.	3-4
Toro Cultivator	6	750	3	LeR	4-3½x4½	Gas.	2
ToroTractor'22	6-10	495	3	LeR	4-3½x4½	Gas.	2
Townsend....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend....	25-50	2500	2	Own	4-8½x10	Ker.	4-8
Traction Meter	40-50	....	4	....	8-3¼x5	Gas.	4-5
Traylor....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar...10	25-40	3750	*2	Wauk	4-5 x6¼	G or K	4
Twin City....	12-20	1200	4	Own	4-4¼x6	G,K	3
Twin City....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City....	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle Sam C20	12-20	1795	4	Weid.	4-4 x5½	G	2-3
Uncle Sam B19	20-30	1985	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam D21	20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utiliter....591	2½-4	295	4	Own	1-3½x4½	G	1
Utilitor...591A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	....	4	Own	4-4½x5¾	G,K	3
Waterloo...N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore 21-22	12-25	1185	4	Wauk	4-4 x5¾	G,K	3
Whitney....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin...E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin...F	20-40	2050	4	Wauk	4-5 x6½	G or K	4
Wisconsin,..H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba....12-20	12-20	2400	*2	Wisc.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4½x6	G,K,D	..
Yuba....20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba.....	25-40	4750	*2	Yuba	4-5½x7	B	..
Zelle.....	12-25	....	4	Buda	4-4½x5½	G or K	3

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. B'& S—Briggs & Stratton. Clim.—Climax. Cont.—Continental. Dom.—Domas Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows §Track Runner. ‡Industrial Tractor. ¶Garden Tractur. **Steam Tractor

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Specifications of Current Passenger Car Models

NAME AND MODEL	Engine Make	Cylinders Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Ambassador.....R	Cont..	6-3⅝x5¼	136	33x5	....	b4500	$4500	....	$3500
American.....D-66	H-S..	6-3½x5	127	33x4½	b1885	1785	1850	....	2455
Anderson...Aluminum 6	Cont..	6-3½x4¾	114	32x4	....	1195	....	....	....
Anderson.....Series 40	Cont..	6-3¾x4½	120	33x4	1495	1495 b1595n	1595	$1995	1995
Apperson.....8-21-S	Own..	8-3¼x5	130	34x4½	....	2620	2645	3625	3695
Auburn.....6-51	Cont..	6-3⅜x4½	121	32x4	1575	1475	....	2275	2375
Auburn.....6-51	Cont..	6-3⅜x4½	121	32x4½	....	n1995	1545	....	....
Bay State.....	Cont..	6-3¼x4½	121	32x4	1800	1800	....	2400	2500
Biddle.....B1 & B5	Buda..	4-3¾x5⅛	121	32x4	2950	b2950	....	3950	3950
Brewster.....91	Own..	4-4 x5½	125	32x4½	5000	5000	....	....	7000
Buick..1922-34-5-6-7-38	Own..	4-3⅜x4¾	109	31x4	865	885	u 725	1175	1395 1325e
Buick....1922-41-4-5-47	Own..	6-3⅜x4½	118	33x4t	1175	1195	u975	1935e	19 5
Buick.1922-48-9-50-4-55	Own..	6-3⅜x4½	124	34x4½	n1625v	n1675v	1435	1895	2195
Cadillac.....61	Own..	8-3½x5⅛	132	33x5	3100	3150	3150	b3875	4100
Case.....X	Cont..	6-3⅜x4½	122	32x4½	1750	1790	....	2550	2690
Case.....W	Cont..	6-3⅜x5¼	129	34x4½	....	2200	2250	2850	3250
Chalmers.....1922	Own..	6-3¼x4½	117	32x4	1185	1185	....	1595	2295
Chalmers.....1922	Own..	6-3¼x4½	122	32x4	....	....	1345	....	....
Chandler.....Six	Own..	6-3½x5	123	33x4	1495	b1495	1645	b1995	2295
Chevrolet.....Superior	Own..	4-3⅛x4	102	30x3½	510	525	u425	b840 k680	860
Chevrolet.....FB	Own..	4-3⅛x5¼	110	33x4	865	885	....	1325	1395
Cleveland.....41	Own..	6-3 x4½	112	32x4	1085	1095	n1260	1495	1585
Cole.....890	Nort..	8-3½x4½	127¼	33x5	2685	b2685n	2685	b3385	3685
Columbia.....De Luxe	Cont..	6-3⅜x4¼	115	32x4	1475	1475	b1475n	b1925	1995
Columbia.....Light Six	Cont..	6-3⅛x4¼	115	31x4	995	985	....	....	1395
Comet.....C-53	Cont..	6-3½x5¼	125	33x4½	....	1985	2085	....	2985
Courier.....	Own..	6-3½x4½	116	32x4	u1395 a1495n	1395	b1495n	2065	2165
Crawford.....22-6-60	Cont..	6-3⅝x5¼	122½	32x4	3000	3000	3000	....	4500
Crawford-Dagmar...6-60	Cont..	6-3⅝x5¼	135	33x5	....	n3500	....	....	....
Daniels.....D-19	Own..	8-3½x5¼	132	33x5	u4350	b4350	4350	5250	6000
Davis.....71	Cont..	6-3½x4¼	114	31x4	....	1295	....	....	....
Davis.....61-67	Cont..	6-3⅜x4½	120	32x4	1595	1595	b1695	2095	2195
Dixie Flyer.....H-S-70	H-S..	4-3½x5	112	32x4	1175	1175	b1295	1545	1595
Dodge Brothers.....	Own..	4-3⅞x4½	114	32x4	850	880	....	980h	1440
Dorris.....6-80	Own..	6-4 x5	132	33x5	....	b3900	3950	4985b	5750
Dort.....19-14	D-Ly..	4-3½x5	108	31x4	885	885	....	1265 1045k	1385 1095k
Driggs.....	Own..	4-2⅝x4½	104	30x3½	1275	1275	....	....	1975
Duesenberg...Straight 8	Own..	8-2⅞x5	134	33x5	6500	6500	6750	7800	7800
Du Pont.....A	Own..	4-3⅛x5⅛	124	32x4½	3000	3200	....	3800	4000
Durant.....A-22	Cont..	4-3⅞x4¾	109	31x4	n890	890	....	1365	1365
Durant.....B-22	Anst..	6-3¼x4½	123½	32x4½	1600	1650	....	2250	2400
Earl.....40	Own..	4-3 x5¼	112	32x4	1485	1095	950u	b1395	1795
Elcar.....K-4	Lyc..	4-3½x5	118	33x4	1095	1095	n1095	1345	....
Elcar.....7-R	Cont..	6-3¼x4½	118	33x4	1395	1395	n1395	2065	2165
Elgin.....K-1	Falls..	6-3½x4¼	118	33x4	1345	1295	b1345	1695	1695
Essex.....	Own..	4-3⅜x5	108¾	32x4	....	1095	....	1195k	1895 1295k
Ford.....T	Own..	4-3⅛x4	100	30x3½	r319	s348	u285	580	645
Franklin.....9-B	Own..	6-3¼x4	115	32x4	1900	1950	u1750	2750	2850
Gardner.....T-R & G	Lyc..	4-3½x5	112	32x4	895	895	....	1095k	1595 1345k
Grant.....	Walk'r	6-3½x4½	116	32x4	1385	1385	....	1895	1945
Gray.....	Own..	4-3⅝x4	100	30x3½	....	490	....	....	760
H.C.S.....Series 3	Weid..	4-3⅝x5½	120	32x4½	2475	2475	....	3250	3475
Halladay.....4	Own..	4-3½x5	115	32x4	1095	1095	....	1990	2085
Halladay.....6	Own..	6-3½x5	115	32x4	1595	1595	....	2295	2395
Handley-Knight.....	Own..	4-4⅛x4½	125	32x4½	....	....	2650	3450	3450
Hanson.....30	Cont..	6-3½x4¼	114	31x4	....	995	....	....	....
Hanson Six.....60	Cont..	6-3⅜x4½	121	32x4	1595	1595	1795	b2475	2585
Hatfield.....A-42	H-S..	4-3½x5	115	32x4	....	1345	b1345	1950	1950
Haynes.....75	Own..	6-3½x5	132	34x4½	2395	b2395	2395	....	3395
Haynes.....55	Own..	6-3½x5	121	32x4½	1545 1895n	1895n	....	2095 2195n	2395 2695n
Holmes.....Series 4	Own..	6-3½x4¼	126	34x4½	....	b2500	2500	b3300	3600
Hudson.....Super 6	Own..	6-3½x5	126	34x4½	....	b1645	1695	2570	2650 1745k
Huffman.....	Cont..	6-3⅜x4½	120	32x4	1395	1395	....	....	2295
Hupmobile.....Series R	Own	4-3¼x5½	112	32x4	1150	1150	u1025	1635 1335k	1785
Jackson.....638	Cont..	6-3½x4½	121	32x4½	....	1485	b1685	2985	2985
Jewett.....Six	Own..	6-3½x5	112	31x4	a995	995	....	b1445	1465
Jordan.....MX	Own..	6-3⅞x4¾	120	32x4	1895	1795	....	2785	2785
Jordan.....	Own..	6-3⅞x4¾	124½	32x4	....	b2150n	....	....	....
Kelsey.....4	Gray..	4-3½x5	111	32x3½	....	985	....	....	1450
Kelsey.....6	Walk'r	6-3½x4½	118	32x4	....	1525	....	....	2175
Kenworthy.....8-90	Own..	8-3 x5¼	130	32x4½	5000	5000	5250	6000	6000
King.....K	Own..	8-3 x5	120	32x4½	1795	1795	b1795	2400	2550
Kissel.....45	Own..	6-3⅞x5½	124	32x4½	n2385	1885	2385	b2975	3075
Kline Kar.....6-55-K	Cont..	6-3½x4½	121	33x4	1690	1690	1690	2750	2890
LaFayette.....	Own..	8-3½x5¼	132	33x5	3985	b4090	4090	5500	5500
Leach.....999	Own..	6-3¾x5¼	134	32x4½	5500	5500	5500	5500	5500
Lexington.....23	Anst..	6-3¼x4½	128	32x4½	1695	1695 2045n	1795	b2345	2545
Liberty.....10-D	Own..	6-3½x5	117	32x4	1575	1395	1575n	2085 1695k	2215

NAME AND MODEL	Engine Make	Cylinders Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Lincoln.....	Own..	8-3⅜x5	136	33x5	$3800	b3800	$3800	$4400	$4700
Locomobile.....48	Own..	6-4½x5½	142	35x5	....	b7600	7600	10500	11000
Marmon.....34	Own..	6-3⅜x5⅛	136	32x4½	3385	b3185	3185	3985	4385
Maxwell.....	Own..	4-3⅝x4½	109	31x4	885	885	....	1235	1335
McFarlan.....1922	Own..	6-4½x6	140	33x5	6300	b6300	6300	7500	7500
Mercer.....Series 5	Own..	4-3¾x6⅜	132	32x4½	3950	b3950	c3950	4850	5250
Merit.....	Cont..	6-3¼x4½	119	32x4	1895	1895	....	....	....
Mitchell.....F-50	Own..	6-3½x5	120	32x4	a1490	1590	b1690	b2050	2275
Mitchell.....F-50	Own..	6-3½x5	127	32x4½	....	....	1850n	....	....
Monroe.....1922-S-9	Own..	4-3¾x4½	115	32x3½	950	950	....	....	....
Moon.....6-40	Cont..	6-3½x4¼	115	31x4	....	1295	....	....	1695
Moon.....6-58	Cont..	6-3⅜x4½	128	33x4½	1785	1785	1785	2785	2785
Nash.....691-96-97	Own..	6-3¼x5	121	33x4	1210	1240	b1395n	....	2040
Nash.....692-94-95	Own..	6-3¼x5	127	34x4½	....	....	1390	b1890	2190
Nash Four.....41-4	Own..	4-3⅜x5	112	33x4	915	935	....	a1385	1545
National.....BB	Own..	6-3½x5¼	130	32x4½	a2475	b2475	2375	1195k b3725	1275k 3825
Noma.....3C	Cont..	6-3¼x4½	128	32x4½	2500	b2500	c2600	....	3500
Noma.....1D	Bea..	6-3½x5¼	128	32x4½	3000	b3100	c3200	....	5500
Norwalk.....430-KS	Lyc..	4-3½x5	116	32x3½	....	1035	....	....	....
Oakland.....6-44	Own..	6-2⅞x4¾	115	32x4	975	995 u795	b1165n	b1445 b1185k	1545
Ogren.....6 T D Luxe	Cont..	6-3⅝x5¼	134	33x5	b3750	3750	3850	4500	4800
Oldsmobile.....43 A	Own..	4-3½x5¼	115	32x4	1095	1095	b1225n	1595	1745
Oldsmobile.....46	Own..	8-2⅞x4¾	122	33x4½	b1735	c1850	1735	....	2635
Oldsmobile.....47	Own..	8-2⅞x4½	115	32x4	1495	1495	b1725n	1995	2145
Overland.....4	Own..	4-3⅜x4	100	30x3½	550	550	....	850	895
Packard.....Single-Six	Own..	6-3⅜x5	126	33x4½	2485	2485	u2250	3175	3275
Packard.....Single-Six	Own..	6-3⅜x5	133	33x4½	....	u2350	2685	....	3525
Packard.....Twin-Six	Own..	12-3 x5	136	35x5	3850	3850	3850	5240	5400
Paige.....6-44	Own..	6-3½x5	119	32x4	1465	1465	u1290	1995	2245
Paige.....6-66	Cont..	6-3⅜x5	131	33x4½	a2495	n2245	2195	3100	3155
Paterson.....22-6-52	Cont..	6-3⅜x4½	120	32x4½	....	1390	1425	2395	2395
Peerless.....56-S-7	Own..	8-3½x5	128	33x5	....	b2990	2900	b3400	3900
Pierce-Arrow.....	Own..	6-4 x5½	138	33x5	5250	b5250	5250	6800	7000
Pilot.....6-50	H-S..	6-3½x5	126	32x4½	2050	2000	2050	2950	3000
Premier.....6-D	Own..	6-3⅜x5½	126¾	33x5	3150	b3100	3250	4300	5100
Premocar.....6-40-A	Falls..	6-3½x4¼	117	32x4	1095	1095	....	1750	1825
R & V Knight.....R	Own..	4-3¼x5	116	32x4	....	1665	....	2385	2475
R & V Knight.....J	Own..	6-3½x4½	127	32x4½	2475	b2475	2475	3015	3105
Reo Series.....T6 & U6	Own..	6-3⅜x5	120	33x4	1595	n1645	1485	b2355	2435
ReVere.....C	Dues..	4-4¼x6	131	32x4½	3200	3200	3200	....	4000
Rickenbacker.....A	Own..	6-3½x4¾	117	32x4	....	1485	....	1885	1985
Roamer.....6-54-E	Cont..	6-3½x5¼	128	32x4½	2850	b2585	2785	3850	3850
Roamer.....4-75-E	Dues..	4-4¼x6	128	32x4½	3985	b3585	b3750n	....	b4650
Rolls-Royce.....	Own..	6-4½x4¾	143½	33x5	....	10,900	....	....	....
Saxon.....125	Own..	4-3½x5	112	32x4	1195	1195	....	1795	1795
Sayers Six.....DP	Cont..	6-3¼x4½	118	33x4	1645	1645	....	2645	2645
Seneca.....L-2 & O-2	Lyc..	4-3½x5	108	30x3½	875	875	....	....	....
Seneca.....50 & 51	Lyc..	4-3½x5	112	31x4	1095	1095	....	....	....
Sperling.....A	Supr..	4-3⅜x5	114	32x4	980	980	....	1685	1685
Standard.....98	Own..	8-3¼x5	127	34x4½	2150	b2500	2500	2750	3200
Stanley.....	Own..	2-4 x5	130	32x4½	2700	2700	2700	3775	3950
Stanwood Six.....	Cont..	6-3¼x4½	118	33x4	1765	1765	....	2750	....
Star.....	Cont..	4-3½x4¼	102	30x3½	r319	s348	u285	580	645
Stearns-Knight....SKL4	Own..	4-3⅞x5⅜	125	34x4½	2250	2250	2450	3150	3450
Stearns-Knight.....6	Own..	6-3⅜x5	130	34x4½	2700	2700	2850	3350	3700
Stephens.....90	Own..	6-3½x4½	122	33x4½	1575	b1595	c1625	2450	2550
Stevens-Duryea.....E	Own..	6-4½x5½	138	35x5	7250	b6900	6800	u5600	b8900
Studebaker....Light Six	Own..	6-3½x4½	112	32x4	975	975	u785	1225	1550
Studebaker..Special Six	Own..	6-3½x5	119	32x4	1250	1275	b1275	1875	2050
Studebaker.....Big Six	Own..	6-3⅞x5	126	33x4½	u1300	1650	n1785	2275	2475
Stutz.....	Own..	4-4⅜x6	130	32x4½	2450	b2790	c2640	3490	4450
Templar.....A-445	Own..	4-3⅜x5½	118	32x4	2025	2125	b2175	2650	2785
Tulsa.....E-1-2-3	H-S..	4-3½x5	117	33x4	1175	1175	....	....	....
Velie.....48	Cont..	6-3¼x4½	115	32x4	1585	1585	b1800	2485	2485
Velie.....34	Falls..	6-3½x4½	112	32x3½	1235	1235	....	1750	2085
Velie.....58	Own..	6-3½x4¾	115	32x4	1275	1275	....	2185	2185
Washington.....C	Cont..	6-3⅜x4½	120	32x4	....	1785	....	....	2285
Westcott.....C-48	Cont..	6-3½x5¼	125	32x4½	....	....	1890	....	2890
Westcott.....A-44	Cont..	6-3¼x4½	120	32x4	....	1690	n1890	....	2690
Wills Sainte Claire..A-68	Own..	8-3½x4.	121	32x4½	2475	2475	....	3275	3475
Willys-Knight.....20	Own..	4-3⅝x4½	118	32x4	1350	1375	....	1875	2095
Winton.....40	Own..	6-3¾x5¼	132	35x5	3400	n3600	3400	b4450	4550

a—3-passenger. b—4-passenger. c—6-passenger. n—Sport. h—All Metal Type. k—Soft Top Type. u—Chassis Price. r—Price without starter and demountable rims. Price with starter and demountable rims $414. s—Price without starter and demountable rims. Price with starter and demountable rims $443. t—Model 47-34x4½ Tires. v—Tire Sizes 32x4½. e—Touring Sedan.

Engine Make: Anst—Ansted. Bea—Beaver. Cont—Continental. Curt—Curtis. D.Ly—Dort Lycoming. G-B—Grey Beal. H-S—Herschell-Spillman. Lyc—Lycoming. Nort—Northway. Roch—Rochester. Rut—Rutenberg. Supr—Supreme. Weid—Weidely. Wisc—Wisconsin

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"L" Salesman

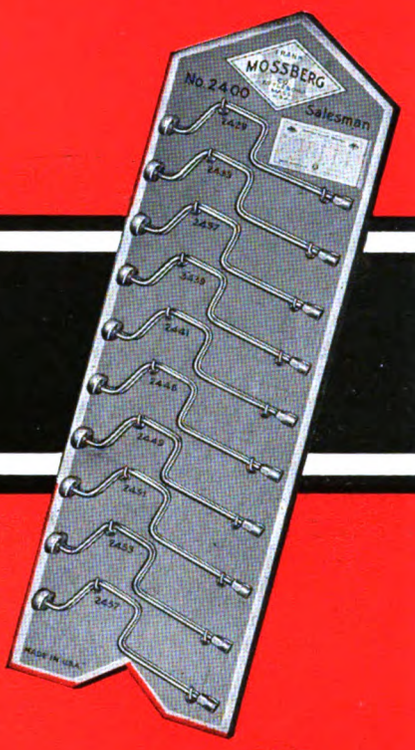
Assortment contains 140 Solid Socket Wrenches—47 6-inch "T" Wrenches—57 12-inch "T" Wrenches, and 36 10-inch Offset Wrenches. All fast sellers. Constructed of ½ inch steel bar, finished in burnished nickel. Board 20 inches by 60 inches—same high quality as "2400" board. Furnished free with complete assortment.

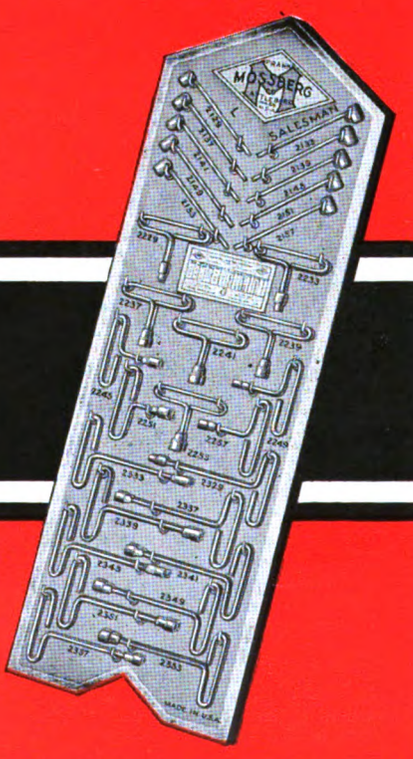
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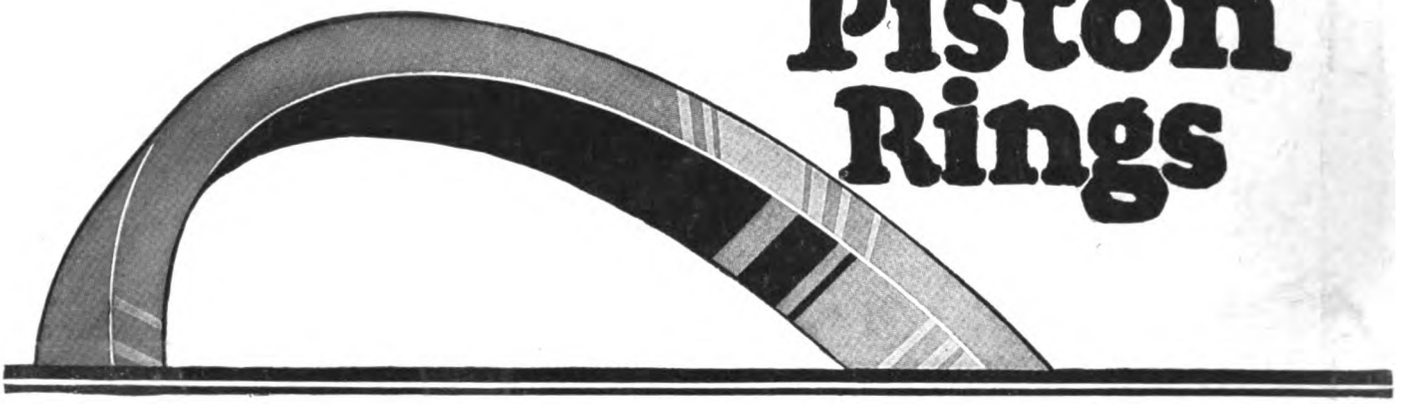


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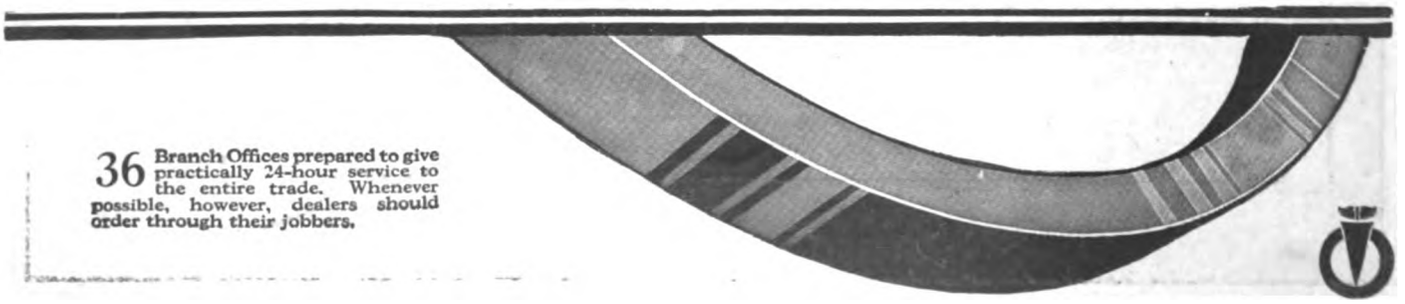
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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Volume LXXII
Number 12

PUBLISHED WEEKLY AT 239 WEST 39th STREET
NEW YORK, SEPTEMBER 20, 1922

Thirty-five cents a copy
Three dollars a year





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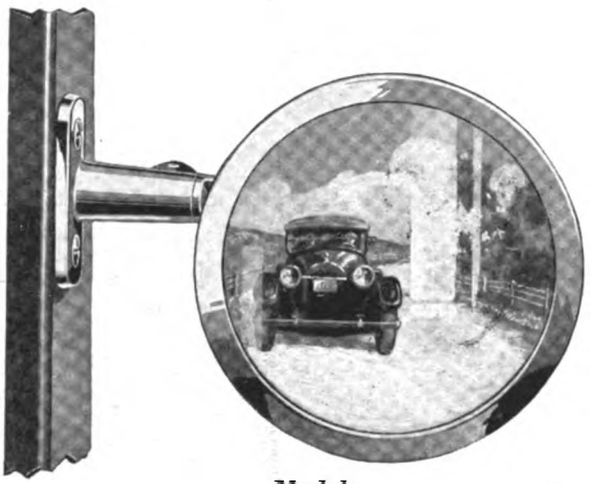
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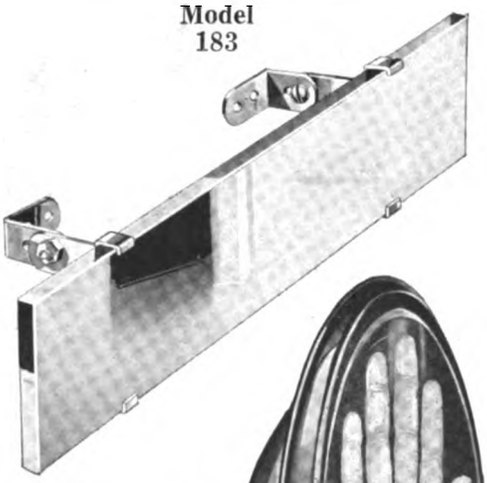
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MOTOR WORLD
DEALERS, JOBBERS AND GARAGEMEN

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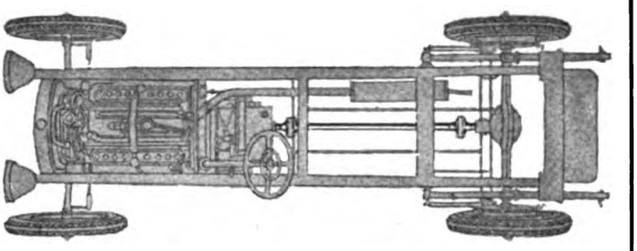
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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXII New York, U. S. A., Wednesday, September 20, 1922 No. 12

Helping Him to Get a Real Good Look at It



AUTOMOTIVE trade association secretaries who attended the National Used Car Conference did not expect to "settle" the used car question and do not claim that they did. But they did turn the clear light of thoughtful, reasonable discussion on this one of the trade's most distressing problems. Facts and ideas which the conference brought out are told on the next four pages.

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How Hard Will Dealers Try to Stop Used Car Losses?

National Conference at Chicago Shows There Are Some Co-operative Plans That Work and Suggests Essentials of Profitable Merchandising—Association Managers Will Issue a Manual to Assist the Trade

By NEAL G. ADAIR

CHICAGO, Sept. 15.

TRADE association secretaries from various parts of the country who attended the National Used Car Conference here this week rediscovered the fact that losses on used cars can be eliminated if dealers will buy and sell them as merchandise. Two days of discussion failed to develop any means of altering the truth that a dealer who employs used car trading solely as an agency of promoting new car sales must pay the cost just as he would for advertising or any other form of promotion. But the discussion did bring out into clear light some of the methods by which dealers, working individually or in groups, can lessen the grief over what the trade calls the used car problem.

Any secretaries, and there were some, who came to the conference feeling that co-operation among dealers to prevent or reduce used car losses is futile, went away convinced that the thing can be done. They heard about the work of dealer organizations that are doing it. They heard the details of plans on which co-operation is based. More important, they learned that while plans furnish the machinery of co-operation they are worthless unless men with understanding of the causes of used car losses and with courage to weed them out, furnish the power.

Dealer's Loss His Penalty

This power is not an enforcement of penalties. Generally speaking, penalties for violation of used car co-operative arrangements have passed out. *The real penalty for a dealer who allows more than a used car is worth is his loss when he sells it. The "teeth" in the unsuccessful co-operative used car plans of to-day are the means which the co-operating dealers employ to show the reckless trader what his losses are and that he cannot escape them. Of these means the foundation is prompt and accurate information regarding market value or actual selling prices of used cars.*

Common Sense Wanted

C. A. Vane, general manager of the National Automobile Dealers Association, put the truth into a compact kernel when he said the used car question was like murder and suicide, reminding the conference that every State in the Union has elaborate legal machinery to prevent murder but the only thing that will keep a person from committing suicide is common sense. And L. B. Sanders, secretary of the Boston Used Car Statistical Bureau, declared that "no association and no plan will ever solve the used car problem; it must be solved by individual dealers." Yet Sanders told how an association with a plan—the Boston plan, one of the most effective in the country—is helping individual dealers to solve the problem.

The trade association secretaries, more than 40 of them, from cities with Boston, Jacksonville, Kansas City and Milwaukee skirting the edges of the territory from which they came, did not meet with any thought of finding a "cure" for the used car troubles of the trade. They hoped to center attention on the most effective means of alleviating these troubles. They realized their hopes and when they left for their homes after two days of long and earnest sessions they had stripped the decorations from numerous used car plans in operation about the country and had classified them for the benefit of themselves and their dealers and the trade in general. The classifications were:

1—*Central appraisal plan.*
2—*Maximum allowance plan.*
3—*Market value information plan.*

It was decided that this classification, with details of operation of different plans, would be put into print in a used car merchandising manual, to be made available for automotive trade association executives throughout the country. The manual will be issued under the auspices of the National Association of Automobile Show and Association Managers, which conducted the conference. Its compilers will be Herbert Buckman, manager of the Cleveland Automobile Manufacturers and Dealers Association, L. B. Sanders, secretary of the Boston Used Car Statistical Bureau, and Neal G. Adair, editor of Motor World and executive secretary of the national association.

Learn Market Values

The conference would have been a poor place for one of those pessimists who think that nothing can ever be done about the used car question. There was plenty of evidence in the addresses and discussions that something can be done and that in more than a few communities something has been done, not only bringing dealers together in co-operation but with the individual merchandising problem of the individual dealer. And there was much to indicate that in a good many communities where dealers think there is no chance for co-operation a chance can be made by vigorous application of the one force that above all others will bring about improvement of used car merchandising conditions. That force is education. It takes the dual form of educating dealers to the fact that used cars have market values, the same as any other commodity, and that it is not good business to buy them except at prices which will permit profitable resale at those market values; and of educating the public to the equally inescapable fact that used

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cars have definitely limited market values and must be turned in for those values or retained for further use by owners who think they are worth more.

Not once during the conference was there a hint that owners should be forced to sell their own used cars. It was conceded that while private sales should be encouraged where the conditions are right, the average owner has neither the time nor the means of finding a buyer. But the dealer performing the service for the owner should not do it gratuitously. He should insist on a fair profit.

Nor did the conference indulge in any rawhiding of manufacturers. Trading allowances were condemned as serious obstacles in the way of establishment of used car market values, in which manufacturers should be interested as a means of improving dealer conditions and so helping the industry generally. It was pointed out that trading allowances running all the way from two or three in some cities to 28 in one were interfering with the progress of the industry. Equally severe was the censure for manufacturers who have forced dealers to take cars beyond the reasonable market possibilities of their territories, thus virtually compelling destructive competition. The conference, however, regarded most manufacturers as appreciative of the fact that only profit-making dealers are good dealers, and attributed much of the over-allowing that prevails in the used car field to the failure of many dealers to understand the steps that lead to net profit.

High Plane for Used Cars

Talks that lifted discussion of the used car to a high, clean level of sane merchandising were made by L. B. Sanders of the Boston Used Car Statistical Bureau; B. B. Burns, Decatur, Ill., used car dealer and president of the Illinois Automotive Trade Association, and S. E. Comstock, vice-president of Williams & Hastings, Detroit Hupmobile distributor. Morris Adler, Dodge Brothers dealer in Quincy, Ill., described the operation of the Quincy Used Car Exchange, which is a central appraisal and selling bureau. T. J. Arnold, head of the used car department of the Garber-Buick Co. of Saginaw, Mich., told about the operation of the Saginaw plan. George A. Bond, secretary of the Kansas City Motor Car Dealers Association, related encouraging results obtained from the market value information service maintained by the association, and E. S. Bond, secretary in Jacksonville, Fla., had a similar report on the experience of his dealers with an information report supplemented by a maximum allowance list. A paper by Ginder Abbott of the Abbott Automobile Co., Packard, Chalmers and Maxwell distributor in New Orleans, described the information service plan there.

Sanders of Boston stirred the conference with a personal illustration of the observation earlier in this story that it is the men behind a plan, not a mere plan, that make co-operation possible to avoid used car losses. In Sanders, a former passenger car distributor, the delegates saw one of the reasons why the maximum allowance market value information plan in Boston commands the support of 80 dealers, for whom it has saved many thousands of dollars by keeping used car allowances down to figures that are fair to the used car owner and the dealer. They give the owner the market value of his car, less what it will cost the dealer to recondition and sell it. Sanders said the Boston plan has been sold to the dealers and kept sold by the application of pressure in the form of education, showing them the folly of competition that wipes out profits. The delegates found much evidence in Sanders' talk and in his presentation of it that he had been an aggressive factor in application of this pressure. Back of him is a strong committee of dealers who insist on making a profit if they are going to do business and who, in weekly conferences since the plan was put in operation, in February, have been able to persuade to their point of view dealers who showed tendencies to go back to trading for the benefit of the used car owner.

Sanders' talk suggested that almost any co-operative plan will succeed if strong men are behind it. Equally, the best plan in the world is useless without the commanding desire of its supporters to keep it going. Sanders declared that a business which had cost dealers more than $200,000,000 in used car losses in 1921 needed "a raid by a band of fool-killers." It needed to be made to understand that the dealer with his 20 or 25 per cent commission on a new car has to sell two cars before he gets into his hands the full list price on which the commission is based. It costs just as much to sell the used car as the new, and unless the dealer does it without loss, in which the used car reconditioning cost and salesmen's commission are included, he does not get the full profit on the new car.

Sanders told how this fact had been emphasized in getting Boston dealers to stop competitive bidding up of used car prices; how the necessity for correct market value information as a basis for maximum allowance prices had been used to induce dealers to make prompt and correct reports on allowances and sales; how mutual confidence has been maintained by getting dealers to call each other on the phone and learn that a prospect's tale of another dealer's extravagant bid was often pure fiction; how dealers were shown their own and the whole group of dealers' losses in the early months of the year, as proof of the need for reform, and how, through newspaper stories and dealers' and salesmen's interviews with prospects, the public had been educated to cease expecting exorbitant allowances.

He Told About a Successful Used Car Association



L. B. SANDERS
Secretary, Boston Used Car Statistical Bureau

Co-operation in New England

The plan has worked so well that associations, some newly formed for the purpose, have taken it up all over New England, buying and using the Boston loose-leaf vest pocket allowance price books. It may become the New England plan, with New England rather than Boston city headquarters.

The allowance price list, supported in Boston by the reports of prices the public is actually paying for used cars, is showing dealers that the value of a used automobile is not what the owner thinks it is or what the dealer, in his anxiety to get the owner's new car order, thinks he might get for it. The car's value is what the public will pay for it, and this is the lesson being taught in Boston.

The Saginaw plan, which has maximum allowances given by dealers on their own cars, without the modification by selling price statistics employed in Boston, has a practical feature in the exchange of used cars among dealers, so that as far as possible used cars will be marketed by dealers in the same make of new car. Arnold of the Garber-Buick Co. said that dealers exchanged cars on the basis of credit memorandums and settled up at the end of the year. The plan has resulted generally in more thorough reconditioning and better resale prices, he said.

The conference was treated to a sane, inspiring treatment of used car merchandising as an individual dealer problem when Burns of Decatur took the floor. Burns' reputation as a used car merchant—he has never sold new cars—is

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indicated by his elevation to the presidency of the Illinois State association, dominated by new car dealers.

Burns declared that the used car business is "just as honest, upright and dignified and can be made just as profitable as the new car business." The foundation for such a result, he said, is good management and treatment of customers on a good will basis.

Dealers Should Sell Used Cars

Though a used car dealer, Burns stated his opinion that used cars should be sold by new car dealers, first, to give them a greater volume of business, second, to build future new car purchases on the strength of satisfied used car customers.

Burns stated three essentials of successful used car merchandising: first, buying at a price that would permit resale at a profit; second, reconditioning to make the car look well and operate satisfactorily; third, intelligent selling.

Burns advised a dealer in any community to bring about association action on maximum allowance prices if possible. If that could not be done, he suggested a weekly round table of dealers. If even this was impossible, he urged the individual dealer, by watching the market and studying his own records, to learn prices that permit resale at a profit and to refuse to pay more. Dealers pass up sales because of prospects' insufficient credit, why not because of their own insufficient profits he suggested.

Burns condemned the slovenly viewpoint of merchandising that lets some dealers open and close a sales interview on the question of the allowance on the used car, the prospect never seeing the new car.

Burns maintained that a used car is either junk or it is worth reconditioning. He recommended "as is" sales only to used car dealers. He said such sales to owners often hurt new car dealers' new car sales. He recounted generous profits made in "dolling up" medium and high priced cars with accessories. He suggested building or buying sport bodies for out-of-date appearing cars. In advertising Burns said that dealers must impress upon prospects that mere change of ownership does not damage a car. *The trade must raise the morale of used car merchandising; advertising must say why a car is a good buy, not why the dealer wants to get rid of it; dealers must realize that used cars are half their business and give them attention accordingly*—these were among Burns' suggestions.

Guarantee Satisfaction

Burns recommended that dealers guarantee used cars to give satisfaction, working to hold every used car customer, whether for another used car or a new one later on.

Interest in the talk of Comstock of Detroit centered in his plan for a campaign to sell branded used cars. Williams & Hastings, his company, sells the Hupmobile from its own salesroom and those of eleven associate dealers in Detroit and immediate vicinity. The name "Gold Seal" has been decided upon for used cars of all makes, which the company will sell on a "satisfactory service" policy. Display and classified advertising will be used to educate the public to accept "Gold Seal" used cars as cars that will give satisfaction. They will be put in condition to give satisfactory service, not overhauled, in most cases, said Comstock, who does not believe that a dealer can tear down and recondition a car from radiator to rear axle and still sell it at a profit under current competitive conditions.

Comstock said his idea of used car merchandising is that it must have the bargain atmosphere the public expects, supported by the willingness of the dealer to insure satisfaction.

He Showed How to Make Used Car Business Profitable



B. B. BURNS
President, Illinois Automotive Trade Association

Though the conference showed keen interest in individual used car merchandising ideas, it gave the greater part of its time to study of co-operative plans. For the benefit of readers who may not have followed the subject closely, it may be said that after sifting detailed information on numerous co-operative used car plans, the conference found three main "families," to one or another of which every known plan may be said to belong. They are:

1—Central appraisal bureau plan.
2—Maximum allowance plan.
3—Market value information plan.

The central appraisal bureau plan has various modifications. In some cities an association or group of dealers employs an appraiser who values all used cars offered in trade to the dealers supporting the bureau. The appraiser's figure is regarded as the maximum price which should be allowed for the car. If a dealer can get it for less, so much the better for him. Some of these bureaus also take on the character of a used car exchange, not only appraising but actually buying, reconditioning and selling used cars as a corporation operating for the dealers who own it. The dealers have no used car department. In other places the bureau merely makes the appraisal for the dealer who sends in a car, also reporting the appraisal price to other co-operating dealers who may inquire in case the owner also offers it to them. These used car exchanges and central appraisal bureaus have worked at least fairly well in some small cities. None, so far as is known, has succeeded in a large city.

Maximum Allowance Plan

The maximum allowance plan is found in numerous modifications of the Saginaw plan, which has been in operation in the Michigan city for eight years. Under the original plan maximum fair price allowances on all models of all makes of cars represented in the city are stated by the dealers with agencies for these cars. The lists are compiled and printed in a book distributed to co-operating dealers by a central committee, which also, on the basis of market values, fixes maximum allowances for cars not represented in the city, but more or less frequently offered in trade. The allowance price books usually are of vest pocket size, with loose leaves so that price changes, due to new car price changes or other causes, can be put in promptly without inconvenience. Boston and some other cities have modified the Saginaw plan by basing maximum allowances on a careful checking of current market values effected by gathering and averaging used car selling prices reported, usually weekly, by co-operating dealers. Whether individual dealers or the central committee states the maximum allowance, there is generally a groundwork of used car value depreciation on a percentage basis.

In Boston, now, 1922 models are listed at 65 per cent of list, 1921's at 55 per cent, 1920's at 40, 1919's at 30, and 1918's at 22. Some other plans allow only 60 per cent for a year old model.

The market value information plan is an exchange among co-operating dealers of used car selling prices. In several large cities, including Chicago, Kansas City, St. Louis, Cleveland and Detroit, and many smaller cities, the dealer association secretary, or a special used car secretary, is the pivot around whom the plan revolves. Each week, on a day specified, each co-operating dealer sends to the secretary a list of all used cars sold, giving the year, model and other identifying information, together with the car's general condition and the price for which it was sold. The secretary tabulates the information, multigraphs it, and at the

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earliest possible moment sends it out to all members. Names of dealers selling the cars, of course, are not included in the report, the secretary alone having this information, which is held confidential.

Pressure by Education

This is the simplest form of market value information service. Improved plans, which most of the cities have worked out, include a listing of cars on hand, so that if cars of certain makes and models in any considerable numbers are shown unsold week after week, dealers are warned that they are not good cars to trade, except at prices which will permit attractive resale offers. In still other cities there are columns in the report for allowance price and sale price.

It is a foregone conclusion that none of these plans—central appraisal bureaus, maximum allowance or market value information—can be introduced or operated without pressure being brought to bear upon individual members of a dealer community or organization. Pressure on a penalty basis has never accomplished anything, except perhaps for a brief period, in any city. Threaten to fine a dealer or throw him out of an association or embarrass his credit facilities at the banks if he doesn't co-operate, and you make him an enemy of the co-operative plan. Unless co-operation is based on friendship and mutual trust, it won't last, because it isn't co-operation. So the pressure which association officers and members bring to bear upon individual members is an educational pressure—showing the individual dealer that it is to his advantage to give information so that in return he can get information, thus contributing to and profiting by establishment of used car market values; showing him that it is to his advantage to hold used car allowances down to market value figures, thus encouraging other dealers to do the same thing and cut down destructive competition; showing him that it is unsafe to over-allow on used cars by pointing out dealers who have failed because of it.

Sales Price Facts

When there is just a sales price information service, without maximum allowance figures, dealers are confronted weekly with the prices that cars are bringing in the market. These constant reminders, with jolts from time to time from the bookkeeping departments, in many cities have helped to discourage the over-allowance habit. There is not much evidence on the central appraisal bureau or used car exchange plan. In Quincy, 80,000 population, only 10 out of 24 dealers are co-operating in the exchange, which appraises, re-conditions and sells these 10 dealers' used cars. Yet Adler told the conference the plan was keeping down these dealers' losses and would be continued.

The conference devoted a half day to show management discussion. An Automotive Equipment Day, showing to dealers the "Ask 'Em to Buy" and "Shop Profits" films of the Automotive Equipment Association, was generally favored for the mid-winter shows. Ray W. Sherman, merchandising director of the A. E. A., offered to co-operate in such days.

There was a lively discussion of a proposal by John E. Raine, secretary of the Baltimore Automobile Trades Association, that a committee be named to draft a tentative constitution for a national association of automotive trade associations. The move was tabled until the annual meeting in January, when a report will be made on progress of organization of a proposed Atlantic Coast Association along similar lines, which its sponsor, C. H. Warrington, president of the Washington, D. C., Automotive Trades Association, said might be the seed of a national association. The delegates who voted to table the new association suggestion felt that it fell into an unfortunate classification halfway between the National Automobile Dealers Association and the Show and Association Managers Association. They also doubted the feasibility of financing a national association of local associations.

The conference, held at the Congress Hotel, was presided over by Robert E. Lee of St. Louis, acting president. The delegates present were:

Association Secretaries

Baltimore, Md., John E. Raine, Baltimore Automobile Trade Association.

Binghamton, N. Y., E. D. Deane, Binghamton Automobile Dealers Association.

Boston, Mass., L. B. Sanders, Boston Used Car Statistical Bureau.

Brooklyn, N. Y., Ralph Ebbert, Brooklyn Motor Vehicle Dealers Association.

Buffalo, N. Y., Carlton B. Proctor, Buffalo Automobile Dealers Association.

Chicago, Ill., Timothy D. Beard, Chicago Automobile Trades Association.

Cleveland, Ohio, Herbert Buckman, Cleveland Automobile Manufacturers & Dealers Association.

Detroit, Mich., H. H. Shuart, Detroit Automobile Dealers Association.

Detroit, Mich., W. D. Edenburn, Michigan Automotive Trades Association.

Grand Rapids, Mich., Marshall Elgin, Grand Rapids Automobile Dealers Association.

Indianapolis, Ind., John Orman, Indianapolis Automobile Trade Association.

Jacksonville, Fla., E. S. Bond, Jacksonville Automobile Dealers Association.

Kansas City, Mo., George A. Bond, Kansas City Motor Car Dealers Association.

La Salle, Ind., R. A. Alderman, Tri-City Used Car Exchange.

Louisville, Ky., George T. Holmes, Louisville Automobile Dealers Association.

Milwaukee, Wis., Bart J. Ruddle, Milwaukee Automobile Trades Association.

Philadelphia, Pa., C. C. Bulkeley, Philadelphia Automobile Trades Association.

Quincy, Ill., A. L. Stewart, Quincy Automobile Trades Association.

Quincy, Ill., R. Morrison, Quincy Used Car Exchange.

St. Louis, Mo., C. A. Vane, National Automobile Dealers Association.

St. Louis, Mo., Robert E. Lee, St. Louis Automobile Dealers Association.

Springfield, Mass., Harry W. Stacy, Springfield Automotive Dealers Association.

Springfield, Ohio, W. F. Townsley, Springfield Automobile Trades Association.

Syracuse, N. Y., Howard H. Smith, Syracuse Automobile Dealers Association.

Toledo, Ohio, T. J. Cooper, Toledo Automobile Trades Association.

Utica, N. Y., W. I. Love, Utica Motor Dealers Association.

Washington, D. C., C. H. Warrington, Washington Automotive Trades Association.

Wilkes-Barre, Pa., Norman Johnstone, Wilkes-Barre Automobile Dealers Association.

Dealers

B. B. Burns, Decatur, Ill.
Morris Adler, Quincy, Ill.
L. F. Wentzel, Aurora, Ill.
A. R. Becker, Cincinnati, Ohio.
Samuel Alpert, Kansas City, Mo.
J. M. Ginter, Wooster, Ohio.
Whitney Leary, Washington, D. C.
W. A. Sullivan, Jackson, Mich.
E. J. Quinn, Washington, D. C.
W. E. Dusenbury, Newark, N. J.
S. E. Comstock, Detroit, Mich.
W. A. Thomas, Louisville.

He Offered a New Idea in Used Car Advertising



S. E. COMSTOCK
Vice-President, Williams & Hastings, Detroit

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Parts Makers See Good Fall Trade and Bumper Year in 1923

Need for Closer Co-operation with Jobbers and Dealers in Advertising and Selling Stressed—Production of 2,400,000 Vehicles in 1925 Predicted

By C. G. SINSABAUGH

BUFFALO, Sept. 18.

A BRIGHT outlook for the immediate future of the automobile industry, with prosperity extending throughout 1923, was predicted at the sixth annual credit convention of the Motor & Accessory Manufacturers Association, held here Wednesday, Thursday and Friday of last week. Ostensibly a meeting of parts manufacturers as represented by the heads of their credit, traffic, export and advertising departments, yet it really was a general symposium of the entire automotive industry in which the dealer and the jobber although not directly represented, came in for a deal of attention in discussing general merchandising problems.

A good fall business, with enough cars manufactured and shipped to supply the demands of the dealers even if there is a transportation tangle this fall and a shortage of coal, was promised, while indications point to 1923 being the bumper year of the industry, not only in car production, but in general prosperity as well. Closed cars are going to be in even greater demand and the replacement business is going to be much greater than ever. Throughout all the sessions, however, the used car loomed as the one menace to the industry, a problem that will not down and which is worrying not only the automobile manufacturers but the parts people as well, who feel the pinch in the reconditioning of these second hand machines.

ALFRED REEVES, general manager of the National Automobile Chamber of Commerce, interpreted the record-breaking production of the past four months. Reeves said that the car makers took Hoover's tip of an approaching coal strike, made last March, and planned a big production this summer in order to prepare for the expected trouble which materialized. During the first eight months of this year, the industry has made 1,664,000 motor vehicles, which is practically equal to the full year's production of 1921. August produced 272,000, and while all of these have not been sold, they have been shipped and the dealers throughout the country will have on hand cars enough to meet the anticipated demand, even if transportation falls down and coal is hard to get this fall. Reeves looks for a substantial slowing up in production in September because of the activities of May, June, July and August, but he feels that this let-up will not be as great as ordinarily might be expected, because the farmer will come into the market this fall with money for cars, while the demand for closed cars is expected to be heavy.

Reeves predicts that the 1922 output will total 2,100,000, with 30 per cent closed cars. In 1923 he thinks production will go to 2,300,000, of which 1,750,000 will take the place of cars already in use. Two years from now he looks for 50 per cent of the production being closed cars.

The used car situation will be worse this fall, Reeves thinks, and he can see no cure for it at the present time. He expressed the belief that second hand trucks never should be taken in trade—they should be kept running until they wear out and are ready for junk.

Others than Reeves pointed out the dangerous menace of the used car. In a telegram to the convention R. H. Collins, president of the Peerless Motor Car Co., said he would have no hesitancy in predicting an even greater general prosperity in the future, "if it were not for the one fatal menace which threatens the industry to-day, namely, the growing tendency of automobile distributors and dealers to place an exorbitant value on cars accepted in trade, and to overestimate their ability to dispose of these cars at their fabulous prices. If this condition continues, the resultant suffering must be shared by the entire trade, including motor and accessory manufacturers and dealers, as well as automobile manufacturers and distributors."

The credit men, too, pointed out the danger from their viewpoint. In the general discussion the first day of the convention, attention was called to the vast numbers of used cars offered for sale on the open lots in the larger cities. It was said that in Cleveland alone 30,000 of these used cars were sold at open air sales this year.

The Financial Outlook

"The Financial Outlook and an Outside View of the Automobile Industry" was the subject alloted to Merryle S. Rukeyser, financial and business editor of the *New York Tribune*, who was the principal speaker at the opening session of the convention on Wednesday.

"Next year's automobile business ought to be satisfactory," said this financial critic. "In most respects the factors which can be foreseen must be placed on the asset side. The main exception is the fact that part of the 1922 buying, which resulted during several months in the breaking of all previous production records, was due to the accumulated demand which had become pent up during the depression of the latter part of 1920 and of 1921. On the side of favorable influences, most of them can be expressed in the phrase—better general financial and industrial conditions."

As if bearing Mr. Rukeyser out in his predictions of better business, there were the telegrams received from various automobile manufacturers which were sent to the convention. In addition to the one from Mr. Collins, quoted above, messages were received from J. J. Cole, E. S. Jordan, C. W. Nash, A. R. Erskine, Windsor T. White, T. R. Lippard, H. H. Hills and others.

Importance of the dealer in the sale of automotive products was stressed at the session of the advertising managers' conference. The subject came up in a round table discussion on "My Best Bet for Getting More Returns from the Advertising Dollar," led by S. E. Baldwin, advertising manager of the Willard Storage Battery Co.

Baldwin declared the only way to sell the consumer successfully is by first selling the dealer thoroughly. "He is the fellow we must think about and concentrate upon," Baldwin said. "Up to this time the industry has been coming uphill without any effort on its own part, and we haven't had to sell. The time is near when we shall have to sell as we never sold before, if we are going to move our products. We must get the dealer to work with us intelligently, or we can't make good. We must sell the

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dealer our advertising with the purpose and reason back of it."

Harry Tipper, business manager of *Automotive Industries*, asserted that undue importance had been attached to the direct acceptance of advertised products by the consumer. The average individual is not impressed by more than one one-hundredth of one per cent of the attempts made to reach him, he said. The great point is that attempts to advertise to the dealer have been much less effective than they should have been. This advertising, generally speaking, has not been sufficiently informative.

Tipper paid tribute to the men who sell the automotive products at retail. He declared that considering the comparatively few years since quantity demand for these products became apparent, the strength of the dealer organizations which have been built up was little short of remarkable. While there are thousands of changes every year, no branch of the industry has become stabilized and the dealers are doing exceedingly well in view of the limited amount of educational effort which has been profitable up to this time.

Tribute to Dealers

Alfred Reeves, general manager of the N. A. C. C., also paid tribute to the dealers of the industry.

He advised advertising managers to go out and live with their dealers as much as possible, for only in that way can they learn how to give them the greatest help in meeting their difficulties.

Harry Horning of the Waukesha Motor Co. expressed the view that automotive manufacturers are getting their message to dealers in an inefficient way. His chief complaint against automotive advertising is the number of meaningless adjectives and superlatives it includes.

Statistical information given by Harry Tipper, business manager of *Automotive Industries*, proved interesting.

"In 1925 the production of motor vehicles will probably reach approximately 2,400,000 and the registration will reach approximately 14,500,000," predicted Tipper. "The curve of production is considerably sharper than the curve of registration, and this arises from the changing relation between the new market and the replacement requirements."

C. A. Musselman, general manager of the Chilton Co., said that the turning point in the industry has been reached and that the industry no longer looks to newcomers to attain the greatest volume of sales. He said the average amount of business per service station has grown from 142 cars in 1919 to 177 cars per shop this year.

Jobbers Favored

That the credit men of the parts business look with favor on the jobber was attested to in the speech of T. E. Challenger, credit manager of the McCord Manufacturing Co., Detroit.

"When it comes to food products and some of the other necessities of life, I agree—and from the buyer's standpoint, mind you—that there should be practically an unbroken line from the producer to the consumer, or at least to his retailer," said Mr. Challenger. "From an economic standpoint alone this would be ideal and, I believe, more or less feasible. But with respect to countless thousands of other classes of manufactured products I very thoroughly and honestly believe that the so-called middleman or jobber, who some are pleased to call an evil, is on the contrary a real necessity to practically all the manufacturers in our line; and that, much by the same token, he is a necessity to the dealer and consumer.

"It is an obvious fact that there is a constantly increasing demand for replacement parts and accessories. The frequency of replacement is primarily dependent upon the nature of the part. Some, due to the use to which they are subjected, or inherent fragility, must be replaced several times a year, while others may last the lifetime of the vehicle, except in cases of unusual mishap.

Broader Markets

"This particular class of business now is greater in volume than the sale of new vehicles. Consequently, for many manufacturers, the replacement field presents a larger opportunity than does the equipment business of car manufacturers or engine builders.

Broadly speaking, I believe the parts maker for whose product there exists any considerable volume of business is losing a considerable and legitimate profit by confining his sales for service purposes exclusively to the manufacturers to whom his product is supplied for equipment purposes. Of the various channels of distribution to the retail trade, I think that only the manufacturer, with a huge volume of business, is justified either in establishing his own branches or selling direct to the retail trade. The exclusive distributor plan perhaps has some unique advantages, but usually results in restricted sale and consequently restricted service to the vehicle owner and has undesirable reactions in several directions. Therefore, for the vast majority of parts manufacturers for whose products there exists a reasonably large volume of business, I believe the well organized, established and financed automotive equipment jobber offers the most economical, most substantial and most profitable method of distribution.

"The automotive jobber now, figuratively speaking, acts as a purchasing agent for his retail customers as well as a warehouser and financier of the movement of merchandise from manufacturer to retailer. Consequently the jobber has many expenses in the conduct of the business and expenses that somebody must assume. Among them may be mentioned: stocking, inspection, investment, superintendence, distribution, untimely obsolescence and so on. So, as I see it, the manufacturer who sells the jobber eliminates most of the expenses and the dealer who buys from him secures service and many other obvious advantages not otherwise obtainable. So the name 'jobber' is in fact only a name for a number of necessary functions in the distribution of merchandise. He may be dispensed with in name, but the functions which the jobber performs must be performed by someone, and it seems to be pretty well agreed that the jobber who is properly organized, properly financed, and experienced in his line of business can perform these necessary functions more cheaply and efficiently than the individual manufacturer can for himself.

Active Merchandising

"Just now jobbers throughout the country are engaged in an active campaign toward better merchandising. The 'Ask 'em to Buy' and 'Ask 'em to Repair' campaigns are being conducted largely through the jobbers and are making better merchants of the supply dealers. This also applies to the garage and repair man—also to the ultimate benefit of the accessory manufacturer. These campaigns also have been of very great benefit to the jobbers' sales organizations. Another of the results is that of the dealers tying themselves more closely to the jobber, who is teaching them better and more productive merchandising methods. These and similar campaigns and other good stimulants mean more efficient jobber distribution, increased business and more substantial accounts for the manufacturer.

"I am not holding a brief for the jobber, but there are many good reasons why we should cultivate him and his trade and help promote his business, thereby promoting our own, and so few apparent or real reasons why we should not tie up with him, that it seems to me there is not much room for meritorious argument, except in a comparatively few cases.

"I believe we should make the jobber, in a way, a part of our organizations. He is performing a service for us that is of great importance and value in the developing of our businesses. He is, broadly speaking, performing this service better and more economically than we can and will do it even better if we give him proper and substantial cooperation."

Some Good News

A satisfactory fall business and a bumper year in 1923 were predicted at the credit convention of the Motor and Accessory Manufacturers Association, in Buffalo, last week.

Of particular significance was the definitely marked trend toward closer cooperation with the retailer and the jobber in the merchandising of the products of this branch of the industry.

The importance of the retailer in his intimate contact with the consumer was recognized and suggestions for practical assistance to them in advertising and distribution were discussed.

There is good news for jobbers and dealers in this story.

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Is There Any Salesmanship? Man Who Had to Buy a Car Asks

A Story Based on Actual Experience Which Makes One Wonder If Many Other Prospects Have the Difficulties This One Had

MANY, many times I have asked myself—
"Why am I *sold* stocks and bonds?"
—"why am I *sold* insurance of all kinds?"—whereas, I never am *sold* automobiles—*I have to BUY them!"*

To me, this seems one of the strangest facts in all business—that, apparently there is no automobile salesmanship. How an industry could have developed from nothing to everything in ten short years—with apparently little or no creative, persuasive work by the seller on the buyer—is perhaps one of the greatest mysteries of modern history. (Loud cries of: "Unfair to automobile dealers!")

But the mystery is somewhat explained by the keen desire inherent in most people for new cars. We want to buy them regardless of whether we are led into it by salesmanship.

THERE could be no finer proof of this peculiar fact than that hundreds of thousands of people pay 50c. or $1, and even put on evening clothes—just in order to go and view a lot of machines that are for sale at automobile shows. Imagine people paying real money to go and see an exhibit of loaves of bread—or an exhibit of shoes for sale—or even an exhibit of clothes for sale, despite the lure that clothes have for so many of us mortals!

It is only because of the thrill in the idea of a new automobile that people pay money to spend time at automobile shows. That same thrill explains why the industry as a whole seems to have forged ahead without the salesmanship that has been so vital to the sale of washing machines, vacuum cleaners and talking machines.

And yet, during the last half of 1921 and the first few months of 1922, but very few automobile companies had all the business they could handle. Nearly every factory actually *needed* business. Therefore, their dealers would have found some extra sales quite desirable.

That period, then, was *the* time for salesmanship. What kind of salesmanship was applied? If you were to ask the dealer, he would undoubtedly give you a fine story of the intensive, strategic effort that he put into action. I have heard some such stories, but they do not seem in any way notable as sales stories. The noteworthy fact is that these stories were so isolated that they seemed to be *worthy* of *comment!*

As to what kind of salesmanship automobile people used during those lean eight months, I believe I am a better witness than the dealer. For some time I have been "advertising" to my community that I needed a new car. Every mile that I drove my old 1918 six-cylinder—every mile that my wife drove her 1920 Ford Sedan—should have served as a sort of "want ad" to urge the automobile dealers in my direction. Most of these gentlemen are personally known to me. Perhaps that is why they avoided me—but I do not believe that it was any excessive degree of *courtesy*, but rather their *habit* of order-taking, which made me almost as unsought as a leper.

I do remember, along about October last, somebody asked me if I didn't want to buy a new Ford. Being human, I said "No!" If I had been followed up, I would probably have bought another one.

I also remember that somebody came in sometime last fall and asked me if I didn't want to buy a certain expensive make. I told him the price was too high, and that when the price came down I would be glad to talk to him. I think the price has come down since. I have not been further urged.

I went to the automobile show early last winter with my chin out—just waiting for a real sales-wallop. There was a half-hearted effort on the part of a few people to sell me a car then and there—but I don't believe that human beings buy such things "then and there." Follow-up is a vital part of this kind of salesmanship.

Anyway, some ten or twelve different dealers got my name and address. I looked longingly at one big four-passenger coupe and asked the price. The man on the floor won my affection by telling me that the price was too high and that he did not want to sell the job to me at the figure then in effect.

A few weeks later I saw the owner of the same dealership. He lives across the street from me. I told him to remind me when the price came down. Mind you, this man was the proprietor, and its active manager, and a man who had made a wonderful record as an automobile dealer.

About two months later a salesman came into my office.

"Do you want to buy one of our cars?", he asked, as he handed me his card. I recognized his name as one of the oldest and best-known automobile salesmen in the community, repre-

If This Isn't You—

HERE is a story that says some rather sharp things about the lack of salesmanship of some automobile dealers and salesmen. If it doesn't fit you, you don't need to read it, though we suspect you'll want to anyway after you take a slant at the first few lines.

The writer for many years has been a student of merchandising. What he says does not apply at all to some dealers and salesmen we know, but it hangs on others as neatly as their skin. Read it and see.

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senting the big car to which I have just referred.

"No," I answered—not too finally, but still in the same way that almost any business man would have answered the same question.

"*Somebody* told me that you wanted to buy our make."

I waited until he might remember that this tip had come from his boss—a personal friend of mine. But, apparently, this fact had been missed and, therefore, he was unable to use the human equation which could have been strongly utilized in this case.

He then started in to tell me that a certain other car wasn't any better than his, and he got so deep into a discussion of the comparative merit of the two that I finally had to beg off. I had never mentioned the competitive car — that was his own idea.

Incidentally, that was the last I heard of him or his boss.

Then another car came into my life for a few moments. At the automobile show I found one of my old friends acting as the salesman for this make. Later, he called me up. A few weeks after, when I went in to look at the car at the showroom, I found that he had left the employ of the dealer, but apparently had not left my name as a fairly good prospect.

As to two other cars—I gave them my name at the show, and even went into the showrooms about a month later. I never received any follow-up from those visits.

One day I met a friend of mine driving a fine car of a new make. I asked him how good it was. He said he liked it immensely. A while later, a boy who seemed to be a school lad, came in and told me that someone had told someone in his organization that I wanted to buy his brand of car. That was all there was to that.

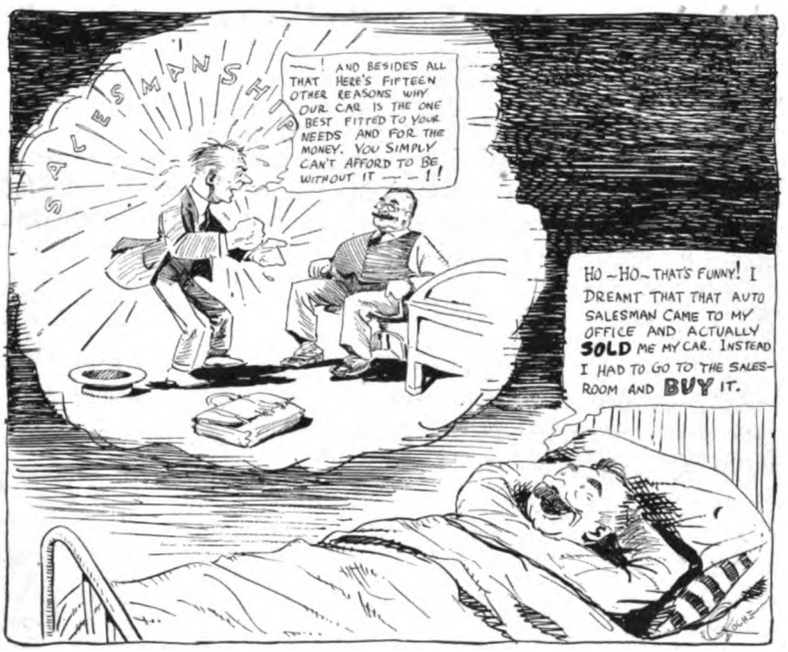
I met the representative of another fine car at a luncheon. He told me he had a used model for sale that had gone only 5000 miles and was quite new. He drove me down to the office in it the next morning. I made him an offer then and there. He said that someone else had a previous option on the car. He phoned me later to say that the other person had bought the car. That was the last I heard of his car—and that was months ago.

I went to see my friend who handles a medium-priced line. He is a great fellow—a very successful automobile man. My brother had one of this make and it did yeoman service over the mountains for five years straight—my cousin drives the same brand. One of my good friends is an officer of the company that manufactures it. I was more than kindly disposed. I said to the dealer:

"I want to look at a coupe—the same as Mr. So-and-so has, at such-and-such a number on such-and-such a street."

"What is it like?", he said.

"Why, it's a four-passenger coupe," I replied.



"Well, it *can't* be one of our cars," he answered.

At last I succeeded in convincing him that I *did* mean just that car—and then he remembered that it was a chassis he *had* sold, with a special body. If he had offered to sell me a chassis and to take me around the corner to have a well-known body builder duplicate this same four-passenger coupe, I am quite sure that I would have bought on the spot. However, he did not suggest it, and I did not want to force him.

And so it went.

One Sunday I was driving past an automobile salesroom, and saw a very nifty sedan job in the window. Later I arranged for a demonstration. So one morning I took my wife and little daughter down to the store. The car was on the floor inside. We were all very much pleased with its appearance, and as it was to be driven by my wife, the appearance counted a great deal.

But it was a very, very small car, and in some ways looked smaller than our old Ford Sedan. A gentleman appeared and introduced himself. He was a fine fellow, but, unfortunately, he was over 6 feet tall and weighed over 200 pounds. When he got in behind the wheel, it made the car look like a joke. A dapper, light-weight would have made the car look like a page from a fashion sheet.

Anyway, the big salesman crowded in behind the wheel. Then he got some men to push the car out of the door, until the front wheels were down over the curb, and the rear wheels were back on the sidewalk. My wife and daughter and myself piled in, and the giant put his foot on the starter. There was a great whirr, but no explosions. He kept this up—time after time—just crushing the life out of the poor little starter — until finally there was a slight sign of life from the motor. Then, by roaring the engine, he finally got started in low; so that at last we left our precarious position where we had been for over five minutes, with our nose protruding into the crowded street.

We started up the street on low and the giant then tried to crush the gears into second. She began to die—so he pulled it back into low. We grated along on low until he finally got up courage to stick it into second again. This continued for about six or eight blocks. Then we begged him to take us back to the store so that we might return to our Ford and recover our nerves.

Although we knew that this had simply been a faulty demonstration, and a violation of the first principles of salesmanship—yet, we were *off* that car.

The bond salesman makes $15 on $3,000 worth of a listed security. The automobile agent makes a gross of $750 on a $3,000 car. I am *sold* securities, but I have to *buy* cars.

And still stranger to me is the fact that no automobile salesman ever even *tried* to sell me a car without first trying to put me to the greatest possible inconvenience and expenditure of my time by making me take a ride.

In fact, no automobile salesman ever tried really to *sell* me, despite the fact that I was in the market, and despite the fact that the automobile salesman has the most interesting, the most alluring, the most fascinating thing of all things to talk about—namely, a fine, shiny, brand-new, spic-and-span, powerful automobile.

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Business Didn't Come In—So This Dealer Went Out After It

How a Small Town Accessory Merchant Canvassed Farmers and Tradesmen and Built Up His Sales and Profits

THIS is a story of an accessory dealer who does not believe in sitting down and waiting for business to come to him and who has definitely proved that there is an opportunity for live dealers in small towns. Claire Low is the dealer and Ypsilanti, Mich., is the town in which Low is located. Furthermore, Low is just 21 years old and Ypsilanti is a town of approximately 6000 inhabitants, 30 miles from Detroit.

Low bought an accessory business located in a large old store last October. Low found it was deep enough to partition off the front for the accessory store and use the rear for living quarters for himself and his young wife. Other improvements in arrangement, lighting, etc., were made.

Business was what many dealers would have considered fair, but Low found that he had a good deal of idle time on his hands early in the mornings and he determined to go visiting from time to time, leaving Mrs. Low to care for the store during his absence.

HE went down the road and stopped in at a farm house. The farmer was in the field, so Low went to the field. He talked to the farmer about crops and stock and other matters of interest, then he talked about automobiles, trucks, tractors, oils, and accessories. Did the farmer have a car? Yes, he had a large touring car and a truck and his son had a small car. Where did he buy his tires and accessories? He had been buying most of them from a mail-order house.

Low made further inquiries and learned that the farmer had been patronizing the mail-order houses almost exclusively for several years, that he was very well satisfied with the goods and the service received from them, that their prices were usually lower than those of local accessory dealers, and that he had seldom been able to obtain just what he wanted from the local dealers. The farmer took his visitor up to the house and showed him the mail-order catalog. Then he gave the dealer a surprise by bringing forth a well-kept record of his purchases over a period of years.

Low saw that the farmer was a business man and that there was but one method of approach to be used. Low had no intention to berate the mail-order house, to appeal to the man's community pride, or to try to "slip anything over on him." He told the man simply that he had opened an accessory business in the near-by town, that he had a complete stock, and that his prices would compare favorably with those of the mail-order house. He asked the farmer whether he would not prefer to trade right there at home where he could get some service and a prompt adjustment in case anything went wrong, and the farmer agreed that he would. He had not known, he said, that Low had the goods he wanted and that his prices were so reasonable. He didn't like to trade in Chicago because it took some time to get the goods after ordering them, and in case of adjustments there was usually a delay of several weeks. He would come in and look over Low's stock.

Other farmers were visited and solicited in the same manner, just one or two every day or so, and pretty soon the effects began to be felt. Low took orders enough to justify him in buying a carload of oil, intended chiefly for tractors, and he brought in other business.

A large farm had just been purchased by a Detroit man and a new superintendent had taken charge. Low called on the new superintendent and found that he too had been accustomed to buy from the mail-order houses. He had a tractor and Low sold him a barrel of oil. While looking around the place, Low had noticed that a touring car and a pick-up were also used on the farm and that some tires were needed for them. The superintendent brought out the catalogue of a well-known mail-order house and they compared prices. On one tire Low's price was 70 cents higher, on another it was 50 cents lower. The man had been very well pleased with the mail-order goods, which he had used for years, but once there had been an adjustment that had taken about four weeks to settle. He bought a complete

There's Money for the Live Accessory Dealer in a Small Town

THIS story tells how a small town accessory dealer built up a large, profitable business by going out into the surrounding farm districts and canvassing farmers and by making direct selling effort on the business men of his community. It contains an idea that might be successfully used by a large number of small town accessory dealers.

When business didn't come in this dealer went out after it. You will profit by reading this interesting story about how Claire Low, of Ypsilanti, Michigan, made two sales where only one existed before.

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set of tires for the pick-up and a spare for the touring car and promised to come in and look over Low's stock.

In the course of the conversation the superintendent divulged the fact that he was short of help, and Low promised to look out for someone for him. A short time later he learned of a family, living several miles distant, that were in search of employment and he made the arrangements which resulted in their moving over to the superintendent's. They had only a trunk to be moved, and this Low sent over in his truck.

That was several months ago. Since that time this superintendent has bought between $300 and $400 worth of goods from Low. There were no tools on the farm, for example, and the superintendent came to Low and bought one of every kind and size of wrench in the house. *Low is an accommodating fellow and he finds that he doesn't lose anything by being such.*

Detroit Trips Profitable

He makes three trips a week to Detroit for stock and on these trips he frequently makes purchases for others and brings back the goods without charge. On some of the purchases he gets a discount and this he of course retains, but otherwise he accepts no pay for his trouble. This brings him a great deal of trade and good will.

Low soon discovered that car and truck dealers and garagemen in his town did not carry parts, choosing rather to depend on the service stations in Detroit to supply their immediate needs as they arose. He found these men very glad to have him call at the service stations in the city and bring out such parts as they needed, splitting their commission 50-50 with him for his trouble. He now has about fifteen of these parts customers, for whom he purchases and brings out around $1,000 worth of parts each month.

This extra business is almost "pure velvet." To begin with Low had to go out and solicit the business, but now his parts customers come to him and give their orders each evening before his regular tri-weekly trip to Detroit. Many individuals also order parts through him in this way and on these orders he of course gets the full discount.

Low has also solicited and secured the accessories and parts business of the majority of the stores, banks, and industries of his town. In different ways he has secured the principal business of many residents of surrounding towns also.

Business in Small Towns

"There's worlds of business to be had in a small town, if one will only get out after it," he declares. "*When business doesn't come in of itself, I go out and look for it.* I never take an aggressive attitude, but merely state my case in a simple, straightforward way and ask them to give me a trial. Then when they do I take care to see that they are more than pleased. Service counts anywhere, but it counts most in a small town or country community. The people are more accommodating and less reserved, and they appreciate it if a merchant is the same.

"I never break my word or disappoint a customer at any cost, and I'll do practically anything to accommodate one of them in any way.

"When people find out that a local dealer has the goods, at a reasonable price, and that he treats them right, they are glad to buy from him rather than from the mail-order houses or from the distant city dealers. Frequently they don't even suspect that their dealer has what they need, though."

Handling the Farmers' Trade

Ypsilanti is an agricultural town, the chief business being derived from the surrounding farms. The present-day farmer, Low says, is very different from the popular conception of a "hay seed," but still has distinctive characteristics. He is a good business man, as a rule, and is well posted in every way. He doesn't like to be hurried or to have things forced upon him.

"We never ask a man what he wants when he comes into the store," Low says. "Frequently a farmer will come in and stand around and talk for 15 or 20 minutes without mentioning a purchase, but we don't push him, he has a purpose when he comes here and we let him take his own good time. He will get to it eventually and he'll appreciate his trip to the store far more than if he had seen me at the door with a 'what can I do for you?" Sometimes one will come in and ask prices on a lot of things and then walk out without a word of explanation. In such cases I never worry. I know that he has a purpose and that he will very likely come back later and buy the goods he priced.

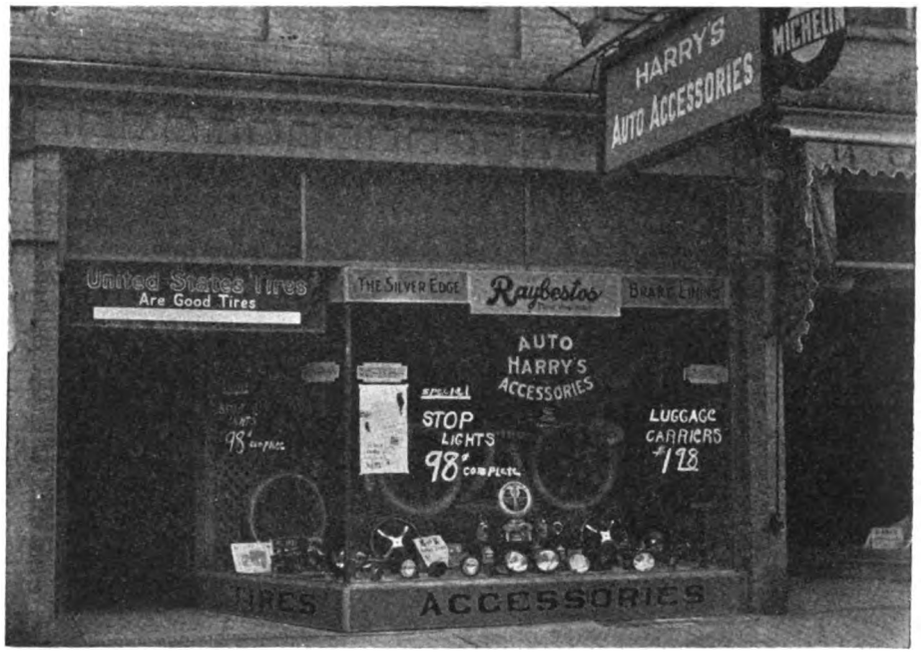
"The farmers are the best customers in the world. Once you have their business, it is mighty hard for anyone else to take it away from you. The farmer is what I would call just a 100 per cent man. Treat him right and let him know you have what he must have and he'll buy it from you. He won't buy fancy things, as a rule; you can't get him to doll up his car, but he is a good customer for replacements and necessities.

"*The greatest business opportunities in the country to-day are for accessories dealers in small towns.* The people don't want to buy from the mail-order houses, but right now *they are almost forced to do so because they have no real accessories dealer near.*"

Low declares that he has made money every single day since he entered business. His present sales are totaling around $120 a day, and as high as $380 on a Saturday. He expects to do a $40,000 business this year on his investment of approximately $5,000, which is his present inventory.

Low is a disciple of E. A. Bowman, the Detroit jobber, whose methods have been presented in former numbers of Motor World, and adheres strictly to the policy of carrying a wide variety but only small quantities of different items, thereby securing quick turnovers.

Claire Low's Store in Ypsilanti



Every day the display windows of Claire Low's accessory store in Ypsilanti carry "special" merchandising messages. But that is not all, Low doesn't wait for business to come in—he goes out and canvasses farmers and business men—and he gets it. Low believes there are wonderful opportunities for profitable business in small towns if accessory merchants do what he did in Ypsilanti

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Same Appeal That Sells Hats Sells Tires, Woman Dealer Finds

Men Just as Susceptible as Women to the Lure of Odd Price Figures and the "Bargain" Appeal—Sales Effort on Special Groups Used Effectively

DOWN in Fort Worth, Texas, the only woman tire dealer in the Southwest is doing business. She is Miss Rose Erlich, formerly designer and saleswoman for one of the biggest millinery houses in New York. She is owner, proprietor, manager and chief "salesman" of the Bargain Tire Co. She is selling automobile tires despite the cry of hard times and little money, and she is using the tactics employed to move millinery stocks to do it.

Miss Erlich says mere man is attracted by odd price figures just as much as the woman. She declares the grasping at bargains is inherent in humanity, and that the desire to buy at a bargain sways all classes at all times.

Miss Erlich is not conducting a "cut rate" tire establishment. She simply "sells them at a bargain." She finds that the same impulse which makes a woman buy a $50 piece of headwear when it is marked down to $49.98, impels the sterner sex to purchase a $22.50 automobile tire when it is marked down to $22.22. And if not to make him buy, at least to make him go several blocks out of the way to get the "bargain," when he needs it.



Hence the policy of the Bargain Tire Co. is to use odd figures in the prices. There are no $7.75 tires, but rather $7.77 tires. She has no $14.25 tires for sale, but plenty of them at $14.14. She has no $18 priced tires, but plenty at $17.77, and so on through the entire list.

But Miss Erlich does not depend entirely on her peculiar marking of prices to sell automobile tires. She "drums up" business in other ways. She figures that physicians are the best bets for selling tires because they use their cars more than any other class of men. Hence she has a complete list of the physicians in her town and surrounding territory and keeps after them with personal letters, telephone calls and personal solicitation. Various kinds of business houses employing quick delivery service are also good bets, she says, and she has a list of these with their buyers, and she goes after them in the same way. These people are constant buyers, she says, and keep the trade stabilized. The ordinary automobile owner is the balance of power in the tire game so far as Miss Erlich is concerned, and she goes after him through newspaper advertising, attractive show windows and satisfied buyers.

Guarantees Every Tire

Miss Erlich says she is making no special effort to get the business of women automobile owners right now, because a woman is harder to sell an automobile tire than a man. She declares the woman is an uninterested customer, because such a plain thing as an automobile tire does not attract her, and she simply is not interested in them. But with a man, the automobile tire is an essential part of the car, and he wants to know just what he is getting and how long it will run before he parts with his money for it.

Miss Erlich sells nothing but "firsts". She guarantees every tire or tube she sells and she makes that guarantee good. She says her competitors have not accused her of "cutting prices," because she has not. She merely marked a couple or three pennies from the "stereotyped" quotations and moved the goods.

Miss Erlich has been in the tire business for four years. Her friends, who raised their eyebrows when she decided to desert picture hats, lace, ribbons, flowers, etc., for an automobile tire business, have seen her tire concern grow from a small one person business with a few tires in sight to one of the biggest tire houses in Texas, a concern which not only sells to Fort Worth automobile dealers, but does an extensive mail order business.

"The tire business is just like any other business," Miss Erlich says. "All you have to do is get in the game with the goods, treat your trade right, keep everlastingly hammering on the game, be honest with yourself and your customer, and you will win out." She says she expects to have the biggest tire house in the Southwest in three more years.

Her business principles are:

Handle the best of goods. Mark them as low as possible. Guarantee the goods and make every statement or promise good.

Honesty all the way round. Cheerfully refund money to dissatisfied customers, because the customer is always right and must be pleased.

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PRICE

In Which a Retailer Makes Some Suggestions About Wholesaling

By NEAL G. ADAIR



BEN DOYNO, employer of jobber salesmen, and Cornelius J. Reilly, customer of jobber salesmen, were discussing jobber salesmen. Both being discussers of considerable expertness and more than reasonably familiar with the subject of discussion, it looked like a large afternoon, which it proved to be.

Reilly, who had managed to place anywhere from one to a dozen items of automotive equipment on most of the Sennett cars and Sayanna trucks he had scattered throughout the Callawassa territory, had been finding fault with the selling methods of the salesmen he bought the equipment from. Doyno, Callawassa's leading jobber, had been defending them. Neither side had scored a knockout, or even a knockdown, when Doyno suggested:

"But every man has some good points. I'll admit, for the moment, that these men—we'll talk about my own to make it interesting—might do some things better than they do, but they hit the bell some times, don't they? And if I should ask you what they do best, what would you say?"

"The thing they do best is to talk price," Reilly replied without a moment's hesitation, "and—you didn't ask me this, but I'll tell you just the same—it's the worst thing they could do."

"Price?" Doyno echoed. "Of course, they talk price. How can anybody sell anything these days, particularly supplies and accessories, without talking price?"

"We sell cars and trucks, too, without talking price until customers force us to," Reilly answered. "And, take it from a customer, you can sell equipment the same way. In fact, I'm beginning to think you can't sell it, or as much of it as you ought to, if you keep on talking price."

"What are you driving at?" Doyno demanded.

"Trying to get a high and mighty wholesaler to listen for a minute or two to some ideas of a modest retailer," Reilly retorted.

"I'm listening. Shoot!" the jobber said.

"All right, here goes," Reilly agreed.

"You can't make money unless your retailers do—the dealers, garagemen and accessory houses you sell to—can you, Ben?"

"Oh, I say," Doyno began in protest, "that's old stuff."

"Thought you were going to listen," Reilly reminded him.

The jobber motioned him to go on, and Reilly continued:

"And your retailers can't make money unless they sell goods?"

Doyno nodded.

"And they can't sell goods unless they have them to sell?"

The jobber nodded again, then burst out: "But what's that got to do with talking price?"

"Now we're getting somewhere," Reilly said. "Your salesmen — not so much as some others, but enough to keep me hot under the collar about half the time—and a lot of other salesmen are coming around day after day, hinting to me and my equipment buyer that we aren't getting the 'right price' on some items we are buying from somebody else. What's the result? We get suspicious of price quotations on these items—and others, too, because suspicion is contagious—and the first thing we know we are holding off buying this line and that line while we inquire around about possible lower prices. While we are holding off, perhaps we run out of stock on these items. We can't sell them when we don't have them, and when we don't sell them you can't make a wholesale profit by selling them to us.

"And there you are. If we do a fool thing like that, how much of it do you suppose is going on among retailers who don't have quite such big establishments and who don't think quite so seriously about lost profits on lost sales as we do?"

"But when our competitors talk price—," the jobber began.

"Let's not get to your competitors just yet," Reilly exclaimed. "I want to tell you a little more about your customers."

"I've been getting around the territory quite a bit," Reilly continued, "and among other things I've been talking with my dealers about accessory and tire profits, trying to show them that they need them and can get them if they'll only try. I've found the same situation out there—jobber salesmen talking price, price, price, until now, when one of them comes into a dealer's place and starts to talk about a line of equipment, the dealer almost automatically says, 'Yes, I know that line, but what's the price?' or something to that effect. And you can't blame him, because dozens of jobber salesmen have been teaching him to talk price, or at least they haven't been trying to teach him not to.

"What we ought to have, some day, is an attitude on the part of the dealer that would prompt him to say, 'Sure, that looks like a pretty good line but how do you sell it?'"

"Wonderful—and about as near as the millenium," Doyno observed drily.

"Just about—unless you and some of the other better jobbers will do something to bring it nearer," Reilly retorted.

"But how—I'm willing to be shown," said Doyno.

"I won't try to show you; you're a jobber and I'm just a retailer," Reilly replied, "but I'll tell you some thing about our business in cars and trucks that may contain a suggestion or two. We don't allow our salesmen to talk price. They go out and sell the car as a source of utility, convenience, comfort and pleasure to the prospect and his family and the truck as an agency of economy or business expansion. Price doesn't enter into the conversation unless the prospect forces it in, and then the salesman quickly switches the subject to the desirability of the car or truck. Some of our sales interviews get right up to the dotted line before price is mentioned.

"Why can't you do more than you do now along that line in wholesaling equipment? Why can't you talk about the desirability of your mechandise as something the retailer can make profits on and then show him how he can make them by telling him about methods of selling it?"

"We do—when we can get the chance," Doyno replied. "But if you were a jobber salesman and you called on a dealer and he had already been pestered by a dozen other salesmen since breakfast—"

"—I'd try to get him interested by talking about something the other man hadn't talked about," Reilly interrupted. "And if I were a smart jobber salesman I'd guess they *had* talked about price."

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Editorial Notes

Christmas Time—Selling Time

WIFE thinks it's a fine idea to give husband a smoker's set for the living room—for Christmas.

Husband is convinced he's brilliant when he gives wife an electric toaster for the dining room—for Christmas.

Does wife ever think of giving husband a set of windshield wings for the open car—for Christmas?

Does it ever occur to husband that wife would be delighted with a vanity case for the coupe—for Christmas?

Everybody, every year, gives the kind of gifts suggested in the first two paragraphs.

Not much of anybody gives accessories for the car.

Why not?

Because the merchants in the automotive trade, with occasional exceptions, have not even begun to do what merchants in other trades too numerous to mention have done to make the Christmas gift-buying season a profit-making season.

These are the things other merchants do:

They stock merchandise that can be sold as Christmas gifts.

They tie this merchandise up with the Christmas gift-giving spirit.

They sell the merchandise for Christmas gifts.

Someone has said that the average motorist sleeps in his home and lives in his car. At any rate the average motorist is proud of his car. Sometimes this average motorist is a man, sometimes a woman. Sometimes the car is of the open type, sometimes of the closed type. And in the long list of merchandise made, distributed and sold by manufacturers, jobbers and retailers of automotive equipment are a great many articles that will make an owner prouder of his car, in addition to making use of the car more convenient or enjoyable.

Why can't these articles be sold as Christmas gifts, like other articles that people are proud to own or that give them convenience or enjoyment?

They CAN be sold as Christmas gifts.

Then why aren't they sold?

The principal reason is that the automotive trade has not tried in any consistent, persistent way to sell automotive equipment for Christmas gifts. Like other trades it is going to begin sometime. Why not this year?

And NOW is the time to begin.

The manufacturer who hopes to build business this year on the Christmas gift idea must begin now to prepare his stock and his appeal to jobbers, dealers and the buying public.

The jobber who expects to profit by the Christmas season must begin now to prepare his stock and to cultivate the Christmas merchandising idea among the retail trade.

The dealer who would make the before-Christmas "dead" season a "live" season must begin now to talk with jobber salesmen about the lines he can sell, to plan for his stock and to lay the groundwork for an aggressive Christmas gift buying appeal to the public, based on advertising, display and personal selling.

Any retailer, whether dealer or garageman, who thinks accessories, tires and the various products that are listed as automotive equipment cannot be successfully sold for Christmas gifts might remind himself of the following facts:

There are ten million car owners and as a class they have more money—for Christmas giving, for instance—than the other 90 million people in the country.

In the two months before Christmas—the gift-buying season—these ten million people, or a good many of them, at least, will make one or more visits to the establishment of a dealer or garageman.

These ten million motorists and their families are not different from other people; they have to rack their brains for gift ideas for fathers, mothers, wives, husbands, sisters, brothers, cousins, friends and all the other folks on almost everybody's gift list.

Almost any article of automotive equipment not only is an attractive gift, but a useful one.

Automotive equipment gifts are within reach of any pocketbook—the cost of the articles runs from a few cents up to quite a few dollars.

Many articles of automotive equipment contain silver, nickel, glass, leather or other materials which are always popular in the stocking or on the tree.

Automotive equipment business is almost exclusively cash business.

Why not go after it?

Motor World suggests that its readers start as soon as they read this editorial to plan for profits on automotive equipment during the Christmas season.

The American people are going to spend many millions of dollars for Christmas gifts this year. Must it all go for slippers for father and silk underthings for mother and a book for brother and silk stockings for sister, and so on down the line. Shall the newspapers be filled with all kinds of gift suggestions **except gift suggestions for the automobile owner?** Shall the spending throngs that fill the streets of big towns and small in the holiday shopping season see windows gay with everything **but automotive equipment?**

The merchants in this industry CAN sell attractive, useful Christmas gifts. They can profit by the sales.

Will they sell and will they profit?

The week before Christmas it will be too late to answer "Yes."

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Facts Determine Garageman's Liability in Theft

Exercise of Ordinary Care a Question That Must Be Decided by Jury in Many Cases

EDITOR Motor World: We had a car stolen from our garage which was left for storage. We have not been able to find any trace of it and would like to know through your legal department to what extent we are liable. Our garage is posted (not responsible in case of fire or theft). Also party neglected to lock his car as usual and did not accept storage tag, which he had been in the custom of doing. Our storage tags are also printed on the face of tag (not responsible in case of fire or theft).

If you are not prepared or do not wish to pass your opinion on this question, please advise as to whom would be the best authority.—R. E. M., W. Palm Beach, Fla.

Answer.—A case like yours always depends on the facts, which must be judged by a jury. Did you use ordinary care to protect the property left in your charge? Did you use the same degree of care to prevent the car from being stolen that an ordinarily prudent man would use to keep his own property under the circumstances? If you were negligent, you will be held responsible. If you used ordinary care to protect the property, you will not be held responsible.

The fact that notices were posted and your tags contained a non-liability clause will have no bearing on the case. If the garage was locked up for the night and someone broke in and entered it and stole the car—for example—you would not be liable.

The general rule of law in most of the States seems to be that, while a garageman may contract to enlarge his liability, he cannot by contract limit his liability. As the court said in the case of Pilson vs. Tip Top Auto Co., "It is the better rule that a bailee for hire cannot by contract so limit his responsibility to the bailor as not to be liable for his own negligence or the negligence of his servants or agents. 67 Oregon pg. 528." This case has been followed in Pennsylvania, Indiana and a number of other States, but I find no case on this point in your State.

Application of Rent Law

Editor Motor World:

Can you please give us some information on the following trouble we are having with our landlord over our garage because we won't pay an increased rent? We have a very small garage with living quarters in the back and the landlord wants us to get out entirely. Now under the New York rent laws we understand we don't have to get out if we live there, do we? Just what do the rent laws provide anyway?—Binghamton, N. Y.

Answer: You do not tell just what the premises rented by you consist of but I think I am safe in assuming you do not live in the garage but in a room or rooms more or less closely attached to the garage. If there is however no separate entrance to the living quarters except through the garage the courts will not allow the landlord to dispossess you but if the rooms can be separately used and entered the court will probably have to dispossess you from the garage if you cannot reach some agreement with your landlord.

Right to Repossess Not Lost

That a seller of a motor car who upon default in installment payments under a bailment lease, neglects to replevin the car until long after the default in the making of the payments, does not waive his rights to bring a replevin action, when it appears that he made repeated demands for his money and threatened to institute the replevin action if the buyer did not make the agreed payments, was the decision of the Pennsylvania court in the case of Federal Sales Co. vs. Kiefer, recently decided in that State and reported in 116 Atlantic Reporter at page 545.

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

Cannot Charge for Street Storage

The New York City Municipal Court in a recent case denied a recovery to a steamship company in an action brought by it for storage charges where it appeared that the property had been stored in a public street holding that it was only entitled to storage charges where the goods were actually stored on its own property.

This decision may affect certain garagemen in summer resorts who in the busy season habitually store cars in front of their garages without specifically calling the attention of the owners to the fact that the charges are really for watching and guarding such cars and not for *storage*. New England S. S. Co. vs. Merrill Co., 118 Misc. Rep. N. Y., pg. 715.

Local Attorney's Help Needed

Editor Motor World: We sold a car to ———, a Chinaman, on a regular lease note. Car was registered with Motor Vehicle Department and on registration certificate we appeared as legal owners. This Chinaman was arrested for having drugs in his possession while visiting his wife at hospital. The doctor who treated his wife attached the car for a bill of $170 and same was sold at sheriff's sale—the medico bidding it in and getting it for the amount of his bill. We were never notified until after the sale when the sheriff called us up. Have we any recourse?—E. M. Co., Parlier, Cal.

Answer: Yours seems to be a very much mixed up case. I do not understand how the car could have been sold without any notice to you. I suggest you retain local lawyers to make a thorough investigation at once. Perhaps they can set aside the sale, get the car back or procure a settlement.

What Is a "Nuisance"?

Whether or not the use and enjoyment of one's premises is reasonable or prejudicial to the rights of others as a matter of law or of fact is dependent upon the evidence developed in each case bearing upon the locality, the particular surroundings, the status of the person complaining and the possible danger or inconvenience which may result to that party. Slattery vs. Herbstone, 233 N. Y., pg. 420.

Stop the Engine and Put on Brake

That the duty of a driver of a motor vehicle when he leaves it unattended in the street is to be careful to have it so secured that it will not start up unless it is started up by the intervention of some outside person or agency which is not reasonably to be expected, was the decision in the recent New York case of Maloney vs. Paplan, 233 N. Y., pg. 426.

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Anderson Light Six Has Aluminum Bodies

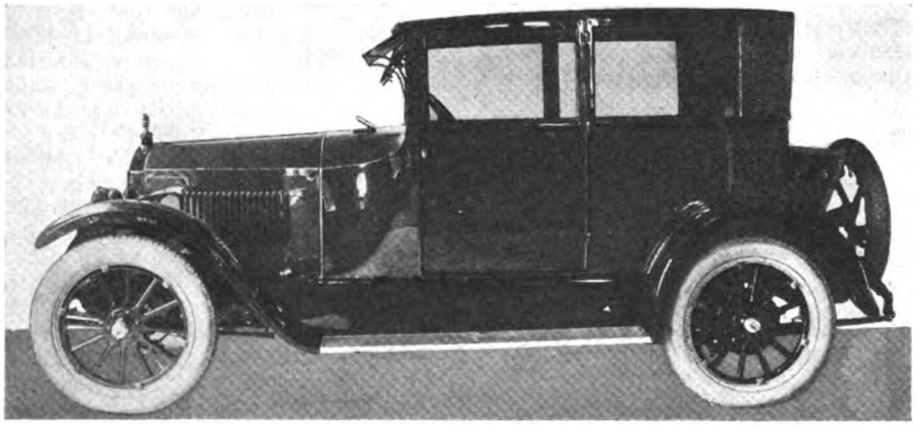
Phaeton and Coach Bodies Being Fitted Now—Other Bodies Later —Frame Unusually Well Cross Braced

THE Anderson Motor Co., Rock Hill, S. C., is now in production on the light six Model 41 which is a medium sized car of low hung appearance and of the sport type with plenty of power and speed. At the present time it is fitted with two styles of bodies, five passenger phaeton, and four passenger coach. The phaeton sells for $1,195 and the coach for $1,450.

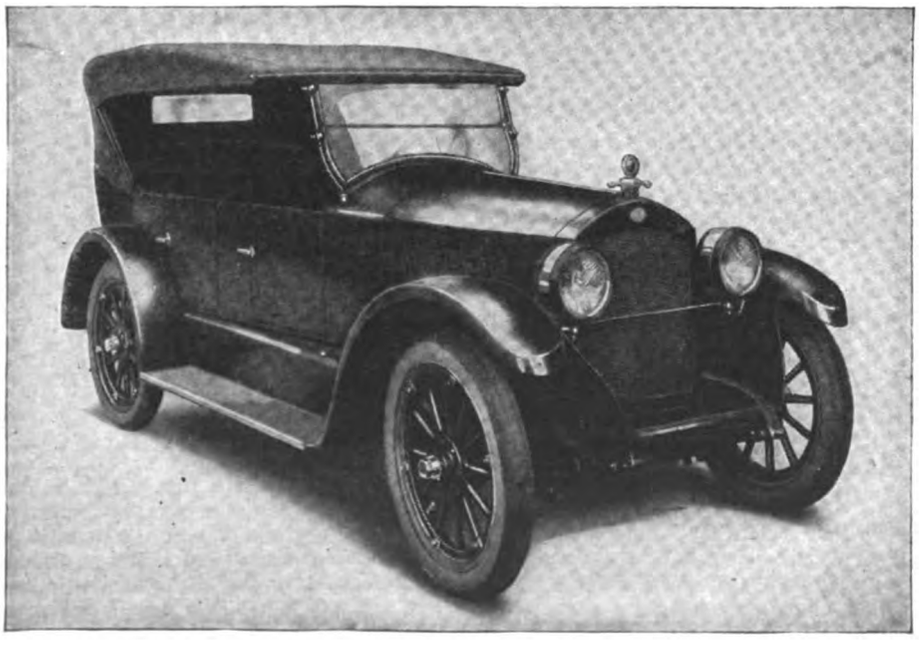
The Anderson company, being an old coach builder, is concentrating its attention on the body work. The bodies are bench made throughout. That is, the body is framed and the sheet aluminum panels which are one of the special features, are put on by hand. The lumber for the bodies is cut locally and consists of practically all white ash with small amounts of oak, maple and sycamore. Poplar is used for the dash front and minor places not subjected to heavy strain. The lumber is seasoned for six months in the open and then kiln dried and then allowed to absorb moisture in the open to atmospheric humidity.

Each aluminum panel is worked out by hand and the joints are welded with oxy-acetylene torches and then filed smooth. The entire body is then surfaced by rubbing with a steel brush to give a suitable footing for the paint. The closed bodies are built up and metaled in a separate department from the open bodies. All body parts, with the exception of fenders, splashers, and other sheet metal parts, are finished with a number of coats of rough stuff, paint and varnish. The sheet metal parts are dipped in enamel and baked in an electrical japanning oven.

The cushions, tops, rugs, curtains, etc., are made in the Anderson trimming department. The upholstery is of genuine leather, cut to pattern, and sewed in pleats to the cotton duck backing. The pleats or pipes are stuffed with cotton. The cushions are built on wire coiled springs. The insides of doors, the front of the seat back and the sides of the cowl are trimmed in imitation to match the leather.



Anderson light six coach, $1450



Anderson light six phaeton, $1195

The Anderson Phaeton

The five-passenger phaeton has unbroken lines in the entire length. It has a snappy block cornered effect and the floor level is 25 in. above the ground. The curtain compartment is in back of the front seat and the pockets are in the doors. The windshield is of the full ventilating type and a cowl ventilator is provided with dash adjustment. The top is of one man type tailored with dreadnaught material. The curtain light in the rear is 6 x 24 in. and is made waterproof. The side curtains have large Pyralin lights placed one above the other to match the doors and side panels of the body. The upper left light at the front can be unbuttoned for convenience in driving and for ventilation. The curtains over the doors are provided with nickel plated rods so that they open with the doors. The interior furnishings include floorboards covered with linoleum and bound with aluminum moulding. The body is finished in a bright blue.

The Light Six Coach

The coach also has aluminum body which is furnished in medium light blue between the belt line and the fenders and in black above the belt line. The fenders and running gear are also black. The upholstery is deep blue. The doors are very large so that entrance can be made to both the front and rear seats to them. There are only two doors. A dome light is provided in the roof and the cowl ventilator has a cowl adjustment. The upper windshield glass is movable and a sunshade is mounted directly in front of the body. A trunk is fitted on the rear of the body.

The Light Six Chassis

The frame is of new design throughout. It has three cross members, two cross tubes and a large plate in the rear. Gussets to the cross members give additional basing. All pressed steel parts are of carbon steel heat treated. The side rails are pressed from ⅛ in. stock

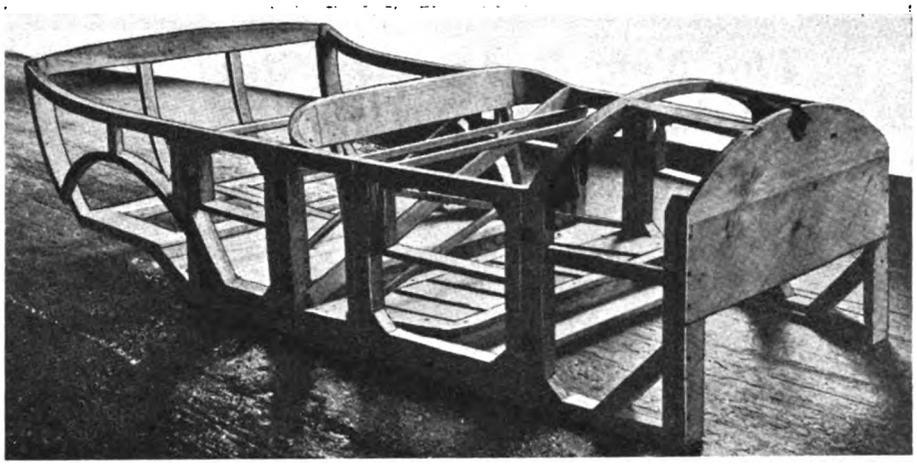
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with 2 in. flanges and are 6⅞ in. deep in the middle tapering at either end. The cross tubes are made of 2 in. seamless steel tubing with ⅛ in. walls. The tubes are pressed on and riveted to bosses on the spring brackets at both front and rear ends of the frame. The brackets are in turn riveted to the side rails. Thus when the frame weaves it must either bend the side rails or twist the cross tubes.

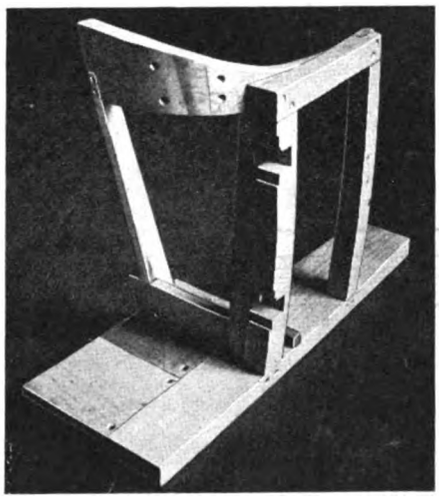
The rear frame plate supports the tire carrier and supports and protects the gasoline tank. This plate is so flanged that it is riveted to both the upper and lower flanges of the side rails. The other cross members consist of the drop forge member which supports the front end of the engine, a 2-in. pressed steel angle member and a 4½-in. pressed steel panel member with 2 in. flange. These are reinforced by gussets at the ends. It is to the chanel member that the brake cross shaft and equalizer are attached.

The springs are 37 x 2 in. front and 58 x 2 in. in the rear. They are of the semi-elliptic type with tapered leaves. Both front and rear springs slant toward the rear to bring the line of road shock nearly perpendicular to the springs. In the front set this slant also is used to give the castor action to the front wheel. The master leaf of each spring is of chrome-nickel steel and the other leaves are of carbon steel with the ends rolled and tapered. The spring eyes are bushed with bronze and lubricated by the Alemite system through hollow shackle bolts. Gabriel snubbers are fitted as standard equipment.

The engine is a Continental 6-Y 3⅛ by 4¼ with a piston displacement of 195.6 cu. in., and an S. A. E. horsepower rating of 23.44. The engine has four main bearings and the camshaft is operated by chain drive at the front end. The carbureter is a Zenith. The clutch is a Borg & Beck 10 in. dry plate and the gearset is a Durston. The speedometer drive is from the gearset and a gearshift lock is provided. The axles are Salisbury, both front and rear. The rear axle is a newly designed light type semi-floating. The pinion is straddle mounted on ball bearings with Timken bearings in the wheels and differential. The propeller shaft is of the flexible disk type.



The Anderson wood body frame ready for fitting the aluminum plates



A section of the wood frame for the body which is glued and screwed

The service brakes are of the contracting type and operate on 12 in. drums on the rear wheels. They are equalized. The emergency brakes are also of the contracting type but operate on an 8 in. drum at the rear of the gearset.

The electrical equipment, starting, lighting and ignition, is Westinghouse two unit single wire system. The 6 volt storage battery is supported by a cradle mounted on the chassis frame. An Anderson patented foot dimmer arrangement for headlights is used on the Light Six. The switch is mounted on the left toe board bracket and is operated by pressing the button with the toe of the left foot.

The headlights are of the drum type with S. A. E. standard universal mounting and tie rod. Other standard parts used in the construction are a Gemmer stearing gear, Fedders radiator and Briggs & Stratton ignition and lighting switch.

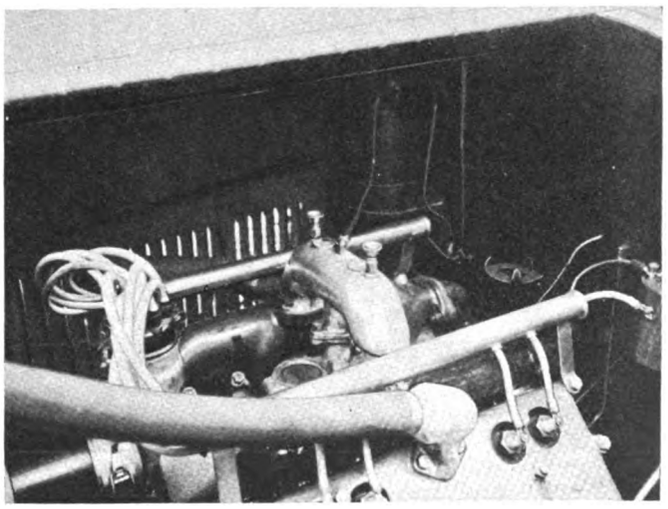
The gasoline tank has a capacity of 17½ gallons, the wheels are of artillery type with 32 x 4 cord tires, the wheelbase is 114 in. and the road clearance 10 in. The five-passenger phaeton weighs 2450 lb. and the coach 2650. The equipment includes Stewart speedometer, pressure gage, dash light with independent switch, Moto-Meter, Klaxon horn, windshield cleaner and the usual set of tools, tire repair outfit, pump and jack.



A rear view of the Anderson light six coach showing the trunk, trunk rack and tire carrier. The steel plate which protects the gasoline tank and strengthens the frame can be seen

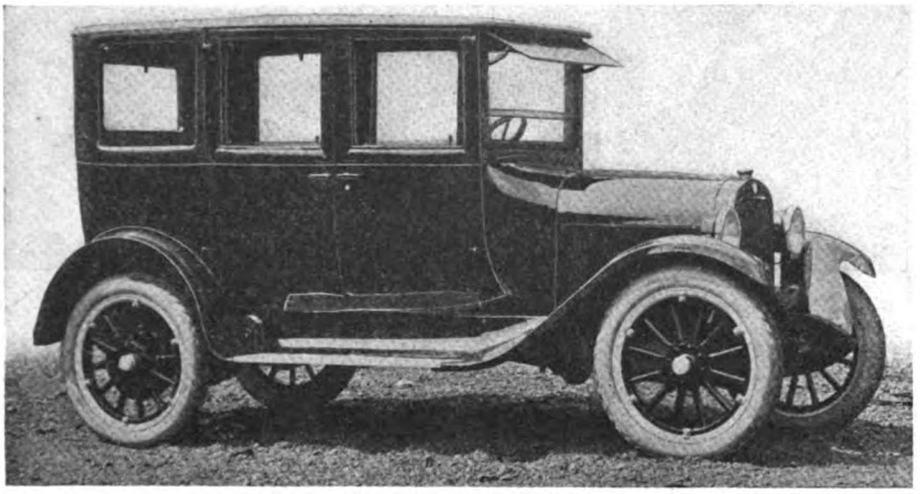
The New Cole 890 Envelope Manifold

The intake is entirely surrounded by the exhaust manifold from the carbureter to the cylinder blocks. This results in a greater amount of heat and a more even heating of the intake manifold to prevent condensation of the fuel between the time it leaves the carbureter and the time it reaches the combustion chamber

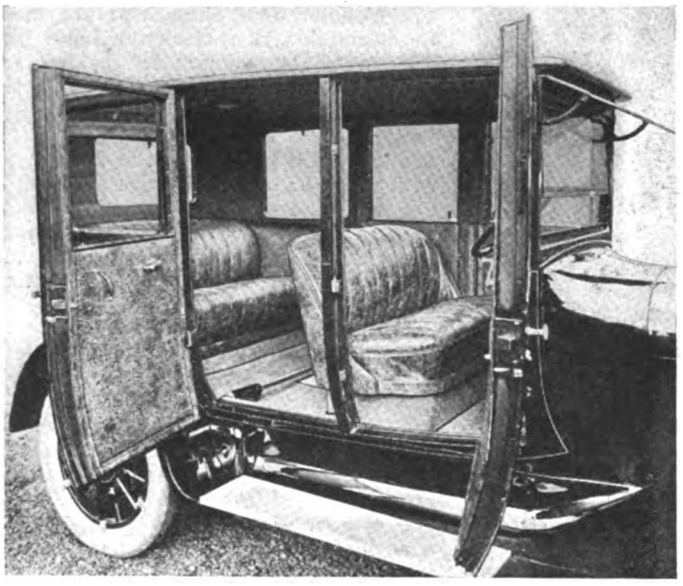


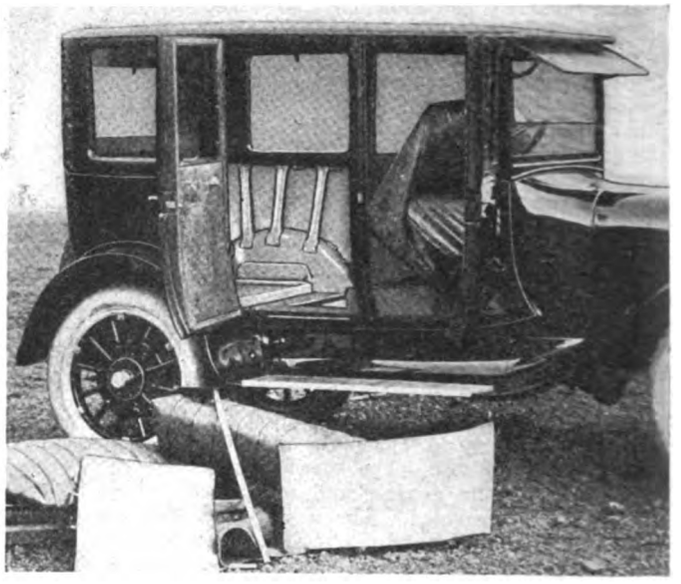
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The New Dodge All-Steel Business Sedan, $1195

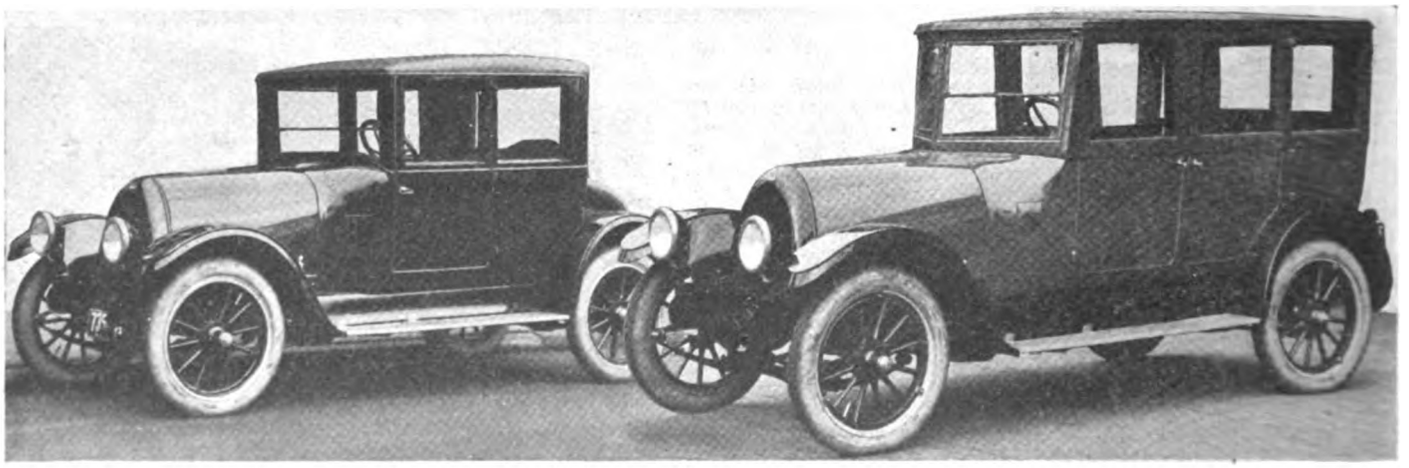


FOLLOWING only a couple of months after the debut of the Dodge business coupe comes the Dodge business sedan, announcement of which was made in the last issue of Motor World. The exterior lines remain almost unchanged, but the demountable rear seat and tilting front seat adapt the vehicle to business purposes equally as well as pleasure purposes. The rear door and the spacious rear compartment allow the carrying of trunks or good sized sample cases.





The New Franklin Victoria Coupe and the Sedan



The sedan is very little changed from the previous sedan but the Victoria coupe has a different seating arrangement and replaces the former coupe. Both are mounted on the new Series 10-A chassis which was described in the Aug. 30 issue of Motor World

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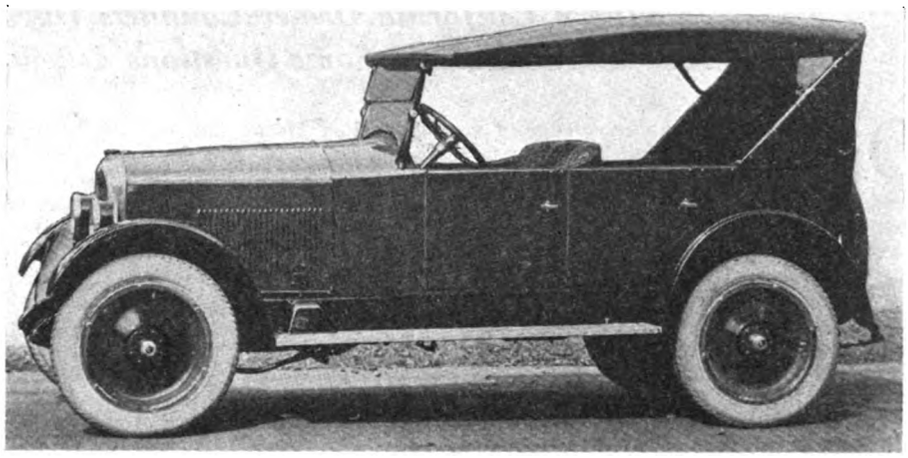
The New Jewett, Columbia and Commerce Models

Jewett Brings Out a Special Phaeton at $1095

A NEW special Jewett phaeton at $1,095 has been added to the line of the Paige Motor Car Co. It is mounted on the standard Jewett chassis. The body and hood are finished in deep moleskin gray. The color, besides being dust proof in character, brings out the straight lines of the body. A nickeled radiator shell and Tuarc disk wheels are fitted, the wheels being finished in the gray of the body with a touch of scarlet at the hubs, and nickeled rims. Outside valve stems furnish wood wheel convenience.

Harmonizing with the gray of the body, the upholstering is a gray green Spanish leather, laid over deep sprung cushions. Standard black running gear and fenders are fitted.

This model will be in addition to the standard phaeton which sells for $995, or $100 less. It is intended to fill in the line for purchasers who desire more of a sport model. The same chassis arrangements and design are used in this as in the standard chassis, with the exception of added equipment already mentioned. The wide doors are a feature of the body.

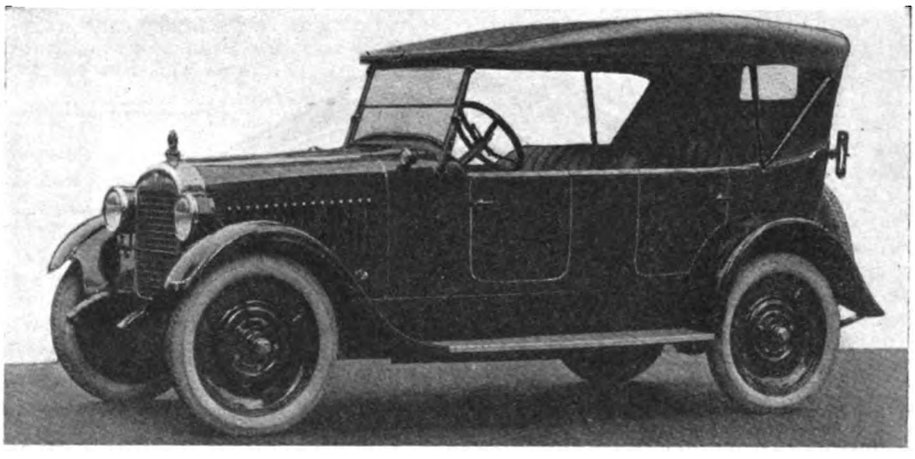


A new Jewett special phaeton, $1095

A New Columbia Special Six Phaeton, $1095

A NEW model known as the special six phaeton to retail at $1,095, f.o.b. Detroit, has been added to the Columbia line. This body is mounted on the standard 115 in. wheelbase chassis incorporating the Continental 6-Y engine, Timken axle, Durston transmission gearset with Timken bearings, Stromberg carbureter, Borg & Beck clutch, Gemmer steering gear, Spicer universal joints and Auto-lite electrical equipment.

Among the features of the special six are nickel-plated Harrison radiator with thermostatically controlled shutters, cowl ventilator, barrel headlamp as well as cowl lamps for parking, heavyweight crown fenders and cord tires. The body is of generous proportions, the rear seat being 46 in. wide, and the upholstery is of real leather over deep coiled springs.

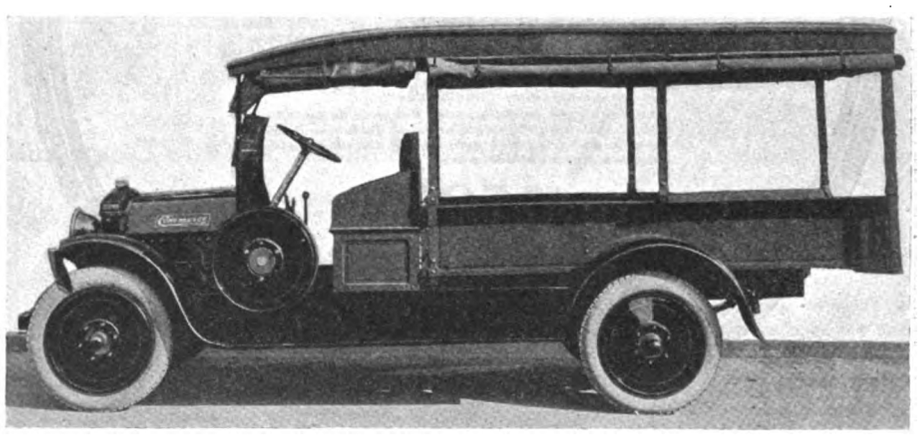


Columbia Special Six Phaeton, $1095

Commerce Brings Out a Special Delivery Truck

THE Commerce Motor Car Co. has just put on the market its new Model 9 special delivery speed truck. This truck has a 1500 to 2500 lb. capacity and sells in chassis form for $1,150, f.o.b. Detroit. With canopy top express body, it sells for $1,330.

The new truck incorporates the 3¾ by 5 in. four-cylinder Continental truck engine with three-bearing crankshaft. This is a unit power-plant incorporating a cone type of clutch 14 in. in diameter.



New Commerce special delivery speed truck fitted with canopy top express body, $1330 *with body*

The truck is driven through a tubular propeller shaft with a spiral bevel, three-quarter floating type of rear axle. The rear axle ratio is 5.87 to 1. The brakes are 16 in. in diameter, both sets being mounted on the rear wheels. The wheels are Michelin steel disk with roller bearings, and the truck is equipped with 32 by 4½ in. non-skid pneumatic cord truck type tires, front and rear.

A single standard wheelbase is used, this being 127 in., and a choice of four types of body is provided. These are open express, canopy top express body with curtains, stake body and panel body. The open express body is $1,250, the platform stake body, $1,300, and the panel body, $1,430.

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Helping the Salesman to Better Know His Line

Southern California Dealer Conducts Questionnaire School —Some Questions Asked

ON the extent of the knowledge of a salesman concerning the automobile or truck he sells largely depends the measure of his success. Frequently his ignorance on certain points as revealed when questions are asked by prospects results in impending sales falling flat.

That salesmen may be properly educated many dealer establishments have organized classes and have made it compulsory for the members of their sales forces to "attend school regularly."

The Reo Motor Car Co. of Southern California, Los Angeles, recently inaugurated a system of educating their salesmen that is particularly thorough and effective. B. C. Foy, manager of the company, found upon investigation that too often one of his salesmen lacked in several particulars of essential knowledge surrounding a Reo car or truck, as well as not being thoroughly conversant with the questions most frequently asked by automobile prospects.

In an endeavor to thoroughly Reo-educate the salesmen, a "questionnaire school" has been inaugurated. At the sales meeting every morning, five questions are handed out by Foy to each salesman. These questions are answered at that time and turned in before the end of the meeting. Each week these questions are corrected and each man graded, which grades are posted on the bulletin board.

Some questions concerning Reo passenger cars that are typical of those propounded at the Reo school are as follows:

"How many leaves in front springs?

"How many leaves in rear springs?

"Factory list price of sedan?

"What type of springs are used for cushions and backs?

"Name ten prominent people in Los Angeles who own Reo cars?"

Particularly interesting to dealers in trucks will be the following list of questions picked at random among those propounded at several meetings of the Reo school in Los Angeles:

What are inside dimensions of armored speed wagon bodies?

Factory list price of express bodies?

What territory is covered by Riverside Motor Sales?

What laundries use Reo Speed Wagons in Southern California?

Gasoline mileage?

Oil mileage?

Shipping weight of enclosed cab and short canopy?

What grocers in Southern California use Reo Speed Wagons?

Width of aisle in Carry-All job?

Height from floor to top of cab of express body with cab?

What banks and express companies are using Reo Speed Wagons?

What is percentage weight of wheels?

Cubic capacity of express body with canopy top?

In what cities throughout country are Reo branches located?

Name and initials of factory officials?

Clearance under front and rear axles?

Correct firm names of our dealers in Southern California?

Capacity of gasoline, oil and water tank?

Factory list price of Reo taxi cab complete and of taxi cab chassis?

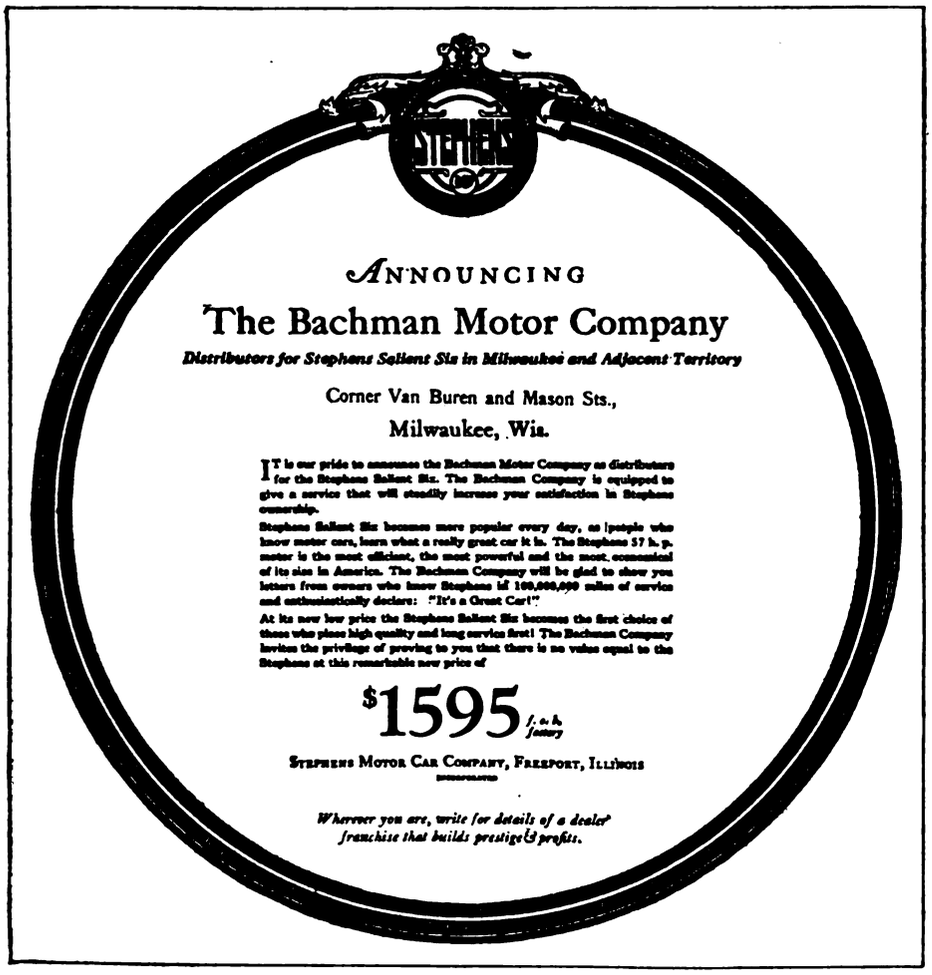
Bore and stroke of motor of taxi cab?

What is price of 15-20 passenger school bus job?

What is wheelbase of this job, etc.?

"We have found that this system is a most satisfactory one for educating our salesmen as it is certain to bring up helpful discussions and create lively competition for the high grades, all of which leads to more constructive interest in the utomobile sold," says Mr. Foy.

A Striking Ad



In searching for examples of good advertising, Milwaukee dealers have been struck by the compelling character of the display advertisements announcing the appointment of the Bachman Motor Co. of Milwaukee as distributer of the Stephens Salient Six. The advertisement is illustrated herewith. Although the "copy" is the product of the Stephens factory advertising department, it is far different than the general run of "stereotyped" layouts so often published by manufacturers in behalf of dealers and distributers. The fact that the Bachman company's name appears numerous times in the text carries the reader away from the idea that it is "just an ad," like so many published under similar circumstances are. The advertisement has aroused a great deal of favorable comment and many compliments have come to the Bachman company upon the strength of it

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When a Competitor Started Price Slashing

This Dealer Worked Up Volume Sales on Necessities by Original Selling Schemes

WHAT is a dealer in automobile accessories to do to keep up legitimate profits when his chief competitors decide to slash prices in order to raise money to pay past due bills or to increase trade in seasonal dull periods?

Should he follow in the groove made by his competitors and cut prices on popular articles like spark plugs, carbon removers, wrenches, etc.?

Arthur Mechanic, who conducts a tire and accessory business at Prospect Avenue and East 79 Street, says that the dealer who merely trails along in the groove set by his competitors and slashes prices in order to get under them, will not last in business.

Once you begin cutting prices, they cannot be controlled. They will go down and down and bring along disaster and trouble.

The thing to do when business conditions change for the worse periodically is to "use your noodle," says Mechanic. Do something out of the ordinary. Put on sales methods that will take your business out of competition with others in the same line.

Mechanic has been continually skirmishing around for special stunts to put his goods over. The system made him prosper.

A year ago he was plainly worried about business prospects. He was apprehensive about keeping up his volume of sales. He "used his noodle," and sales have grown continuously since early 1921.

Here is how he made his business grow when many other establishments in the retail accessory business showed losses in volume:

In the midst of price cutting campaigns carried on by his competitors, Mechanic selected several accessories that he considered absolute necessities to the owner and centered his advertising and sales work in putting them before the public. On account of their utilitarian value he decided to try selling them without cutting prices. He also decided not to reduce the price of a single accessory in his store.

His theory was that if he could work up a volume of sales on the special articles of necessity and thereby get customers into his store, he could sell the other accessories at the list price notwithstanding cut prices in other stores.

His theory worked. His books show a substantial increase in sales.

One accessory that Mechanic has been particularly successful with is an automobile lock. If he hadn't done something out of the ordinary on behalf of the lock he admits that he probably would not have sold it.

To-day he is selling Simplex locks to practically every dealer in Cleveland.

The automobile insurance companies also are selling Simplex locks for Mechanic.

When he took on the sale of the lock, Mechanic worked on the theory that the insurance companies would do anything reasonable to cut down their losses. He also used the rule of the insurance companies, which makes the auto owner carry 25 per cent of the value of the car as a risk, in his advertising campaign among the owners.

Mechanic first ascertained the theft insurance rates charged by the insurance companies on cars with and without locks. Here is what he found and then gave wide circulation to:

Buick: Without lock $4.20 per $100 and $3.57 per $100 with lock;

Hup: $1.50 per $100 without and $1.25 with; Ford $6.00 without lock and $5.10 with.

He gave figures to show that the owner could buy a lock and still save money on his insurance premium. The fact that the insurance companies add a penalty of $15 to the premium on cars that do not have a lock was used with telling effect among owners.

Dealers were urged to bring the facts about what could be saved by the lock in the matter of insurance premium to the attention of owners. A service station is operated to put in order without charge every lock that goes bad on the theory that fair treatment is one of the best mediums for building business.

The monogram automatic locking cap for motor meters has gone big as a result of similar sales methods by Mechanic. He learned that motor meters were being stolen and then in a smashing campaign by advertisements and circulars he told what the locking cap would do. He sold them without cutting prices.

Another stunt that Mechanic gives credit for boosting sales is that of displaying placards throughout his sales room. Persons entering the store will find all sorts of placards setting forth the merit of articles and telling just what each will do. These attract the attention of the patrons and the placard usually refers to some trouble that the owner is having. He buys.

Ideas On Selling and Management

You will find them on this and the opposite page—ideas that will make dollars or save dollars for the

Car Dealer Truck Dealer Equipment and Tire Dealer Tractor Dealer Repairman

Some of our readers are contributors to this section of Motor World. Have you developed a plan that might help some other men? If you have, will you write it out and send it in?

This Ad Sold Lubricating Service

A Fable in Oil

A CERTAIN man who lives here opened up the family Sock and bought a new Automobile. And it was very fine. But the Man was Foolish and he let Tom, Dick and Harry do the oiling and greasing of it. So in a few Months the Car was all in. And the Man blamed it on the Company that made it.

So he sold that Automobile and bought another Car of a different Make. Then he started to do it up the same Way. Whereupon a Friend put him wise and sent him to McBryde.

Now the Car gets complete lubricating Service every Week and the Man thinks it is the only Car that was ever made. Because McBryde keeps it in trim by putting the right Oil and Grease into every place it should go and tightens the whole Car as well.

Moral: Join the McBryde Weekly Service Club and keep your car in trim, too.

McBryde Lubricating Service

Northeast Corner Ninth and Flower Sts.
Phone 823960

Bring Your Car to One Who Knows

An effective advertisement that was particularly successful in bringing customers to a Los Angeles station.

Silent Salesman Helps Accessory Sales

"WE keep a large framed board in the front part of our store," said a successful middle western accessory dealer, "on which we display different accessories every two weeks. At the top of this board is this inscription: 'Accessories you should have on your car.' Under each accessory so exhibited we place a card giving the name and price. We find that this board attracts a lot of attention and is really a big help in making more sales."

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The Foundation of Shop Profits

The Systematic Arrangement of Tools and Parts—How to Prevent Losses in the Stock Department by Having a Place for Everything and by Having a Check System

Article No. 2

By J. HOWARD PILE

THE replacement of lost, worn and broken tools is a heavy item of expense to any shop. The profits which are made on labor are sometimes completely eaten up with this expense item. The losses on parts and equipment that disappear and never seem to get charged up to a repair order are another source of profit leaks and these, taken together with the uncharged gasoline and oil, can well nigh bankrupt a shop.

System in the purchasing, keeping and using of these items will prevent these leaks and turn losses into profits.

Tools are pretty hard to keep track of. They seem to disappear in thin air at times. Perhaps they are like the scissors that the surgeon occasionally leaves in the innards of his patient. Owners never seem to complain of this, however. If anything they complain of the loss of their own tools.

Small Tools

A very commonsense idea for handling the tool situation is to roughly divide tools and tool equipment into three divisions:

1. Small tools which the mechanic uses himself.
2. Tools generally used by all mechanics in the shop.
3. Special tools and jigs used only occasionally.

There are some few tools that should really be the personal property of the mechanic. The exact list of such tools will necessarily vary with the nature of the work that the mechanic performs. A comprehensive list is given in Table A. Where these tools are supplied by the shop, there is always more or less borrowing between the men and the constant loss or misplacing of these tools with resultant loss of time on the part of the men and loss in money by the necessity of replacing them. If the men are compelled to supply their own tools, they will take better care of them, will not lend them and it has been proven time and time again that the private ownership of these tools is an economy. The entire list of tools shown in Table A can be purchased at retail for $9.05. Many shops make arrangements to purchase a quantity of these tools at wholesale rates and supply their mechanics with them at the lower prices. This would mean that the set could be had for from $6 to $7.

In order that the mechanic may keep his set of tools intact, it is necessary that he have some place to keep them when they are not being used and at nights. A handy tool chest is shown in Fig. 1. This type may be kept at the back of the work bench or on the shelf under the bench. Another idea is a drawer operating on slides under the top of the bench. This is handy and it can be locked at night. True, the tool chest can be locked too, but what is to prevent someone from taking the whole chest?

A still further development in a tool carrier idea is the "tea wagon" pictured in Fig. 3. This is designed to hold not only the mechanic's personal tools but the other tools he needs for quick service or for special or general work around the car. Where specialized work is carried on, this device can be worked out to provide exactly the facilities required by the nature of the work.

Bench Tools and Equipment

If the matter of private tool equipment is left to the mechanic, it will very often happen that the equipment will get in bad shape or part of it will be lost. Some shops have a weekly inspection of tools by the foreman and if tools are missing or damaged, they have to be replaced or repaired before the mechanic is allowed to continue at work.

In this class are the tools which are used generally by more or less all the mechanics in the shop. Some of the equipment, while only used occasionally, is too heavy to be carried to the tool room and some of the smaller tools are

Better Mechanics

Article No. 258

A Series of Four Stories on Shop Profits.

I—Layout and Equipment appeared in the September 13 issue.

II—Systematic Arrangement of tools and parts appears in this issue.

III—Records and Forms will appear in the September 27 issue.

IV—Getting the Business will appear in the October 4 issue.

The dealer or repairman can make shop profits if the business is properly conducted. These stories suggest fundamentals of profit making in the repair business.

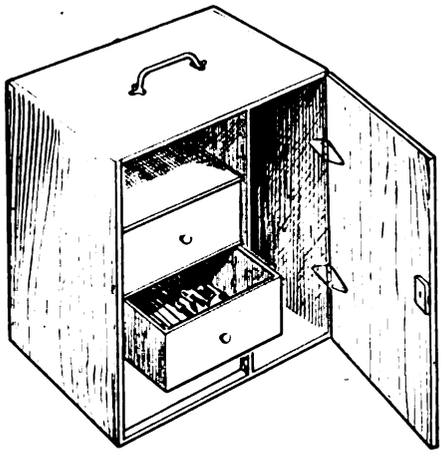


Fig. 1—A handy tool chest for the mechanic

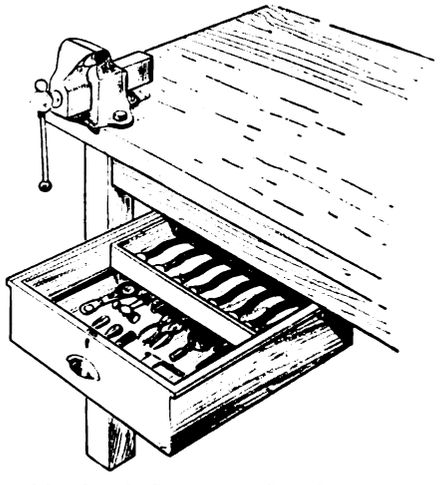


Fig. 2—A drawer under the bench

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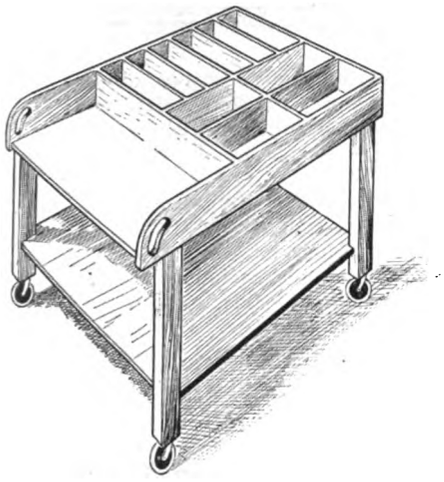


Fig. 3—A "Tea tray" tool outfit

in such constant use that it would not pay to use time carrying them back and forth.

A good selection of files is very important. The list in Table B gives some shapes and sizes that will find a ready use in the shop and Fig. 4 shows convenient racks for hanging them up. The racks are over the work bench and at such points that they are most convenient. The bench should be laid out so that certain kinds of work are most economically performed in some certain section of the shop. Reference to the plan which was published in the last article will show that the left end of the bench is adapted to engine work. Here are located the engine stand on the floor, the crankshaft straightening and aligning press, the connecting rod alignment gage and the surface plate, all pieces of equipment necessary to engine operations. A little bit further along the bench is the parts washing tank, which, however, is also convenient to other departmental work.

Immediately adjacent to the engine department is the mounting of two vises close together on the bench. These are for the purpose of holding a front axle while it is being overhauled, tested for alignment or straightened. The right side of the bench can be used for rear end, gearset and clutch work. In such a small shop it is not always possible to keep all departments busy at once, and the sections of the bench are therefore made available for all kinds of work.

One of the greatest time wasters in a shop is the continual losing of tools. It is vitally important that there be places for every tool, no matter what it is, and that these tools be kept where they belong. The solid wrenches in Table B may be disposed of in racks behind the bench. It is a good idea to hang everything up that will hang up and have a place specially marked out for it. Solid wrenches and other tools for that matter can usually be hung between nails or pegs and the shape of the tool can be outlined on the board or wall with red or black paint. A missing tool is then instantly detected and mechanics will save many hours in the useless hunt for tools.

Jigs and gages can well be protected when not in use with covers to keep dirt and grit from the finely finished surfaces. A little time spent in this care will be repaid by better working jigs and longer life.

In this ideal plan for a small shop, the tire and battery work has been grouped together in one corner. One obvious advantage of this plan is that the steam from the vulcanizer can also be used for softening battery compound. Also in a shop of this size it is entirely possible for one man to attend to the two departments.

The machine tools have been grouped together on one side of the shop where the light conditions are good and where the machines will be least in the way of the other work. The lathe should have the most desirable position in the shop. The best results are obtained when the operator has the light coming over his right shoulder. As a matter of fact this positioning is seldom possible and lathes are generally placed so that the light comes from in back and from the right. This gives light on the work and the tool and also allows light to penetrate into work being bored. The floor on

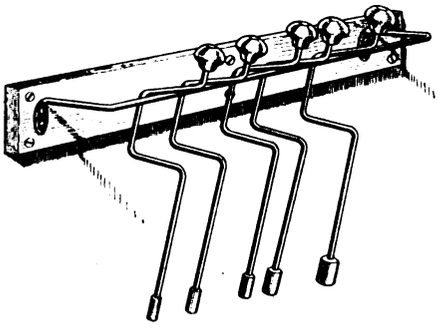


Fig. 5—Speed wrenches are hung this way

which the machine tools rest should be solid. If there is any shake in the floor, it should be braced from beneath. There should be free space all around each tool as the operator will have an occasional job which requires that he work from all sides of the machine. If the lathe is a hollow spindle type, there should be

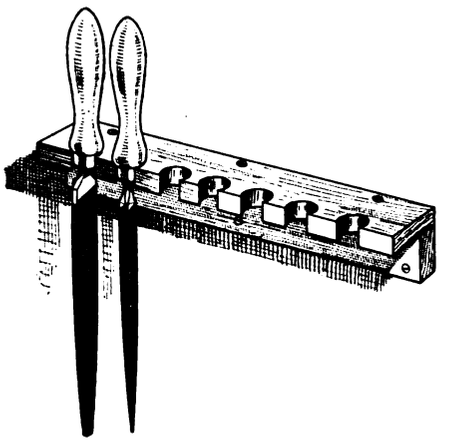


Fig. 4—File racks hang over the bench

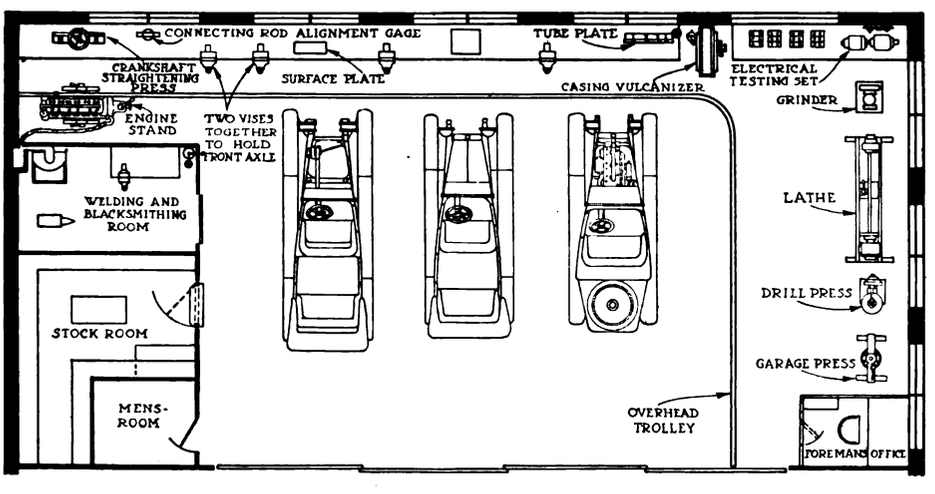
good clearance between the headstock and the wall or else a hole should be cut in the wall to allow long stock to be used.

The Smithing and Welding Room

The equipment of the smithing and welding room is simple and substantial. A stout bench in one corner, equipped with a blacksmith's vise answers all needs and the rest of the "furniture" consists of the forge, anvil, coal box and smithing tools, all grouped around the forge. The welding tank outfit also forms part of the equipment. The forge chimney is also used to conduct the exhaust of engines which may be run on the engine stand for freeing up the bearings or otherwise testing them out. The smithing room is required to be partitioned off with fireproof walls and with a fire door in most towns and cities. There are usually local regulations that have to be complied with.

The Stock Room

The stock room contains not only the stock of parts, but all special tools and jigs which are not part of the floor or bench equipment. One section is laid out in racks for these tools, each having its particular place. The balance of the stockroom is given over to the storage



The plan of the shop department of a garage. This shop is 25 x 50 ft. Detail illustrations of the shop were shown with Article No. 1 in the last issue

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Table A—Tools the Mechanic Should Have

The equipment listed here would retail for about $14.

1½ Ball pein hammer.
Pair of slip joint pliers, 6 in.
2 Screw drivers, 4½ and 9 in.
Adjustable end wrench, 6 in.
Bicycle wrench.
Cotter pin puller.
Cold chisel, ½ in., 6 in. long.
6 in. Steel scale, graduated.
Pair outside spring calipers, 6 in.
Feeler gage set.
Set of three bearing scrapers.
Tool chest.

Table B—Tools and Equipment on the Bench

The equipment listed here will retail for about $225.

Assortment of files as follows:
1— 5 in. taper.
1— 7 in. taper.
1— 8 in. square bastard.
1—10 in. mill second cut.
1— 8 in. flat bastard.
1—10 in. flat bastard.
2—10 in. half round second cut.
1— 6 in. round second cut.
1— 8 in. round bastard.
2— 8 in. hand bastard.
2—10 in. hand bastard.
2—12 in. hand bastard.
Set of double end 15 or 22 deg. solid wrenches with openings from 7/16 to 7/8 in.
Set of speed wrenches, T-head, etc.
Piston vise.
Connecting rod aligning jig.
Surface plate.
Hub cap wrenches.
Crankshaft straightening press.
Valve lifter.
Spark Plug Wrench.
Ignition and generator wrenches and jigs.
Demountable rim wrench.
14 in. pipe wrench.
4 vises, 4½ in. jaws.
1 blacksmith vise, 4½ in. jaw.
Parts washing tank.

Table C—Floor and General Shop Equipment

The equipment listed here would retail for about $2,000.

10 lb. sledge hammer.
4 lifting jacks.
Castor jack.
Towing ambulance.
Engine stand with fittings.
Crowbar or pinch bar.
Overhead trolley system.
Chain fall.
Bearing burning in machine.
22 in. drill press with countershaft.
Partial set of drills, Nos. 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 1/4, 5/16, 11/32, 3/8, 13/32, 7/16, 15/32, 1/2 in.
60 deg. Center reamer for lathe centers.
Drill chuck with capacity to 3/8 in.
Drift pin.
V-blocks and cast iron pieces for drill pads.
15 hp. electric motor and starting rheostat.
Shafting and pulleys.
Screw cutting lathe, 15 in. swing, 63 in. between centers with equipment including countershaft.
3 and 4 jaw chucks, set of tools, lathe dogs and stock of self-hardening steel.
6 in. spring dividers.
Outside firm joint calipers, 10 in.
Outside spring calipers, 6 in.
Inside spring calipers, 6 in.
2 Center punches.
20 Ton garage press with drivers and equipment.
Emery wheel with two wheels, Spare buffer and rotary rasp.
Casing vulcanizer 3, 3½, 4, 4¾ cavities.
Tube plate for four tubes.
Tire tools including tire irons, shears, casing mandrel, roughing brushes, scratch brush, pliers, awl, tread gage, assorted knives, fabric hook, assorted rollers and stitchers, round nose pliers.
Forge.
Anvil, 100 lb.
Electrical testing equipment.
Battery charging outfit.
12 battery clips.
Blacksmith tools, including 2 hammers, fullers, chisels, punches, tongs and coal box.
Acetylene welding and decarbonizing outfit.
Air compressor.
Battery filler.

Table D—Stock Room Outfit

The equipment listed here would retail for about $375.

Special wrenches for various cars and parts.
Valve grinder.
Piston inserter.
Hack Saw frame and 1 doz. blades, 10 in., 14 teeth.
Micrometer calipers, 2 to 6 in.
Twist drill gage, 1 to 60.
Steel try square, 6 in.
Surface gage.
Dial test indicator.
Set of steel figures, 3/15 in.
Set of valve seat reamers 1 5/8 to 2 1/4 in.
Valve refacing tool.
Portable electric drill.
Hand drill, 3/16 in.
Set of taps and dies, S.A.E. and U. S. Std., 1/4 to 1 in.
Die for Ford hubs.
Set of reamers 1/4 to 3/4 by 32nds.
Set of special bushing reamers for Fords and others.
Surplus stock of numbered drills.
Surplus stock of fractional size drills.
Radiator test plugs.
Creeper.
Sharpening stone, 6 x 2 x 5/8 in., fine.
Valve grinding and lapping compound.
Wheel puller.

of parts, each in its own bin. The stockroom is also the place where oil is dispensed in a small shop. Larger shops necessarily need other facilities.

The proper handy arrangement of the parts in such a manner that they can be easily seen and quickly taken out is essential. It enables the man in charge of the stock to quickly determine low stock and put in orders and it also saves the time of mechanics who need parts for repairs.

Where any considerable trade is carried on in parts sold to car owners direct, it is desirable to have the stockroom arranged with two windows, one for retail customers and one for mechanics from the shop. As a rule one man can attend to both windows and still have time to attend to other duties. The plan calls for a desk and heavy table in the stockroom. The desk is used for the routine work of the department and in some cases can take the place of the foreman's desk which has been placed on the other side of the shop.

It may be thought that a stockroom with its bins and records is a lot of red tape and a waste of time in an organization of this size, but when the losses through stock leaks are considered, it will be found a good investment. Every shop that is without such a system loses heavily in parts, equipment, oil and gasoline supplied to repair orders and never charged to the customer. The stockroom can automatically check this by issuing no stock or supplies without getting from the mechanic the number of the repair order. Article No. 3, in the September 27 issue of Motor World will deal with the details of this phase of shop profits.

Names as Well as Numbers on Parts Bins

"OF course we carry our stock of accessories and parts on shelves and in bins in our sales room," said a middle western accessory dealer, "but we don't simply label these shelves by number as is so frequently the case. We also label each shelf and bin by name. We do this so that when customers come in they can look around and see for themselves just what we carry. In this way they frequently see things they want, which they haven't come in for, and in this way we make more sales than would otherwise have been the case."

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Repairshop Shortcuts

How About Diagnosis?

THE automobile service man has certain advantages over the doctor. If the doctor makes a wrong diagnosis, the patient may die, but if the service man guesses wrong the most that can happen is a continuance of the trouble or the breakage of some part. No matter how good a trouble man may be, it is not possible for him to look at a car and say offhand just what the matter is. He needs electrical testing equipment and other handy devices just as the physician needs a stethoscope or a watch to time the patient's pulse. Much of this equipment can be better purchased ready made.

What have you made in the shop that helps your electrical diagnosis? Tell Motor World about it.

No. 3391 — Lubricating Closed Car Door Fittings. — Lamp wicking, soaked with oil and fastened to the end of a long wire, is used to oil window regulator hinges, pins and levers inside the doors of closed bodies.—Donald McClean, Cleveland.

No. 3392 — Lamp Bulb Holder. — A lamp bulb holder is made of heavy cardboard with holes cut and the voltage and contact of each bulb marked. The boards can be cleated to the wall or several boards can be kept in slides.—Henry Parker, American Thread Co. Garage, Holyoke, Mass.

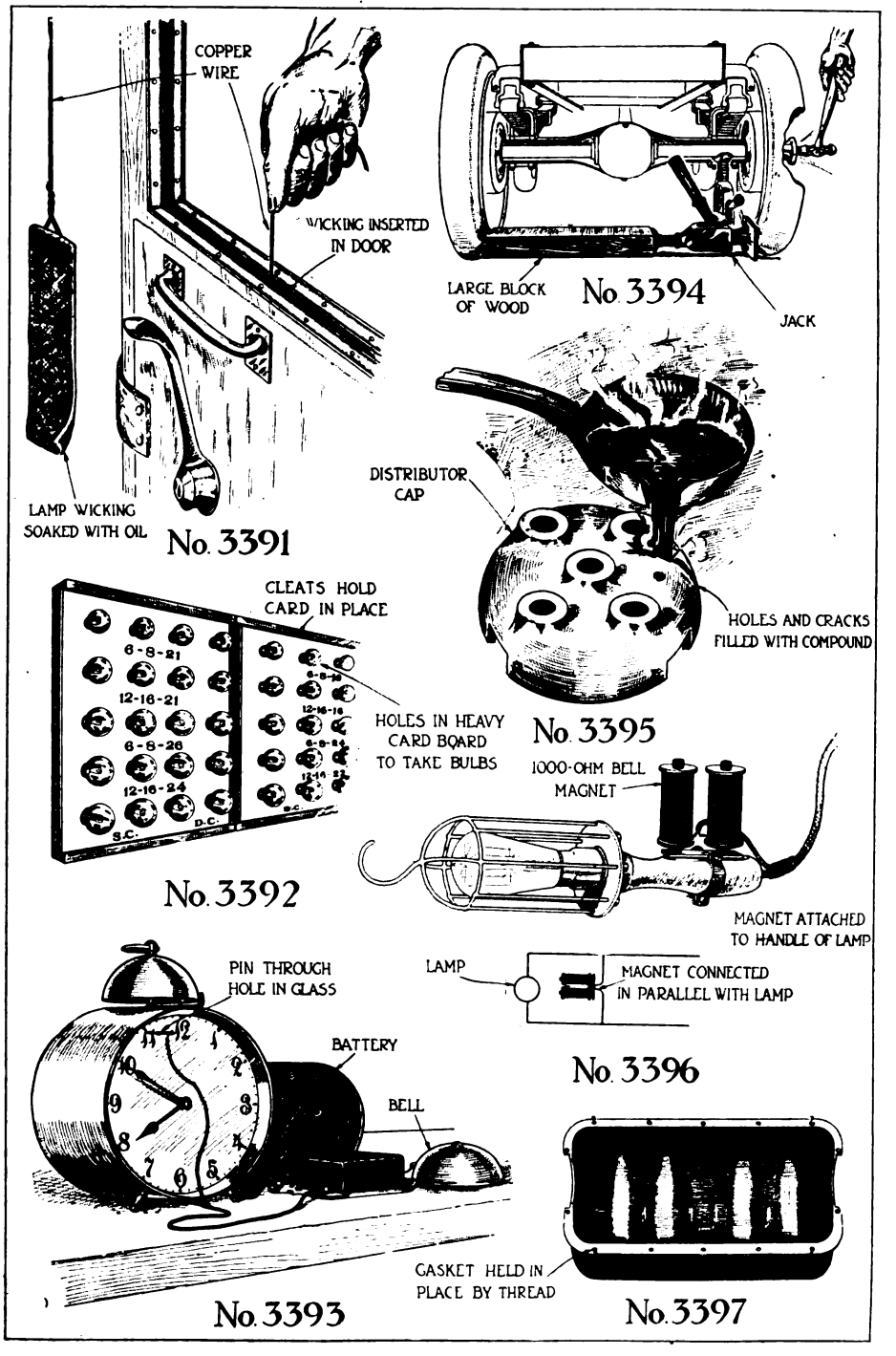
No. 3393—Time Signal for Vulcanizing.—To set the time of the cure in minutes, an alarm clock has a small hole drilled in the glass, a brass pin being inserted. The glass is movable so that the pin can be set any number of minutes ahead of the minute hand which closes the bell circuit.—F. W. Walton, Salem, Ore.

No. 3394—Removing a Rear Wheel.—A rear wheel which is stuck to the shaft is removed by putting a block and a jack between the wheels and raising the jack till it exerts pressure against the wheel. A smart rap on the axle shaft loosens the wheel.—Carson Crowley, Valdosta Garage, Valdosta, Ga.

No. 3395—Repairing a Distributor Cap.—A cracked or perforated distributor cap is repaired by cleaning the break and pouring hot storage battery compound in to fill up the fracture.—H. V. D. Sweet, Canajoharie, N. Y.

No. 3396—Magnet for Portable Light.—A magnet to hold a portable light in any position is attached to the lamp handle. It consists of a 1000 ohm bell magnet and is connected in parallel with the lamp.—Arthur G. Raabe, Long Island City, N. Y.

No. 3397—To Prevent Gasket Slipping—Gaskets for crankcases, oil pans, etc., are prevented from slipping while the part is being installed by fastening several pieces of thread through the holes. The thread is fine enough to mash into the gasket when it is tightened.—Crawley B. Cash, Cash Garage, Gaffney, S. C.



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Interesting Things Automotive



Traveling Grocery Stores Spreading

Fifty grocery stores on wheels, like this one, are promised Buffalo by the Entrez Stores Corporation, which indicates the growth of this type of business, and incidentally a growing market for trucks.



In One of the Parks Dodge Brothers Gave Michigan

Candidly acknowledging its own responsibility for part of the car congestion on the highways of Michigan, Dodge Brothers, Inc., has given eleven tracts of forest and lake sites to the state to afford car owners relief. This is a scene in one of them on the Huron River, Wayne County.

When New York Dealers Hold an Outing



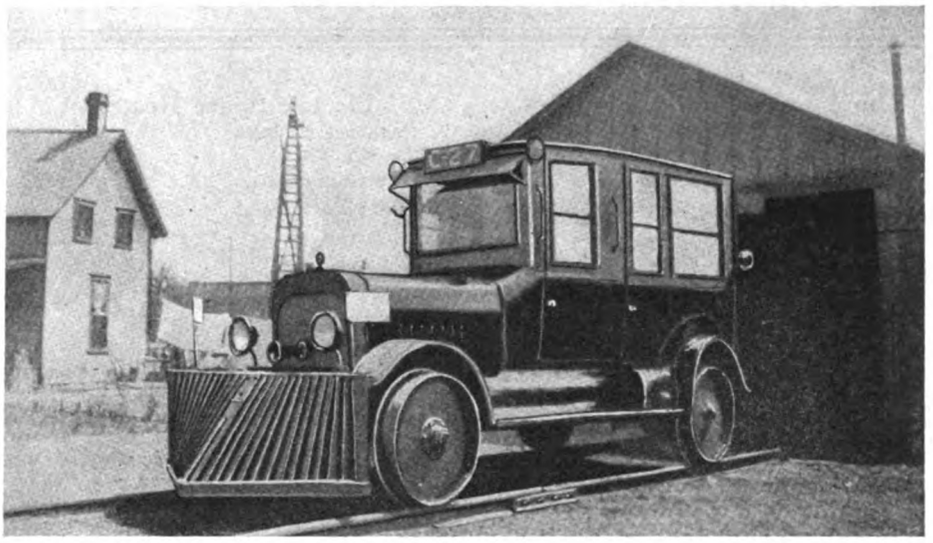
Fred Wagner, the "Wag" who is known from coast to coast as a starter of automobile races, is always the host at his farm at Smithtown, Long Island. Here he is with Mrs. Wagner and an ear of the corn that has something to do with drawing the "Boosters" to Wag's farm. Charles H. Larson (with the arm band), head of the Cutting-Larson Co., New York distributor of Oldsmobiles, and Thomas F. Moore, executive secretary of the Automobile Merchants Association of New York, are amused spectators of the archery contest—can't you just imagine how the old bull's eye suffered with these metropolitan motor car salesmen behind the bow?

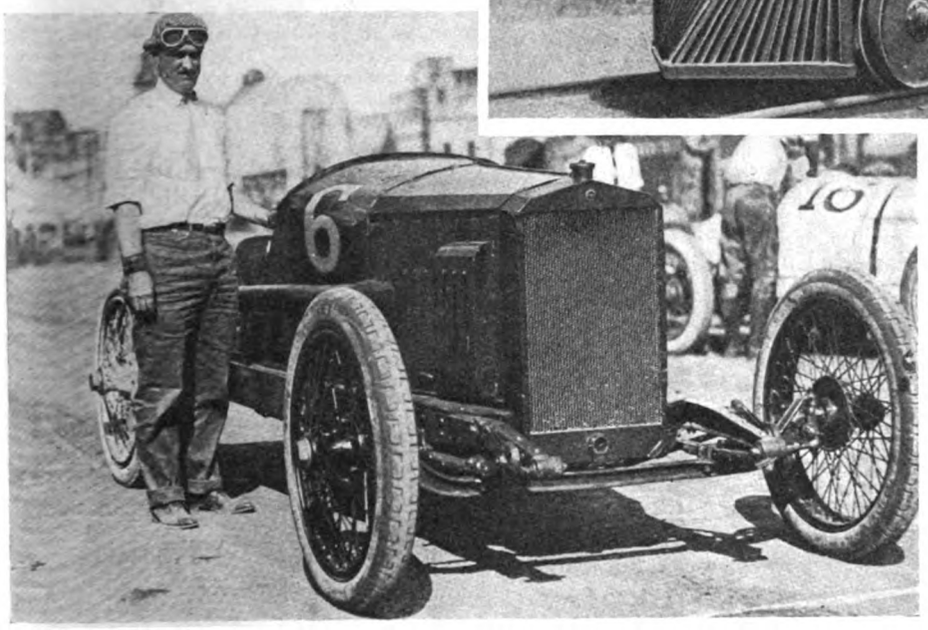
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Caught by the Camera

Old Buick Still in Service

This old Buick, said to have delivered 90,000 miles already, is now on the job as a private railroad car used by Phil Carroll, superintendent of the Kansas division of the Missouri Pacific. The wheels are disk type with flanges. A cowcatcher, special radiator shell and hood, have been installed. Over the regulation Buick body a special winter top, mostly glass, has been built.

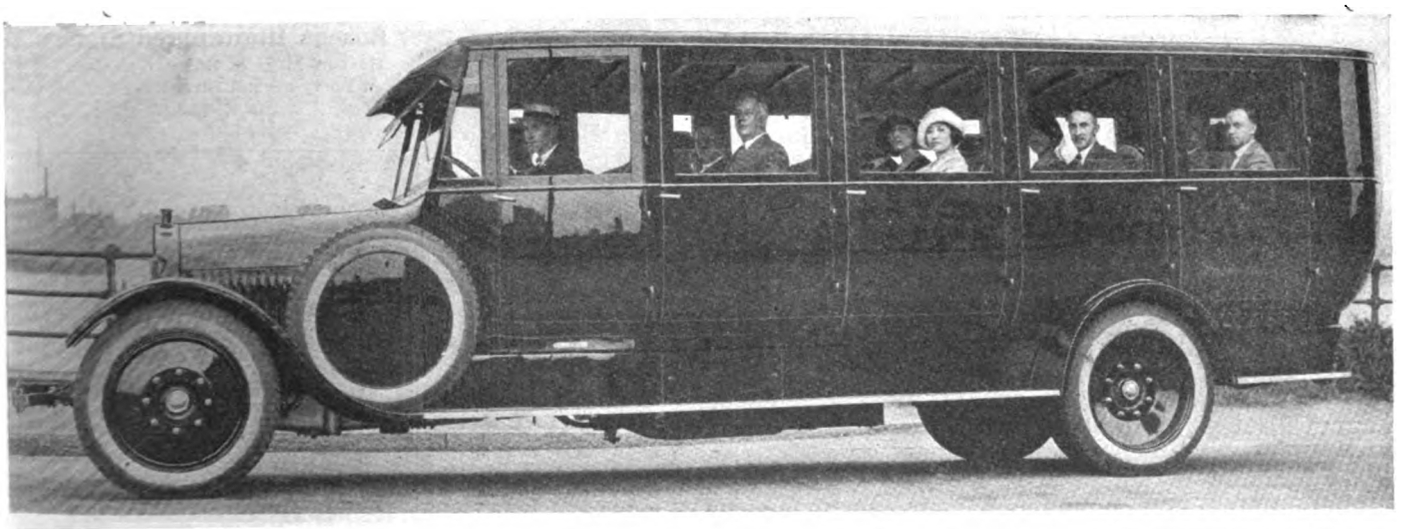




Winner of Dominion Championship Race

Lon Disbrow with his Essex special in which he won the heat winner's race of the Dominion championship series on the Canadian National Exhibition oval, Aug. 28. This was the concluding event of the meet that opened in Toronto, Aug. 26 and was witnessed by between 40,000 and 50,000 speed fans. There were 10 entrants.

A Motor Bus De Luxe



The Mohawk, a vehicle specially built to carry passengers between Boston and Albany this summer. The body is entirely enclosed with plate glass windows that can be readily opened by passengers. The interior finish is equal to that of a private limousine. The car is equipped with dual pneumatics in the rear and carries spare tires.

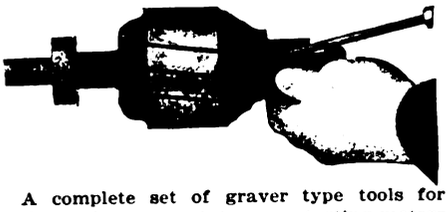
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Equipment for the Shop

New Machinery and Tools

Thompson's Draw Cut Undercutters

Thompson Mfg. Co., Meadville, Pa.
Price, $1.75 per set of four.



A complete set of graver type tools for undercutting commutators on starting motors and generators. After the commutator has been trued up, the self-aligning box guide is placed on the segment to be cut and with the proper width graver a push cut is started, after which one or two draw cuts will complete the section. The gravers can be sharpened without changing the width or shape.

Ont-O-Dor Garage Door Opener

Harry G. Ainsworth, Kentland, Ind.



The doors are opened by means of a crank driven by a small electric motor through worm reduction gears. The switches controlling the current are standard electrical equipment. Private garage doors may be opened by driving over a plate in the driveway and public garage doors may be opened by a three-way switch and as many four-way switches as desired.

Apex Piston Ring Compressor

Thomson-Friedlob Mfg. Co., Peoria, Ill.
Price, $3.75.



The corrugated band encircles the piston rings and turning the controlling shaft winds a spool which tightens the band. The device can be worked from the top of the block or from underneath, and as the shaft has a universal joint it is possible to work it at an angle around the crankshaft.

Electric Space Heater

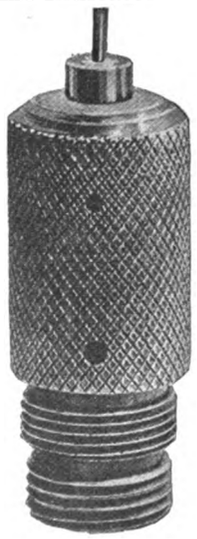
Westinghouse Electric & Mfg. Co.,
East Pittsburgh, Pa.
Prices $2.50 to $6.



These heaters may be used for preventing cars stored in unheated garages from freezing up. The heating element is contained in a sheet steel casing. The terminals project on only one side of the casing. The heaters are made in sizes from 220 watts up to 1250 watts and for operation on either 110 or 220 volts.

Sauer's Engine Time Indicator

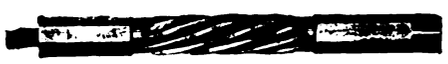
Sauer Brothers,
Chico, Cal.
Price $2.50



The purpose of this indicator is to show when the piston in any cylinder is at top dead center on the compression stroke. It is inserted in place of the spark plug and indicates the pressure in the cylinder. When the indicator shows maximum pressure the piston is on dead center.

Millersburg Expansion Reamer

Millersburg Reamer & Tool Co., Inc.,
Millersburg, Pa.



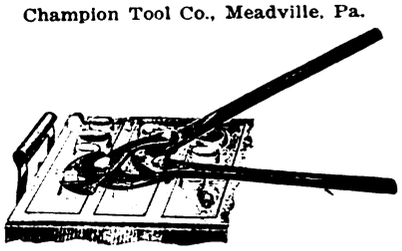
The smooth-cut expansion reamers have helical flutes which shear the metal and work well in holes with keyways or oil grooves. They are made in two types: A, which are the same length as the standard straight fluted tools, and B, with a 1½-in. pilot, which are specially adapted to automotive work. The expansion limits are as follows:

¼ to ⅝ in.	.010 in.
⅝ to 1 in.	.013 in.
1⅛ to 1½ in.	.015 in.
1⅝ to 2 in.	.017 in.
2⅛ to 2½ in.	.020 in.

The reamers are made in sizes from ¼ to 2 in. by sixteenths and from 2 to 2½ in. by eighths. The style illustrated is Style B.

Champion Utility Clipper

Champion Tool Co., Meadville, Pa.

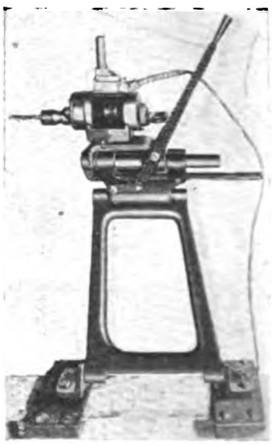


A double-acting cutter with a capacity for cutting up to ¼-in. bolts, or thicker material if softer. The angle of the jaws throws the handles above a level plane so that the work is made accessible. It consists of two jaws, two handles and four bolts. The jaws are renewable. The length is 15¾ in. and the weight 2¼ lb.

Van Dorn Radial Arm for Portable Electric Drills

Van Dorn Electrical Tool Co., Cleveland.

The scope of the arm is such that it extends over a large area and with its double joint can easily be manipulated to find the center mark of the hole to be drilled. A strong tension spring lifts the drill out of the hole. It will accommodate any size Van Dorn portable electric drill up to ⅝ in. in steel.



Beacon Illuminated Signs

Beacon Mfg. & Sales Co., Inc.,
220 West Forty-second Street, New York City.
Price, $50.

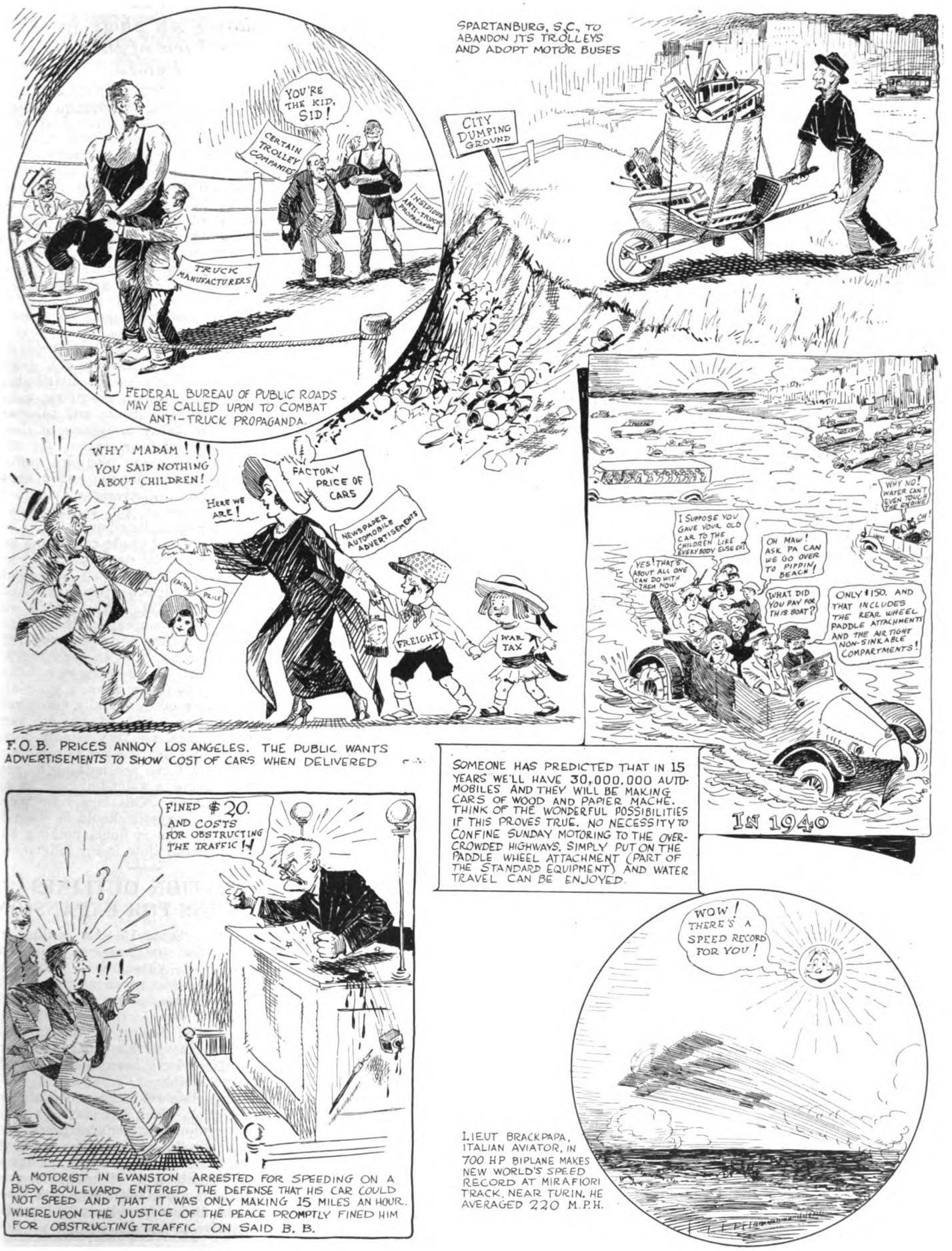


The sign is illuminated at night with electric lights on both sides and is suspended with a pipe and chain hanging. Lettering and colors optional.

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Along the Automotive Newsway

By Leo Roche



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AUGUST SALES GAIN, REPORT TO N. A. C. C.

Dealers Feel That Price Reductions Have Retarded Total Sales Volume

NEW YORK, Sept. 14—Dealers' reports presented at the first fall meeting of the directors of the National Automobile Chamber of Commerce indicate that August sales generally were much better than the previous month and from 50 to 100 per cent better than August of last year. This condition prevailed except in a few states which represented no one section of the country. Where percentages of increase were given, they ranged from 9 to 30 per cent.

There is a general feeling on the part of the dealers that the effect of price changes has been to stimulate sales of cars where there had been reductions but that the volume of sales as a whole has been retarded.

Light trucks are in much greater demand than heavy duty vehicles.

The used car market is reported as being very irregular with some dealers stating it to be good and others dull.

Excellent conditions in the agricultural and industrial fields promise fairly good prospects for fall trade, although, at the same time, it is reasonable to suppose that there may be some decline in output.

Standardization Data

The committee on simplified practice of the N. A. C. C. is actively engaged in the preparation of data looking toward standardization of parts, spark plugs, starters, roller bearings and brake linings. The motor truck committee states that it was getting inquiries from milk producers relative to the adoption of trucks for use in shipping. If the producers ship by trucks rather than by rail it will mean that 10,000 additional motor vehicles will be needed.

The service division has been campaigning during the summer and has distributed more than 100,000 stickers to service association members for placing on cars. In its work it has had the active co-operation of the Automotive Equipment Association with assistance given by parts and equipment manufacturers. Inquiries relative to the formation of service associations are on the increase and the division is helping materially in carrying through programs, after formation, including the furnishing of speakers, films, and the like.

The drawing of space for both New York and Chicago shows will take place at the N. A. C. C. rooms on Thursday, Oct. 5 at 2 o'clock.

Phelps Manages Barley Sales

KALAMAZOO, Sept. 11—William Elliott Phelps has been appointed general sales manager for the Barley Motor Car Co. Until Aug. 1 he served as general sales manager of the Haynes Automobile Co.

1,671,418 *VEHICLES* 8 *MONTHS OUTPUT*

NEW YORK, Sept. 15—A total of 1,671,418 cars and trucks were manufactured during the first eight months of this year compared with 1,668,550 total production for the entire year 1921, according to the National Automobile Chamber of Commerce. Production by months is as follows:

	1921	1922
January	51,919	90,481
February	65,218	120,293
March	109,758	171,390
April	156,892	219,294
May	163,667	225,167
June	177,757	289,120
July	176,067	244,355
August	178,831	*272,640

***August 1922 estimated from traffic reports.**

PACKARD ADDS TWO NEW CLOSED MODELS

DETROIT, Sept. 16—Two new closed models have been added to the single six line by the Packard Motor Car Co., a five-passenger sedan limousine at $3,325 and a five-passenger coupe at $3,350. Both are mounted on the 126 in. wheel base chassis. With these the company has six closed models in the single-six line, four on the short chassis and two on the 133 in.

The new sedan limousine is similar to the seven-passenger sedan limousine already included in the line, except for the shorter chassis. It is convertible from owner to chauffeur driven by the raising or lowering of a glass partition between the front and rear compartment. The front compartment is upholstered in black leather and the rear in gray broadcloth.

The new coupe seats three on its rear seat which extends across the width of the car. It is fitted with a large trunk containing two suit cases and a hat box. Nickel bar fenders are fastened on the rear panel of the body.

FIRST GRAY ROADSTER COMING THIS MONTH

DETROIT, Sept. 16—Gray Motor Co. will produce the first of its roadsters this month, the price being fixed at $490, the same as the phaeton model. The company is now building 60 cars daily and will increase its production to 150 daily with the completion of its second manufacturing unit which will be ready in November.

The compartment in the rear has been made extra large for commercial use and the rear deck is detachable so that a small commercial body may be attached when desired.

Gray Motors is staging an economy run from San Francisco to New York under the sanction of the A. A. A. with Capt. A. B. Walton as official observer.

BIGGER YEAR COMING IS GENERAL OPINION

Executives All Share in Optimistic View of Industry's Future

BUFFALO, Sept. 18—Several widely known automotive executives have sent messages to the annual convention of the Motor and Accessory Manufacturers' Association in session here expressing highly optimistic views of the future of the industry. Some of those already received, follow: R. H. Collins, president of the Peerless Motor Car Co. "In my opinion the automobile business is the finest business in the world. Present conditions in the trade are more than satisfactory to us and I would have no hesitancy in predicting an even greater general prosperity in the future were it not for one fatal menace which threatens the industry to-day, namely, the growing tendency of automobile distributors and dealers to place an exorbitant value on cars accepted in trade and to overestimate their ability to dispose of these cars at these fabulous prices. If this condition continues the resultant suffering must be shared by the entire trade including motor and accessory manufacturers and dealers as well as automobile manufacturers and distributors."

H. H. Franklin: "Trade conditions are good and the outlook is bright."

J. J. Cole: "Our August shipments were 30 per cent greater than any month since January, 1921. We believe our shipments will be normal for the balance of the year. We see no reason why 1923 will not exceed any year in our history."

C. W. Nash: "It appears to me that prophecies made more than a year ago that business would gradually but surely improve to the point of having very prosperous times, are very rapidly being brought about. Barring the railroad and coal situation, I can see nothing to prevent 1923 being a splendid year in all lines of business. This is a time when courage and foresight should be used to the limit. If this is done, nothing but good results can follow, in my judgment."

ASSOCIATION OUTLINES PLANS FOR EXPANSION

CHICAGO, Sept. 16—An outline of the plans for the expansion of the Association of Automotive Equipment Manufacturers was given at yesterday's meeting of the association at the Chicago Hardware Club by George Fritz who was recently elected general manager of the association. It was announced that executive offices have been opened at 926 Consumers' Building, Chicago.

Members discussed the ambitions of the association, which was started among Chicago equipment manufacturers, but now has enrollment in other sections. The association grew out of a demand for an organization of manufacturers who, without other trade elements present, could discuss problems and activities exclusive to manufacturing.

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FORD CLOSES PLANT; 70,000 MEN DROPPED

No Time Set for Resuming Work—First Laying Off Since March

DETROIT, Sept. 16—The Ford Motor Co. factories closed to-day for an indefinite period. Approximately 70,000 men employed in the Ford factories at Highland Park, River Rouge and the Lincoln plant were dismissed with no word as to when work might be resumed.

No official statement has been made by the company, but recent conferences of executives would indicate that steel prices rather than coal have principally influenced the closing. Thousands of workmen in other factories making parts and materials for the Ford company will be affected. Few other factories in the Detroit district serve the Ford company alone, so that operations will be maintained in most other plants, but on a greatly reduced scale. Body, wheel, tires, parts and other accessory manufacturers for the company will make big curtailments in operation.

In going into the closed down period, the company declared that it is carrying a considerable number of orders over. Denial was made that the closing was because of business falling off appreciably, but on the contrary that orders would warrant a continuance of heavy operation. A sufficient stock of parts has been accumulated to carry over the servicing of all cars until factory operation is resumed.

In the case of the Lincoln company, orders are known to have been on hand to cover several more months of operation without new orders being received. Some material suppliers report that they had been notified that the closing was for two weeks, but others said no notice of any kind had been received.

Branch managers from all parts of the country have been in conference with the sales department for the past two weeks, the purpose of which, however, was said to be to obtain a check on the situation in all parts of the country and having no direct bearing on the closing.

Many other car factories in the district are operating on a greatly reduced schedule. This is especially true of the cars in the low price field, with cars in the middle class field also affected. Many workmen are being laid off in plants, and there is considerable unemployment in the industry for the first time since March.

BUFFALO, Sept. 16—The local assembly plant of the Ford Motor Co. closed to-day and will reopen Tuesday to dispose of a shipment of cars. It will then close again for an indefinite period.

CHICAGO, Sept. 16—The Ford assembly plant in this city will close at noon Monday.

KEARNY, N. J., Sept. 16—The Ford Motor Co. assembly plant here will not close for the present, according to notices posted to-day instructing 2800 men employed to report for duty as usual on Monday.

CAMBRIDGE, MASS., Sept. 16—Officials stated to-day that the New England assembly plant of the Ford Motor Co. here will shut down late next week. The closing will affect 500 men.

COURSE IN AUTOMOBILE MECHANICS

BERKELEY, CAL., Sept. 18—The University of California announces several courses in automobile mechanics to be offered by the extension division this year. One of the courses is for car owners, designed to teach them the mechanics of their own cars. Instruction will be given on any car owned and driven by the applicant for the course. Another course of the same kind is offered exclusively to women. Still another course is for shop mechanics who wish more advanced training, and there is a fourth for chauffeurs, truck and bus drivers and men similarly connected with the operative end of the industry. Instruction will be individual in all the classes and carried on in automobile shops.

PRICE REDUCTION MADE BY WILLYS-OVERLAND

TOLEDO, Sept. 18—The Willys-Overland Company has announced price reductions effective to-day on all models of Willys Knight and Overland cars which bring the lists down to the lowest ever quoted. The reductions on the Willys Knight cars range from $80 to $140 and on the Overland from $20 to $55. The new prices include many improvements. The revised list is as follows:

Willys Knight		
5-passenger	Old Price	New Price
Phaeton	$1,375	$1,235
Roadster	1,350	1,235
Coupe	1,875	1,795
Sedan	2,095	1,950
Chassis	1,150	1,125
7-passenger		
Phaeton	1,575	1,435
Sedan	2,295	2,195

Overland		
	Old Price	New Price
Phaeton	$550	$525
Roadster	550	525
Coupe	850	795
Sedan	895	875
Chassis	450	425

John N. Willys, president of the company, is enthusiastic over business conditions and prospects. "We are rapidly settling many of the fundamental problems which have held business back over here and conditions are improving daily," he said. "I cannot see anything but a period of increasing prosperity ahead. We are not worrying about coal. We are simply bending our energies toward getting ready for the big increase in business which we know is ahead of us."

FLINT CAR FIRST APPEARANCE SOON

Production Set to Start January 1 at Long Island City Plant

NEW YORK, Sept. 18—The first showing of Durant's new Flint car will be given simultaneously in New York and Flint, probably this week. Production is expected to be started at the plant in Flint, Mich., by Jan. 1 and at the Long Island City plant possibly at an earlier date. Operations at the latter factory will depend upon the progress that is made on refitting the former Willys Corp. plant at Elizabeth, N. J., which Durant Motors, Inc., purchased and which it will use exclusively for the production of the Star and Durant.

These two cars are now being turned out at the Long Island City plant and no effort will be made to begin production on the Flint there until they have been removed to New Jersey. Work is being pushed rapidly on equipping and making re-arrangements at the Elizabeth plant to meet the requirements for Star and Durant production with the result that removal may be effected by the middle of next month.

No schedule has been outlined for Flint car production, but the Long Island City plant has a capacity of 100 cars daily and the first five units of the plant at Flint, a capacity of 500 a day. By next spring it is thought that the two plants will be turning out from 400 to 500 cars.

The schedule for the Durant has been fixed at approximately 6,000 for September, an increase over August output.

No complete plan of distribution of the Star has yet been made. As a starter the car is being given to Durant distributors in various cities who will act in the capacity of branches of the state company. This will establish a closer contact between distributor and factory. Star Motors, Inc., the selling organization, has companies in most of the states.

5000 Sales Per Month

CHICAGO, Sept. 16—A report by R. G. Dun & Co. gives the number of new automobiles sold in Cook county, including Chicago, in the seven months ending July 31 as 28,590. It states that sales in May, June and July were about 5000 a month and that the August figure would be only slightly less.

Rickenbacker and Bride Sail

NEW YORK, Sept. 18—Major Edward V. Rickenbacker, vice-president of the Rickenbacker Motor Co., and his bride, who was formerly Mrs. Adelaide Durant, sailed for Europe on Saturday to be gone two months. While abroad, the couple will make a tour of the battlefields, and upon their return will make their home in Detroit.

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A. E. A. PLANS XMAS SALES CAMPAIGN

Will Show Dealers How to Sell Automotive Christmas Gifts

CHICAGO, Sept. 16—An early start on an intensive Christmas merchandising campaign for automotive equipment and service has been decided upon by the Automotive Equipment Association, and Ray W. Sherman, director of merchandising, is preparing a series of bulletins to show dealers and garage proprietors how to get the greatest results from the undertaking.

"Buy an automotive gift for Christmas" will be the central idea of the campaign and the manufacturers and jobbers who are members of the A. E. A. will be urged to advise their dealer customers to display an attractive placard bearing these words. It is Sherman's opinion that dealers should make thorough preparation during November for this Christmas selling and be prepared to jump into it intensively the first of December. He advises a special appeal to women and says, "There is no reason why the department stores should forever be the one great mecca of the Christmas shopper."

Can Buy Shop Service

Many suggestions and ideas for the planning and execution of the Christmas selling campaign are given in Number 3 of the Sales Executive, publication of which was recently commenced by Sherman.

One notable suggestion is that shop service can be merchandised for Christmas gifts as well as articles of equipment. "A paint job, a carbon cleaning job or any job for which a price can be flat-rated beforehand can be sold as a Christmas gift," it is said. "The service gift could be a very neatly done authorization on the dealer's stationery stating that Santa Claus had ordered the dealer to do the work required and that it would be done at the convenience of the receiver of the gift. This would make the money spent for gifts useful, which is what a lot of it is not. Many a man would rather have a set of spark plugs than a handful of wild neckties."

Another suggestion is that many common replacement articles can be fitted into Christmas merchandising. For instance, a set of piston rings, brake lining, a timer, or other articles would be very acceptable to the man whose car is in need of such equipment.

A warning against stocking up with Christmas cartons is given. This is to guard against the possibility of having a lot of unsalable packages left on hand after the holiday season. It is stated that the best plan for Christmas goods seems to be to take standard merchandise and provide materials or a plan whereby the dealer can wrap the article in holiday paper and tie it with ribbon or colored cord.

The importance of Christmas decorations in the sales room is emphasized. It is advised that there should be a tree at least in every dealer's place.

TENNESSEE DEVELOPS ROAD FINANCING PLAN

NASHVILLE, TENN., Sept. 16—The Tennessee Good Roads Association has plans which, if adopted, will cause the entire automobile tax collected in that State to be put into a system of state highways. In addition they propose a two cents per gallon tax on gasoline.

Last year the automobile tax in this State amounted to $1,600,000, half of this tax was used by the highway commission for the purpose of supplementing county and federal aid. The other half was prorated to the various counties, giving them approximately $6,876.20 each.

Under the plans proposed by the Good Roads Association the entire amount will be under the direction of the State Commission. It is stated that a bond issue of $75,000,000 could be retired in 30 years by this method, without additional taxation on property or other sources of revenue.

It is estimated that bonds in this amount will build a hard surface road of permanent construction, connecting every county seat in the State; and in addition complete main trunk highways.

BUYING STIMULATED BY TRACTOR CARAVAN

Awaken Dormant Interest in Power Farming Equipment —Many Orders Taken

PORTLAND, ORE., Sept. 19—After a series of demonstrations occupying nearly a month, during which practically every city and town in central western Oregon, from the California state line to Portland, was visited, the Fordson tractor caravan and power farming demonstration has reached Portland. The demonstration is being carried out by the Oregon branch of the Ford Motor Co., the Standard Oil Co. and a number of companies handling power farming implements.

Upon its arrival here, the caravan disbanded for a few days while those in charge secured a brief rest. It will start out again, going West into the Tillamook country on the coast and will spend the month of September visiting the coast and Columbia river towns.

Holidays Provided

The caravan thus far has met unusual success, according to Manager Goodwin of the Oregon branch of the Ford Motor Co. In every town at which they stopped wide publicity was given to the demonstration, and a virtual holiday was provided. Stores and business institutions in the various towns co-operated in a splendid way, assisting in drawing in the farmers from the outlying districts. In many instances the crowds attending the demonstrations numbered several thousand people.

"Not only was the demonstration a big success in attendance and in interest shown," said Goodwin, "but it has brought splendid results in the way of actual business. Following the demonstrations efforts were always made to follow up the advantages thus attained.

The caravan, it is declared, has already ushered in a period of buying throughout the section which it has visited thus far, after a period of about two years, in which there has been practically none.

A Caravan That Is Arousing Interest in West



When a town is reached, the vehicles which are making an extensive tour of parts of Oregon, draw up in a central location and prepare for a demonstration. At the left is seen the sheet used to flash motion pictures and at the right is taking place one of the demonstrations. Unusual success has marked the venture in bringing the farmer back into the market

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N. Y. MARKET GATHERS STRENGTH FOR FALL

Upward Sales Trend Following August Slowing Down Portends October Spurt

NEW YORK, Sept. 15 — Although August showed an appreciable falling off in car sales in the Metropolitan territory, according to figures based on registration issued by Sherlock and Arnold, there is every indication that the sales curve has taken another turn upward and that September will show an improvement.

The falling off could hardly be characterized as a slump, although there were notable exceptions where some makes reached a point nearly fifty per cent lower than the peak months of April, May and June. However, balancing these in the total sales were others, particularly in the higher price class, whose August sales showed a distinct improvement over July and reached points within striking distance of the boom months.

September opened slowly following the downward trend of the market during the closing days of August and each day is showing an improvement. The upward trend is expected to gather momentum in October and develop into a strong selling market, especially for closed cars, during the fall and early winter months. The closed car show, scheduled for the latter part of this month, is expected to contribute some impetus.

Deliveries Slowed Up

With but a few exceptions the railroad situation has not affected New York to the extent of actually preventing deliveries. Delivery service between the factories and dealers has been considerably slowed up, however, and some dealers already are organized to make drive aways this fall if conditions do not improve.

Unless weather conditions are particularly unfavorable the fall promises to develop a fairly active used car market.

The outlook for truck sales this fall is brighter than in many months, but up to the present time there has been no acute upward turn. September truck sales were slightly better than August on the whole and inquiries indicate a stronger demand in October and November, especially in the light delivery car field.

Tractor Interest Grows

CHICAGO, Sept. 15—Increased interest by farmers in tractors was noted by Guy H. Hall, director of the National Institute of Progressive Farming, at the Minnesota and Wisconsin State fairs from which he recently returned.

The Minnesota fair was not as largely attended this year as in the past, Hall said, but the farmers who were there showed unusual interest in the tractor and other power farming exhibits. "The amusement section was practically deserted," Hall said, "while the men and boys from the rural sections were climbing all over the tractors and other machines."

The Wisconsin fair was largely attended, and the tractor exhibit was one of the most popular, Hall said. Many orders were taken, he said.

Sergt. Alvin C. York Takes Dodge Agency



Sergt. Alvin C. York, officially declared America's greatest hero in the World War, has gone into the automobile business, having taken over the Dodge agency at Jamestown, Tenn.

SHOW BRINGS FORTH CONCEALED PROSPECTS

WILMINGTON, DEL., Sept. 16—A successful summer automobile show was staged last week here in connection with the Delaware State Fair. The exhibitors were Wilmington dealers, and nearly all of them were represented, as were also some accessory men.

The exhibitors seem to feel that the effort was worth while. Some sales were made, but the chief result was in the number of prospects secured which there seemed to be no other way of reaching. The whole state and surrounding sections of Maryland, Pennsylvania and Delaware were represented among the fair patrons, and it seemed as if nearly all took some interest in the motor show.

In addition to having cars on display, there were commercial vehicle and tractor demonstrations.

Friday was probably the best day for the motor show. On that day automobile races replaced the horse races on the track.

Moon Record Output

ST. LOUIS, Sept. 15—The Moon Motor Car Co. reports a record production of 1,018 cars for August with indications pointing toward a higher market for September. The company has under construction an extension to its plant, half of which will be used for the factory maintenance division.

INDIANAPOLIS SHOW MAKES BIG SALES

All Lines Exhibited Make Sales —Dealers Anticipate Large Fall Business

INDIANAPOLIS, Sept. 18—The State Fair Auto Show held here this week during the State Fair under the auspices of the Indianapolis Auto Trade Association proved the best business getter of all auto exhibits held since 1920. Previous selling records of fair shows were surpassed in all lines. On the third day reports of more than fifty sales were made to the show office. During the next twenty-four hours reports of twenty-seven vehicles sold were received and six of the large distributors had not turned in their reports. The end of the week was even better.

Trucks also made good. During the first morning one distributor sold two trucks. Another distributor who has had some slack times during the season reported eleven sales made during fair week. Even the makers and dealers in special truck and commercial vehicle bodies used their order pads frequently. Brisk commercial business is expected from now on through the fall.

Accessory Business Good

Accessory business was unusually good. One dealer who does more retail business than any other city firm reported that sales, both of retail and wholesale, were far ahead of those at the last fair show in number of units. Specialty men also did well and found live buyers in both the retail and wholesale departments.

Brisk business was reported in all popular lines of agricultural machinery, and some new equipment that is being introduced was sold to the surprise of the exhibitor. There was less tractor demonstration of farm work than in previous years. The tractor is at last being taken for granted here and more attention was given to the display of new equipment and tools both for agricultural and industrial work.

More Space Provided

There were 41 passenger car exhibitors, seven truck, seven showings of special bodies and 52 accessory and miscellaneous exhibits. Larger spaces for the vehicle exhibits marked the show and less crowding of spaces. This doubtless helped the sales work and the smaller crowd of fair visitors than in some previous events also acted to the same end. Those who came seemed the live, interested classes who wanted to buy.

Local distributors whose state organization have not been large in the past, signed up many dealers and found "three times as much activity in this direction" as they had expected. The well organized distributors reported brisk wholesale business but not so many additions to the country sales staffs.

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TOMMY MILTON WINS KANSAS CITY RACE

Captures 300 Mile Race Using Leach Special—Roscoe Sarles Killed

KANSAS CITY, MO., Sept. 18—Tommy Milton, champion driver of the American Automobile Association and winner of the 1921 Indianapolis speed classic, driving an eight-cylinder Leach special, won the 300-mile automobile race held at Kansas City's new $500,000 speedway Sunday, Sept. 17.

Milton's time was two hours, 46 minutes, 52 seconds. Harry Hartz, driving an eight-cylinder Hartz Special, was second in the race, making the required 240 laps in two hours, 47 minutes, 50 seconds. Frank Elliott came out in third place with his eight-cylinder Leach Special, doing the 300 miles in two hours, 49 minutes, 46 seconds. Ralph Mulford was fourth, driving a Duesenberg, straight eight special. Jerry Wunderlich, also with a Duesenberg straight eight special, Jimmy Murphy driving Bennett Hill's Miller special and I. P. Fetterman were next in order.

Roscoe Sarles, relief driver for Cliff Durant, was burned to death when his car caught fire after smashing through the railing of the track. The car hurdled 40 feet and smashed to the ground. His mechanician, C. V. Pickup, was injured dangerously.

Murphy Forced Out

Jimmy Murphy was forced to leave the track early when his car threw a tire and he collided with Joe Thomas, but he took Bennett Hill's place when Hill was taken from his car in the 135 lap too ill to continue the race. Peter De Paolos Jr. Special turned turtle and caught fire, dangerously injuring Paolo and his mechanician, Tony Guletta.

Frank Wagner, the veteran, officiated as starter. A crowd of over 60,000 attended the races which were postponed a day because of a heavy rain the day before.

The speedway is the first plant ever built with steel grandstands which seat approximately 35,000. The track is one and one-fourth miles long and is oval shaped. It is said by many to be the finest board speedway ever built. There are more than 450 different degrees of pitch in the track. An average of 42 degrees was allowed on the turns. Drivers made an average speed of 110 miles an hour in the Kansas City speed classic.

Sixteen drivers started the 300-mile race but only 11 finished. Prizes amounted to $30,000, the first prize being $10,000. Drivers who entered the race were: Eddie Hearne, Bennett Hill, Peter De Paolo, Joe Thomas, R. J. Brett, J. P. Fetterman, Tommy Milton, Frank Elliott, Leon Duray, Harry Hartz, Howdy Wilcox, Ralph Mulford, Jerry Wunderlich, Allen A. Mulford, Roscoe Sarles and Jimmy Murphy.

COMBAT RAILROAD CROSSING ACCIDENTS

CHICAGO, Sept. 15—A conference of highway commissioners, railroad officials and presidents of automobile clubs in Illinois has been called by the Illinois Commerce Commission to meet at Springfield Sept. 30 to plan a campaign for the purpose of reducing the number of accidents to automobiles at railroad crossings.

Such accidents have increased rapidly, according to the commission, notwithstanding the precautionary measures taken by the railroads and highway officials in installing warning signs and bells at all dangerous crossings.

It is the purpose of the Commerce Commission, after a full hearing which will be public, to issue a general order dealing with the situation.

Moving a Town by Motor Truck



Moving a town is the latest job of a motor truck. The town is Jennings, which is being taken to Cadillac, Mich., a distance of eleven miles. To do the job the Acme Motor Truck Co. built a special trailer upon which the houses are carried bodily. The eleven mile trip is made in about four hours at a running speed of five to eight miles an hour.

IOWA REPORTS GAIN IN FARMING SECTIONS

Many Low Priced Car Sales—Closed Car Demand Increasing Steadily

SIOUX CITY, IOWA, Sept. 18—Automotive business is on the up-grade. Of the 37 lines of cars handled by the 22 dealers who went out of business in 1921 only five have been picked up, but optimism prevails among dealers and distributors as a rule.

Being fed from the farming sections of three States—Iowa, Nebraska and South Dakota—business in the automotive lines has reacted with the farmers' conditions in 1921. Some tractors are being sold which seems to indicate that the buying power of the territory has been improved.

Light cars are finding a good market, the dealers in some cases being unable to secure enough deliveries to fill their orders. Medium priced cars are a little slower, but sales in this class are increasing. Higher priced lines are moving very slowly, but are for the most part cash sales.

Sales of lower priced cars have been mostly on the instalment plan. From 60 to 75 per cent of all cars sold in this territory during 1922 have been sold this way.

Strike conditions have affected the business slightly, several dealers reporting cancellations from this cause. No dealers report any embarrassment in deliveries because of transportation difficulties.

Open cars have been in demand during the summer months, although August showed a decided increase in closed car business. Light coupes are in strong demand.

Crop conditions in the Northwest have been promising until the last few days, when reports have been received that South Dakota corn is suffering from lack of moisture. As yet there has been no reaction felt because of reports.

Big Gain in London, Ont.

LONDON, ONT., Sept. 15—The local automobile dealers are showing the biggest increase in years. By the end of the year there will be close to 5000 cars in London, and well over 8000 in the County of Middlesex. With indications of a good harvest, dealers expect the business to be maintained.

Demand for Closed Jobs

ST. LOUIS, Sept. 18—The Gardner Motor Co. reports a large demand for its new closed models, and production has been continuing at an increasing rate through the summer. Heavy shipments have been made to the East and to the Pacific Coast. The southern market is reported just beginning to become active, with indications that the automobile business throughout the South will be better this fall than for a long time.

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DETROIT EXPANDING PLANT FACILITIES

Manufacturers Rush to Complete Building Programs to Increase Output

DETROIT, Sept. 18—Many millions in new buildings will be made ready for the industry in the remaining months of this year and the early spring of 1923. With the announcement by Dodge Bros., of a new eight story body and assembly building, practically every large maker in the middle class or low class field is now definitely committed to the expansion of plant facilities. Though the expansions are largely to permit of increased closed body production, they likewise mean that general production capacity will be larger.

Hupp Making Additions

Besides Dodge, the Hupp Motor Car Co. has recently announced the addition of a new manufacturing building which will give it about 50 per cent added production space. The Ford Motor Co. is contemplating the erection of assembly plants at Jacksonville, Fla., and Minneapolis in the United States, as well as in Tampico, Mexico. The Canadian plant capacity is to be doubled by 1923 through additional factory buildings, and the Manchester and Cork plants in the British Isles are being extended.

Work has just been started on a one-story addition at the Lincoln Motor Co. plant which will be 1,600 feet long and which will be used for general production. No formal statement has been made by Ford officials as to the extent Lincoln production will be increased, but the size of the building under way would indicate that Ford is beginning to put into effect plans which will place the Lincoln car on a much larger production basis.

Columbia Motors, with the acquisition of the former Saxon plant, is in a position to triple its former production. Wills Sainte Claire is adding factory space for the special painting and finishing of its cars. The Buick Motor Co., with the addition of the former Scripps-Booth plant, has doubled its former production capacity. A new body plant is being built at Flint by the Chevrolet Motor Co. which it will lease to the Fisher Body Co. for the exclusive production of Chevrolet body work.

Durant's Program Biggest

The Durant building program in the district is the largest of all. In Flint the buildings to be constructed for the Flint Motor Car Co. alone will cost approximately $1,500,000 and will cover, when complete, 37 acres of ground. In Lansing, the buildings for the Star and Durant four are nearing the point where production will begin, giving capacity for about 300 daily of the former and 150 daily of the latter.

The Gray Motor Co. has started the erection of an additional assembly building in Detroit which will give it a capacity in this district of about 200 daily. Similar assembly plants in Oakland, Cal., and Albany, N. Y., planned for operation before the season of 1923 will give a production capacity of about 100 daily in each plant. Philadelphia also has been mentioned as the site for an assembly plant which may be started this year.

There has been no expansion of truck manufacturing facilities in this se because most of the plants were built to meet war time conditions and are never built for peace time requirements to date. Truck business is showing steady gains, however, and makers are optimistic over the possibilities of putting most of their plant space into operation by the spring of 1923.

Closed Car Output High

DETROIT, Sept. 14—Reports by the Maxwell Motor Car Co. show that the closed car output is running 50 per cent of total production. From present schedules it is very likely that the company will reach its estimate of 56,000 cars as the total output for the year. The September schedule calls for 5,500 cars and the last quarter 13,500.

Increase School Bus Fleet

BIRMINGHAM, ALA., Sept 16—The Board of Education of Jefferson County, Ala., have found the motor bus or truck so efficient in transporting children to and from school that they are increasing their fleet. Bids have recently been requested for four new trucks for this work.

TARIFF BILL KEEPS 90 PER CENT IMPOST

House Conferees Accept Senate Amendment—Will Check Speculator's Efforts

WASHINGTON, Sept. 15—Protection for the American automotive industry is assured in the conference tariff report as submitted to the House to-day. One of the most important features of the tariff bill is the acceptance by the House conferees of the Senate amendment imposing a duty of 90 per cent foreign value upon motor vehicles, bodies, chassis, and parts exported from this country prior to Feb. 11, 1919, for use during the war. The enactment of the provision will put a check to speculators, who have bought this equipment abroad, from taking unfair advantage of American producers and dealers.

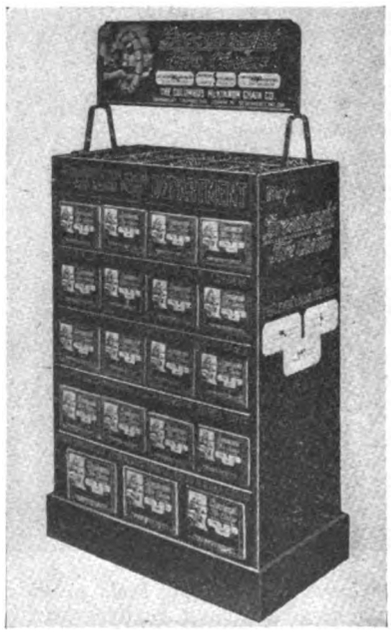
The House bill provides that if any country imposes a duty on motor vehicles or parts when imported from the United States in excess of the American levy there shall be placed an equal duty on similar articles imported from that country. This duty is, however, not to exceed 50 per cent, American value. This amendment strikes out the House provision; and the House receded from its disagreement with an amendment restoring the House provision and making certain clerical changes.

Tire Chain Display Cabinet

THE Dreadnaught chain cabinet is another merchandiser prepared by a manufacturer to provide the dealer with a means of displaying this item of equipment in a neat, attractive manner. Complete sets of chains in strong cartons are carried on the shelves of the cabinet and an assortment of spare cross chains is provided for by dividing the top into compartments. Each compartment is marked with the size and number of links in the cross chains it contains. Clamps are installed on the side of the cabinet to carry advertisements of this make of chain which appear from time to time in popular magazines.

The cabinet is furnished the dealer free on receipt of his order for 50 pairs of chains and 500 cross links. The dealer may select any assortment of sizes and parts he chooses. However, the Columbus-McKinnon Chain Co. has worked out an assortment of sizes which will enable the dealer to supply the needs of most of his customers.

Dreadnaught chains are packed in waterproof, riveted fibre cartons. These cartons are packed in crates of ten for shipment to the jobber. Only one size of chain is packed in a crate. These two features simplify handling and stock-keeping in the jobber's warerooms. The cartons are well adapted for dealer display purposes and, in addition, may be used by the buyer as a compact container for his chains in the toolbox of his car.



The Dreadnaught chain cabinet provides a neat, attractive means of displaying chains and cross links

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TIRE MAKERS STILL FEEL PRICE EFFECTS

Ignorance of Production Costs Hurts Industry—General Improvement Seen

CHICAGO, Sept. 15—Tire manufacturers speaking at the monthly meeting here yesterday of the Midwest Rubber Manufacturers' Association declared that eight out of ten of the small tire manufacturers are selling tires for less than the cost of production. It was the opinion of the speakers that probably half of the eighty per cent do not know that their selling price is below the cost of production because they are not able to figure manufacturing cost.

The price situation was said to be seriously affecting the tire makers in the Midwest group, but some hope of improvement was seen in the business trend. It was pointed out that most of the manufacturers have discontinued the shipment of tires on consignment and are now requiring cash on delivery.

The tire trade is greatly hurt, it was said, by the frequent failures of tire manufacturers with the result that in the liquidation process carloads of tires are dumped on the market at a fraction of the production cost. One manufacturer went so far as to declare that there are no longer any legitimate retail tire dealers. "The 'gyps' are the only ones who can make money enough to stay in the business," he said.

It was decided to hold the November meeting of the association in St. Louis.

General Tire to Expand

AKRON, Sept. 15—Between now and the first of the year the General Tire & Rubber Co. proposes to double its capacity, which will give it a capacity of about 4500 tires a day. The expansion will cost about $200,000 and will be in the nature of machinery rather than buildings.

John N. Willys Returns

NEW YORK, Sept. 16—John N. Willys, president of the Willys-Overland Co., has returned from a two months' visit to Europe. Willys, in anticipation of stiff competition abroad because of the tariff, has planned increased production in his English plant at Manchester.

A Demonstration Stand for the Jobbers' Salesroom



The bureau of electric tools provides a substantial work bench upon which the units displayed may be demonstrated. The back piece carries an assortment of machines as well as pockets for booklets. The stands are made of oak with a wax finish. The side and front panels consist of colored slides which are removable and new slides are supplied periodically. The bureau is illustrated in the new Black & Decker book, "Products, Markets, Policies," which has been issued to the jobbing trade

INSURANCE HANDLING BY DEALERS RESENTED

Agents in New Jersey Protest—State Officials Also Complained Against

NEW YORK, Sept. 15—Northern New Jersey insurance agents are protesting against automobile dealers acting as insurance agents when selling cars to new customers, the Eastern Underwriter says, and the National Association of Insurance Agents will be asked to take some form of action at its Hot Springs convention.

So indignant are the Jerseyites that it is said they contemplate retaliation by asking their friends to buy cars in New York City rather than in their home State. It also is charged that some of the insurance companies are open to criticism in that they co-operate with the automobile dealers in this practice by accepting their insurance.

Still another charge made is that certain insurance brokers have agreements with automobile dealers whereby commissions received on the sale of a car and those received upon the insurance are divided equally.

Another alleged practice that is condemned is against direct soliciting of insurance by state officials who issue automobile licenses.

The Eastern Underwriter also is authority for the statement that "with a loss of over $500,000 to companies writing fire and theft policies on automobiles in the cities and towns of Northern New York in one year, the agencies writing this class of insurance have practically retired from the field and are not only refusing to write new business, but are cancelling old policies." It is said that 30 out of the 40 in this field have quit.

COLLECTOR EXPLAINS ASSESSMENT OF TAX

MILWAUKEE, Sept. 18—A. H. Wilkinson, collector of internal revenue at Milwaukee, has given an explanation of the section regarding assessments on automotive parts used in connection with repair and replacement work by garages and service shops to combat misunderstanding among some dealers and manufacturers. He says:

"Regarding repair work other than top and body work, a person who manufactures for sale separately parts and accessories, and who is also engaged in the repair business, will be held to be a manufacturer with respect to all such parts and accessories made and sold by him, regardless of whether used in repair work or not. A person who does not manufacture any parts or accessories for sale separately, but is engaged in doing a strictly repair business and who makes only occasionally a part needed for an immediate repair job performed by him, is not a manufacturer, and is not required to pay any tax with respect to any such parts or accessories."

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SOUTH AFRICA MAKES STEADY SALES GAINS

Revival Marked by Great Increase in Use of Motor Trucks

JOHANNESBURG, S. A., Aug. 9 (*By Mail*)—Motor traders throughout South Africa complain that July was the worst month they ever experienced, but in spite of this, car sales have been good. That is difficult to understand. More actual cars—new and used—were sold in the Transvaal, Natal, Orange Free State and Cape Colony in July than in May and June, and yet the workshops were almost idle and the accessory and tire business was dead. August has already shown an improvement, and it looks as if the new car sales are going to continue.

Mines Reopening

The fact is that the results of the Revolution that took place on the Rand early this year are only making themselves felt now. A bright feature, however, is that there is less unemployment than since the strike, and gold mines that have been closed down for a considerable period are being started up again. Also there is talk of another gold reef in the Northwestern Transvaal, and it is known that several of the big mining houses are sufficiently interested to keep their experts touring around that part of the busveld where the gold belt is believed to be.

The latest car arrival is the English Austin. This has been specially built for colonial work and has met with a very favorable reception. The first Austin cars that came to S. A. after the war were not as suitable to conditions here as this later model. The standard touring job is a high grade production selling here at about the same price as the Hudson. It is powerful, has high clearance, sufficiently low gearing, and is not too heavy. Other English and Continental cars in the shape of Fiats, Vauxhalls, Talbots and Renaults have recently arrived.

Reliability Competitions

The Transvaal Automobile Club had arranged three reliability competitions (1000 miles) to take place early in August, but owing to lack of entries these had to be cancelled. Last year the T. A. C. Motor Marathon was a great success, and it is to be regretted that nothing of the sort is to be run in 1922. As a matter of fact the Transvaal Automobile Club—the largest automobile body in the Union of South Africa—has come in for considerable criticism lately. It is asserted that it is not sufficiently representative, and it is thought that some form of associate membership should be arranged.

Johannesburg, Cape Town, Durban and Pretoria—the Union's four largest cities—are all endeavoring to "put their house in order" as regards traffic and parking. Dealers here realize that better traffic means better business, and are acting accordingly. In Johannesburg there is a traffic advisory board consisting of members of the Municipality, the Police, the Transvaal Automobile Club, the Motor Traders and the South African Railways (who are large users of heavy transport). This body is now wrestling with parking problems, and as a result it is thought that owners will get into the habit of garaging their cars during the day instead of leaving them about the streets. The number of parking spaces in comparatively narrow thoroughfares right in town has been reduced, giving better facilities for improving traffic.

Motor Trucks Increasing

A great feature about traffic in Johannesburg—and in a lesser degree throughout South Africa—is the increasing use of motor trucks. The traffic is becoming thoroughly motorized. Just lately firms that have always expressed the opinion that motor transport was useless for their particular work have gone in for trucks, and in every instance this change has been successful. For instance a well-known firm of coal merchants in Johannesburg purchased a White truck, but before doing so it needed a tremendous amount of persuasion to convince them that the outlay was justified. Now they are concentrating on these trucks, and their example is being followed by others.

The Municipality of Benoni, a Reef town with a population of about 15,000 whites, has just purchased the first White motor bus chassis to come to this country.

At present they are operating motor buses built on ordinary truck chassis. There is likely to be a demand for motor buses in South Africa in the near future. In Johannesburg two or three companies are now operating from one to four buses each and competing successfully with the municipal trolley cars.

URGE LAW REQUIRING MIRRORS ON TRUCKS

WASHINGTON, Sept. 16—Accidents on the highways could be greatly decreased by the passage of uniform state laws requiring every truck to carry a mirror, and by requiring every horse drawn vehicle, as well as automobiles, to display some sort of light when using the roads at night.

This is the opinion of M. O. Eldridge, director of roads of the American Automobile Association Good Roads Board, after making a careful digest of the traffic laws of all the States of the Union. Eldridge, in a report to the Secretary of Commerce, sets forth that 13 States have laws requiring the mirror on trucks, but that very few have any regulation for horse-drawn vehicles.

SHORT MEASURE SALES OF GASOLINE FOUGHT

N. M. A. Estimates 1,000,000 Gallons Daily Loss to Motoring Public

WASHINGTON, Sept. 18—The crusade against short measure selling of gasoline inaugurated by the National Motorists' Association has been started in earnest. The first shot produced results in that of 46 warrants sworn out in Louisville by the Louisville Automobile Club against managers of filling stations, six pleaded guilty and paid the fine of $10 each that was imposed by Judge William Earl. These warrants followed a four day tour of inspection by the club in cooperation with the city inspector of weights and measures. At each station visited five gallons of gasoline were bought and it is said that there was an alleged shortage of measurement in each case.

Charges made by the National Motorists Association are that the average filching of short measure artists amounts to two pints in each five gallons, a daily loss to purchasers of 1,000,000 gallons, valued at approximately $250,000, or $90,000,000 a year. This is based on the assumption that each motorist buys two gallons of gasoline daily.

STRIKE PROVES TRUCK SHIPMENTS BEAT R. R.

CHICAGO, Sept. 16—Automobiles have been placed in operation by the Northern Jobbing Co., a wholesale grocery concern here, to make hauls to all Illinois, Wisconsin, Michigan, Indiana and Iowa towns. This move was inaugurated because of the railroad strike, and it is the opinion of the traffic managers of the firm that this will continue even after the shop men have returned to work.

Figures compiled by this house show that the average cost per mile on operations is fully fifty per cent less than rail shipments have been since the war. Light speed trucks will work on the roads for this company, as no heavy goods are handled.

Grocery dealers in towns supplied by the company were writing that certain commodities could not be found in the town at all. One town in Wisconsin complained that "not a bar of soap is to be had," and so the motor truck whizzed out with a shipment.

Great Gains by Pierce-Arrow

BUFFALO, Sept. 16—The Pierce-Arrow Motor Car Co. reports sales and shipments for last month as greater than in any previous August and three times the amount for August, 1921. The company states that it is behind in production especially of closed cars which total more than 70 per cent of the entire output.

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CHANGES IN THE TRADE

George F. Reed has been appointed distributor for the Moon in McKeesport, Pa.

Lee Motors, Inc., Syracuse, has taken over the agency for Syracuse and central New York for the Oakland.

Overholt Motor Co., Greensburg, Pa., has secured the agency for Mack trucks for all of Westmoreland County.

E. G. Streett has been appointed southern representative for the **Klaxon Co.** with headquarters in Atlanta, Ga.

Herr & Co., Lancaster, Pa., has been appointed sole distributor for **Firestone** rubber products in that territory.

Queens Vehicle Corp., Jamaica, Long Island, New York, now represents the new Peerless 8 in that territory.

W. M. Renick and Blair Pyle have been appointed to distribute the Lomar shock absorber in Cleveland territory.

Edward Payton of Syracuse has been appointed sales manager of the **Birkett L. Williams Co.** of Cleveland, Franklin dealers.

Robert Strong of Fruit Hill, Ohio, has been appointed a territorial salesman for the **Peck Motor Car Co.**, Cincinnati Hupmobile dealers.

Peck & Adler, formerly of Little Falls, have been named distributors for the **Westcott Motor Car Co.** in the territory adjacent to Syracuse.

Mack Trucks, Inc., has opened a factory branch at Toledo, which will be in charge of **J. C. Smith**, formerly manager of the St. Louis branch.

Bachman Motor Car Co., Milwaukee, distributor of the Dort and Stephens, announces the appointment of S. S. Morehouse as retail sales manager in Milwaukee County.

John Nicol Co., 2210 Michigan Avenue, Chicago, formerly handling the Federal, has become distributor for the Liberty and will continue to represent the Saxon Duplex.

Brunswick-Balke-Collender Co. announces the appointment of **Fred W. Earle**, formerly of the United States Tire Co., as district representative, located in Sioux City, Iowa.

Nielsen Buick Co. of Brigham City, Utah, has filed incorporation articles. Capital will be $10,000 in $1 shares. **John Heaton** is president and **J. C. Nielsen** secretary-treasurer.

Meixell Tire Co. has been established in Atlanta by **A. C. Meixell**, who was with the Fisk company for thirteen years, for the distribution of Fisk tires in the Atlanta territory.

Kleiber Motor Truck Co. of San Francisco announces the appointment of **L. B. Stephens** as general manager of the sales and service departments of their Atlanta factory branch.

Templar Motors Co. of Cleveland has opened a Philadelphia salesroom and service station under the direction of the factory. The local concern is known as the Templar Sales Co.

Elton Motors Co., Youngstown, Ohio, has opened a sales and service station for Cadillac and Chevrolet in Salem. **E. B. Drake** will be manager with **A. D. Stewart** in charge of service.

John P. Dods, for years associated with the **Automobile Blue Book Publishing Co.**, has been appointed general manager of the Brightman Manufacturing Co., South Columbus, Ohio.

Diamond Chain & Mfg. Co. has opened an office in Cleveland in charge of H. I. Markey, who has been with the company for five years as mechanical engineer in the engineering and sales departments.

William Love, who recently handled Packards at Toledo, has become the distributor for Rickenbacker cars and Standard trucks. **H. C. Bulask** of Toledo, who has been in Cleveland with Packard, will be sales manager.

Jack Devins, formerly of the E. S. Gahagan Co., Cincinnati Studebaker distributors, has assumed the sales management of the **Lexington-Cincinnati Motors Co.**, **Jack Duval** having been promoted to general manager.

Peerless Motor Co., Cleveland, has been incorporated with a capital of $100,000, to deal in motor cars and accessories. The incorporators are **D. A. Burke, W. H. Collins, J. F. Porter, F. A. Trester** and **E. R. Cameron.**

Cookson Motor Car Co., Dayton, has been incorporated with a capital of $25,000, to deal in motor cars and accessories. The incorporators are **C. R. Cookson, R. H. Brundrett, Roland C. Landis, A. F. Hullinger** and **Ralph P. Dixon.**

Homeier-Whorley Motor Co., Akron, has been incorporated with a capital of $25,000, to deal in motor cars and accessories. The incorporators are **A. L. Homeier, Merton M. Whorley, Pierce A. Snyder, Z. M. Whorley** and **C. H. Stahl.**

James J. Flynn, for six years with the Chevrolet Motor Co. and in charge of Cincinnati zone as sales manager for three years, is leaving to accept a position with **Durant Motors, Inc.**, with headquarters at Elizabeth, N. J.

Columbus United Tire Co., which has been operating two stores in Columbus and a chain in central Ohio, has opened a third local store. The new store will be under the management of R. N. Pharis. J. E. Leacy is general manager of the company.

Arch McBrair is the first Elgin dealer to be appointed for Cincinnati suburbs and other points in the western part of Hamilton County by the **Dornette Motor Car Co.**, Cincinnati, which has just assumed distribution of the Elgin in the Cincinnati territory.

John D. Harrison, assistant manager of the Willys-Overland branch in Atlanta, formerly assistant manager of the Toledo, Ohio, branch, has resigned his position and accepted an important post in the sales department of **Barrett & Co.** of New York City.

R. M. Dobson has been appointed general manager of the new Milwaukee County sales and service division established by the **International Harvester Co.** The I. H. C. maintains one of its largest tractor works in Milwaukee, these shops also producing numerous other lines.

R. S. Beane, who formerly operated in the south for the Sparks-Withington Co., has been made southern district manager for the **Hinckley-Myers Co.**, Jackson, Mich., which manufactures automobile tools and equipment. Beane has been connected with the industry since 1907.

C. S. Johnson, for many years with the Peerless Motor Car Co. of New York City, the General Motors, and from 1910 to 1914 an attache of the American Embassy at Berlin, has been appointed District Sales Manager for the new Peerless car in New York, Connecticut and New Jersey.

Harry E. Smith of Columbus, Ohio, has purchased at receiver's sale a stock of parts and accessories from the United Auto Stores Co., and will head the **Economy Auto Supply Co.** in this city. All of the stores of the United Auto Accessories Co. have been closed and the stocks moved to Columbus.

C. G. Atwood, formerly distributor of Overland cars in northwestern Ohio and of late years head of the battery sales for Prest-o-Lite in Toledo, has joined the Cadillac-Toledo Co. as a salesman. He is also head of the Toledo Auto Shows Co., which will have charge of the annual spring show.

S. M. Williams, who for several years was in charge of the work of the Federal Highway Council in Washington, D. C., and who joined the Autocar Co., Ardmore, Pa., when the Federal Highway Council was abandoned, has been appointed manager of the New York City branch of the Autocar company.

D. C. McCready is the new district manager of the **B. F. Goodrich Rubber Co.** in the Cincinnati territory. He comes to Cincinnati from Washington, where he was district manager for the organization for a number of years. For four years he was in the Goodrich sales department at the factory.

A. F. Bassett has been appointed assistant sales manager of the motor bearings division of the **Hyatt Roller Bearing Co.** Bassett is a graduate of Yale Sheffield school and has been connected with the sales and engineering divisions of the company. Recently he has been sales engineer for the Detroit territory.

Walter F. Wright, southern division manager of the Willys-Overland Co., has taken over the Cleveland branch of Willys-Overland and will operate it under his own name as a distributor. Wright has been with Willys-Overland for ten years, serving alternately as factory representative, special representative, branch manager, division manager and assistant to the vice-president in charge of sales.

Nash Sales Co., Milwaukee, which on Sept. 1 took over the retail franchise on the Nash line in Milwaukee County and vicinity, has also been appointed distributor and local retail dealer of the **LaFayette**, the wholesale territory comprising all of Wisconsin. Alfred Reeke, who has gone to Cleveland, Ohio, as distributor of the Nash and LaFayette, formerly handled the retail franchise of both lines.

J. M. Dixon and **N. E. Oliver** have been appointed directors of the **Quaker City Rubber Co.** Dixon is president of the Tobacco Products Co. Oliver, who has been identified with the rubber industry for 25 years, was formerly associated as a director with the Diamond Rubber Co. and later became general manager of the B. F. Goodrich Rubber Co. of New York, where he had charge of practically all of the eastern states.

Accessories Oversold

CHICAGO, Sept. 15—After the greatest summer season in its history, the automobile accessory business in Chicago is getting back to its accustomed stride. Dealers in accessories everywhere report sales in the past six months as beyond every expectation and preparation. Spotlights, bumpers, stoplights and seat covers have been oversold in a number of places, and every dealer expects that the winter will be good.

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ASSOCIATION ACTIVITIES

Springfield to Hold Show

SPRINGFIELD, MASS., Sept. 15—At a meeting of the Springfield Automotive Dealers Association a proposal to have a closed car show in the Municipal Auditorium three days the latter part of October was favorably considered, with probability of a special meeting being called to make arrangements for the event.

A resolution was adopted providing for the abolition of the practice of extending free use of cars to various fraternal and social organizations soliciting such aid from association members, except in such cases as the board of directors may decide that the occasion merit such courtesies. The same rule will apply to advertising solicited among the members by organizations conducting fairs and the like. Exceptions will be made, however, in the case of charities and aid to war veterans.

Cincinnati Holds Outing

CINCINNATI, Sept. 16 — The monthly meeting and outing of the Cincinnati Automotive Trades Association, held early this month at a river resort near the Queen City, was an unqualified success.

At the business meeting Manager John J. Behle reported that the sale of space for the association's big automotive and radio show to be held in November has exceeded every expectation of the executive committe. The success of the enterprise is now assured, sufficient space already having been let to guarantee the expenses.

The business meeting was preceded by a stake dinner prepared under personal direction of William Pister, a member of the association; and the afternoon was spent in various forms of recreation.

As a result of the outing, several new members were added to the association.

Georgia Head Resigns

ATLANTA, Sept. 15—Volney Williams of Savannah, Ga., president of the Georgia Automotive Dealers Association, advises that the organization will temporarily operate minus the services of a secretary, due to the resignation of Percy A. Megahee. Williams will act in the capacity of both president and secretary until a later state-wide meeting of the body, at which time Megahee's successor will be chosen. The Georgia Motor Bus and Transportation Association, of which Megahee was also secretary, will also name his successor at its next state-wide meeting.

ASSOCIATION GIVES FREE LEGAL SERVICE

CHICAGO, Sept. 16—The value of the free legal service recently instituted by the Chicago Automobile Trade Association is shown by the fact that the day following the announcement of this service 25 members telephoned to ask questions. Many of these questions involved large sums of money. Among them were such as these:

"Can we hold the car of a party who owes us?" "Would you advise filing suit against this man who did thus or so?" "What is the state law regarding this or that?" "An officer came in and demanded that we pay another $35 license on our service station. What shall we do?"

The manner of conducting the legal department makes it of value to all members, even those retaining their own attorneys. It does not attempt to handle cases in court, but the fact that it devotes its attention exclusively to the automobile trade enables it to answer immediately many pressing questions which a lawyer in general practice might have to study for a considerable time.

Service Association Meets

NEW YORK, Sept. 14 — The Automotive Service Association of New York held its first fall meeting at the Automobile Club of America on Sept. 7. Two motion pictures were shown, one subject being the care and adjustment of the Borg & Beck clutch and the other the construction of the modern automobile, a film made by the Department of Agriculture and the Studebaker Corp. Fifty service managers attended and the meeting was conducted by the new general manager, John R. Eustis. The organization will hold its annual clambake and shore dinner on Long Island Sept. 24.

Brooklyn Holds Clam Bake

BROOKLYN, N. Y., Sept. 15—The Automotive Service Association of Brooklyn held its annual outing and clambake on Aug. 27 outside of Freeport, L. I. Over one hundred attended, and in addition to the regular program of sports the organization brought along its own jazz band, made up of service manager members.

Plan February Show

CHARLOTTE, N. C., Sept. 18—The Charlotte Automotive Trade Association announces that the Carolina automobile show will be held in Charlotte some time during the month of February. No specific date for the show had been set, it was stated, but definite decision made by the Charlotte automobile interests that the show would be held.

Syracuse Annual Meeting

SYRACUSE, Sept. 18—The annual meeting of the Automobile Dealers Association will be held here Oct. 1, at the S. A. M. Club. Officers of the local association will be elected.

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Calendar of Trade Events

CONVENTIONS

Santa Barbara.....October
Annual Convention of the California Automobile Trade Association.

Chicago .....Oct. 18-19-20
National Association of Farm Equipment Manufacturers.

Chicago .....Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

Toledo.....Dec. 6-8
Annual Convention of the Ohio Automotive Trades Association.

SHOWS

Jacksonville, Ill.....Sept. 16-23
Morgan County Fair, Jacksonville Automotive Dealers Association.

Cleveland.....Sept. 18-28
Exhibition of Closed Cars during the merchants and manufacturers exposition, under the auspices of the Cleveland Automobile Manufacturers & Dealers Association, Herbert Buckman, manager.

Memphis, Tenn.....Sept. 23-30
Annual Automobile Show held under auspices of the Memphis Automobile Dealers Association, Tri-State Fair Grounds.

New York.....Sept. 23-30
Closed Car Show, under Auspices of Automobile Merchants Association, Grand Central Palace.

Dallas.....Oct. 6-16
Texas State Fair.

New York City.....Oct. 7-14
Annual Electrical and Industrial Exposition, Grand Central Palace.

Detroit .....Oct. 17-21
Closed Car Salon, General Motors Building, Detroit Automobile Dealers Association, H. H. Shuart, Manager.

Washington, D. C.....Oct. 21-28
Annual Closed Car Salon held under auspices of the Washington Automobile Trade Association, Convention Hall.

Houston.....Nov. 8-18
South Texas Fair.

Jersey City.....Nov. 11-18
Third Annual Show, Fourth Regiment armory, under the auspices of the Hudson County Automobile Trade Association.

Chicago .....Nov. 13-18
Annual Show of Automotive Equipment Association.

Los Angeles.....Nov. 11-19
Automobile Show, Motor Car Dealers Association, Burt Roberts, manager.

Cincinnati .....Nov. 22-29
Second Annual Automobile Accessory and Radio Exposition, Music Hall, under the auspices of the Cincinnati Automotive Trade Association.

New York.....Dec. 3-9
Eighteenth Annual Automobile Salon, Commodore Hotel.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, auspices of the Automobile Body Builders Association.

Chicago .....Jan. 27-Feb. 3
Annual Automobile Salon, Drake Hotel.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Minneapolis .....Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Brooklyn, N. Y.....Feb. 24-Mar. 3
Annual Automobile Show under auspices of the Brooklyn Motor Vehicle Dealers Association, 23rd Regiment Armory.

Syracuse.....Feb. 26-Mar. 3
Annual Automobile Show under auspices of the Syracuse Automobile Dealers Association.

Newark, N. J.....Mar. 10-17
Annual Automobile Show under the auspices of the New Jersey Automobile Exhibition Co., Claude E. Holgate, manager.

RACES

Fresno, Cal.....Sept. 30
Los Angeles.....Nov. 30
San Diego.....January

BUSINESS CONDITIONS IMPROVING, SAYS RICE

DETROIT, Sept. 14—Following a convention of distributors and dealers this week, at which fall and winter sales were discussed, President H. H. Rice of Cadillac Motor Car Co. has declared that factory operation will be continued through the winter at full force. He said:

"I believe that general business, in spite of a few disturbances on the surface is decidedly on the up-grade. I not only believe that people will be able to get coal this winter, but also manufacturing concerns will get enough coal to operate.

"Strikes in any essential line of business are bound to be settled after a short duration. These strikes are too vital to last long. The crops this year are good, and I believe the farmers will obtain good prices for them. Factories that have been shut down are gradually opening."

Lynn McNaughton, general sales manager of the company, said business in the past twelve months has exceeded the business of any similar period, both in number of cars and in total value.

Anti-Theft Law Enforced

DETROIT, Sept. 18—The Secretary of State has cancelled permission to use an affidavit in lieu of a certificate of title in handling a used car in trade. The permission is withdrawn after 14 months grace.

The sale of a new car does not have to be titled in order to be sold, but the purchaser must immediately obtain a title or be guilty of a violation of the law which carries heavy penalties.

Stress is laid on the execution of this so-called Condon Law, which is a measure to reduce the theft of motor vehicles.

COUNTY FAIRS HELP AUTOMOBILE DEALERS

BLOOMINGTON, ILL., Sept. 18—The county fair season, now nearing an end, has been very advantageous for the automotive dealers. They have placed exhibits extensively, due to bountiful crops, higher prices for all kinds of farm products and the general tendency of the farmer to spend money again.

Dealers in cars, trucks and tractors have been quick to note prosperous conditions and the display of automotive equipment has been proportionately large. Now that farmers are buying tractors once more, dealers are opening up their selling campaign after a long period of quiet.

Big plowing matches in Kane County, known as the Wheatland and Big Rock, gave the tractor men an opportunity to talk their machines, and most of the manufacturers had a corps of men on hand looking up prospects.

FISHER BODY PLANS ASSEMBLING PLANTS

DETROIT, Sept. 15—Fred J. Fisher, president of the Fisher Body Corp. has announced an expansion program involving plants at six points in the United States, aggregating more than 1,500,000 sq. ft. of additional floor space, which will be devoted exclusively to the manufacture of closed bodies for Chevrolet cars.

The corporation through a newly organized subsidiary, the Fisher Body St. Louis Co., has taken over the General Motors Buick plant at St. Louis and will devote it exclusively to the manufacture of Chevrolet closed bodies.

The corporation recently acquired the O. J. Beaudette Company at Pontiac, for the production of open bodies for the Chevrolet.

As the greater part of the Cleveland plant is devoted to Chevrolet production this will make a total of three plants with a joint floor area of over 3,000,000 sq. ft.

Six New Plants Under Way

In addition to these three manufacturing plants, six new plants are in process of construction for assembling, painting and trimming Chevrolet bodies.

The assembling plants will be operated in part by the Fisher Body Ohio Co. of Cleveland and in part by the Fisher Body St. Louis Co. of St. Louis.

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason.....A	¾–1	$1650a	3¾x5	34x5n	34x5n	W
Acason.....RB	1½	1950	3¾x5¼	36x3½	36x6	W
Acason.....H	2½	2750	4½x5¾	36x4k	36x8k	W
Acason—.....L	3½	3450	4½x5¾	36x5k	36x10k	W
Acason.....M	5	4350	5 x6¼	36x6	40x12	W
Ace.....C	1½	2295	3¾x5½	34x3½k	34x5k	W
Ace.....A	2½	2795	4¼x5½	36x4k	36x7	W
Acme.....20	1	....	3¾x5	35x5n	35x5n	W
Acme.....30	1½	....	3¾x5	34x3½	34x5	W
Acme.....40	2	....	3¾x5	34x3½	34x5	W
Acme.....60	3	....	4½x5¼	36x4	36x7	W
Acme.....60L	3	....	4½x5½	36x4	36x7k	W
Acme.....90	4½	....	4½x5½	36x5	40x10	W
Acme.....125	6½	....	4¾x6	36x6	40x12	W
American.....25	2½	3350	4 x6	36x4k	36x4dk	W
American.....40	4	4275	4½x6	36x5k	36x5dk	W
Armleder.....20	1	....	3¾x5¼	34x3½k	34x6k	W
Armleder.....21	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder....40-B	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder....40-C	1½	....	4¼x5¼	34x3½k	34x6k	W
Armleder..HW-B	2½	....	4¼x5½	36x4k	38x7k	W
Armleder..HW-C	2½	....	4½x5¼	36x4k	36x7k	W
Armleder..KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder..KW-C	3½	....	4½x5½	36x5k	36x5dk	W
Atlas.....MD	1	1185	3½x5	32x4½n	32x4½n	W
Atterbury....29R	1½	2175	3¾x5	34x3½	34x5	W
Atterbury....22C	2½	3375	4¼x5¼	36x4	36x4d	W
Atterbury....22C	2½	3375	4¼x5¼	36x4	36x4d	W
Atterbury....22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury....22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury.....8E	5	4975	4¾x6	36x5	40x6d	W
Atterbury.....8E	5	5125	4¾x6	36x5	40x6	W
Autocar.....21UF	1½–2	1950	4¼x4½t	34x4k	34x5k	D
Autocar.....21UG	1½–2	2050	4¼x4½t	34x4k	34x5k	D
Autocar.....27H	2	2950	4 x5½	34x5	36x7	D
Autocar.....27K2	2	3075	4 x5½	34x5	36x7k	D
Autocar.....26Y	5	3950	4¼x5½	34x6	36x12	D
Autocar.....26-B	5	4100	4¼x5½	34x6	36x12	D
Available...H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available.....H2	2	2775	4 x5	36x3½k	36x6k	W
Available...H2½	2½	3160	4 x5	36x4k	36x8k	W
Available...H3½	3½	4175	4½x5½	36x5	40x5d	W
Available.....H5	5	5375	5 x6	36x6	40x12	W
*Avery.....	1	....	3 x4s	34x5n	34x5n	I
Beck.....A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	I
Beck.....B-30	1½	1725	3¾x5	34x5	36x6	
Beck.....C-40	2	1810	3¾x5	36x6	36x6	
Beck.....D-50	2½	2395	4½x5¼	38x7	40x8	
Bell.....M (Iowa)	1	1195	3½x5½	35x5	35x5n	W
Bell.....E (Iowa)	1½	2100	3¾x5¼	34x3½	34x5	I
Bell.....O (Iowa)	2½	2560	4¼x5½	34x4	34x6	I
Bessemer.....G	1	....	3½x5	35x5n	35x5n	I
Bessemer.....H-2	1½	....	3¾x5	36x3½	36x5	I
Bessemer.....J-2	2½	....	4½x5¼	36x4	36x4d	I
Bessemer.....K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem...KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem...CN	2	1595	4 x3¼	34x4½k	34x6k	I
Bethlehem...HN	3	2195	4 x5¼	36x4k	36x8k	I
Brinton.....C	2	2500	3¾x5	34x4	34x5	W
Brinton.....D	3	2975	4½x5¼	36x4	36x7	W
Brockway.....E	1	....	3¾x5½	35x5n	35x5n	B
Brockway.....S-5	1½	....	3¾x5	36x4	36x6	W
Brockway.....SK	1½	....	4½x5¼	36x4	36x6	W
Brockway.....KR	2½	....	4½x5½	36x4	36x8	W
Brockway.....K-5	2½	....	4½x5¼	36x4	36x8	W
Brockway.....RT	3½	....	4¾x6	36x5	36x10	W
Brockway.....R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway.....T-4	5	....	4¾x6	36x6	40x6d	W
*Buick.....	½	945b	3⅜x4¾	31x4n	31x4n	B
Case.....	2	....	4¼x5¾	36x6	38x7	I
*Chevrolet.....	¼	510b	3½x4	30x3½n	30x3½n	B
*Chevrolet.....G	¾	650	3½x4	34x4n	34x4½n	B
*Chevrolet.....T	1	1095	3½x5¼	33x4n	35x5n	W
Chicago.....C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago.....C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago.....C3½	3½	....	4½x5½	36x5	36x10	W
Chicago.....D5	5	....	4½x5½	36x6	40x12	W
Clydesdale.....13	¾–1½	1435	3¾x5	34x5n	34x5n	B
Clydesdale.....13	¾–1½	1890	3¾x5	34x5	34x5	W
Clydesdale.....22	1–1½	2385	3¾x5	34x5	34x5k	W
Clydesdale.....42	1½–2	2475	3¾x5	36x3½	36x6	W
Clydesdale...65X	2½–3	3250	4¼x5¼	36x4	36x8	W
Clydesdale...65EX	2½–3	3450	4½x5½	36x4	36x8	W
Clydesdale.....93	3½–4½	4100	4½x5½	36x5	36x10	W
Clydesdale....120	5–6	4500	4¾x6	36x6	40x12	W
Comet.....T	1½	1050	3¾x5	34x4	34x4	W
Commerce.....T	¾–1½	1450	3¾x5	34x4½n	34x4½n	B
Commerce.....12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce.....15	2	2150	3¾x5	35x5n	36x6n	I
Commerce.....18	2½	2195	4⅛x5¼	36x6n	40x8n	I
Commerce.....25	2½	2425	4⅛x5¼	36x4	36x7	W
Cook.....51	2½	3600	4 x5⅛	36x6n	40x8n	W
Corbitt.....E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt.....D-22	1½	2200	3¾x5	34x3½	34x5	W
Corbitt.....C-22	2	2600	4⅛x5¼	36x3½	36x7	W
Corbitt.....B-22	2½	$3000	4⅛x5¼	36x4	36x7	W
Corbitt.....R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt.....A-22	3½–4	3800	4½x5½	36x5	36x10	W
Corbitt.....AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder....AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder.....B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder.....D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder.....C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder.....F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder.....E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn.....E	1	1600	3¾x5½	35x5n	35x5n	W
Dearborn....FX	1½	2300	3¾x5½	34x4	34x5	W
Dearborn.....F	1½	2180	3¾x5½	34x4	34x5	W
Dearborn.....48	2	2590	3¾x5⅛	34x4½n	34x7	W
Defiance.....G	1	1695a	3¾x5	35x5n	35x5n	B
Defiance.....D	1½	2095a	3¾x5	35x5n	36x6n	I
Defiance.....E	2	2275a	3¾x5	35x5n	38x7n	I
Denby.....31	1¼	1485	3½x5	35x5n	35x5n	B
Denby.....33	1½	2145	3¾x5	35x5n	38x7n	I
Denby.....34	2	2395	3¾x5	36x3½	36x6	I
Denby.....35	2½–3	2795	4⅛x5¼	36x4	36x7	I
Denby.....27	4	3895	4½x5½	36x5	36x5d	I
Denby.....210	5	4295	4½x5½	36x6	40x6d	I
Dependable....A	¾–1	1650	3⅝x5⅛	34x5n	36x6n	W
Dependable....C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable....D	2½	2650	4 x5½	34x5	36x6	W
Dependable....E	3	2950	4¼x5½	36x4	36x7	W
Diamond T...O-3	1–1¼	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T.....T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T.....U	2–2½	2650	4 x5¼	36x4	36x7	W
Diamond T.....K	3½	3750	4¼x5½	36x5	30x5d	W
Diamond T....EL	5	4325	4½x5½	36x6d	40x6d	W
Diamond T.....S	5	4500	4¾x6	36x6	40x6d	W
Deane.....		2½	4100b	4¼x5¾	36x5	36x7	C
Deane.....		3½	5100b	4½x5¾	36x5	36x5d	C
Deane.....		6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers.		¾	730	3⅞x4½	32x4n	32x4n	B
Dorris.....K-4	2–2½	3400	4¼x5½	36x4	36x7	W
Dorris.....K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort.....133	½	685a	3½x5	34x4n	34x4n	B
Double Drive..B		3	4000	4¼x5½	6	6	W
Duplex.....A		2	2775	4 x5½	35x5n	38x7n	W
Duplex.....E		3½	3500	4½x5½	36x8	36x8	I
Duty.....22		2	1590	3½x5	34x3½	34x5	I
F. W. D.....B		3	4200	4⅝x5½	36x6	36x6	B
Fageol.....1½		1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol.....2½		2½	3900	4¼x5¾	34x4	36x7	W
Fageol.....3½		3½	5000	4½x6½	36x5k	40x5dk	W
Fageol.....5		5	5700	4½x3¼	36x6	40x6d	W
Fargo.....R		2	1700	3¾x5	36x4	36x6	I
*Federal.....		1½	1375	3¾x5	—x5n	—x5n	
Federal.....SD		1½	1800	3¾x5	35x5n	36x6n	W
Federal.....TE		1½	2175	4¼x5¼	36x3½	36x5	W
Federal.....UE	2–2½	2425	4¼x5½	36x4	36x7	W
Federal.....WE	3½–4	3150	4½x5½	36x5	36x5d	W
Federal.....X2	5–6	4500	4¾x6	36x6	40x6d	W
*Ford.....TT	1	430	3¾x4	30x3½n	32x4½n	W
Front Drive....C		1½	2800	3¾x5½	5	4	W
G & J**.....23		1	2275	3⅝x5½	34x5n	34x5n	W
G & J**.....A		2–2½	3375	4 x5¼	36x4	36x7	W
G & J**.....B		3½–4	4475	4½x5½	36x5	36x10	W
G.M.C.....K15		1	1295	3½x5½	34x5n	34x5n	B
G.M.C....K-41A		2	2375	4 x5½	36x4k	36x7k	W
G.M.C....K-41B		2	2375	4 x5½	36x4k	36x7k	W
G.M.C....K-41T		5†	2450	4 x5½	36x4	36x8	W
G.M.C....K-71A		3½	3600	4½x6	36x5	40x5d	W
G.M.C....K-71B		3½	3700	4½x6	36x5	40x5d	W
G.M.C....K-71T		10†	3700	4½x6	36x5	40x12	W
G.M.C...K-191*		5	3950	4½x6	36x5	40x6d	W
G.M.C...K-191T		15†	4050	4½x6	36x5	40x14	W
G.M.C...K-191S		5	4050	4½x6	36x5	40x6d	W
G.W.W.....		1½	1850	3¾x5½	35x5	35x5	I
*Garford.....		1	1590	3⅝x5½	34x5n	34x5n	W
Garford.....25-H		1½	1990	3¾x5½	36x3½	36x5	W
Garford.....7]-H		2½	2750	4¼x5½	36x4	36x8	W
Garford.....77-D		4	3750	4½x6	36x5	36x5d	W
Garford.....63-D		5	4500	5 x6½	36x6	40x6d	W
Garford.....153-A		7½	5200	5 x6½	36x6	40x7d	C
Gary.....F	1–1½		1675	3¾x5	36x3½	36x5	W
Gary.....I		2	2250	4 x5½	36x3½	36x6	W
Gary.....J		2½	$2650	4½x5½	36x4	36x8	W
Gary.....K		3½	3650	4½x6	36x5	40x5d	W
Gary.....M		5	4100	5 x6½	36x6	40x6d	W
Gersix.....M		1½	3100	4 x5½	36x3½	36x7	W
Gersix.....K		2½	3500	4½x5½	36x4	36x8	W
Gersix.....		3½	4500	4½x6	36x5	40x12	W
Graham Bros.....		1	1265	3¾x4½	33x4½n	34x5n	B
Graham Bros.....		1½	1325	3¾x4½	33x4½n	36x6n	B
1Gramm-Pion..10		1	1295	3½x5	33x5n	33x5n	B
1Gramm-Pion..15		1½	1750a	3¾x5	36x3½k	36x5k	I
1Gramm-Pion..65		1½	2250a	3¾x5	36x3½k	36x5	W
1Gramm-Pion..20		2	2475a	4½x5¼	36x4k	36x7k	W
1Gramm-Pion..30		3	3300a	4¼x5½	36x4k	36x4dk	W
1Gramm-Pion.75P		3½	4225a	4½x5½	36x6n	42x9n	W
1Gramm-Pion..40		4	3850a	4½x5½	36x5	36x5dk	W
1Gramm-Pion..50		5–6	4450a	4¾x6	36x6	40x6dk	W
Hall.....1½		1½	3100	3¾x5	34x5n	38x7n	W
Hall.....2½		2½	3275	4½x5¼	36x4	36x6	W
Hall.....3½		3½	4100	4½x5½	36x5	36x5d	W
Hall.....5		5	5100	4½x5½	36x5	40x6d	W
Hall.....7 chain		7	5100	4½x5½	36x5	40x6d	C
Harvey....W OA		2	2650	4¼x5½	34x4	34x7	W
Harvey....WFA		2½	2950	4¼x5½	36x4	36x7	W
Harvey....WHA		3½	3950	4½x6	36x5	36x5d	W
Hawkeye.....K		1½	1850	3¾x5½	34x3½k	34x5k	I
Hawkeye.....M		2	2650	4¼x5	36x4k	36x6k	I
Hawkeye.....N		3½	3700	4½x6¾	36x5k	36x10k	I
Hendrickson...O		1½	2200	3¾x5⅛	36x4n	36x5n	W
Hendrickson...N		2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson...M		3½	3000	4¼x5	36x5k	36x5dk	W
Hendrickson...K		5	4000	5 x6¾	36x6	40x6	W
Huffman.....B		1½–2	1795	3¾x5	34x3½	34x6	W
Huffman.....C		1½–2	1695	3¾x5½	36x3½	36x6	I
Huffman.....D		2–3	2895	4¼x5½	36x4	36x7	
Hurlburt....A-A		1–1½	1950	3¾x5	34x5n	34x5n	W
Hurlburt....B-B		2–2½	2800	4¼x5½	36x4	36x4d	W
Hurlburt....C-C		3–3½	3475	4¼x5½	36x5	36x5d	W
Hurlburt....D-D		4–4½	4150	4½x6	36x5	36x6d	W
Hurlburt....E-E		6–6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa) B		1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa) G		1½	2040	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.).. HI		2½	2940	4½x5¼	36x4	36x7	I
Indiana.....12		1½–2	....	3¾x5½	34x3½k	34x5k	W
Indiana.....20		2	....	4½x5½	36x4k	36x7k	W
Indiana.....25		2½–3	....	4½x5½	36x4k	36x8k	W
Indiana.....35		3½–4	....	4⅝x5½	36x5k	36x5dk	W
Indiana.....51		5–7	....	5 x6¼	36x5k	40x6dk	W
*International...S		1	1250	3½x5	34x5n	34x5n	I
International...21		1	1550	3½x5¼	36x3½	36x3½	I
International...31		1½	1650	3½x5¼	36x3½	36x4	I
International...41		2	2100	3½x5¼	36x3½	36x5	I
International...61		3	2400	4¼x5	36x4	36x6	I
International..101		5	3600	4¼x5	36x5	40x10	I
Jackson....4WD		3½	3850	4½x5½	36x7	36x7	B
K-Z.....1		1	1750	3½x5	34x3½	34x5	W
K-Z.....1½		1½	2075	3¾x5	36x4	36x6	W
K-Z.....2½		2½	2550	4¼x5¾	36x4	36x8	W
K-Z.....3½		3½	3350	4½x5½	36x5	40x10	W
K-Z.....5		5	3850	4½x5½	36x6	40x6d	W
Kalamazoo.....T		1	1295	4 x5	34x5	34x5n	B
Kalamazoo...G-1		1½	1800	3¾x5	34x4	34x5	W
Kalamazoo....LG		2	2645	4 x5	36x4	36x7	W
Kalamazoo....NH		3	3145	4 x6	36x5	36x10	W
Kalamazoo...HD		3	3350	4¼x6	36x5	36x10	W
Kalamazoo....SK		4	3815	4¼x6	36x5	36x12	W
Kalamazoo....OK		5	4350	4½x6	36x6	40x6d	W
2Kelly-S....K-31		1½	2700	3¾x5¼	36x3½	36x6	C
2Kelly-S....K-34		1½	2700	3¾x5¼	36x3½	36x6	W
2Kelly-S....K-38		2½	2900	3¾x5¼	36x4	36x4d	W
2Kelly-S....K-35		2½	2900	3¾x5¼	36x4	36x4d	C
2Kelly-S....K-40		3½	3900	4½x6½	36x5	40x5d	C
2Kelly-S....K-41		3½	3900	4½x6½	36x5	36x10	I
2Kelly-S....K-42		3½	3900	4½x6½	36x5	40x5d	W
2Kelly-S....K-50		5	4400	4½x6½	36x6	40x6d	C
2Kelly-S....K-60		6	4600	4½x6½	36x6	40x7d	C
2Kelly-S....K-61		5–7	4800	4½x6½	36x6	36x7d	I
Kimball.....AB		2	3675	4 x6	36x4	36x7	W
Kimball.....AC		2½	3975	4¼x6	36x4	36x8	W
Kimball.....AK		3	4500	4½x6	36x4	36x10	W
Kimball.....AE		4	5000	4¾x6	36x5	40x12	W
Kimball.....AF		5	5500	5 x6	36x6	40x7d	W
*Kissel..Express		1	1585	3⅞x5½	34x5n	34x5n	W
Kissel.....Utility		1½	1975	3⅞x5½	36x3½	36x5	W
Kissel..Freighter		2½	2875	4¼x5½	36x4	36x7	W
Kissel.....H. D.		4	3675	4¾x5½	36x5	36x5d	W
Kleiber.....AA		1	2200	4¼x5¼	34x3½k	34x5k	W
Kleiber.....A		1½	3100	4½x5¼	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor. †Capacity with semi-trailer.

1—Gramm-Pioneer. 2—Kelly-Springfield.

Passenger Car Specifications on page 52

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kissel...BB	2	$3600	4½x5½	36x4k	36x7k	W
Kissel...B	2½	3050	4½x5½	36x5k	36x8	W
Kissel...C	3½	4600	4½x5½	36x5	36x8d	W
Kissel...D	5	5300	5 x6½	36x6	40x12	W
Koehler...D	1½	2150	3½x3½	34x3½	34x8	W
Koehler...M	2½	3175	4 x5½	36x4	36x7	W
Koehler...MCS	2½	3275	4 x5½	36x4	36x7	W
Koehler...F	3½	4470	4½x5½	36x5	36x10	W
Koehler,MT. Trac	5	3275	4 x5½	36x4	36x7	W
Krebs...23	¾	1260	3½x5	34x4½	34x4½	B
Krebs...24	1	1565	3½x5	34x5	34x5	W
Krebs...45	1½	2125	4½x5½	36x4	36x7	W
Krebs...75	2½	2375	4½x5½	36x4	36x8	W
Krebs...110	3½	2975	4½x5½	36x5	40x10	W
Larrabee...X-2	1	1925	3½x4½	34x5n	34x5n	B
Larrabee...U	1½	2100	3½x5	34x3½	34x5	W
Larrabee...J	1½-2½	2400	3½x5	34x3½k	34x5k	W
Larrabee...K	2½-3	3100	4½x5½	36x4	36x7	W
Larrabee...K-S	2½-3	3450	4½x5½	36x4	36x8	W
Larrabee...L-4	3½-5	4000	4½x5½	36x5	36x5d	W
Larrabee...W	5-7	4800	4½x6	36x6	40x6d	W
Maccar...L	1½	....	4½x5½	36x4	36x6	W
Maccar...H-A	2	....	4½x5½	36x4	36x4d	W
Maccar...H-2	3	....	4½x5½	36x4	36x5d	W
Maccar...M-3	4	....	4½x5½	36x5	36x6d	W
Maccar...G	5-6	....	4½x6	36x5	40x6d	W
MacDonald...A	7½	5750	4½x6	40x7	40x14	I
Mack...AB D.R.	1½	3450	4 x5	36x4	36x3½d	D
Mack...AB Chain	1½	3000	4 x5	36x4	36x3½d	C
Mack...AB Chain	2	3300	4 x5	36x4	36x4d	C
Mack...AB D.R.	2	3750	4 x5	36x4	36x4d	D
Mack...AB D.R	2½	3850	4 x5	36x4	36x4d	D
Mack...AB Chain	2½	3400	4 x5	36x4	36x4d	C
Mack...AC Chain	3½	4950	5 x6	36x5	40x5d	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac...AB	5	3400	4 x5	36x4	36x4d	C
Mack Trac...AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac...AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac...AC	13	5750	5 x6	36x6	40x12	C
Mack Trac...AC	15	6010	5 x6	36x7	40x7d	C
*Maplesleaf...**	1½	3000	3½x5½	34x5n	36x6n	W
Maplesleaf...AA**	2	3600	4 x5½	36x4	36x7	W
Maplesleaf...BB**	3	4050	4½x5½	36x4	36x4d	W
Maplesleaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Maplesleaf...DD**	5	5625	4½x5½	36x6	40x6d	W
Master...JW	1½	2290	4½x5½	34x3½	34x5	W
Master...JD	1½	2590	4½x5½	34x3½	34x5	D
Master...Z	2	2290	4½x5½	34x3½	34x5	W
Master...W	2½	2890	4½x5½	34x4	36x7	W
Master...DD	2½	3190	4½x5½	34x4	36x7	D
Master...A	3½	3990	4½x6	36x5	40x5d	W
Master...E	3½	4290	4½x6	36x5	40x5d	D
Master...Y	4	4490	4½x6	36x5	40x6d	D
Master...B	5	4990	4½x6½	36x6	40x6d	W
Master...F	5	5090	4½x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4½x5½	34x4	36x7	D
*Maxwell...1½	1½	912	3½x4½	32x3n	32x4n	W
*Menominee...	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1¼	2000	3½x5	34x3½	36x5	W
Menominee...H	1½	2475	4 x5	36x3½	36x5	W
Menominee...D	2-2½	2875	4 x6	36x4	36x8	W
Menominee...G	3½	3800	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4½x6	36x6	40x12	W
Moline...10	1½	1985	3½x5	34x5n	36x6n	I
*Moreland...R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland...BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland...EX	2	2800	4½x5½	36x4	36x7k	W
Moreland...AX	3	3500	4½x5½	36x5	36x10k	W
Moreland...RX	4½-5	4600	4½x6	36x6	40x6	W
Nash...2018	1-1½	1595	3½x5½	34x3k	34x4k	I
Nash...3018	2-2½	2150	3½x5½	34x4k	34x7k	I
Nash...Quad.	2-2½	2750	4½x5½	36x5k	36x5k	I
Nash...3018, LWB	2-2½	2200	3½x5½	34x4k	34x7k	I
Nash Quad. LWB	2-2½	2800	4½x5½	36x5k	36x5k	I
Nash...5018	2½	2250	3½x5½	34x4k	34x7k	I
*Nelson...G2	1½	....	4½x5½	36x3½	36x6	W
*Nelson...G3	2½	....	4½x5½	36x4	36x7	W
*Nelson...G4	3½	....	4½x5½	36x5	36x5d	W
*Nelson...G5	5	....	4½x6	36x6	40x6d	W
Netco...DK	2	3100	4½x5½	36x4k	36x7k	W
Netco...HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles...E	2	3000	4½x5½	36x4k	36x7k	W
Noble...A21	1¼	1840	3½x5½	34x5	34x5	W
Noble...B31	1½-2	2490	3½x5½	36x4	36x7	W
Noble...D61	2½-3	2950	4½x5½	36x4	36x8	W
Noble...E71	3½-5	3800	4½x6	36x5	36x10	W
Noble...B30	1½	....	3½x5½	36x3½	36x5	W
Noble...C40	2	....	4 x5½	36x4	36x7	W
Noble...D50	2½	....	4½x5½	36x4	36x8	W
Noble...E70	3½	....	4½x6	36x5	36x10	W
Northwestern...W	1½	2700	4½x5½	34x4	36x6	W
Northwestern,WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk...25E	1	1595	3½x5	34x3½	34x4	W
Norwalk...35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E Spec	1½	2285	3½x5½	34x3½	34x5	W
Ogden...A2	1	....	3½x5	34x5n	34x5n	W
Ogden...D	1½	....	3½x5	36x3½	36x5	W
Ogden...E	2½	....	4½x5½	36x4	36x8	W

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Old Hickory...W	1	$1775	3½x5	36x3½k	36x4k	W
Old Reliable,...A	1½	2350	4 x5	34x4	36x6	W
Old Reliable,...B	2½	3500	4½x6	34x4	36x4d	W
Old Reliable,...C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4½x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4½x6½	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5½	35x5n	35x5n	I
Olympic...A	2½	3200	4½x5½	36x4	36x8	W
Oneida...B9	1½	2825	4 x5½	36x3½	36x7	
Oneida...C9	2½	3200	4 x5½	36x4	36x8	
Oneida...D9	3½	4050	4½x5½	36x5	36x10	
Oneida...E9	5	4725	4½x5½	36x6	40x12	
Oshkosh...A	2	3250	3½x5	36x6n	36x6n	B
Oshkosh...AA	2	3400	3½x5	36x6n	36x6n	B
Oshkosh...B	2½	3850	4 x5½	38x7n	38x7n	B
Oshkosh...BB	2½	4000	4 x5½	38x7n	38x7n	B
*Overland...4	½	450	3½x4	30x3½n	30x3½n	B
Packard...EC	2-3	3100	4½x5½	36x4	36x7	W
Packard...EX	2-2½	3100	4½x5½	36x6n	40x8n	W
Packard...ED	3½-4½	4100	4½x5½	36x5	36x5d	W
Packard...EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige...S2-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige...54-28	2½	2420	4¼x5½	34x4	34x8	W
Paige...51-13	3½	3145	4½x5½	36x5	36x5d	W
Parker...C-22	1	1875	3½x5½	34x5n	34x5n	W
Parker...G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker...J-20	3½	3950	4½x6	36x5	40x5d	W
Parker...M-28	5	4850	5 x6	36x6	40x6d	W
Patriot...Revere	1	1380	3½x5	35x5n	35x5n	W
Patriot...Lincoln	2	2050	4 x5¼	34x3½	34x5	W
Patriot .Washgt'n	3	2900	4½x5½	36x4	36x7	W
Pierce-Arrow....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow....	5	4850	4½x6¾	36x6	40x6d	W
Pittsburgher....	1½-2	3000	3½x5	36x4	36x6	..
Pittsburgher....	3	3800	4½x5½	36x5k	36x8	W
Power...F	2	3150	4 x5¼	36x5	36x7	W
Power...C	3½	....	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier...R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier...R-29	1	....	3½x5	34x3½	34x4	W
Rainier...R-26	1½	....	3½x5	34x3½	34x5	W
Rainier...R-28	2	....	4½x5½	34x4	34x6	W
Rainier...R-20	2½-3	....	4½x5½	34x4	34x7	W
Rainier...R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier...R-17	5-6	....	4½x6	36x6	40x6d	W
Ranger...TK-20-2	1½	2450	3½x5	30x6n	38x7n	W
*Reo...F	¾-1½	1245	4½x4½	31x4½n	34x4½n	B
Reliance...10A	1½	2400	4 x5¼	36x3½	36x5	I
Reliance...20B	2½	3100	4¼x5½	36x4	36x4d	I
Republic...75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic...10	1	1395	3½x5	34x3	34x4	I
Republic...10 Exp	1	1695	3½x5	34x5n	34x5n	I
Republic...11X	1½	1795	3½x5	34x4	34x6	I
Republic...19	2½	2195	4½x5½	34x4	36x7	I
Republic...20	3½	3095	4½x5½	36x5	36x10	I
Rowe...CW	1½	3000	3½x5	30x6n	36x6n	W
Rowe...C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rowe...G.S.W.	3	4150	4 x6	31x5	36x5d	W
Rowe...G.P.W.	3	5250	3½x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4½x6	36x5	36x6d	W
Rowe.....F. W.	5	5500	4½x6	36x6	40x6d	W
Ruggles...20	1	1195	3½x5	34x5n	34x5n	B
Ruggles...40	2	1795	4 x5	34x5n	34x7	D
Samson...15	¾	....	4-3½x4	32x4n	32x4n	B
Samson...25	1¼	....	4-3½x5½	35x5n	35x5n	B
Sanford...W-15	1½-2	2150b	3½x5	36x3½k	36x5k	..
Sanford...25	2½-3½	....	4½x5½	36x4	36x4d	W
Sanford...35	3½-5	....	4½x5½	36x5	36x5d	W
Sanford...50	5-7	....	4½x6	36x5	40x6d	W
Schacht...2-Ton	2	3200	4¼x5½	36x4	36x7	W
Schacht...3-Ton	3	3800	4¼x5½	36x5	36x5d	W
Schacht...4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht...5-Ton	5	4400	4½x6	36x5	40x6d	W
Schacht...7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz...A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz...K	2	3000	3½x5½	34x3½	34x7	W
Schwartz...L	3	3600	4¼x5½	36x4	36x8	W
Schwartz...M	5	4900	4½x6	36x6	40x12	W
Seldon...30	1½-2½	2250	3½x5	34x3½	34x5	W
Seldon...31	1½-2½	3350	4½x5½	34x5n	38x7n	W
Seldon...50	2½-3½	3250	4½x5½	36x4	36x7	W
Seldon...51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Seldon...70	3½-5	3750	4½x5½	36x5	36x10	W
Seldon...90	5-7	4950	4½x6	36x6	40x12	W
Seneca...M	½	820	3½x4½	30x3½n	30x3½n	B
*Service...12	¾	....	3½x4½	32x4½n	32x4½n	B
*Service...15	1¼	....	3½x5	34x4½n	35x5n	B
Service...21	1½	....	3½x5½	34x3½	34x5	W
Service...32	2	....	4 x5½	36x3½	36x7	W
Service...37	2	....	4½x5½	35x5n	38x7n	W
Service...52	3	....	4½x5½	36x4	36x8	W
Service...72	3½	....	4½x5½	36x5	36x5d	W
Service...77	4	....	4½x6	36x5	36x5d	W
Service...102	6	....	4½x6	36x6	40x6d	W
Signal...NF	1	$1450	3½x5	34x5n	36x6n	W
Signal...H	1½	1950	4½x5½	34x4	36x6	W
Signal...J	2½	2375	4½x5½	34x4	36x8	W
Signal...M	3½	3175	4½x5½	36x5	40x5d	W
Signal...R	5	3900	4¾x6	36x6	40x6d	W
*Standard...75	1¼	1330	3½x5	33x5n	33x5n	W
Standard...1-K	1½	1600	3½x5	34x3½k	34x5k	W
Standard...76	2½-3	2400	4½x5½	36x4k	36x7k	W
Standard...66	3½-5	3150	4½x5½	36x5	36x10	W
Standard...5-K	5-7	4400	4¾x6	36x6	40x12	W
*Star...	½	610b	3½x4½	30x3½n	30x3½n	B
Sterling...1½	1½	2385	4 x5¼	36x3½k	36x5k	W
Sterling...2	2	3085	4 x5½	36x4k	36x6k	W
Sterling...2½	2½	3290	4½x5½	36x4k	36x4dk	W
Sterling...3½	3½	4325	4½x6½	36x5k	40x5dk	W
Sterling...5-W	5	4950	5 x6½	36x6	40x6d	W
Sterling...5-C	5	5500	5 x6½	36x6	40x6d	C
Sterling...7½	7½	6000	5 x6½	36x6	40x7d	C
*Stewart...Utility	¼-1½	1245	3½x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3½x5½	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3½x5	34x3½	34x5	I
Stewart.....7	2-2½	2190	4½x5½	34x4	34x7	I
Stewart...7-X	2½-3	2290	4½x5½	34x4	34x7	I
Stewart.....10	3½-4	3190	4½x5½	36x5	36x5d	I
Stewart...10-X	3½-4	3190	4½x6	36x5	36x5d	I
*Stewart.....	1¾	1245	4-3½x5½	34x4½	34x4½	
*Stoughton...C	¾	1240	3½x5	34x4½n	34x4½n	B
Stoughton...A	1	1790	3½x5½	34x5n	34x5n	W
Stoughton...B	1½	2150	3½x5½	36x3½	36x5	W
Stoughton...D	2	2490	4 x5½	36x4	36x7	W
Stoughton...F	3	3150	4½x5½	36x5d	36x5d	W
Sullivan...E	2	2800	4½x5½	36x4k	36x7k	W
Sullivan...H	3½	3750	4½x6	36x5	36x5d	W
*Thomart.....	1¼	1795	4 x5½	34x5	34x5	C
Tiffin.....GW	1½	2100	4½x5½	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5½	36x4	36x3½d	W
Tiffin.....PW	3½	3600a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4½x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4½x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4½x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4½x5½	35x5n	38x7n	W
Tower.....H	2½	2475	4½x5½	36x4	36x7	W
Tower.....G	3½	3475	4½x5½	36x5	36x5d	W
Trafic.....	1½	1595a	3½x5	35x5n	35x5n	I
Trafic.....C	2	1595a	3½x5	34x3½k	34x5k	I
Trafic.....	3	1895a	3½x5	36x4	36x7	I
*Transport.....15	1	1295	3½x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3½x5½	34x3½k	34x4k	I
Transport.....35	2	1885a	3½x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5½	36x4k	36x8k	I
Transport.....60	3½	2585	4½x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Trayler.....B	1½	2390	3½x5½	34x3½	34x5	W
Trayler.....C	2-2½	2850	4 x5½	36x4	36x7	W
Trayler.....D	3-3½	2300	4½x5½	36x4	36x8k	W
Trayler.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3½x5	31x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3½x5½	31x3½k	34x6k	I
Triangle.....C	2-2½	2285	3½x5½	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5½	36x4k	36x7k	I
Twin City...B.W.	2	2750	4 x5½	36x6	40x8	I
Twin City...A.W.	3½	3950	4½x6	36x5	40x5d	W
*Twin City.....B	3½	....	5½x6	36x6	36x6	I
*Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4½x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4½x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4½x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4½x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
United.....A	1½	2445	3½x5½	34x3½k	34x5k	W
United.....B	2½	3150	4½x5½	36x4k	36x7k	W
United.....C	3½	3975	4½x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States..U	1¼	1800	3½x5½	34x5n	34x5n	B
UnitedStates,NW	1½-2	2375	3½x5	36x5	36x3½	W
United States...N	1½-2	2175	3½x5	36x3½k	36x5k	I
United States...R	3	3300	4 x5½	36x4	36x4d	W
United States...S	4	4075	4½x5½	36x5	36x5d	W
United States...T	5-7	4975	4½x6½	36x6	40x6d	W
Velie.....46	1½	1585	3½x5	36x3½k	36x5k	I
Veteran.....M**	1½	2699	3½x5½	35x5n	35x5n	W
Veteran.....P**	2	3699	4 x5½	36x4	36x7	W
Veteran.....R**	3	4200	4½x5½	36x4	36x7	W
Veteran.....S**	4	5396	4½x6	36x5	36x10	W
*Vim.....29	½	1050	3½x4½	31x4n	31x4n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express, truck or delivery wagon. **—Canadian Make. trac.—tractor.

2—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Vim	30	1½	$1175	3½x4½	32x4½	W
*Vim	50	½-¾	995	4 x5	32x4n	B
Vim	31	1	1975	3¾x5⅛	35x5n	W
Vim	22	2	3150	3¾x5⅛	36x6	W
Vim	23	3	3950	4¼x5½	36x5	W
Walker-JohnsonA		2	2250	3¾x5	34x3½	W
Walker-Johnson B		3	2750	4½x5½	36x4	W
Walter	M	2½	3850	4½x5¾	36x4	W
Walter	S	5	4850	4½x6¼	36x6	W
*Watson	C	1	1465a	3⅝x5⅛	35x5n	W
Watson	N	3½	4250	4½x5½	36x5	W
Western	W1½	1½	2550	4½x5¼	36x3½k	W
Western	L1½	1½	2550	3¾x5	36x3½k	W
Western	W2½	2½	3250	4½x5¼	36x4	W
Western	L2½	2½	3250	4½x6	36x4	W
Western	W3½	3½	4250	4½x6	36x5	W
*White	15	¾	2400	3¾x5⅛	34x5n	B
White	20	2	$3250	3¾x5½	36x4k	D
White	40	3½	4200	3¾x5¾	36x5	D
White	45	5	4500	4½x5¾	36x6	D
White Hick	E	1	1225	3¾x5	34x5n	W
White Hick	H	1½	1375	3¾x5	36x3½	W
White Hick	K	2½	1675	4½x5¼	36x4	W
Wichita	K	2	1875	3¾x5¼	36x3½	W
Wichita	M	1	2400	3¾x5¼	36x3½k	W
Wichita	RX	3	3200	4¾x5¾	36x4k	W
Wichita	O	4	$3500	4½x6¼	36x5k	W
Wilcox	AA	1	1900	3¾x5½	36x4k	W
Wilcox	BB	1½	2550	4¼x5	36x4	W
Wilcox	D	2½	3000	4¼x5	36x4k	W
Wilcox	E	3½	3950	4½x6	36x5k	W
Wilcox	F	5	4350	4¾x6½	36x5	W
Wilson	F	1½	2270	3¾x5	36x3½	W
Wilson	EA	2½	2825	4½x5¼	36x4	W
Wilson	G	3½	3685	4½x5½	36x5	W
Wilson	H	5	4520	4¾x6	36x6	W
*Wisconsin	A	1	1750	3¾x5	34x5n	W,B
Wisconsin	B	1½	2100	3¾x5	35x5	W
Wisconsin	C	2½	2700	4 x5¾	36x6n	W
Wisconsin	D	3½	3000	4¾x5¾	36x6n	W
Wisconsin	E	5	3500	4½x6¼	36x6	W
Wisconsin	F	7	4000	5 x6¼	36x6	W
Witt-Will	N	1½	2450	3¾x5	36x3½k	W
Witt-Will	P	2½	2900	4½x5¼	36x3½k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm.	15-25	1185	4	Midw.	4-4½x5½	Gas.	3
Allis-Chalm.	20-35	1885	4	Own	4-4¼x6½	GorK	3-4
‡Allis-Chalm.	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork 2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T.	15-30	1900	4	Clim.	4-5 x6½	G,K	4
Aultman-T.	22-45	2800	4	Own	4-5½x8	G,K	6
Aultman-T.	30-60	4000	4	Own	4-7 x9	G,K,D	9-10
Automot. B-3	12-24	1250	4	Herc.	4-4 x5½	Gas.	2-3
Avery,SR.Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery B	5-10	....	4	Own	4-3 x4	G,K	2
Avery C	....	....	4	Own	6-3 x4	G,K	..
Avery	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery	12-20	....	4	Own	4-4½x6	G,K,D	3-4
§Avery	....	....	*	Own	4-4x5½	G,K,D	3
Avery	12-25	....	4	Own	2-6½x7	G,K,D	3-4
Avery	14-28	....	4	Own	4-4½	G,K,D	3-4
Avery	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery	45-65	....	4	Own	4-7¼x8	G,K,D	8-10
Bates Mule II	15-25	....	4	Midw	4-4½x5½	Gas.	3
Bates Mule F	18-25	....	*2	Midw	4-4½x5½	Gas.	3
‡Bates MuleG	25-35	....	*2	Midw	4-4½x6	Gas.	..
Bear	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman G	2-4	240	4	Own	1-3½x4½	Gas.	....
Best	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best	60	....	*2	Own	4-6½x8½	G,K,D	8-9
Boring	5-10	395	4	LeR.	4-3½x4½	G	..
Boring 1921	....	1850	3	Wauk	4-4⅜x5¾	GorK	2
**Bryan	15-30	....	4	Own	2-4 x5	K.	3
Capital	15-30	1000	2	Own	4-4¼x6	Gas.	3
Case	12-20	1050	4	Own	4-4½x5	G,K,D	3
Case	12-20	....	....	....	4-4½x5	....	2
Case	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case	22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T3S	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar 5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur	5-2½	345	2	N Way	2-4½x4½	GorK	1
Chicago 40	40	2500	4	Own	4-4½x6	Gas.	4
Cletrac F	9-16	595	*2	Own	4-3¼x4½	G,K,D	2
Cletrac W	12-20	1345	*2	Own	4-4 x5½	G,K,D	2-3
Dakota 4	15-27	1500	3	Dom,	4-4¾x6	Gas.	3
Dupoe A	20-30	2500	4	Buda	4-4½x6	Gas.	4
Dll D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dll R.W.	20	2980	4	Midw.	4-4½x6	Gas.	3
Do-It-All A	3-6	495	..	Own	1-4½x5	Gas.	1
Eagle F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol D	9-18	1525	4	Lyc.	4-3½x5	Gas.	2
Farm Horse B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Farquhar	15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar	19-35	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar	25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch..4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson	-18	$ 395	4	Own	4-4x5	G,K	2
Franklin C	18-30	4000	*2	Clim.	4-5 x6½	G or K	3-4
Franklin C	18-30	3350	*2	Clim.	4-5 x6½	G or K	3-4
Franklin G2	18-30	4350	2	Clim.	4-5 x6½	G or K	3-4
Frick A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt A	18-30	2150	4	Wauk.	4-4¾x6¾	G or K	4
Gray	20-36	1975	3	Wauk.	4-4½x6¼	Gas.	4
Gray	22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. Western St	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr 20	20	765	4	Own	2-5¼x6½	K,D.	2
†Hart-Parr 30	30	895	4	Own	2-6½x7	K,D.	3
‡Hart-Parr	....	1695	4	Own	6½x7	K,D.	..
Heider D	9-16	870	4	Wauk	4-4¼x6¾	G,K	2
Heider C	12-20	995	4	Wauk	4-4½x6¾	G,K	3
Heider Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4	12-25	985	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4	15-30	1885	4	Midw.	4-4½x6	Gas	3
Illinois C	15-30	....	4	Clim.	4-5 x6½	G,K	4
Indiana F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†780	4	Own	2-6½x8	G,K,D	3
International	15-30	1750	4	Own	4-5¼x8	G,K,D	4
J-T N	25-40	3000	*2	Clim.	4-5x6½	G,K,D	3-4
¶Kinkade	1½	190	1	Own	1-3 x3	Gas.	....
La Crosse	12-24	985	2	Own	2-6 x7	G,K	3
Lausen 5	12-25	1295	4	Midw.	4-4½x5½	Gas.	3
Lausen 21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lausen Road	15-30	2000	4	Beav.	4-4¾x6	K	....
Leader B	12-18	685	4	Own	2-6 x6½	G,K,D	2-3
Leader N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn H4J	40-	4500	*	Cont.	4-4½x5½	Gas	4
Linn W	60	5000	*	Wauk	4-5 x6½	Gas	6
Little Giant, B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant, A	26-35	3300	4	Own	4-5½x6	K	6
Lombard.1922	85-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2½x2½	Gas.	..
Minne All-P	12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Mod.D	22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD	35-70	3850	4	Own	4-7½x9	G or K	8-9
Mohawk .1922	8-16	650	2	Light	4-3½x4½	K or G	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch	9-18	....	2	Own	4-3½x5	Gas.	2-3
‡Monarch	20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Motor Maculi	1½	195	2	Own	1-2¾x3½	Gas.	..
NB 1	3-6	425	4	Own	2-3¾x4	Gas.	1
Nichols-Shep.	20-42	2650	4	Own	8 x10	G or K	3-6
Nichols Shep.	25-50	3000	4	Own	9 x12	G or K	4-7
Nichols-Shep.	35-70	3650	4	Own	-10½x14	G or K	8-10
Nilson Senior	20-40	1975	5	Wauk	4-5 x6¼	G,K	4
Oil Pull K	12-20	....	4	Own	2-6 x8	K,D	3
Oil Pull H	16-30	....	4	Own	2-7 x8½	K,D	4
Oil Pull G	20-40	....	4	Own	2-8 x10	K,D	5-6
Oil Pull E	30-60	....	4	Own	2-10x12	K,D	8-10
Oldsmar K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Peoria L	12-25	1600	4	Clim.	4-5 x6½	G,K	3
Pioneer G	18-36	1750	4	Own	4-5½x6	G,K,D	4
Pioneer C	40-75	3550	4	Own	4-7 x8	Gas.	10
Plowman A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable	10-20	390	4	Own	2-6 x7	Ker.	2
Rex	12-25	1600	4	Wauk	4-4½x5¾	G or K	3
Russell	12-24	1500	4	Own	4-4¾x5¾	G or K	2-3
Russell	15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell	20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell	30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson M	....	445	4	Own	4-4 x5½	G,K	2
Sandusky, J	10-20	1250	4	Own	4-4¼x5½	G,K,D	2
Sandusky E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
¶Shelby	1	150	3	B & S	1-2½x2½	G	..
Shelby D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby C	9-18	....	4	Wauk	4-3¾x5¾	G or K	2
Steady Pull	12-24	1485	4	Own	4-4 x5	Gas.	3
Tioga 3	18-32	....	4	Wisc.	4-4½x6	Gas.	3-4
Tore Cultivator	6	750	3	LeR.	4-3½x4½	Gas.	2
ToreTractor'22	6-10	495	3	LeR.	4-3½x4½	Gas.	2
Townsend	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend	25-50	2500	2	Own	4-8½x10	Ker.	4-8
Traction Motor	40-50	....	4	....	8-3½x5	Gas.	4-5
Traylor TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar 10	25-40	3750	*2	Wauk	4-5 x6¼	G or K	4
Twin City	12-20	1200	4	Own	4-4¼x6	G,K	3
Twin City	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle Sam C20	12-20	1295	4	Weid.	4-4 x6½	G	2-3
Uncle Sam B19	20-30	1985	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam D21	20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utiliter 501	2½-4	295	4	Own	1-3½x4½	G	1
Utiliter 501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis K	15-25	....	4	Own	4-4¼x5¾	G,K	3
Waterloo N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore 21-22	12-25	1185	4	Wauk	4-4 x5½	G,K	3
Whitney D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin F	20-40	2050	4	Wauk	4-5 x6½	G or K	4
Wisconsin H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba 12-20	12-20	2400	*2	Wisc.	4-4½x6¾	G,K,D	3
Yuba 15-25	15-25	2750	*2	Wisc.	4-4½x6	G,K,D	..
Yuba 20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba 25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba	25-40	4750	*2	Yuba	4-5½x7	D	..
Zelle	12-25	....	4	Buda	4-4½x5½	G or K	3

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont.—Continental. Dom.—Domas Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor. ¶Garden Tractur. **Steam Tractor

The following price changes have been announced since the above table was compiled: Hart-Parr, "20," $845; "30," $1,065.

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Specifications of Current Passenger Car Models

NAME AND MODEL	Engine Make	Cylinders Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Ambassador R	Cont.	6-3½x5¼	136	33x5	....	b4500	$4500	....	$6500
American D-66	H-S.	6-3½x5	127	33x4½	b1885	1785	1850	....	2485
Anderson...Aluminum 6	Cont.	6-3½x4½	114	32x4	....	1195	....	....	....
Anderson.....Series 40	Cont.	6-3½x4½	120	33x4	1495	1495	1595	$1995	1995
						b1595n			
Apperson.....8-21-S	Own.	8-3½x5	130	34x4½	....	2620	2645	3625	3695
Auburn.....6-51	Cont.	6-3½x4½	121	32x4	1575	1475	....	2275	2345
Auburn.....6-51	Cont.	6-3½x4½	121	32x4½	....	n1995	1545	....	....
Bay State	Cont.	6-3½x4½	121	32x4	1800	1800	....	2400	2500
Biddle.....B1 & B5	Buda.	4-3¾x5½	121	32x4	2950	b2950	....	3950	3950
Brewster.....91	Own.	4-4 x5½	125	32x4½	5000	5000	....	....	7000
Buick..1922-34-5-6-7-38	Own.	4-3½x4¾	109	31x4	865	885	u 725	1175	(1395
									(1325e
Buick....1922-41-4-5-47	Own.	6-3⅜x4½	118	33x4t	1175	1195	u975	1935e	1985
Buick..1922-48-9-50-4-5.	Own.	6-3⅜x4½	124	34x4½	n1625v	n1675v	1435	1895	2195
Cadillac.....61	Own.	8-3½x5¼	132	33x5	3100	3150	3150	b3875	4100
Case.....X	Cont.	6-3⅜x4½	122	32x4½	1750	1790	....	2550	2690
Case.....W	Cont.	6-3⅜x5¼	129	34x4½	....	2200	2250	2850	3250
Chalmers.....1922	Own.	6-3½x4½	117	32x4	1185	1185	....	1595	2295
Chalmers.....1922	Own.	6-3½x4½	122	32x4	....	....	1345	....	....
Chandler.....Six	Own.	6-3½x5	123	33x4	1495	b1495	1645	b1995	2295
Chevrolet.....Superior	Own.	4-3½x4	102	30x3½	510	525	u425	(b840	860
								(k680	
Chevrolet.....FB	Own.	4-3½x5¼	110	33x4	865	885	....	1325	1395
Cleveland.....41	Own.	6-3 x4½	112	32x4	1085	1095	n1260	1495	1585
Cole.....890	Nort.	8-3½x4½	127¼	33x5	2685	b2685n	2685	b3385	3685
Columbia.....Du Luxe	Cont.	6-3⅜x4½	115	32x4	1475	1475	b1475n	b1925	1995
Columbia.....Light Six	Cont.	6-3½x4½	115	31x4	995	995	....	....	1395
Comet.....C-53	Cont.	6-3½x5½	125	33x4½	....	1985	2085	....	2985
Courier	Own.	6-3½x4½	116	32x4	a1395	1395	b1495n	2065	2165
					a1495n				
Crawford.....22-6-60	Cont.	6-3⅝x5¼	122½	32x4	3000	3000	3000	....	4500
Crawford-Dagmar...6-60	Cont.	6-3½x5½	135	33x5	....	n3500	....	....	....
Daniels.....D-19	Own.	8-3½x5¼	132	33x5	a4350	b4350	4350	5250	6000
Davis.....71	Cont.	6-3½x4½	114	31x4	....	1295	....	....	....
Davis.....61-67	Cont.	6-3⅜x4½	120	32x4	1595	1595	b1695	2095	2195
Dixie Flyer.....H-S-7J	H-S.	4-3½x5	112	32x4	1175	1175	b1295	1545	1595
Dodge Brothers	Own.	4-3½x4½	114	32x4	850	880	....	980h	1440
Dorris.....6-80	Own.	6-4 x5	132	33x5	....	b3000	3950	4985b	5750
Dort.....13-14	D-Ly.	4-3½x5	108	31x4	885	885	....	(1265	(1385
								(1045k	(1095k
Driggs	Own.	4-2⅝x4½	104	30x3½	1275	1275	....	....	1975
Duesenberg...Straight 8	Own.	8-2⅞x5	134	33x5	6500	6500	6750	7800	7800
Du Pont.....A	Own.	4-3½x5½	124	32x4½	3000	3200	....	3800	4000
Durant.....A-22	Cont.	4-3½x4½	109	31x4	n890	890	....	1365	1365
Durant.....B-22	Anst.	6-3¼x4½	123½	32x4½	1600	1650	....	2250	2400
Earl.....40	Own.	4-3 x5¼	112	32x4	1485	1095	950u	b1395	1795
Elcar.....K-4	Lyc.	4-3½x5	118	33x4	1095	1095	n1095	1345	....
Elcar.....7-R	Cont.	6-3¼x4½	118	33x4	1395	1395	n1395	2065	2165
Elgin.....K-1	Falls.	6-3½x5¼	118	33x4	1345	1295	b1345	1695	1695
Essex	Own.	4-3⅜x5	108½	32x4	....	1095	....	1195k	(1895
									(1295k
Ford.....T	Own.	4-3¾x4	100	30x3½	r319	s348	u285	580	645
Fox	Own.	6-3¼x5	132	32x4½	3900	3900	....	4900	4900
Franklin.....9 B	Own.	6-3¼x4	115	32x4	1900	1950	u1750	2750	2850
Gardner.....T-R & G	Lyc.	4-3½x5	112	32x4	895	895	....	1095k	1345
Grant	Walk'r	6-3½x4½	116	32x4	1385	1385	....	1895	1945
Gray	Own.	4-3⅝x4	100	30x3½	....	490	....	....	760
H.C.S.....Series 3	Weid.	4-3⅝x5½	120	32x4½	2475	2475	....	3250	3475
Handley-Knight	Own.	4-4⅛x4½	125	32x4½	....	....	2650	3450	3150
Hanson.....30	Cont.	6-3½x4¼	114	31x4	....	995	....	....	....
Hanson Six.....60	Cont.	6-3⅜x4½	121	32x4	1595	1595	1795	b2475	2585
Hatfield.....A-42	H-S.	4-3½x5	115	32x4	....	1345	b1345	1950	1950
Haynes.....75	Own.	6-3½x5	132	34x4½	2395	b2395	2395	....	3395
Haynes.....55	Own.	6-3½x5	121	32x4½	(1515	(1495	....	(2095	(2395
					(1895n	(1895n		(2195n	(2695n
Holmes.....Series 4	Own.	6-3½x4¼	126	34x4½	....	b2500	2500	b3300	3600
Hudson.....Super 6	Own.	6-3½x5	126	34x4½	....	b1645	1695	2570	(2295
									(1745k
Huffman	Cont.	6-3⅜x4½	120	32x4	1395	1395	....	....	2295
Hupmobile.....Series R	Own.	4-3½x5½	112	32x4	1150	1150	u1025	(1635	1785
								(1335k	
Jackson.....638	Cont.	6-3½x4½	121	32x4½	....	1185	b1685	2985	2985
Jewett.....Six	Own.	6-3½x5	112	31x4	a995	995	....	b1445	1465
Jordan.....MX	Own.	6-3⅜x4¾	120	32x4	1895	1795	....	2785	2785
Jordan	Own.	6-3⅜x4¾	124½	32x4	....	b2150n	....	....	....
Kelsey.....4	Gray	4-3½x5	111	32x3½	....	985	....	....	1150
Kelsey.....6	Walk'r	6-3½x4½	118	32x4	....	1525	....	....	2175
Kenworthy.....8-90	Own.	8-3 x5¼	130	32x4½	5000	5000	5250	6000	6000
King.....K	Own.	8-3 x5	120	32x4½	1795	1795	b1795	2100	2550
Kissel.....45	Own.	6-3⅜x5½	124	32x4½	n2385	1885	2385	b2975	3075
Kline Kar.....6-55-K.	Cont.	6-3⅜x4½	121	33x4	1690	1690	1690	2750	2890
LaFayette	Own.	8-3½x5¼	132	33x5	3085	b4090	4090	5500	5500
Leach.....99	Own.	6-3¼x5¼	134	32x4½	5500	5500	5500	5500	5500
Lexington.....23	Anst.	6-3½x4½	128	32x4½	1695	(1695	1795	b2345	2545
						(2045n			
Liberty.....10-D	Own.	6-3½x5	117	32x4	1575	1395	*1575n	(2085	2245
								(1695k	

NAME AN-MODEL H	Engine Make	Cylinders Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Lincoln	Own.	8-3½x5	136	33x5	$3800	b3800	$3800	$4400	$4700
Locomobile.....48	Own.	6-4½x5½	142	35x5	....	b7600	7600	10800	11000
Marmon.....34	Own.	6-3⅝x5⅛	136	32x4½	3385	b3185	3185	3985	4285
Maxwell	Own.	4-3⅝x4½	109	31x4	885	885	....	1235	1235
McFarlan.....1922	Own.	6-4½x6	140	33x5	6300	b6300	6300	7500	7500
Mercer.....Series 5	Own.	4-3¾x6¾	132	32x4½	3950	b3950	c3950	4850	5250
Merit	Cont.	6-3¼x4½	119	32x4	1895	1895	....	....	....
Mitchell.....F-50	Own.	6-3½x5	120	32x4	a1490	1590	b1850n	b2050	2275
Mitchell.....F-50	Own.	6-3½x5	127	32x4½	....	....	1690	....	....
Monroe.....1922-S-9	Own.	4-3¼x4½	115	32x3½	950	950	....	....	....
Moon.....6-40	Cont.	6-3½x4¼	115	31x4	....	1295	....	....	1695
Moon.....6-50	Cont.	6-3½x4½	128	33x4½	1785	1785	1785	2785	2785
Nash.....691-96-97	Own.	6-3¼x5	121	33x4	1210	1240	b1395n	....	2040
Nash.....692-94-95	Own.	6-3¼x5	127	34x4½	....	....	1390	b1890	2190
Nash Four.....41-4	Own.	4-3½x5	112	33x4	915	935	....	(a1385	(1545
								(1195k	(1275k
National.....BB	Own.	6-3½x5¼	130	32x4½	a2475	b2475	2375	b3725	3825
Noma.....3C	Cont.	6-3¼x4½	128	32x4½	2500	b2500	c2600	....	3500
Noma.....1D	Bea.	6-3½x5¼	128	32x4½	3000	b3100	c3200	....	3600
Norwalk.....430-KS	Lyc.	4-3½x6	116	32x3½	....	1035	....	....	....
Oakland.....6-44	Own.	6-2¾x4¾	115	32x4	975	(995	b1165n	(b1445	1545
						(u795		(1185k	
Ogren.....6 T D Luxe	Cont.	6-3⅝x5¼	134	33x5	b3750	3750	3850	4500	4800
Oldsmobile.....43 A	Own.	4-3½x5¼	115	32x4	1095	1095	b1225n	1595	1745
Oldsmobile.....46	Own.	8-2⅞x4¾	122	33x4½	b1735	c1850	1735	....	2635
Oldsmobile.....47	Own.	8-2⅞x4½	115	32x4	1495	1495	b1725n	1995	2145
Overland.....4	Own.	4-3⅜x4	100	30x3½	550	550	....	850	895
Packard.....Single-Six	Own.	6-3⅛x5	126	33x4½	2485	2485	u2250	3175	3275
Packard.....Single-Six	Own.	6-3⅜x5	133	33x4½	....	u2350	2685	....	3525
Packard.....Twin-Six	Own.	12-3 x5	136	35x5	3850	3850	3850	5240	5400
Paige.....6-44	Own.	6-3½x5	119	32x4	1465	1465	u1290	1995	2245
Paige.....6-66	Cont.	6-3⅜x5	131	33x4½	a2495	a2245	2195	3100	3155
Paterson.....22-6-52	Cont.	6-3⅜x4½	120	32x4½	....	1390	1425	2395	2395
Peerless.....56-S-7	Own.	8-3½x5	128	33x5	....	b2990	2900	b3400	3900
Pierce-Arrow	Own.	6-4 x5½	138	33x5	5250	b5250	5250	6800	7000
Pilot.....6-50	H-S.	6-3½x5	126	32x4½	2050	2000	2050	2950	3000
Premier.....6-D	Own.	6-3⅜x5½	126¾	33x5	3150	b3100	3250	4300	5100
Premocar.....6-40-A	Falls.	6-3½x1¾	117	32x4	1095	1095	....	1750	1825
R & V Knight.....R	Own.	4-3½x5	116	32x4	....	1065	....	2385	2475
R & V Knight.....J	Own.	6-3½x4½	127	32x4½	2475	b2475	2475	3015	3105
Ree Series.....T6 & U6	Own.	6-3½x5	120	33x4	1595	n1645	1485	b2355	2435
ReVere.....C	Dues.	4-4½x6	131	32x4½	3200	3200	3200	....	4000
Rickenbacker.....A	Own.	6-3½x4¾	117	32x4	....	1485	....	1885	1985
Reamer.....6-54-E	Cont.	6-3½x5½	128	32x4½	2850	b2585	2785	3850	3850
Reamer.....4-75-E	Dues.	4-4½x6	128	32x4½	3985	b3585	b3750n	....	b4650
Rolls-Royce	Own.	6-4½x4¾	143½	33x5	....	10,900	....	....	....
Saxon.....125	Own.	4-3½x5	112	32x4	1195	1195	....	1795	1795
Sayers Six.....DP	Cont.	6-3¼x4½	118	33x4	1645	1645	....	2645	2645
Seneca.....L-2 & O-2	Lyc.	4-3½x5	108	30x3½	875	875	....	....	....
Seneca.....50 & 51	Lyc.	4-3½x5	112	31x4	1095	1095	....	....	....
Sperling.....A	Supr.	4-3⅜x5	114	32x4	980	980	....	1685	1685
Standard.....98	Own.	8-3¼x5	127	34x4½	2150	b2500	2500	2750	3200
Stanley	Own.	2-4 x5	130	32x4½	2700	2700	2700	3775	3950
Stanwood Six	Cont.	6-3¼x4½	118	33x4	1765	1765	....	2750	....
Star	Cont.	4-3½x1¾	102	30x3½	r319	s348	u285	580	645
Stearns-Knight....SKL4	Own.	4-3⅞x5⅝	125	34x4½	2250	2250	2450	3150	3450
Stearns-Knight.....6	Own.	6-3⅜x5	130	34x4½	2700	2700	2850	3350	3700
Stephens.....93	Own.	6-3¼x4½	122	33x4½	1575	b1595	c1625	2450	2550
Stevens-Duryea.....E	Own.	6-4½x5½	138	35x5	7250	b6900	6800	u5600	b8900
Studebaker....Light Six	Own.	6-3½x4½	112	32x4	975	975	u785	1225	1550
Studebaker..Special Six	Own.	6-3½x5	119	32x4	1250	1275	b1275	1875	2050
Studebaker.....Big Six	Own.	6-3⅞x5	126	33x4½	u1300	1650	n1785	2275	2475
Stutz	Own.	4-4½x6	130	32x4½	(2450	b2790	c2640	3490	4450
					(2760n				
Templar.....A-445	Own.	4-3⅜x5½	118	32x4	2025	2125	b2175	2650	2785
Tulsa.....E-1-2-3	H-S.	4-3½x5	117	33x4	1175	1175	....	....	....
Velie.....48	Cont.	6-3¼x4½	115	32x4	1585	1585	b1800	2485	2485
Velie.....34	Falls.	6-3½x4½	112	32x3½	1235	1235	....	1750	2085
Velie.....58	Own.	6-3½x1¾	115	32x4	1275	1275	....	2185	2185
Westcott.....C-48	Cont.	6-3½x5¼	125	32x4½	....	....	1890	....	2890
Westcott.....A-44	Cont.	6-3¼x4½	120	32x4	....	1690	n1890	....	2690
Wills Sainte Claire. A-68	Own.	8-3¼x4	121	32x4½	2475	2475	....	3275	3475
Willys-Knight.....20	Own.	4-3⅝x4½	118	32x4	1350	1375	....	1875	2095
Winton.....40	Own.	6-3¾x5¼	132	35x5	3400	a3600	3400	b4450	4550

a—3-passenger. b—4-passenger. c—6-passenger. n—Sport. h—All Metal Type. k—Soft Top Type. u—Chassis Price. r—Price without starter and demountable rims. Price with starter and demountable rims $414. s—Price without starter and demountable rims. Price with starter and demountable rims $443. t—Model 47—34x4½ Tires. v—Tire Sizes 32x4½. e—Touring Sedan.

Engine Make: Anst—Ansted. Bea—Beaver. Cont—Continental. Curt—Curtis. D.Ly—Dort Lycoming. G-B—Grey Beal. H-S—Herschell-Spillman. Lyc—Lycoming. Nort—Northway. Roch—Rochester. Rut—Rutenberg. Supr—Supreme. Weid—Weidely. Wisc—Wisconsin.

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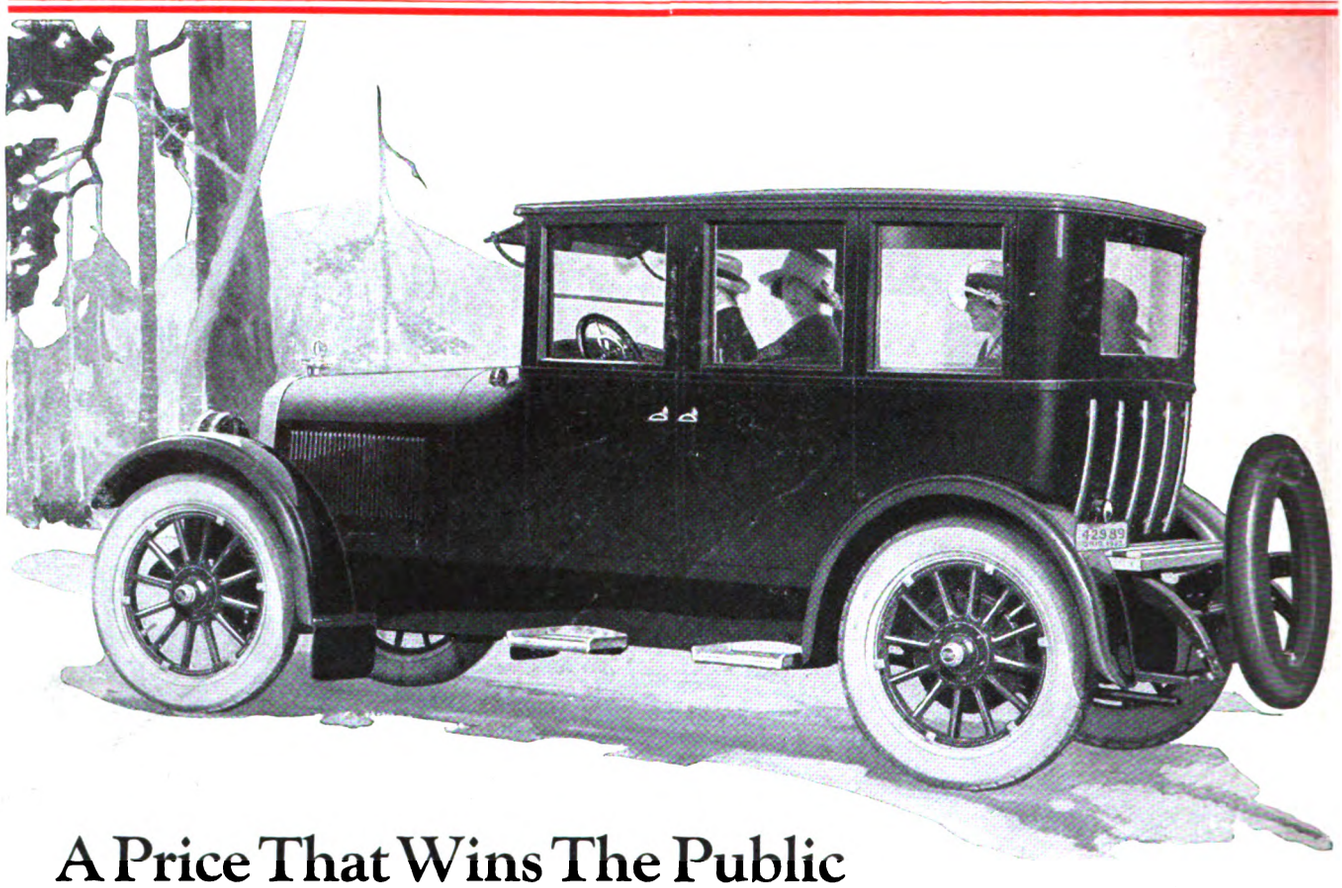
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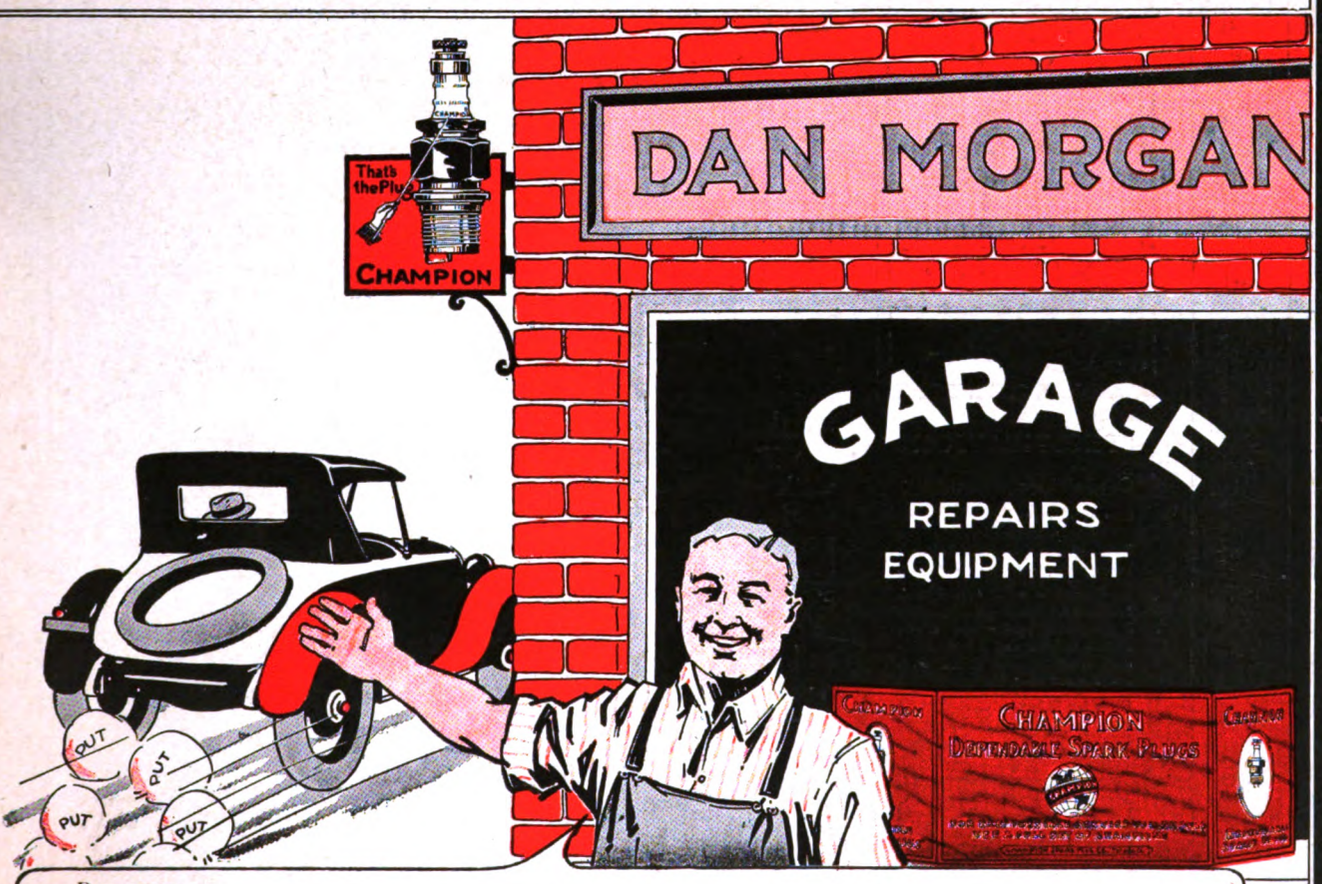
MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Volume LXXII
Number 13

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NEW YORK, SEPTEMBER 27, 1922

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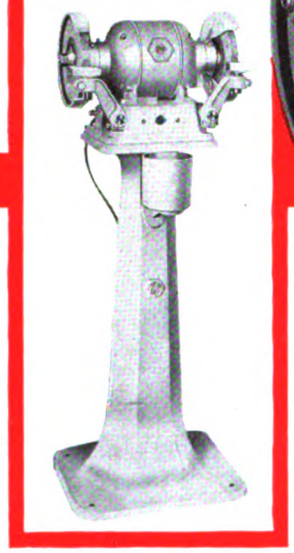
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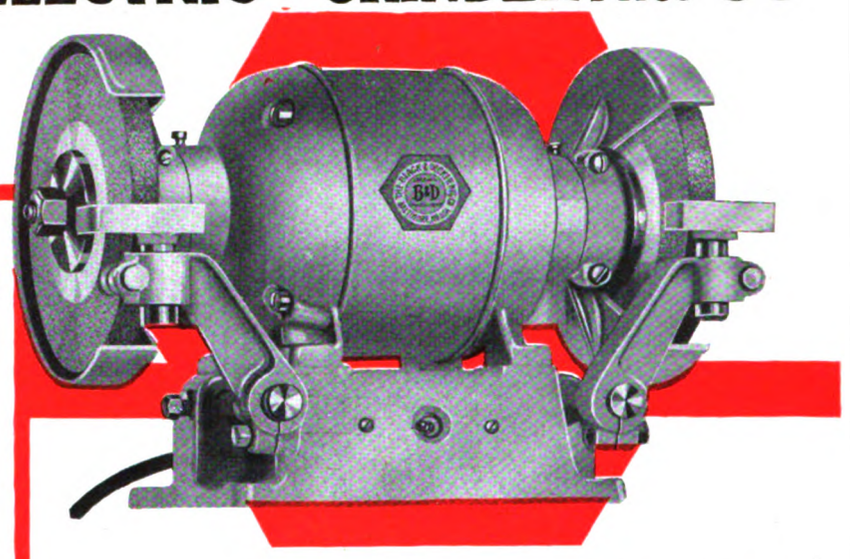
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Complete with pedestal $108





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"With the Pistol Grip and Trigger Switch"

It is a heavy duty machine which has been designed to meet an insistent demand for a Black & Decker grinder **for the larger Service Stations and Repair Shops.**

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Net weight .....75 lbs.

Complete with two 8 inch grinding wheels, 2 wheel guards, 2 adjustable tool rests, toggle switch in base and 5 feet of duplex electric cable fitted with attachment plug.

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MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

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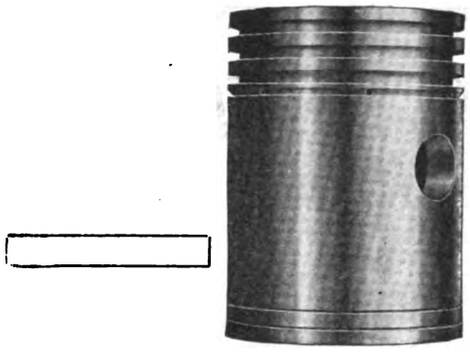
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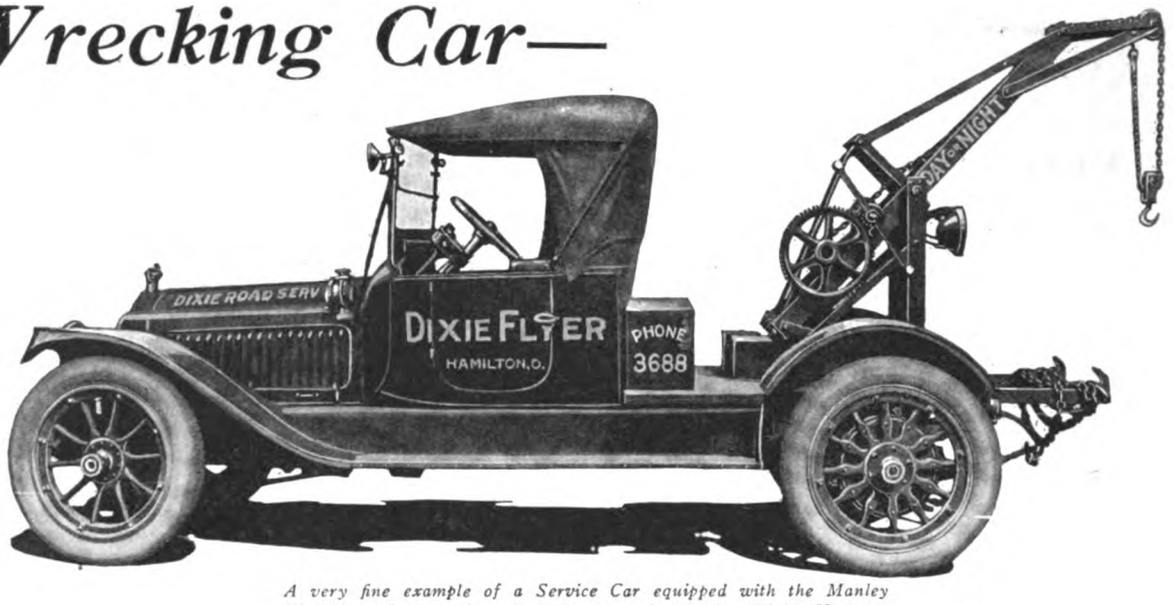
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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXII New York, U. S. A., Wednesday, September 27, 1922 No. 13

Opening It Up



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Lower Priced Closed Cars Feature of New York Show

Soft-top and Kindred Models Attract Attention to Broadening Closed Car Market—Twelve Manufacturers Show Seventeen Models New to the Trade—Trend Toward Two Door Type

By NEAL G. ADAIR and J. HOWARD PILE

NEW YORK, Sept. 25.

THE closed car this week is having its first formal showing as everybody's car—the automobile of to-day and to-morrow. The New York Closed Car Show is the first to exhibit low-priced closed cars, with soft tops and other cost-reducing features, in numbers almost as great as the conventional, higher-priced types. It is a closed car show, not a salon. Luxurious models are there, but they do not stand alone, as in closed car shows of former years, serving notice that the person who would step up from his open car must pay a big price differential. Alongside the "regulation" sedans and coupes in many of the exhibits are brand new or recent models of the new school of design which is rapidly narrowing the gap between closed and open car prices.

Public Interested

The show visitor cannot walk the length of a single aisle without getting the impression that the industry has been putting itself earnestly to the task of bringing closed cars within the reach of a far greater number of pocketbooks than in former years. The trade, of course, has realized this development, and so has the public to some extent, but the metropolitan Closed Car Show has offered the first opportunity to give it the emphasis that so important a movement deserves. First-night visitors last Saturday were heard on all sides making the comment that "I had no idea they were getting these closed car prices down so low." Inquiries of salesmen on the opening night gave promise of wide interest throughout the week in the lower priced jobs.

The show, the first ever held by the New York dealers in the Grand Central Palace, where the national show has been held for several years, presents the closed car products of 54 manufacturers. There are also a number of truck and automotive equipment exhibits.

In the show are 16 new body models brought out by 11 manufacturers. Several of these bring their makers for the first time into the growing group of producers who are offering the public virtually three classes of cars, open, lower priced closed and higher priced closed.

It's a Dealers' Show

The New York dealers have done a creditable piece of work in the presentation of the show. The decorations, while dignified and attractive, are in keeping with the educational idea of the show—to suggest the closed car not merely as a winter car, but as the ultimate automobile of the average American family or business man looking for utility and comfort.

There are some dealers in the show who are exhibiting merely because their competitors are. They can't get closed cars enough to fill orders and don't expect to catch up before midwinter. They don't need the sales promotion assistance that the show furnishes, it is true; but haven't they overlooked the value of the exposition, particularly at this stage of the development of lower priced closed cars, as a means of educating the public to the closed car idea and so laying the foundations for a more stable, year-round business in future years? On the floor of this New York show are several hundred specimens of the closed car builders' highest art, shown with facilities for ease of comparison of make with make, model with model. The Grand Central Palace for a whole week is talking closed cars; so are the newspapers, and so are thousands of people who are flocking to the show. Isn't this worth something to the trade in the New York territory, even to distributors and branch managers who, just at this moment, are oversold on closed cars? Wouldn't a similar educational effort be worth something to the trade in other large centers? For a year or two, at least, while the industry is building up the closed car idea, aren't all well promoted, well managed closed car shows of value to the industry as a whole?

Before we leave the show as a show to talk about new cars exhibited, a word should be said about the attendance. The first night did not bring out the throngs of sightseers that go to the mid-winter shows. It was a serious, plainly interested crowd that drifted through the aisles, admired the cars, climbed in and out of some of them and, in contrast to some show crowds, indicated an active buying interest by rather freely giving names and addresses to salesmen. The sales staffs were noticeably alert, showing the effects of training in preparation for the contest which offers money prizes every night for the best examples of salesmanship observed by sleuths working incognito for the managing committee.

Special Days a Feature

The show is getting a good deal of attention in the newspapers through holding special days, with special features arranged for each. Monday was Family Day, and it was announced that all families of eight or more presenting themselves at the doors would be admitted free of charge. The record family, which came from a suburban town, consisted of a husband and wife and 21 children, all of which, they claimed, were their own. Families of eight and more were numerous. The

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newspaper men made quite a bit of this feature, and the show got a good deal of publicity of the kind that cannot be bought.

Tuesday was set aside as Actors' Day, when a committee of stage people were to take part in selling cars in some of the exhibits.

Another publicity-commanding feature in connection with the show is a contest among high and grammar school art students for the best paintings suggesting ideas for construction and decoration of automobile bodies. Well known artists were selected as judges, and their prominence contributed to interest in the competition and so in the show.

The New Models

The show presents the current closed models of nearly all types of the 54 manufacturers represented by their metropolitan agencies. Especially noticeable, in addition to the soft top models, were cars showing a trend of some manufacturers toward two-door sedans and coupes with the wider windows made possible by this arrangement. Novelties included a Pierce-Arrow limousine with two windshield cleaners and a Dodge Brothers town car, a special job, with the sunshade built integral with the top. A number of exhibitors had special body and paint jobs, the latter decorating the show with frequent bright spots of color.

Two new Chandler bodies at the show are the limousine at $2,895 and the town car, $2,895. Both these models are fitted with what has become generally known as "sport" equipment, including aluminum steps with individual fenders and splashers, drum type headlamps and so on. Sliding glass panels divide the driving compartment from the rear compartment and a locking device prevents shifting of the panels. The limousine carries five passengers in the rear and is equipped with all the usual fittings of a car of this class and also has a dictaphone for communication with the driver.

Nash Changes Chassis

The Nash chassis has been changed slightly and a new four-door, 5-passenger sedan is added, this being $2,040. Among the chassis changes are the addition of five cross braces in the frame, which still further prevent frame weaving. Although these braces were added primarily to prevent flexing of closed bodies, the open bodies are fitted to the same chassis. Another feature of the closed jobs is the copper guttering of the windshield sides to prevent leakage of water.

A new Oldsmobile body is the brougham at $1,425. This is a two-door body with a seating capacity of five and uses the tilting front seat. A feature of the design is the rear carrying compartment which is reached from the outside. A cover, curved to conform to the body lines, is hinged at the top and can be locked. A strut holds it open when access is desired. The tools are all buttoned to a board which drops from this cover and beneath this is space for a considerable amount of luggage.

Two new bodies are added to the Reo line, these being of steel and comprising a sedan at $1,885 and a coupe at $1,835. They are to be known as model C and will be produced along with the aluminum bodied coupe and sedan which have been in production for some time at a higher price. The price of the aluminum bodies remains as before at $2,355 and $2,435. The new steel bodies are being built in the Reo shops and an option of either wood or disk wheels is offered.

A new five-passenger, two-door sedan is added to the Stephens line, this being priced at $2,195. The tilting front seat arrangement is used and the equipment throughout is of the sport class, including drum type headlamps, a trunk with double suitcase in the rear and aluminum bars on the rear of the body.

The new Oakland sedan and coupe, both Fisher built, made their debut at the show. The sedan, a four-door job, is priced at $1,445 and the coupe, which has a five-passenger seating arrangement with tilting front seat, is $1,545. The coupe, which is $100 higher in price than the four-door body has considerable additional equipment, including a platform for a trunk, aluminum back rails, etc. Equipment on both the models is of the sport character.

The Packard line is augmented by the addition of a coupe and a five-passenger limousine-sedan to the single six chassis. The coupe has a seating arrangement for four and is priced at $3,175. All window and door glasses lower flush with the sills. The limousine-sedan is $3,275.

A new seven-passenger sedan, to be known as Model 27, fills out the Willys-Knight line. The price of this job is $2,195. The chassis is identical with the regular model.

A two-door brougham is added to the Lexington body selections. The rear seat is quite wide and deep and has an unusually high back. The two front seats are of chair type, the right being of the tilting type. There is a trunk at the rear which contains two removable suitcases.

Cole has made several changes in its closed bodies, including the addition of a cowl ventilator. Due to the ventilation secured by this means the lower part of the windshield has been made fixed. The closed bodies have three-quarter running boards with an extra wheel mounted just forward of the end of the running board. The wheel equipment, consisting of six wheels, is optional, wood, wire or disk. The price of the two-door sedan is $3,685.

New Liberty and Maxwell

A new cabriolet to be known as the Commander is added to the Liberty closed models. The price is $1,695. The dash is finished in walnut and a walnut molding is used on the interior. The interior finish is gray with leather upholstery. The exterior finish is maroon. The equipment includes clock, cigar lighter, windshield cleaner and cowl ventilator.

A new Maxwell body is the club coupé at $985. It is featured by quarter windows which drop full length in place of the solid, fabric-covered quarter sections which are generally used in connection with two-passenger coupés.

The seating space is arranged the same as the Maxwell roadster. The ventilation features have been given particular attention by the arrangement of the quarter windows and by the special type of windshield which has been adopted for all the Maxwell closed cars. Both sections of it swing outward, the upper half being hinged from the top and the lower from the bottom. To keep the windshield weather and water tight the entire assembly is set around a rabbet.

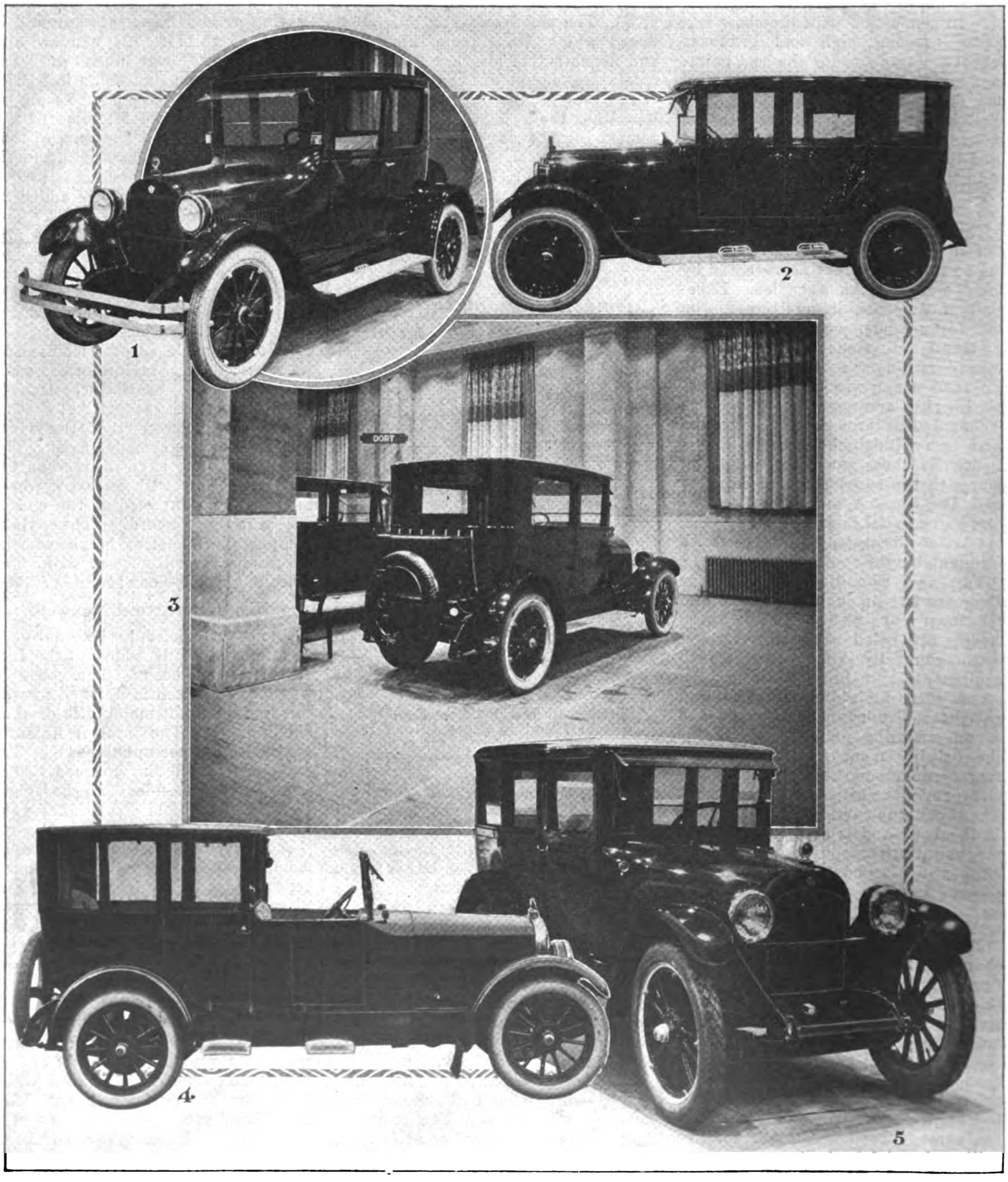
New Bodies at the New York Closed Car Show

Cole two door sedan	$3685
Chandler five passenger limousine	2895
Chandler town car	2895
Lexington two door brougham	2645
Liberty Commander cabriolet	1695
Maxwell Club coupé	985
Nash Six four door sedan	2040
Oakland five passenger coupe	1545
Oakland four door sedan	1445
Oldsmobile two door brougham	1425
Packard limousine-sedan, single six	3275
Packard coupe	3175
Reo Model C sedan	1885
Reo Model C coupe	1835
Stephens two door sedan	2195
Willys Knight seven passenger sedan	2195

Pictures of new bodies at the show will be found on pages 12 and 13.

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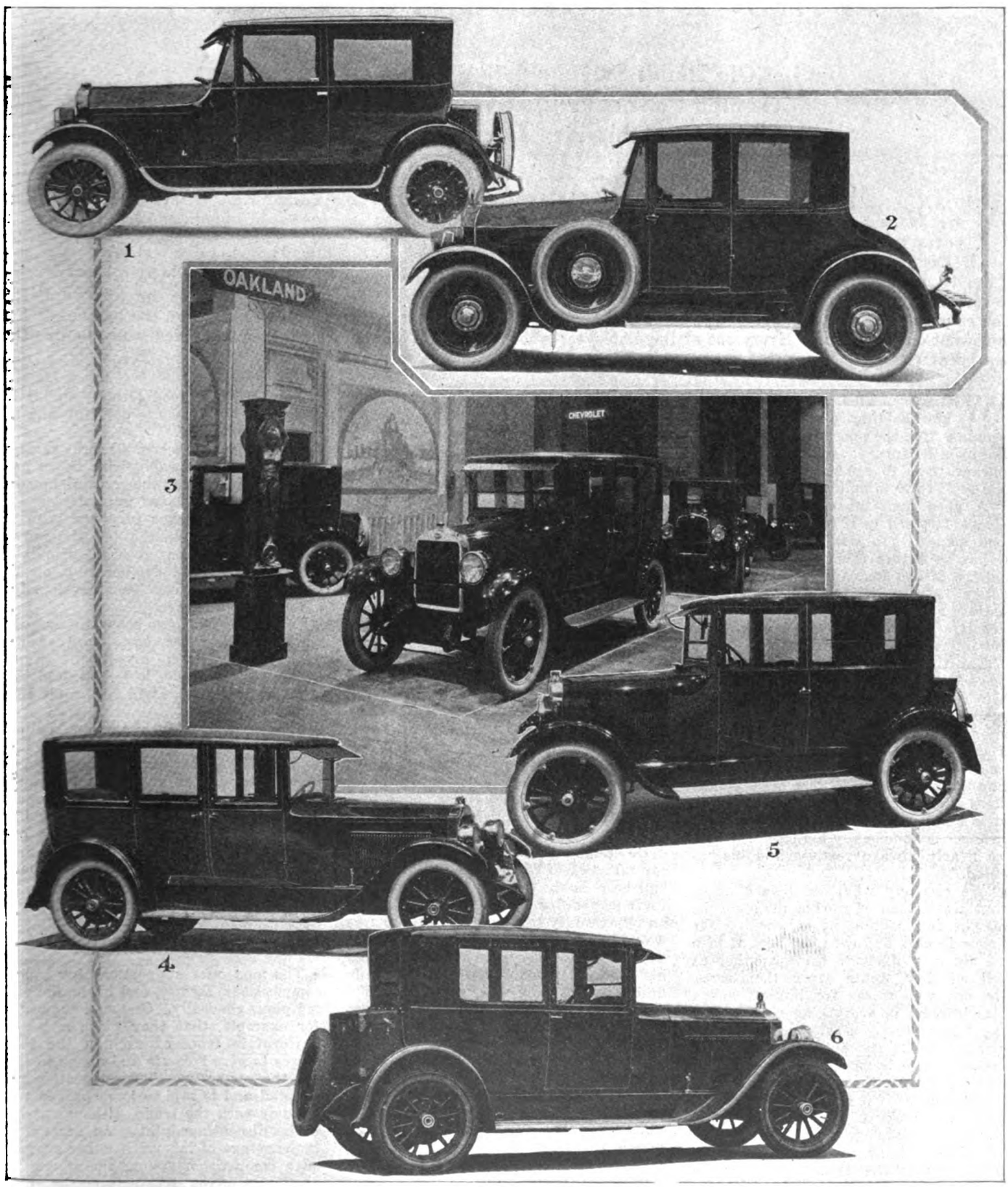
Some of the New Closed Bodies



1—Reo Model C coupe. 2—Reo Model C sedan. 3—Stephens two door sedan. 4—Chandler town car. 5—Nash six cylinder four door sedan

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Seen at the New York Show



1—Lexington brougham. 2—Cole coupe. 3—Oakland four door sedan. 4—Packard Single Six limousine-sedan. 5—Oakland two door sedan. 6—Packard single Six coupe

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Give Employees a Future, Says This Detroit Tire Dealer

Making Old Hands Stockholders Reduces Labor Turnover, Gets Men Personally Interested in Firm's Success and Puts New Life into Business

A PLAN for promoting contentment and conscientious service among employees has been given a three years' trial in the stores and shop of Henderson Tire Co., Detroit, and is pronounced a success.

Henderson Tire Co. operates three retail tire and accessories stores and a large vulcanizing shop in Detroit. The employees usually number twelve or more, depending somewhat on the season. Every one of the employees who has been with this company for one year or more is a stockholder in the corporation. Harry H. Henderson, founder of the business, is president, and holds the majority of the stock, while J. C. Heeran, manager of one of the stores, is vice-president, and John H. Arbogast, a salesman in one of the stores, is secretary-treasurer.

The corporation was not formed for the purpose of furnishing capital with which to establish the business. The business had been established for seven years before this plan was introduced.

"WE incorporated and submitted the stockholding plan," Henderson explains, "for the one purpose of giving the men a future; something to encourage them to remain with the business and strive to build it up.

"A good man must have something to look forward to if he is to remain a good man. On a straight salary basis he has no future other than his wages and the rather doubtful prospect of promotion to some minor position. He is restless, and you can't blame him. What incentive has he for being contented and interested in his work?

"The tire business is seasonal. During slack times a dealer can get all the men he wants at reasonable wages, but as soon as the rush season comes on men become scare and others begin to look around for good men. The men have no reason for holding onto their jobs other than their wages, so if some other fellow offers them a little more they quit and go to him. The result is that the labor turnover is abnormally high and the men are nearly always restless and discontented.

"We can say what we please about what a salesman or workman *should* do, but the fact is that he is working for somebody else, and even the best of men are not very likely to serve another as well as they would serve themselves. The one who works for himself has a vital interest in everything that in any way affects the general welfare of the business, while the one who works for somebody else is more than likely to be indifferent. If the business prospers, well and good; if it fails to prosper, that is the boss' lookout. He himself can get another job to-morrow.

"After studying several plans carefully, I decided that the only satisfactory solution of the problem was to make the men partners in the business. That would give them a definite and a permanent incentive to stick with their jobs and to take advantage of every opportunity to build up their own future by building up the business."

Employees Share in Profits

Three years ago Henderson got his men together and put his cards on the table. He told them what he wanted to do and why he wanted to do it. He opened his books and showed the growth of the business and the profits he was making. Neither was sensational, but both were normal and showed a healthy growth during the seven years he had been in business. There was every reason to believe that the business would continue to grow. He was not offering them a share in the proposition because he needed additional capital, but because he wanted them to share with him and help him grow. He wanted each man to feel that he was in business for himself, that his future was assured, and that the more he accomplished the more he would prosper.

He planned to incorporate with a capital stock of $25,000. Each man who had been in the employ of the company for one year or longer would be given an opportunity to buy stock. No shares would be offered to outsiders, and in case any employee wished to leave or to sell his stock, he would give the company first offer. As the men were hardly expected to have sufficient cash on hand to pay for the stock, a partial-payment plan was provided.

It was an open, frank offer of an honest proposition that was bound to pay good dividends and the men readily agreed to accept it. The eight men who were eligible to buy stock each took $1,000 worth of shares and the bookkeeper took $500.

That was three years ago. Every one of the eight men who bought stock at that time is still with the company and is now enjoying good returns on his investment. The stock is paid for and the men are contented.

All employees receive straight salaries that compare favorably with those paid for similar work in other establishments. Dividends are declared annually.

Not only has labor turnover been almost entirely eliminated, but the capital turnover has been greatly stimulated and initiative and co-operation on the part of the men has been developed to a remarkable degree.

During the business boom the corporation turned its entire capital twelve times. This year, with an investment of approximately $25,000, it is expected that the sales and service will total more than $200,000.

There is a meeting of the stockholders about once a month, at which time each stockholder is free to offer any suggestions he may think will be helpful. The men get together in the evening around a table, with plenty of appetizing food before them, and discuss matters pertaining to the general welfare in an informal way. The president of course presides, but the discussions take the form of a friendly conversation rather than of a formal business meeting.

Men Show Interest

The men offer suggestions for stunts, competitions, service, and business-building plans generally. One man suggested, for example, that they place a boy in uniform in front of each of the three stores to give free air and water to each car that came up. The suggestion was adopted and is said to have proved very popular with the trade, although it had to be discontinued later on account of the shortage of labor. Another suggested a competition among the stores, the employees of the store making the greatest sales increase for the month to be given a dinner by those of the other

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A Tire Store Front with a Selling Appeal

This is one of the stores in which Henderson's plan of giving his employees a future to work for is being worked out successfully. Through participation in the profits of the business he has the hearty support of all of his employees. Notice the inviting appearance, the facilities for promptly and efficiently taking care of customers. Wouldn't a motorist just naturally expect satisfactory service if he drove up to a place like this? The story that begins on the opposite page tells some interesting facts about Henderson's tire business in Detroit

two stores. This also was adopted, and the competition is now a permanent one.

Sales experts and other authorities are sometimes brought in to give talks at these meetings. The men appreciate any assistance of the kind and they immediately try out such suggestions as seem to them to be applicable to the business. They are continually on the alert for anything that will promote the common prosperity of the group.

In the Vulcanizing Shop

In the vulcanizing shop, said to be the largest in the city, the men have not only discarded a lot of cheap, obsolete equipment, but have in several instances invented equipment of their own. One of the men, for instance, devised an equalizing pressure tank that insures every cure and that has proved almost invaluable. Some one else thought of the idea of making matrices of all tread designs of non-skid tires. Now when an owner has his tire vulcanized in this shop he gets exactly the same tread. He also gets the same stock and the same colors, so that one would have to observe closely to discover that the tire had ever been vulcanized. The vulcanizers have also done much to standardize their work and bring their efficiency up to the highest point.

The men are settled. They see their future definitely established in the future of the business. They know that their positions are secure and that the harder they work, mentally or physically, the more they will prosper. They feel safe in buying homes, marrying wives, and looking forward to years of contentment and prosperity. Patrons have declared that they are the happiest, most alert, and most agreeable employees that have ever served them.

They are now pooling a large share of their dividends with the expectation of opening a fourth store next spring. They are using a rather extensive advertising campaign which is expected to result in greatly increased business.

They emphasize service and insist that they sell mileage rather than tires. The volume of their business enables them to buy all tires in carload lots, thus getting them at jobbers' prices. Accessories are also bought in large quantities.

Asked what suggestions he would offer other dealers who might want to introduce the plan, Henderson said:

"Nothing other than to warn them to be perfectly honest and frank with the men. Don't try to hide anything, and don't try to get the best of the bargain. The purpose of the plan is to promote permanent relations that will assure prosperity for all.

Henderson entered the tire and vulcanizing business in Detroit in Aug., 1912, with a capital of about $400. He rented a little, ramshackle shop out Michigan Avenue, put most of his capital in cheap vulcanizing equipment, and employed one man. He "ate snowballs," as he expresses it, during his first winter in business. Since that time the business has grown steadily. He opened a second store in 1918 and a third one in 1920, and plans to open a fourth in 1923.

Could You Have a "Day," Too

AN effective advertising idea was carried out on Saturday, Sept. 2, by Rue Motor Co. of Bloomington, Ill., Ford dealer. To stimulate business, which has been quiet since the railway strike, it was decided to ask the merchants of the city to co-operate for a Ford day in which every owner of a car of that type be invited to attend a barbecue. The business men willingly responded and gave away number tickets during the week preceding with every sale of fifty cents. The holder of the winning number was presented with a new Ford car. In addition, there were fifty other prizes given by the dealer and other merchants, these going to the Ford owner who came from the most distant point; the Ford owner with the oldest car; the Ford owner with the largest family, etc. There was a large response, and the event was voted a great success by the promoters. H. Dale Rue, president of the Rue company, gave a dinner to all of the motor car dealers of Bloomington one week prior to the event and invited all of them to take part and procure what advantage they could of the presence of this army of Ford owners. He believed that in this great number of visitors there would be many prospects for the higher priced cars, and the Ford day might be of value to all of the dealers, and he hoped that each would find some profit in the assemblage. This exhibition of brotherly spirit was appreciated by the dealers, and all agreed to do what they could to make the day a great success.

A feature was a parade of Ford cars. The finale was a program of athletic sports and the awarding of the prizes. The success of the event led to the decision to make Ford day an annual event in Bloomington. All of the retail merchants profited by the event, and there was a great army of purchasers in from the rural districts.

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Our City Thoroughfares—Shall They Be Highways or Garages?

A Consideration of the Parking Problem, Showing Causes of Congestion and Means of Relieving It

By HERBERT S. SWAN

THE parking question has become, within the last few years, one of the most aggravated traffic problems. Cars must be parked, and parked conveniently to the destination of the people using them, but where to park them except in the streets where they deprive other vehicles of the facility of using the thoroughfares is a problem which no city has solved satisfactorily.

Whether a particular space in the roadway shall be occupied by a standing or by a moving vehicle is not the question. Nor is it a question of whether a given vehicle shall be allowed to stand or be forced to move. It is much broader than either of these alternatives, for in the more acute cases it squarely presents the issue whether standing vehicles shall be permitted to drive moving vehicles entirely off the streets.

A vehicle has as much right to stop as it has to move but its right to stand in the streets is not equal to its right to circulate. The purpose of a street is to serve as a highway, not as a storage yard. To permit vehicles to stand in the streets as long as they might choose results, where there is a considerable amount of traffic, in barricading the streets to all traffic. To make parking spaces of streets none too wide to care for circulating traffic must inevitably result in diverting traffic to other streets where it can move more freely.

The studies made by the City Plan Commission of Paterson, N. J., on the subject of parking should be of particular interest to other cities.

The maximum number of cars parking in the business district of Paterson at one time during the day is ordinarily between 12 and 1 p. m., when sometimes there are as high as 700 cars. Many cars are parked in the streets the entire day. On secondary streets this is of minor importance, but when cars park on Main Street for five and six hours the consequences are too serious to ignore.

Main Street is *the* retail street and dependent as no other downtown street for its business upon the volume of traffic. Anything that detracts from Main Street's accessibility to the buying public is a direct stab at its business prestige; anything that increases the number of people frequenting the street tends to enhance its potential opportunities for business.

Out of the 235 cars parked on a single block of Main Street during the ten hours from 8 a. m. to 6 p. m. on a June day, ten cars stood at the curb for periods varying from over two hours to six hours and five minutes. The total parked car hours for the 235 cars was 130 hours and 45 minutes; that for the ten cars parked more than two hours, 33 hours and 27 minutes. The average parked time for all cars was 33 minutes per car. Cars parked over two hours, though they constituted only 4.2 per cent of the total cars parked in the block, consumed 28.7 per cent of the total vehicle hours parked by all the cars.

More than half of the machines parked were parked for less than 15 minutes. Seven-tenths were parked for less than half an hour. Only one machine in seven parked longer than one hour. Yet the machines parked more than one hour consumed 55 per cent of the total time parked by all the machines.

At its busiest point Main Street passes an average of 2.25 vehicles per minute per traffic unit of roadway width during the maximum traffic hour. With a double track trolley in the center, its roadway width, if free of all obstructions at the curb, readily passes one traffic unit on either side of the car tracks, but with vehicles parked at the side, all traffic is forced onto the tracks.

Every machine parked for an hour elbows 135 vehicles out of their alignment, but the annoyance suffered by traffic exceeds the embarrassment to the machines hourly thrown upon the trolley tracks by parked cars. One-half of the roadway width, and that the most effective half so far as ordinary vehicular traffic is concerned, is completely paralyzed, so that traffic requiring two roadway units for its free movement is forced into one where it must fall into an agonizing goose-step behind trolleys, which, through a series of jerks and starts sometimes manage to cover only two or three miles an hour.

The combined result of these different factors operating together is that the traffic along Main Street often backs up

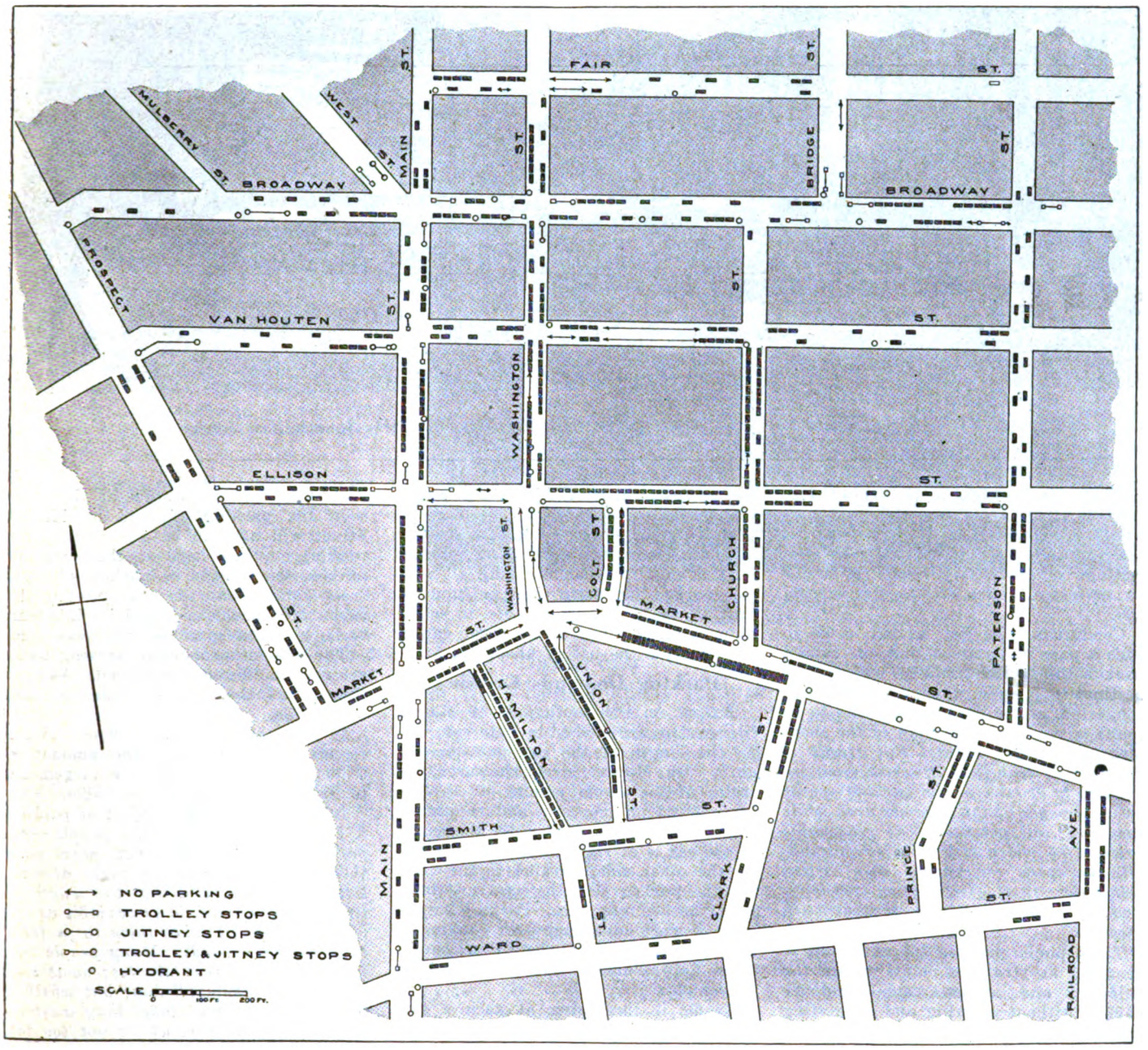
Is the Parking Problem Retarding Car Sales in Your City?

THE story beginning on this page was written for Motor World by Herbert S. Swan, a consulting engineer and city planner with offices in New York. It treats of the parking problem in general and illustrates points by stating facts developed in a study of traffic conditions extending over many weeks in a New Jersey city of slightly more than 125,000.

How many people in your city would buy a car, or another car, if it was easier to drive into the office or shopping center? How far can you go with parking restrictions without driving people to give up their cars for trolleys and buses? What can be accomplished by half-hour street parking restrictions, with supplementary free parking space provided by the city? Where does the individual motorist's convenience clash with the convenience of the general motoring public?

These and other questions are answered in this story by a man who makes a business of studying traffic conditions and solving traffic problems. The story may show you how you can help the public authorities overcome traffic difficulties which discourage motoring and cause motor car sales resistance in your town.

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Parked cars in the downtown district of Paterson, N. J., take up more roadway space in some streets than do moving cars. Note the congestion of parked cars on the busiest streets while the streets immediately to one side are comparatively unused

and fills the street, not only to the first, but even the second and third cross street to the rear.

Viewed solely from the interests of moving traffic, all parking should be prohibited on Main Street. Such a rule would, however, appear to be needlessly drastic at the present time. It would unquestionably increase the traffic capacity of Main Street. But in depriving all vehicles of the right to stand at the curbs, even for short periods of time, it would prove a serious blow to retail business.

The real parking problem on Main Street is how to confine the parking privilege to shoppers while excluding non-shoppers. How to allow those who are especially convenienced by parking on Main Street to park there while prohibiting those who are not, is an object which can probably be best achieved by limiting the parking privilege on Main Street.

A one-half hour limit on Main Street, with longer or no time limits on the other streets, would at one stroke remedy one of the worst abuses of the parking privilege on this street—it would put an end to half day and all day parking. Limiting the parking privileges on Main Street to thirty minutes would almost quadruple the number of cars able to park on the street.

A large part of the downtown street congestion in Paterson is due to machines cruising around in search of a place to park. Every day many people wishing to stop on Main Street are forced to park their cars several blocks away because the space that should be theirs is monopolized for hours at a time by the cars of non-shoppers. In some cases these cars are owned by shop keepers who are so thoughtless as not to realize that by parking in front of their premises they barricade their stores to prospective customers.

The distance an owner may reasonably be expected to walk to his destination after parking his car varies more or less in the same ratio as the time it takes to perform his errand. If his errand is quickly performed, he will wish to park immediately in front of the premises; if his errand is a long one, he will still, of course, wish to park in front of the premises, but where this is impossible, he may be induced to park at a proportionately greater distance. This distance in a city like Paterson does not at the outside limit much exceed a quarter of a mile, or the equiva-

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Utilization of a street intersection for parking purposes, Longacre Square, New York

lent of a five-minute walk. If a parking space, either in the street or elsewhere, is not available within a five minute walk of one's destination, the advantage of proceeding thence in a car as against a trolley or jitney is largely lost.

Conditions have not, as yet, come to such a pass in Paterson that one cannot park within a five minutes' walk of his destination. Even when traffic is most congested, ample parking space is to be found within that time limit of the shopping and office center. *But traffic is growing so fast that it seems wise for the city to acquire public parking spaces on the fringes of the business area while they are still obtainable at reasonable prices. To widen streets to provide additional space for parked cars is unthinkable. It is entirely too expensive. Too buy exclusive parking spaces is much cheaper.*

These public parking spaces should be acquired at strategic points where the half-day and all-day cars could be parked without entering and congesting the business district. In other words, they should be parked immediately outside of the downtown area. The amount of land acquired should be determined with a view to accommodating all vehicles parked for more than an hour, so that all the downtown streets, in so far as parking is permitted on them, can be reserved for the use of shoppers.

Parking Demands Growing

Except on the south side of Market Street, cars are ranked in Paterson, that is, the length of the car parallels the curb. On Market street, however, the width of the street admits of cars being parked on one side and ranked on the other; that is, on one side the length of the car is at right angles to the curb, on the other side, parallel to the curb. On the parked side the cars are invariably backed into place. Parking has the very distinct advantage over ranking in that the same street length accommodates approximately double the number of vehicles.

Traffic is increasing at such a rate that it is only a question of time how soon the parking of cars on Market Street will have to be discontinued for ranking, but as long as the cars are parked, they should be parked with the front rather than the rear next to the curb. It is much easier to drive into than to back into a space between two cars.

The present prohibited parking zones are very indifferently enforced. And yet these zones should be extended as soon as possible.

In some cases, the narrowness of the streets, in other cases, the amount of trolley traffic makes these enlargements to the prohibited zones desirable.

In approaching the subject of parking it is well to remember that people must park their cars; that they must park them as conveniently to their destination as possible; and that the length of time they may park is as variable as the length of time it takes them to perform their several errands. Many people will wish to park a few minutes; some several hours; others all day; but whether the time is short or long, they must be enabled to park somewhere not too far from their destination.

It is not to be assumed, however, that everybody has a right to park wherever he chooses or for as long as he pleased. When the public is embarrassed more than the individual is convenienced, then the privilege must be curtailed. On some streets, it may have to be limited to a short period; on others entirely prohibited. As the population and business in a community increase, its parking regulations will have to be revised—the parking time limits reduced, and the prohibited zones enlarged, until finally in a large portion of the downtown business area, cars be allowed to stop merely for a sufficient time to pick up and discharge passengers.

Meeting the Demand

When that time arrives, parking spaces must be provided off the public streets. To a degree the need may be met by commercial garages, private parking spaces or perhaps by department stores and other large owners of delivery



A prohibited parking zone, Paterson, N. J., but the cars don't know it

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trucks placing their private garages at the service of their customers. Although these efforts are all very laudatory and in some instances appreciably help to fill the need, they do not fill the whole need.

Many persons cannot afford to store their cars in commercial garages, even though they pay only one fee per day for the privilege. Others, able to pay a single fee per day, are in and out of their shops and offices so many times a day that, were they to have to pay a fee each time they withdrew their car, the cost would amount to a very pretty penny each year.

The real solution is public provision of free parking space, as it is needed, and of regulation of street parking so that, as far as possible, the convenience of individual car owners is served without serious inconvenience to the general car operating public.

What Kind of "Parkers" Cause Most Congestion in Your Streets?

(This investigation in Paterson, commented on in this story, developed definite statistical information of value in studying a parking problem. Particularly interesting are the tables below, showing how the parked hours are divided among short and long-time parkers and giving some examples of "parking hogs.")

MR. SWAN is preparing another article for Motor World which will deal with the fundamentals of traffic control. Still another story in prospect for Motor World readers will tell about a picturesque and practical highway construction and traffic control plan being worked out for the rural highways of a western State. Traffic articles, carrying interest and practical information for automotive men, will appear in Motor World throughout the fall and winter.



Forty-second Street east from Sixth Avenue, New York. Cars ranked along the curb force moving vehicles into congested lines

Parked Cars

Main Street between Ellison and Van Houten Streets 8 a. m. to 6 p. m.

Time Minutes	Cars Number	Per Cent	Parked Time Minutes	Per Cent
1-5	26	11.1	106	1.4
6-10	84	35.8	792	10.1
11-15	17	7.2	229	2.9
16-20	21	8.9	402	5.1
21-25	2	.8	42	.5
26-30	17	7.2	503	6.5
31-40	19	8.2	687	8.7
41-50	12	5.1	566	7.2
51-60	4	1.7	235	3.0
61-90	14	6.0	1,064	13.5
91-120	9	3.8	972	12.4
121-plus	10	4.2	2,247	28.7
	235	100.00	7,845	100.0

Typical Samples of "Parking Hogs"

Main Street Between Ellison and Van Houten Streets 8 a. m. to 6 p. m.

Time of Arrival	Time of Departure	Parked Time Hours and Minutes
9:15	11:35	2:20
9:40	11:55	2:15
10:30	12:56	2:26
11:35	2:05	2:30
11:45	5:50	6:05
12:25	5:45	5:25
12:30	4:00	3:30
1:35	5:05	3:30
2:15	5:00	2:45
3:15	5:56	2:41
Total parking time for above 10 cars,		33:27
Average parking time per car,		3:20

Selling a Car to a Chronic Prospect

LEE STANCLIFF, a railroad engineer, had been termed a "chronic prospect," as he had been looking over different makes for three years and seemed unable to make up his mind.

After many demonstrations favorably received by himself and wife he still insisted he was afraid to buy because friends had advised him not to.

I asked Stancliff to let me analyze the objections of his friends with the proviso that if I could overcome them he was to give me a deposit and if I could not I would trouble him no more. He agreed.

"Well," I asked, "who was the first to advise you?" He replied, "Jumbo Williams, a locomotive engineer, warned me against a ———— on the ground the car is complicated and rides hard." The explanation was simple: A deal which Williams had up was stopped because the prospect had a poor reputation for paying his debts and I suppose he was angry. "You are right, Jumbo is poor pay," replied Stancliff.

Now for the next party. Stancliff informed me Mrs. Struble, wife of the constable, said: "Don't buy a ————." "That is queer," I remarked, "as the Strubles know little about a ———— and are good friends of my employer, but I am going to learn why she tried to queer my sale."

Before Stancliff could protest, I was across the street and asked Mrs. Struble about it. She declared, "I did not knock the ————, as I think it is a good car, but I wanted Mr. Stancliff to buy the make we drive." At my request she telephoned Stancliff what she told me.

Returning to Stancliff, I asked for the next. He answered, "Barnett, the garageman, a good mechanic warned me not to buy because he was working on the rear of those cars all the time."

I expressed my doubt, that Barnett, who runs a small shop, had ever seen the new ————, with full floating axles. I asked Barnett on the telephone, "Can you tell me what kind of a rear end the ———— has?" He replied, "A three-quarter floating axle and —— bearings." "Just a minute," I said "will you please repeat that?" I handed the receiver to Stancliff, who quickly realized Barnett knew little about it.

Replying to my question Stancliff said he could not think of any more names. "Were the objections of others strong enough to overcome what you have seen for yourself?" I asked; "No, they are not," was the answer, and he paid the deposit.—J. J. JACOBS, Sacramento, Cal.

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Newspapers Furnish Accessory Sales Tips for Small Town Dealer

Direct Mail Follow Up of New Car Purchasers Brings Results —How Ask 'Em to Buy Salesmanship Built a Successful Business

"ONE way that helps us sell a good many articles of automotive equipment and spare tires," says I. C. Keinard, of Keinard Bros., accessory dealer in Phoenixville, a 12,000 town in Pennsylvania, "is through reading our Phoenixville daily paper through carefully every morning for hints. You see our paper is filled with 'small town' gossip, and whenever a car dealer, or his salesman sells a car, he rushes down to the local newspaper office, or telephones, telling of his sale, and this is run as an item of news. Then I quickly mail a personally addressed and typed letter to the new customer, offering what we have suitable to equip his new car.

"Very likely this particular method would not be applicable to an automotive equipment business in a large city, or any place where the local newspapers do not make news items of car sales, but it suits our purpose admirably. The letter has a personal note and, coming right after the customer has bought a car, it strikes home.

"For some reason, car dealers hereabouts have not seemed to think about selling the customer a quantity of goods with which to properly equip his car. They seem much pleased to have made a sale and let it go at that. Sometimes they let the customer get away without even buying a spare tire. Of course that is where we profit.

"In the letter which we send, suggesting extra equipment, *we usually tuck in a leaflet or so, advertising something either new, or especially suitable* for that customer's car."

In spite of a hard downpour or rain, customers kept entering the store. Between sales, the manager of the accessories department, Frank Supplee, contrived to say:

"We have always 'asked 'em to buy.' This has been the store's plan ever since it started. Nobody ever stops at our gasoline pump, in front, or enters the store and comes to this department without having some buying suggestion made to him other than the purpose for which he came. That's the only kind of salesmanship that counts.

"Anybody can hand out goods that are called for. There isn't much actual service in that sort of thing. What we aim to do is to supplement the customer's ideas, to suggest something that he may need and hasn't thought of, or to remind him of some need that, for the moment, he may have forgotten. This is the sort of thing a customer feels like thanking the salesman for. It may save him a lot of trouble and another trip. In any event a purchase made under such conditions is helpful to him.

"In fact, the store has been asking people to buy ever since the days of the old 'one-lunger' type of automobile. The house sold accessories then and it went on the principle that the customer couldn't always think of everything and there are always times when a good suggestion about a purchase of equipment would be welcomed. It is a policy that has paid from the start. Undoubtedly, there are many stores that need to have the value of the policy pointed out to them, but much of the success of this department has been due to salesmanship of this kind.

"When filling cars at the pump we have a good opportunity to make a cursory examination of each car and we note whether it is without a spare tire, or whether it needs a stoplight, or anything else. Then we call attention, diplomatically, to the deficiency and ask the owner if he wants the article. If the equipment can be attached easily, we do that for him."

How Keinard Bros. Do It

ASK 'em to buy whenever customers stop in front for gasoline, or come inside the store.

—

Read the local paper carefully for "news" items of car sales.

—

Follow these up with personal letters and envelope inserts addressed to those who have bought cars.

—

Watch all cars for deficient equipment or lack of spare parts or proper tires.

—

Maintain carefully selected stock, displaying some in showcases and in windows changed frequently enough to arouse interest.

The store, which is a story and a half high, but deep, has good display windows, in one of which there is usually a display of tires, in addition to automotive equipment. There are also show windows for the half-story, which contain attractive displays.

Inside, the stock is arranged neatly and in an attractive manner. There are large display cases filled with equipment and there is an adequate reserve on shelves and in bins behind the counters. The firm is careful not to overstock and yet it carries a quantity sufficient to care for all immediate and some prospective customers. The offices are in the rear of the store and on the mezzanine. The sporting goods department has proved a good "feeder" to the automotive equipment end, as the "outdoors" man and woman usually have a leaning toward motoring, anyway.

Study and hard and intelligent work have overcome for the Keinard brothers such obstacles as have been met in their path. The salesmen usually have to ask callers who inquire for either of the brothers to state their business, as, unless it is important, the Keinards are not apt to see callers personally when they are engaged in office work. This is a little unusual for proprietors in the smaller towns and boroughs of Pennsylvania, but is owing to no lack of affability, as the brothers are particularly courteous.

"I have found," said I. C. Keinard, "that the man who starts in the automobile accessory business with a moderate amount of capital, say $2,000, is not nearly so apt to succeed as the man who has a few hundred dollars.

"Why? Because the man with a little capital usually wants to make a very good appearance at the start. Ordinarily, he wants nice appointments about his store and office—nice counters and show cases to begin with, a fine lighting system and many other refinements that cost money. The man who starts in with little else besides a determination to win out, has to go easy on these things at first because of necessity and for the same reason has to work hard every minute, with grim determination.

"Attention to details, hard work and salesmanship will count for the automotive equipment man who is earnest in his desire to win out."

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Bought But Not Sold

By NEAL G. ADAIR



"WE'VE sold Judge Hitchcock!" Tommy Trumbull and his announcement burst simultaneously into the office of C. J. Reilly, who had distributed Sennetts so long and copiously about the Callawassa territory that many people called them "Reilly's cars." Nearly everybody in the Reilly organization, from sales manager Trumbull down to Georgie Roper, the junior salesman, had tried year after year to land Judge Hitchcock, wealthy and popular citizen and veteran motorist, but until now he had resisted entrance into the Reilly family of owners.

"Good boy!" Reilly exclaimed. "How did you do it?"

"Why worry about that?" Trumbull retorted. "The Judge knows everybody, goes everywhere and always goes in his car—and now he'll go in a Sennett. That'll help some, won't it?"

"Sure it'll help some," Reilly agreed, "if—."

"If what?" Trumbull demanded with a bit of impatience.

"If he says a good word for the Sennett wherever he goes," the distributor finished.

"But he'll be driving one—and actions make a bigger noise than conversation."

"Usually," Reilly conceded, "unless the conversation is of a particular kind that I have in mind."

"Meaning?" Trumbull prompted.

"Meaning—Tommy, what did you allow the Judge for his old car?" Reilly asked in a sudden shift of his questioning.

"An even thousand," said Tommy.

"And it's worth—."

"We'll easily get $700," Trumbull interrupted, "and if Judge Hitchcock in a Sennett sedan isn't worth three hundred as a year round advertisement I'll—I'll—."

Trumbull hesitated for lack of words strong enough to complete his sentence but his chief shook his head in apparent disappointment.

"Tommy," he said, "I thought we were all through buying that sort of advertising."

"But Judge Hitchcock—," Trumbull began.

"—is a more or less ordinary mortal with a head and body and two arms and two legs; sort of bow legs, at that," Reilly added whimsically.

"But think of his influence; think what he'll be saying all around town about the Sennett," the sales manager persisted.

"Even if he said it—all that you hope he will—I don't believe it's worth degenerating into that kind of trading," Reilly said, "and—and—he's just as likely to say something that wouldn't suit us quite as well."

"What could he say that wouldn't help us?" Trumbull wanted to know. "We know the Sennett is good and the Judge will have to say something about it and—"

"Now we're getting to the point," Reilly exclaimed. "We know the Sennett is good—sure. But does the Judge? Why hasn't he bought from us before? Why did he buy this time? Did you sell him the Sennett or buy his old car?"

"But he's got a Sennett, hasn't he? Doesn't that answer all the questions?"

"Hardly," Reilly replied, "and now that we've got into this thing, Tommy, let's go all the way in. Maybe the Judge really wanted a Sennett—in which case you pulled a fine boner to make him a present of three hundred perfectly good dollars, but there's nothing to indicate that he wanted it more than any other car in our price class. And if he has just bought 'another car' will his talk about town do us any particular good; in fact, may it not do us some harm?"

"I'm skidding; this is too slippery for me," Trumbull protested.

"All right, let's forget about Judge Hitchcock. Maybe he'll say all the nice things we hope he'll say about the Sennett—and help us get back some of our three hundred. Let's forget the Judge and talk about this over-allowance business in trading used cars. I'll admit we don't overstep often—and I give you credit for holding the salesmen to our policy, Tommy—but when we do what's likely to happen? We're after a prospect who owns a car. If we go after him the way our policy tells us to we sell him a Sennett. When we get all through and he wants a Sennett we talk with him fairly but firmly about the worth of his old car. If we are on the job we get it at market value. If we pay too much one of two things has happened; either he's a better talker than we are or we haven't sold him the Sennett.

"Now suppose we yield a hundred or two or three, whatever it may be, and close the deal. What is the thought uppermost in the mind of this buyer? Just this, that he has been pretty shrewd and has got a fine price for his old car. And his new car—well it's a new car, that's all, and just as likely as not he'll tell his friends that he didn't intend to get a Sennett, he had his mind set on another car, but we made him such a tempting offer for the old crock that he couldn't afford not to take it."

"But Judge Hitchcock—," Trumbull interjected.

"Forget Judge Hitchcock," said Reilly. We got through with him somewhere back in the year one. What we are talking about was using every possible means of making our owners boosters for our car and our house. Our service helps a lot there, of course, but we've got to get our owners started right and they are started all wrong if they get an impression that our car isn't worth as much as we advertise it for. How can they be blamed for getting that impression if we cut the price on the new car by raising the price on the old one?

"Even for the moment forgetting our loss, which we surely can't afford to forget for more than a moment, here's one thing, Tommy, that the boys here and the dealers out in the territory should understand thoroughly: We've only half done the job when we get a man to buy a car; the real achievement is to steer the transaction so that he buys the car because he wants it. Then the car is—."

"Sold—not just bought; I get you," Tommy finished and Reilly nodded.

Questions

Everywhere people turn they are reading advertisements of closed cars. Have you a sedan or coupe on your salesroom floor? Have you a closed demonstrator?

Every automobile price reduction, or at least every run of them, reduces the value of used cars in dealers' hands. Do you have a minimum for used car stocks and hold to it?

What are the most popular fall touring roads in your territory? Do you have signs on them, telling what your business is and how motorists can reach you?

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Editorial Notes

Jones from Missouri

JONES from Missouri Wants to Know About the New Jersey $40,000,000 Road Bond Issue—that is the way the Good Roads Association of New Jersey introduces a little book that promotes an issue to come before the voters of the Garden State this fall. The book tells its story in questions and answers. It begins like this: Question: What's this 40 million dollar bond issue everyone is talking about? Answer: It's the pay-as-you-use plan to finance the completion of New Jersey's State highway system by 1927. Q. Won't the present pay-as-you-go plan based on the one mill per dollar tax do that? A. No. In the first place the present plan is a pay-as-you-go plan, but we haven't the money to see it through. This policy for State highway construction was all right for the problem as it stood in 1917, but it won't do for the vastly greater problem that faces us today. Then the book goes on with interesting questions and answers for eight little pages, showing how the lesser cost of upkeep of better roads will offset the interest charges on the financing of the new, and when it's all over "Jones" says he's convinced there is no other way of getting a State highway system built in five years.

The book offers a suggestion for good roads associations in other States looking for a popular method of promoting their plans. It is published in Newark by the Good Roads Association of New Jersey.

Used Car Values and New Car Sales

USED car co-operative movements among dealers which are in force or springing up in all parts of the country, are efforts to establish market values for this class of merchandise. They may be called something else, but that is what they are. There are market quotations for many classes of merchandise. They are known to buyers and sellers and they take price out of the conversations of salesmen and prospects. Used cars have varying values, according to their condition and the local market, but their prices should not be subject so largely to the obstinacy of the seller or the gullibility of the buyer as they are now.

The Chicago Used Car Market Report, issued by the Chicago Automobile Trade Association, gives average used car market values nationally and by sections and is of value to dealers as a guide to fair allowances. Its use is recommended by some secretaries of local used car bureaus, who declare that the Chicago report is valuable as a supplement to the local report. But it is the local report, issued weekly in many cities by co-operating dealers, that tells the prices used cars are bringing in the local territory, thus furnishing the dealer a guide by which he can give the owner a reasonable price for his used car and still avoid a loss on the trade. The local report establishes known market values for various makes and models of used cars. It could be adopted with profit by an association or group of dealers in any community large enough to warrant the slight clerical expense involved.

A local market report which dealers actually use as a guide to allowances serves virtually the same purpose as a maximum allowance list. It used to be thought that operation of such a plan would put a damper on new car sales. It hasn't in Boston because the dealers are paying what cars are actually worth. What more can owners ask, and if they do ask more, for a time, can't they be persuaded out of an unreasonable attitude by constructive educational publicity regarding the reasonableness of the allowances? That is what happened in Boston and it has happened in other cities where dealers have co-operated in name as well as in fact to establish market values.

"Dynamic" Fred Caley

HONOR has been paid an automotive man, well known to the trade throughout the country, in the issuance of a little book entitled, "He's Dynamic," which is called, "A short story of a real man and a live club" and which describes the activities of Fred H. Caley as secretary of the Cleveland Automobile Club. Caley has been known to the trade for many years through his former connection as secretary of the Cleveland Automobile Manufacturers' and Dealers' Association. He recently retired from dealer activity to devote all his time to the secretaryship of the club and to the executive secretaryship of the National Association of Motorists, recently formed by local organizations which have seceded from the American Automobile Association.

The book states Caley's motto as secretary of the Cleveland Automobile Club as follows: "Good roads, better streets and better conditions for the man who owns and drives a car!" It is hard to think of a better slogan for any automobile club, and a dealer association might do much worse than devote some of its energies to accomplishing the reforms advocated by Caley.

Some dealers make extra profits "dolling up" better class used cars with extra equipment and accessories. Do you? These dealers say their customers are glad to pay the additional cost of cars that "look like the money." Are yours? How can you tell till you try?

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Must the Trade Have Longer Discounts?

It Must, or Reduce Selling Expenses, Says Dealer Who Points Out That Selling Costs Are Going Higher Instead of Lower—What Do You Think?

A DEALER in the Far West—not a big distributor, but a typical small city dealer in two lines of cars with the average retail discount to work on—sat down a few days ago and wrote a letter to Motor World. Before he mailed it he asked several of his competitors to read the letter. They approved of its contents as telling the truth of the present situation in the trade, as they saw it. Motor World prints the letter on this page, with the thought that it may bring out constructive suggestions from other readers regarding this perplexing problem of the trade—the high cost of doing business with the bearing that used car trading has upon it.

EDITOR Motor World: A nationally known figure in the automobile world remarked recently that the romance of the automobile business was gone.

Perhaps it is.

But what is more important, the financial responsibility back of the retailing of automobiles is going. As proof of this statement, it is necessary to talk with men of business capacity only a few minutes before they are almost certain to remark, "The retailing of automobiles is not only unprofitable, but it is hazardous as well."

This is a serious situation that is developing, because the automobile business is in no sense of the word a "piker" business. Large sums of money are required to handle even a limited automobile account, and money in quantities is never attracted into anything without the inducement of a satisfactory profit.

Inasmuch as the retailing of motor cars was at one time so amply financed, why has this change come about? Mainly for the reason that very few dealers in the United States are making a satisfactory profit, regardless of their managerial ability, the lines handled or the volume of business done. From the standpoint of profit, dealers are up against a stone wall and do not know what to do.

Manifestly the problem has but two aspects, lower costs of doing business or increased discounts, or perhaps both. There are those who claim that discounts are sufficient for the reason that dealers at one time made money by selling a quantity of cars and that intensive selling will bring the same result again if overhead costs are reduced.

Let us examine business costs for a moment. Waiving those cases where elaborate establishments and extravagant business policies have been indulged, we have three factors in sales to-day which formerly did not exist, viz., stronger competition, more conservatism on the part of buyers, and more old cars with a weaker second hand market.

To meet stronger competition, it is necessary to have salesmen of greater ability. To get them to work harder, their morale must be bolstered with special inducements, because to-day only maximum effort will close sales.

Then, again, because prospective buyers are being solicited harder they become harder and harder to sell. This makes it necessary for the salesman to make many additional visits to the prospect, all of which cuts down his productive capacity, increases his selling overhead, and runs up the cost of each sale.

Finally, the used car adds one more burden of expense. Now the gist of used car discussion during the past few months has simmered down to this: "Buy 'em Right,' and Sell 'em at a Profit." That sounds simple—if it can be done. But except in a few outstanding cases it is not being done although there are a lot of wideawake go-getters throughout the country who have been doing their best along that line. The fact is that merchandise which is bought *competitively* is almost never sold at a profit. No experienced merchant will dispute this contention because the truth of it has been proved again and again.

Write to Motor World About It

This page every week is devoted to discussions of topics of the trade by Motor World readers. Have you a suggestion to overcome a difficulty or improve some condition within the industry? Write to Motor World about it.

The Problem of Increasing Costs

The question then arises, how are we to handle a sales situation involving constantly increasing costs and show a profit unless discounts are increased? Sure enough, how are we to do it?

The answer is that it is not being done and furthermore, the dealer organization of the country, even in the best lines, is slowly disintegrating. The most desirable salesmen are quitting the field for more lucrative lines of endeavor and financial men are giving automobile dealers the go-bye. These things are actually taking place. Another six months will find the situation still more acute than at present.

Dealers who desire to fight the battle through have a man-sized job ahead. In the first place it is necessary to cut all overhead costs, including sales overhead, to the basis of potential motor car demand. The only buyer who typifies this potential demand is he who can be persuaded to purchase an automobile at a profit to the dealer on terms that will never necessitate excessive cost of collection or repossession.

Must Eliminate the Used Car

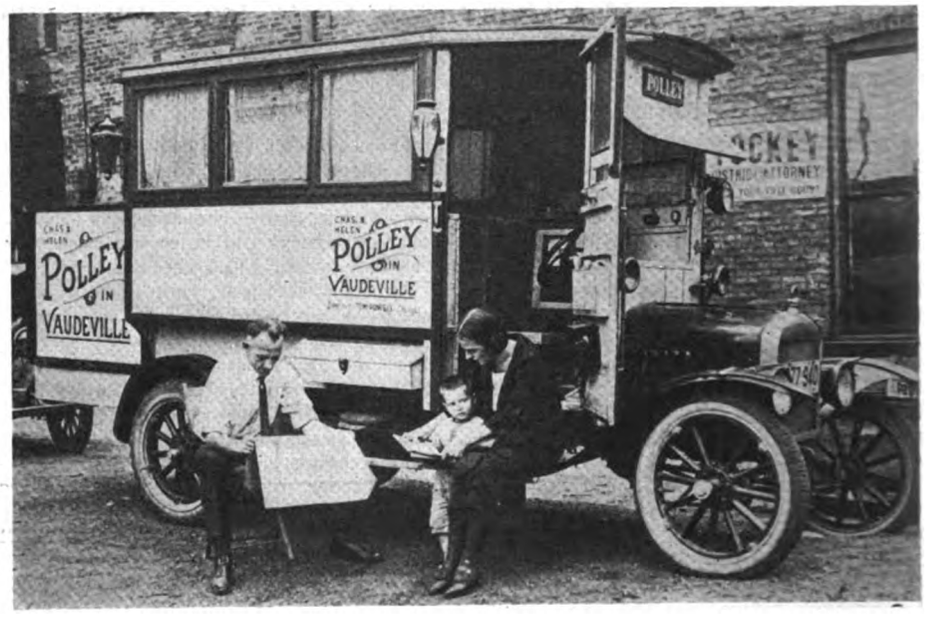
To my mind the used car must be eliminated from the new car sale. In no other way can the prospect with an old car be forced to keep his rightful place in the transaction, viz., that of purchaser of new merchandise only. Whenever a salesman attempts to sell a new car and the sale is a competitive one, the prospect who owns an old car will invariably force concessions that rob the transaction of all profit for the dealer.

In smaller cities where a used car department cannot be maintained as a well defined unit of the organization with a man in charge who has authority to make all appraisals, divorce of the old car from the new car sale is very difficult. Probbably the small dealer has no alternative at the present time but to refuse to handle any used cars at all. At least this plan has the advantage of ridding his organization of an overhead expense which is not compensated for by profits gained.

Inasmuch as factory executives concede that dealers who sell from 25 to 50 cars per year are responsible for marketing a major portion of the factory output, it seems strange that no one of them is willing to pay this important individual a living wage for his services, but on the other hand, after he has invested his own money, compel him to work for nothing and board himself. What kind of treatment is this for such an industry as ours to mete out to one branch of its organization, a branch which has been directly responsible for millions and millions of dollars of profit returned to factory owners and executives? Is it any wonder that the small dealer is entirely willing to turn his thankless and profitless task over to someone who desires no compensation but glory?—*Western Dealer.*

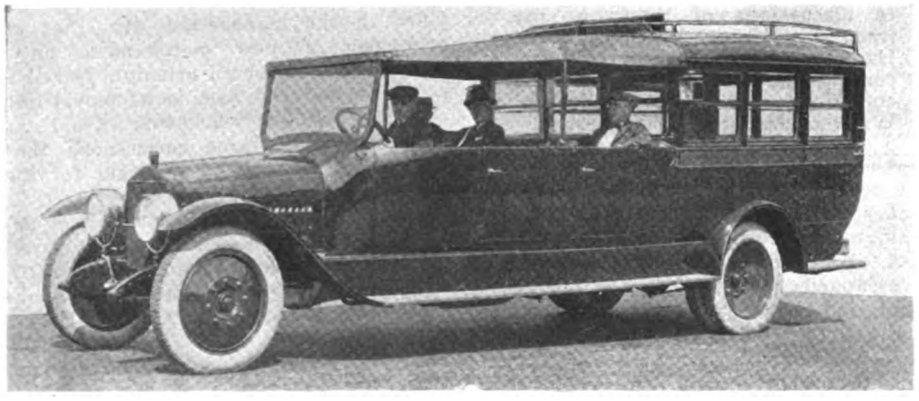
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Interesting Things Automotive



A Traveling Home for Traveling Theatrical People

Some vaudeville players are finding it cheaper to travel in their own bungalow motor car than pay railroad fares and hotel expenses. The owners of this "auto-bungalow" have traveled all over the country in it



A DeLuxe Coach

This de luxe coach for extensive touring, the design of which was brought from France by Leon Rubay, president of the Rubay Co., body builder, left the company's plant in Cleveland recently on a tour of eastern and coast resorts to show hotels, clubs and transportation companies its adaptability to their uses. The Rubay coach body is on a White 50 chassis. There is an enclosed drawing room in the rear accommodating twelve persons and an open forward section, accommodating twelve. Baggage is carried on the roof.



The New Star Car in Coney Island Mardi Gras

The Star, Durant's new contribution to the low price class, attended the Coney Island Mardi Gras recently. The car was shown on a revolving platform on a motor truck and occupied a conspicuous place in the procession

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Convenience a Consideration in Filling Station Design

Should Be Easy for Driver to Get to and from Pumps— Accessory and Battery Service Sales Provided for

THE floor plan shown on this page provides for the sale of gasoline, accessories and battery service. The building is 46 ft. deep and 30 ft. wide.

Easy entrance to and exit from the driveways is important in a filling station. Drivers prefer stations where it is easy for them to drive up to the pumps. Consequently the entrance and exit in this filling station have been made wide and the driveways on either side of the concrete island carrying the pumps are of an accessible width. There are two pumps and they are placed far enough apart so that four cars can drive up to them. No roof is provided over the driveway as this is not a necessary feature. The comparatively small number of wet days in a year do not ordinarily justify the investment in a roof over the driveways.

Nothing should be allowed to interfere with the sale of gasoline at the pumps. Air and water service should be placed so that cars taking advantage of them will not block the pumps. During rush periods accessories should not be sold at the pumps. People expect quick service from a filling station and it is important for a station to maintain a reputation for such service. Convenient toilets and a ladies restroom are provided at the front of the building.

The accessory store has a display window facing on the driveway. The interior of the store is fitted up with display cases. A small office provided in the rear. The cash register and cashier's desk should be placed convenient to the entrance to the store. The stockroom is located directly in back of the store. A small room for oil storage opens off of it. The battery shop is located next to the stockroom. A separate battery charging room is provided. The inclosed washrack at the rear of the building is large enough to take two short wheelbase cars.

The small triangle on the corner formed by the driveway should be planted with grass. A sign should be placed on the corner. This sign should be readable at several hundred feet so a motorist will have time to make up his mind to buy gas and to stop his car. It should be visible from both streets.

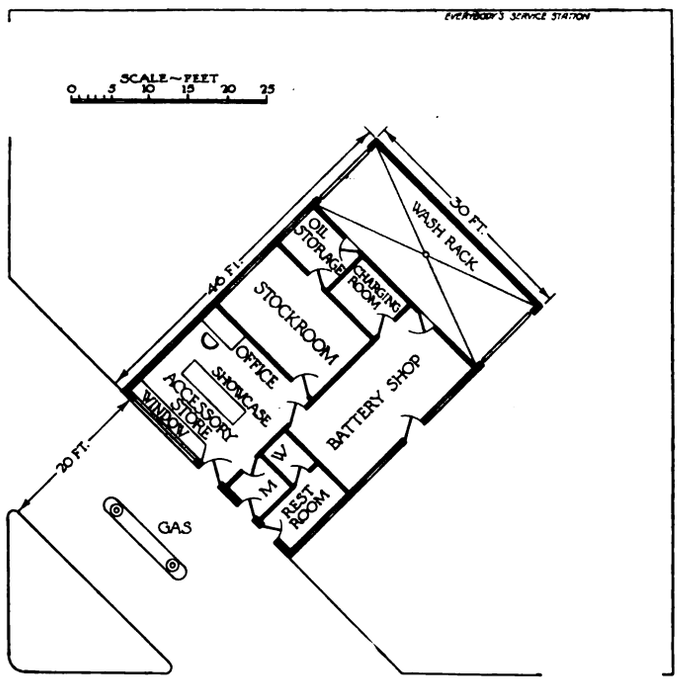
The balance of the lot is available for any one of a number of services connected with the filling station. In these days of low grade gasoline, it is desirable that oil be changed every 500 to 700 miles. Many owners do not care to get under the car to take out the plug for this purpose and the vacant space around the station is useful to park cars that owners have left for a few hours for the renewing of oil.

Motor World's Department of

Better Business Buildings

Is a weekly feature of the paper.

Size of plot, with rough sketch showing shape and its relation to adjoining plots; name and number of departments operated; number of cars to be shown in salesroom; number of cars in garage should be given when making inquiries.



Building for filling and accessory business on corner property. The building is 46 x 30 ft. The washrack is big enough for two cars of short wheelbase length

Republic Issues Booklet on Service Department Operation

MERCHANDISING and Sales Methods Applied to the Dealers' Parts and Service Department is the title of a recent publication of the Republic Truck Sales Co., Alma, Mich. Recognizing the fact that the prosperity of the truck dealer is based on the efficiency of his service department, The Republic Corp. has produced this booklet which tells its dealers how to operate a service department efficiently and profitably.

The text of the book deals with the selection of parts stock, when re-orders should be placed, proper cataloging and arrangement of parts in stock room, records of parts received and sold, and handling of claims with factory. The handling and billing of repair orders, gasoline, oil and grease records, repairshop equipment and methods of operation are also discussed.

All forms recommended for the use of the dealer are illustrated and drawings are given, showing the layout of model stockroom and construction of the parts bins in it. Illustrations of proper shop layouts and arrangements of mechanics' tools are also given.

The monthly inspection plan is also explained in detail. Sample post cards to be used in notifying truck owners of the time inspections will be made are given as well as a sample monthly inspection report. Typical letters to be used in advising truck owners of findings of inspectors, and for following up jobs are given.

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An Effective Used Car Advertising Effort

A Striking Example of How Co-ordination of Selling Force May Be Secured by a Dealer

A USED car advertising effort with a decided punch was used successfully recently by C. P. Rockwell, Inc., New England distributor of Nash. It consisted of a series of small ads, followed in the Sunday papers with a large ad. The advertising was linked up by having the windshield of each used car labeled with a bull's-eye sticker, the bull's-eye being the feature of the campaign. To perpetuate the idea that the bull's-eye is the mark of dependability, Rockwell is having a two page folder on which the bull's-eye appears printed. The folder is primarily a chart allowing for a record of maintenance to be kept. A 30 x 30 ft. sign, featuring the bull's-eye, was erected on the corner of the building.

As the bull's-eye becomes better known, and the idea developed, it is intended that it shall indicate the shortest way to the best values, back of which is an established reputation for the buyer's protection. The plan is evolved as a result of Rockwell's efforts to back up the slogan "Our Reputation Is Your Protection."

Motion Display in Car Salesroom

MOTION has always been regarded as a sure way to draw attention to a window display.

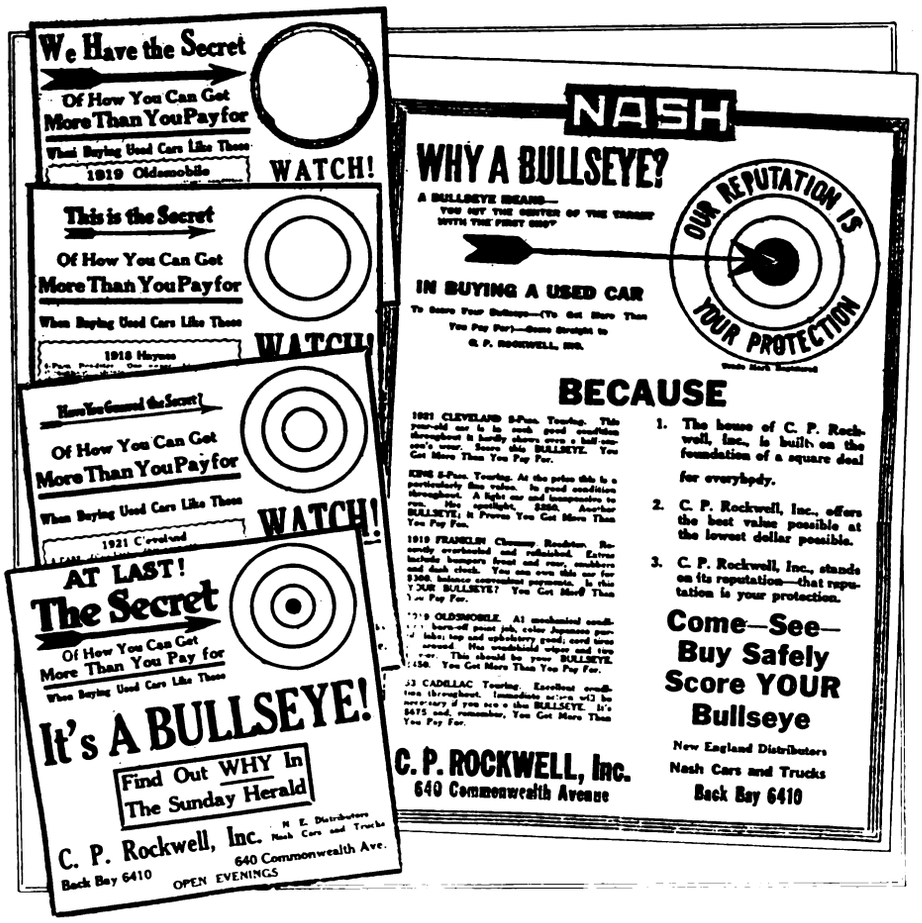
Motion was used to excellent advantage recently in a window display in Atlanta by the Martin-Nash Motor Co., a display said to be one of the most unusual any dealer has ever attempted in this section.

An incline of planks of several feet in length was constructed just inside the display rooms, running upward to the very edge of a plate glass window. A Nash sport model ran back and forth on this incline, so arranged as to work automatically and without a driver, the car, of course, being operated under its own power. It would run up the incline to within an inch or two of the expensive plate glass window, then automatically shift gears into reverse and back away for another trip.

The device which controlled the car was invented and perfected by J. M. Turnage, of Atlanta, and before being shown here was successfully exhibited in two other southern cities.

No display of any automobile concern has perhaps ever attracted a greater amount of attention in Atlanta. The street in front of the Martin-Nash salesrooms was continually crowded by interested spectators, many of whom remained for some time expecting to see the car miss connections and keep on until it had smashed the plate glass window. Nevertheless hundreds of trips were made during the display, and the device worked perfectly on each occasion, the car always reversing when it was within an inch or two of the window.

A Series of Used Car Ads



This series of small ads followed by a large ad in the Sunday paper, used by C. P. Rockwell, Inc., New England distributor of Nash in Boston, is a good example of the "campaign" idea. Note how the development of the bullseye ties the ads together and leads interest to the revelation of the merchandising message

Calling Out Public's Car Selling Ability

"HOW many people here could sell this car as well as men in the business?" said one automobile salesman to another, after a crowd had been absorbed for nearly an hour in a demonstration.

"More than you think," replied the other salesman.

The Velie Automobile Co. of St. Louis is putting the question to a unique test. A contest awarding $1,200 in prizes for the five best letters embodying impressions and opinions on the Velie car after a demonstration has been announced by this company.

Anybody can enter this contest except members of the Velie organization.

Letters must be limited to 100 words. Only one prize will be awarded to any one person, but any person may write as many letters as they desire.

The winners will receive negotiable credit vouchers as follows: First best, $500; second best, $300; third best, $200; fourth and fifth best, $100 each.

Mayor Kiel, A. R. Morgan, principal of public schools, and Franklin Miller, judge of the Circuit Court, will judge the letters.

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A Hallowe'en Window Display Idea

A Simple and Inexpensive Trim That Will Help Accessory and Tire Dealers Make a Timely Appeal

EVER notice that the department store windows, hardware windows, and those of many other merchants, especially if they are progressive fellows, have a suggestion of Hallowe'en along toward the end of October? Sometimes it is only the use of black and orange decorations. Sometimes it is one or two pumpkin masks, or an old witch. Hallowe'en falls on Oct. 30.

Of course, these special efforts to appeal to popular thought are not expected to actually sell the merchandise in the stores. What is accomplished by such displays is an impression on the public mind that will remain, often, and make a person think of that store because of its striking display.

So it is good business, occasionally when opportunities permit, to relieve the window display by something that attaches itself to public thought in connection with some holiday.

The next opportunity for such a window appeal is Hallowe'en.

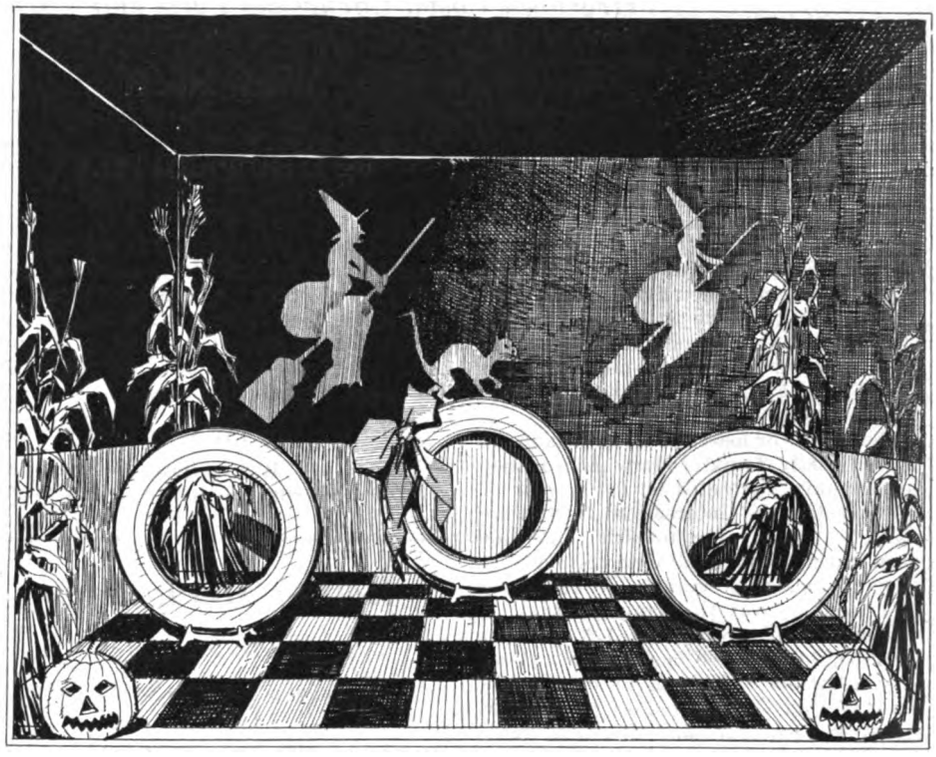
On this page is presented a suggestion for a tire or accessory store window that is simple in its construction and costs but a few cents.

In making this window the walls are covered with black crepe paper to a distance of about three feet from the floor. Orange crepe paper is used on the walls for the remainder of the distance to the floor. At the stationery store it will be possible to buy silver or gold stars, old witch cutouts, cats, etc., which may be pasted on the black paper in the manner shown in the sketch. If these figures cannot be bought they may be cut from Hallowe'en crepe paper on which they often are printed as borders, etc. Even if they cannot be gotten in this way, a sign painter would make them for a very small sum.

The floor of the window is covered with strips of black and orange crepe paper woven to produce a checker-board effect. Shocks of corn are placed in the corners and a couple of pumpkin masks will complete the properties. Tires, on which the beading or lettering on the sides may be gilded are then placed in the window. A big bow of black and orange crepe paper, pasted so as to show black on one side and orange on the other, will be effective tied to the center tire as shown.

The same general background may be used with an accessory display instead of tires.

If used for a general accessory display the window may be built just as this one is, with the center tire in the back center and a few accessories spotted on the checkered floor of the window.



With the investment of a few cents for crepe paper and a couple of pumpkins the tire or accessory dealer can set up this Hallowe'en window. Full instructions for building the window are given on this page

Ideas On Selling and Management

You will find them on this and the opposite page—ideas that will make dollars or save dollars for the

Car Dealer Truck Dealer Equipment and Tire Dealer Tractor Dealer Repairman

Some of our readers are contributors to this section of Motor World. Have you developed a plan that might help some other men? If you have, will you write it out and send it in?

Women's Week in Accessory Store

WHY not arrange a "Women's Week" at your store? During this week you could have displays and demonstrations of accessories which make it easier for women to drive cars and which make car driving more comfortable for them. Included in the accessories thus pushed could be heaters for cars, robes, spotlights, etc. Advertise this stunt by means of cards in your windows and by means of ads in the local papers. Urge the men to patronize your store during the week and buy accessories for presentation to the women folk as birthday and wedding anniversary gifts.

A "Stop That Puncture" Campaign

THE Lee Tire Co., 289 Monroe Avenue, Memphis, Tenn., staged a contest a short time ago in which $50 in cash was offered to the boys of Memphis. Seventeen prizes in all were offered, first prize being $15, second $10, etc., and prizes grew smaller, down to 11 prizes of $1 each. Money was awarded to boys who picked up the most glass, wire, nails, tacks, etc., that might puncture a tire and brought same to the firm's office. There was no fee and any boy could enter, but boys had to register. The contest was confined to the city limits and objects were to be taken from the streets and brought in each day by the contestant and signed for. The contest was known as a "Stop That Puncture Campaign Contest."

The 555 Tire & Service Company, Little Rock, Ark., has also had on a similar contest.

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The Foundation of Shop Profits

Systematic Records Are Just as Important as Good Mechanics and Good Shop Equipment—Turn Losses Into Profits by Watching Overhead Costs, Uncharged Parts and Unrecorded Labor

Article No. 3

By J. HOWARD PILE

PEOPLE go into business primarily to make money. If you buy a watch for $10 and sell it for $15, you have a profit of $5. There is nothing complex about this transaction, and you do not have to have an adding machine or a set of books to find out whether you made a profit.

The profits or losses of a repairshop are not so easily found. Many times shop owners have struggled on for a year or more under the impression they were making money, only to find that they were eating into capital investment to keep the business going. A dwindling bank account was the danger signal.

It sounds fine to charge $1.25 an hour for labor and pay 60 cents for it. Very easy to calculate: 65 cents an hour profit, 9 hours a day. That makes $5.85 profit a day on each man, and five men working, let's see, that makes nearly $30 a day profit on labor alone and 25 per cent on parts and accessories. Well, it won't take long to get rich at that rate. Ought to be able to retire or start a factory or go into the moving picture business or something in a couple of years. No more greasy hands and grimy clothes. No, sir!

But wait a minute.

Let's introduce the well known killjoy, OLD MAN OVERHEAD. He puts quite a dent into those wonderful profits with his rent, light, heat and so on. And how about the hours you pay for and don't collect for, and the jobs that have to be done over again, and the bills you send and never collect, and the reamers you break and all that sort of thing? Let's take that $30 a day and see whether it is really a profit or whether it may possibly be turned into a loss. If it is a loss, we've got to do something quick or the old ship will sink.

The Importance of Keeping Records

That's it. We must keep records. Then we will know where we stand. To do that we need various books and cards and forms. A careful entry must be made of every cash and credit transaction. Regardless of how these items originate, they are eventually recorded in the cash-journal or some equivalent book and posted to the individual ledger accounts of customers and people the shop buys goods or services from. Regardless of how the details of such a bookkeeping system are handled, at the end of any week or month or year, it is possible to find how much money the shop owes for materials and service and how much money is owed to the shop for parts, equipment and labor.

Figuring the Overhead

It will not do to allow the compilation of fixed charges and overhead to go to the end of the year, and then see if there is a profit or loss. These items must be systematically recorded and tabulated in such a manner that at the end of any period it will be possible to ascertain the cost of doing business.

Overhead is a charge or expense which can be easily ascertained after it has occurred, or can be approximately estimated in advance, but which is difficult to definitely charge against any department of the business. The following items are generally included under the head of overhead in a moderate size establishment:

Rent, light, heat, power, depreciation, telephone, advertising, administration, office expense, stationery and printing, shop non-productive labor, free service, shrinkage of stock, bad debts, insurance.

These things are all necessary to the successful business, yet they do not produce direct revenue. You buy an article and sell it at a higher price, and it produces direct revenue. But you pay money for rent or taxes, and it does not produce direct revenue, yet it has to be there or you could not do any business.

Suppose you make up a list something like this, using figures that you know are nearly right:

Rent	$1,500
Light	100
Heat	125
Power	250
Depreciation of stock and equipment 10%	500
Telephone	50
Advertising	150
Administration (salaries of yourself, foreman, etc.)	8,000
Office expense	4,000
Stationery and printing	100
Shop non-productive labor	1,000
Work done over	500
Stock shrinkage	100
Bad debts	500
Insurance	500
	$17,375

This makes a total of $17,375 in overhead or fixed charges to start with. This is perhaps typical of a fairly large shop, but here's how it looks:

$17,375 pear year
1,448 per month
334 per week
48 per day
5.33 per hour

Where is the $30 a day profit now? Not counting profits on the sale of parts, the loss on labor would amount to $18 per day, and you would have to sell a whole lot of parts and accessories to make up this loss before the profits began to roll around. There would be something radically wrong with a shop that showed up with figures like this, yet many shops are operating under a handicap nearly as great.

The remedy is to cut down the overhead. Turn off lights when they are not needed. Don't run machinery, except when it is needed. Cut out the useless phone calls. Cut down non-productive

Better Mechanics

Article No. 258

A Series of Four Stories on Shop Profits.

I—Layout and Equipment appeared in the September 13 issue.

II—Systematic Arrangement of tools and parts appeared in the September 20 issue.

III—Records and Forms appears in this issue.

IV—Getting the Business will appear in the October 4 issue.

The dealer or repairman can make shop profits if the business is properly conducted. These stories suggest fundamentals of profit making in the repair business.

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Repairshop Forms to Reduce Labor and Material Losses

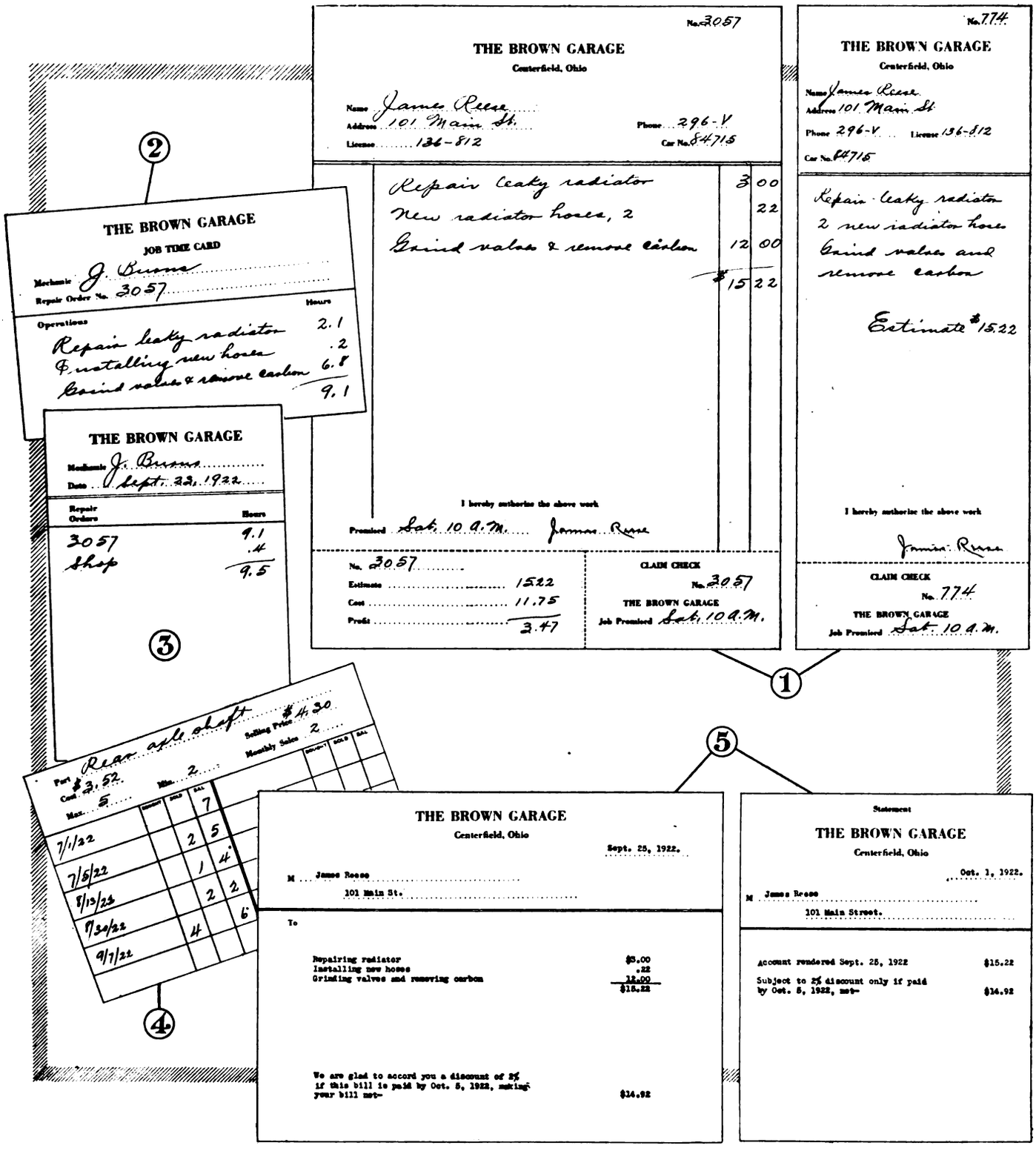


Fig. 1—Two kinds of repair order. The one at the left is for larger stations and allows sufficient room for detailed instructions. The one at the right is more simple and is suitable for a moderate size garage. Both have claim checks attached and the larger one has a tracer card. Fig. 2—The time for each job is kept on a job time card. If a time clock is used the operations may be timed separately if desired. Fig. 3—Mechanics keep daily time records to double check the jobs and to record unallocated or uncharged time. Fig. 4—A stock inventory card which enables the stock clerk to detect low stocks and reorder. Fig. 5—The invoice is sent out when the job is completed, itemizing the operations. The statement refers only to the date of the invoice

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labor and reduce free service to a minimum by doing the jobs right so they will not come back. These are only a few of the actual economies that can be made.

The Repair Order

A most valuable form in the shop is the repair order form shown in Fig. 1. In the larger shops it is made in triplicate by means of carbon papers. In the very smallest shops a single copy on heavy paper is sufficient. The repair order specifies exactly and minutely what work is to be done on the car and carries the owner's signature authorizing the work. Most shops are working toward a flat rate, and where such a system has been developed, the predetermined cost of the job is noted on the repair order. The orders are numbered and have a detachable claim check which is given to the customer.

The claim check is an important part of the order. In the first place it protects the shop owner by preventing the surrender of the car to anyone other than the holder of the claim check. In the second place it gives the owner a feeling of security. Without a claim check, he is not quite certain that somebody else will not walk into the shop and drive off with his car. It also shows the owner that the shop is careful and methodical, and he really has more faith in the shop.

Some kind of a record must be made of all parts, material and time used on every job. It will not do to pay good money to the manufacturer for parts, then lose track of them and give them away to customers. A great source of loss is gasoline and oil put into cars by mechanics and never charged up. This is giving the owner something for nothing. He does not even know that you are giving it to him and so does not thank you. You do not know it either, or you would not be giving it away.

In a larger establishment, a "material requisition" is required for every cent's worth of material used on a job, the requisition giving the name and number of the parts, the repair order number and the mechanic's name. There are other variations for smaller shops, one of them being a sales register on the parts room counter, on which is entered the same details as in the case of the material requisition.

Regardless of whether flat rates, maximum estimate or time and material systems are in use, a careful record must be kept both of time on the various jobs and the mechanics' time. The job time record is important, even if the flat rate system is used, because it is possible to continually check up actual time against estimated time and revise estimates according to practice, or find out why certain mechanics cannot finish jobs within the time limits.

Mechanics' time is necessary in order to tabulate at the end of the week the number of hours the men worked on jobs that could be charged for and the number of hours they were idle or working on general shop work, which is nonproductive. A close watch on this will save much money. When there are not enough jobs to keep the workmen busy on productive work, the big majority of the time it is necessary to go out and get some more work in, or to cut down the force of mechanics to fit the work in the shop. When the non-productive hours dwindle to nearly nothing, it is time to think about getting more help. The shop should try to keep productive hours between 80 and 90 per cent.

Every square foot of space in the shop is worth money. If the rent of the place, plus light, heat and all the other items of overhead is assumed to be $48 per day, and the shop, occupying one-third of the whole building, has 1250 square feet, then each square foot is worth 1 cent per day. The average car requires 70 square feet, and therefore it costs 70 cents a day to have a car sitting around. It is therefore of great importance to keep the stock of parts in such shape that those parts required will be instantly available. Five days waiting for a part adds $3.50 to the cost of doing the job, for which the shop receives nothing and during which time the owner frets because he cannot use his car.

A careful check-up of stock must be made all the time. Regularly used parts should have a card system with a maximum and minimum mark. When the minimum is reached by count, an order should be put in at once. In addition to costing money through delay, express shipments, telegrams and so on increase the job to a surprising extent. Sometimes it is possible to collect from the owner for these, sometimes not. Even if he pays, the higher cost of the job and the delay leave a bad taste in his mouth that will require much satisfactory and low priced work to eliminate.

A stock record or stock inventory card is shown in Fig. 4.

These forms and records are part of an orderly and well managed business. Another evidence of the good business man is the proper use of a checking account at the bank and a neatness in issuing checks. A pocket checkbook with check numbers put in in ink does not impress the one who receives it very favorably. Any business which amounts to anything at all can make arrangements with the bank to have checks printed with the name of the concern and have the checks numbered with a machine. Keeping the bank account straight is a very important part of the business, and a point should be made of carefully comparing the monthly statement of the bank with the checkbook stubs. This will not only check up errors monthly, but will relieve the concern of liability for banking errors. Most banks require that errors be reported within ten days after a statement is rendered.

Getting the Business

The last of the series of four articles on shop profits will appear in the October 4 issue and will cover the merchandising of service. No amount of system, records, layout or fine workmanship will bring profits without new business.

Handling Charge Accounts

Dealers and repairshops are making efforts to do business on a strictly cash basis. Occasionally a business is able to work this out 100 per cent, but not often. There are always some customers who will not pay cash, and it is either a question of doing business the way the customer wants to do it or allowing his business to go somewhere else. This is especially true in the case of commercial accounts, truck fleets, etc. Chauffeur-driven cars also come in the same class, as the chauffeur is seldom given the money, but instructed to bring a bill.

The handling of these accounts and the collection of the money is part of the business and must have its share of attention. Bills which are allowed to run without any attempt at collection generally fall flat and remain unpaid. The first of the month is the usual time to check over accounts. Bills should be rendered immediately on the completion of work, and thereafter if the bill remains unpaid, statements are sent the first of each month. There are thousands of methods of securing the payment of bills, the most effective of which are the offer of a 2 per cent reduction for cash within five or ten days, and the use of a carefully worded personal letter with the first bill or with the first statement. A typical bill and first statement are shown in Fig. 5.

Fairness to Employee and Customer

The shop which has a careful record of costs, losses and profits will be able to deal fairly with both employee and customer. One of the greatest causes of dissatisfaction in most shops on the part of the employee is his being paid 60 cents per hour when he knows his boss is collecting $1.25 or $1.50 for this same time. Many mechanics who stand a good chance of advancement in the business, quit and start in some alley shop on their own account, secure in the belief that they can make twice as much for themselves as they can working for a shop. Most of these men come to grief sooner or later because they have bumped into the overhead and expense problem and it has licked them. A shop which had the confidence of its mechanics could thoroughly explain all these details to dissatisfied men and show them that their chances for making good are better with a good concern.

Customers who hear talk about the discrepancy between wages paid and time charged are also prospects for a convincing talk on the same subject. The shop owner with records of his transactions, of his costs and of all the details of his business is able to treat his employees and his customers in fairness and make the profits to which he is entitled as a good business man.

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Repairshop Shortcuts

Don't Make Him Mad

MECHANICS have been pretty well flooded with literature on the subject of not getting grease and grime on the seats of sedans and coupes and how much the owner appreciates grabbing hold of a nice clean steering wheel. So we can consider that world's problem settled. Here is another don't that slips by once in a while.

Keep the car floor clean too. You know how much grime is on the shop floor and it is easy to transfer it to the floor of the car. If the mechanics don't do it, the owner may. Put newspapers in and leave them in. The owner can throw them away when he gets outside.

Send in your shortcuts to Motor World. One dollar will be paid for each one accepted and we will accept any that are practical and that have not been used before.

No. 3398—Air Pressure for a Gravity Tank.—A special gasoline tank cap fitted with a tire valve and pet cock is useful for bringing a car into the shop when the gas is low or when the gas line is partially obstructed. The cap is fitted with a gasket to make it air tight.—W. B. Wheatley, Norfolk, Va.

No. 3399—Detecting a Carbonized Muffler.—When there is a lack of power in an engine that has been overhauled, the trouble may be in a carbonized muffler. This can be detected without disassembling the muffler by weighing and comparing the weight with a new muffler.—Donald McClean, Cleveland.

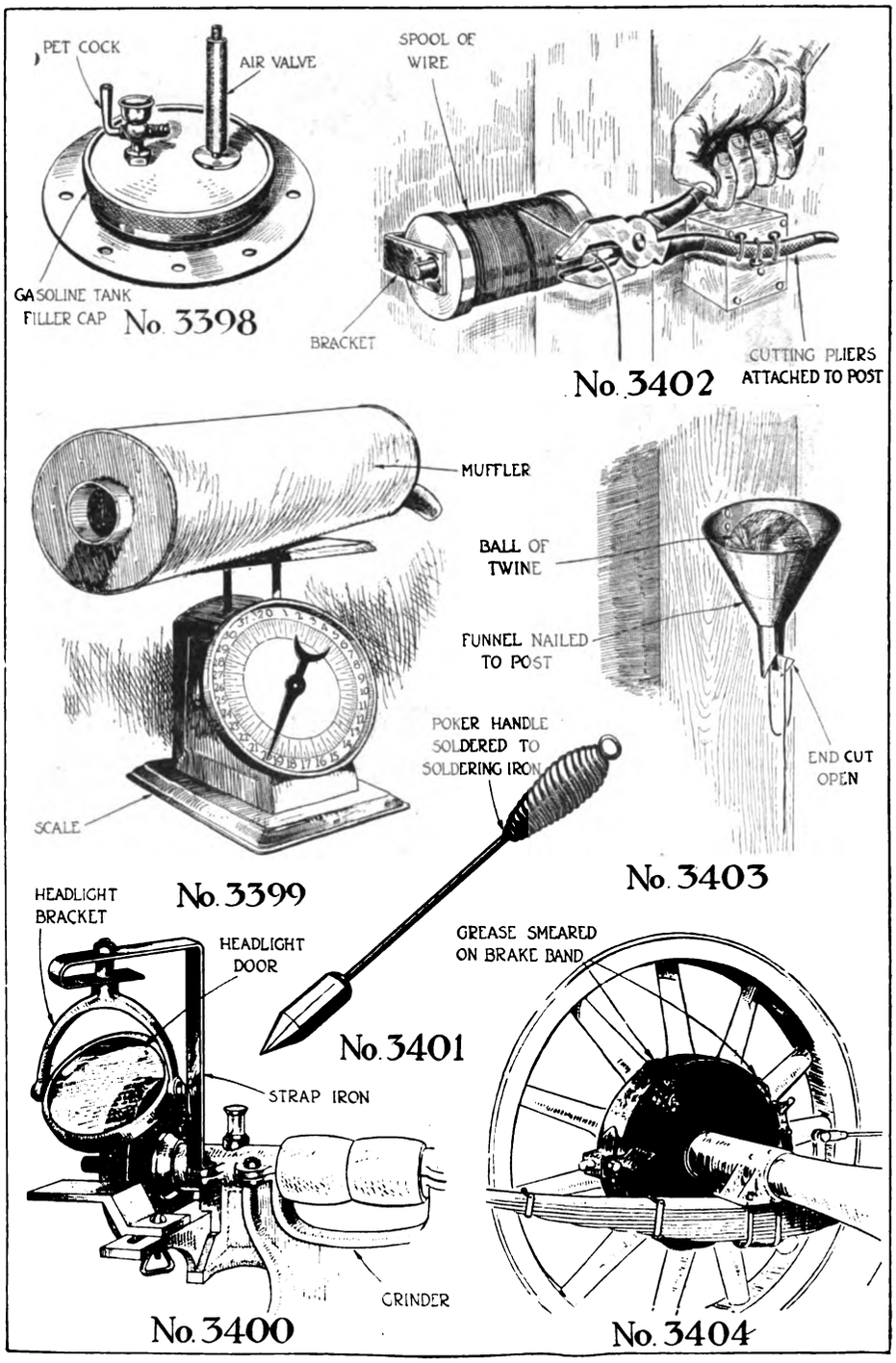
No. 3400—A Grinding Wheel Guard.—To prevent eye injury in using a grinding wheel an old headlight bracket and door with plain glass are rigged up over the wheel.—H. R. Grigsby, Garage Superintendent, Oklahoma Gas & Electric Co., Oklahoma City, Okla.

No. 3401—Cool Handle for Soldering Iron.—A twisted wire handle from a stove poker is welded to the shank of a soldering iron, making a serviceable soldering iron which will not be loosed with the heat.—A. N. Bostwick, Bostwick & Thompson, Minden City, Mich.

No. 3402—A Handy Wire Supply.—A spool of wire mounted at a convenient place and a pair of cutting pliers with one handle fixed to the same support make it quick and easy to get the required length of wire.—Donald McClean, Cleveland.

No. 3403—Holder for Twine Ball.—A holder for the ball of twine is a funnel which is fastened to a post or the wall. By making a diagonal cut in the spout and turning it back, filing it sharp, a cutter is also provided.—G. A. Luers, Washington, D. C.

No. 3404—To Locate Dragging Brakes.—A small dab of grease on both brake drums will disclose whether either or both are dragging as the grease will melt from the heat on the one that is dragging.—Donald McClean, Cleveland.

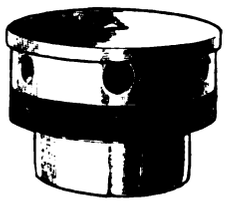


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Equipment to Sell

New Devices for the Car and Truck

F. B. Oil Saver for Fords

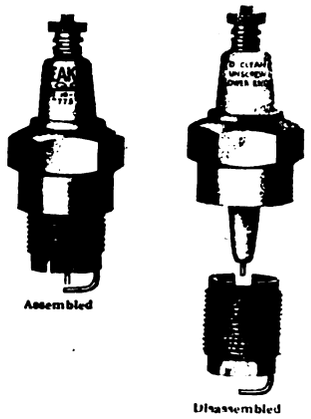


F. B. Equipment Co., 119 East Atwater Street, Detroit.

The oil saver fits over the oil filler pipe of the Ford in place of the filler cap. It contains a valve which opens with the down stroke of the pistons to allow the passing of gases and closes on the up stroke closing the crankcase against dust and road dirt. A slight vacuum created by the device reduces oil leaks.

Meaker Two-Piece Spark Plug

Meaker Spark Plug Co.,
1366 Antietam Street, Detroit.
Price $1.



The plug can be disassembled for cleaning the porcelain and the central electrodes, but the separation is between steel parts, the upper part of which is permanently fixed to the porcelain at the right pressure. The plug can be disassembled any number of times for cleaning or other purposes without disturbing the packing between the spark plug shell and the porcelain.

Yale Tire

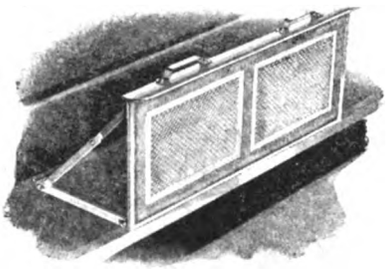
Yale Tire & Rubber Co.,
New Haven, Conn



Yale tires are made in fabric from 30 x 3 to 32 x 4½ and in cord non-skid from 30 x 3½ to 36 x 6. Red and grey tubes are made in sizes from 30 x 3 to 36 x 6. The 30 x 3½ four-ply fabric casings list at $11.15, five-ply, $13 65. The same size in cord non-skid is $15.40 for four-ply, $19.00 for six-ply.

Kaufman's Convertible Carry-All Auto Step

Eclipse Timer Mfg. Co., Milwaukee, Wis.
Price $15 in aluminum; $10 in cast iron and aluminum.



A combined runningboard step and luggage carrier. It is hinged on the outer edge and when used as a step folds down flat on the running-board. The aluminum surfaces are corrugated. By releasing a knob and raising the step, the luggage carrier is brought into position to hold suit cases, parcels, etc.

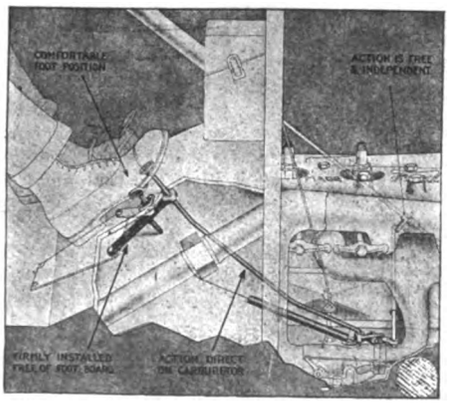
Sani-Mist

The Sani-Mist Co.
16 Home Street, New London, Conn.
Price $1 per quart

A preparation for cleaning and polishing automobiles. It may be applied with a cloth or sprayer.

Snap Foot Accelerator for Fords

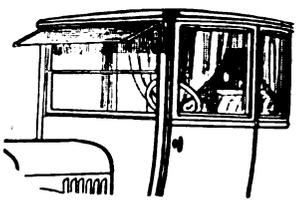
Morse Mfg. Co., Syracuse, N. Y.
Price $1.50.



The accelerator has two parts and is easily installed. A positive action is given directly from the foot to the carbureter throttle in the line of pressure. The action of the hand throttle is independent from the throttle lever down to the carbureter arm. A bracket attached to the transmission cover plate affords necessary support for the pedal close up under the foot board but free of it. The foot rest is liberal in size and supports the foot in a comfortable position.

Sunbeam Junior Visor for Fords

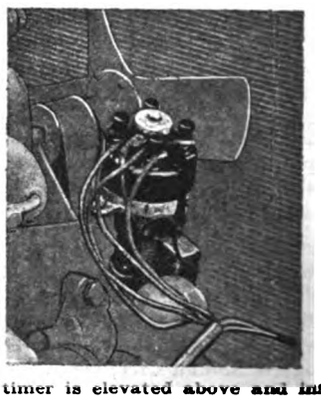
Thoma & Son, Inc.,
Fairfield, Iowa.
Price $8.



The visor is made with ¼ in. ribbed glass with a choice of semi-opaque amber or green which is claimed to kill the glare without darkening the car. Made in two models, one for open cars and the other for closed cars. The angle of the visor is adjustable by means of humb screws.

Mallory Timer for Fords

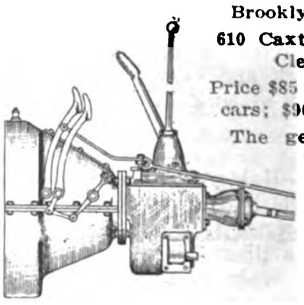
A. R. Pollaski Co., Milwaukee, Wis.



The timer is elevated above and inside of the oil filler hole and the original plan of wiring is not changed. The timer breaks the circuit mechanically so that a spark is produced at the plug at very low speeds of the flywheel magneto. When using a battery system exclusively for running a car the vibrator points are locked.

Brooklyn Three-Speed Gearsets for Fords

Brooklyn Mfg. Co.,
610 Caxton Building, Cleveland.
Price $85 for passenger cars; $90 for trucks.

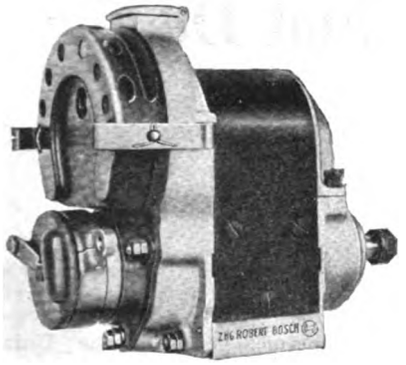


The gearset is attached immediately in back of the transmission case and carries a universal joint at its rear end. It provides three-speeds forward and one reverse and gives the Ford a control consisting of left pedal for the clutch and right pedal for the service brakes which are on the drums on the rear wheels. The emergency brake lever is fixed to the gearset, next to the gear lever. This brake operates internally on the drums as in the standard model.

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Robert Bosch Type ZH6 Magneto

Robert Bosch Magneto Co., Inc.,
123 West Sixty-Fourth Street, New York City.



The magneto is designed for 6-cylinder engines and is very small, weighing only 10¼ lbs. It is entirely enclosed to make it water and dust proof. The magnet field sleeve is movable with the interrupter housing, thereby producing the same intensity of spark in retard as in advance position. The timing range is 40 deg.

Grizzly Grip Cold Patch

20th Century Tire Protector Co.,
Midlothian, Texas.
Price $1 per can.

A cold patch for tubes put up in two sizes, 30 sq. in. 3 in. by 10 in. at $0.50; 4 in. by 18 in. $1. The can, in each case, contains sufficient cement for the amount of patching.

Exlo Steering Post Control for Fords

Exhaust Lock Co., 201 Chamber of Commerce, Indianapolis.



The device clamps to the steering post under the hood. The anchor arm fastens to the frame. When the steering wheel is turned the cams spread, the top half riding up the steering column ⅜-½ in. The connecting spring supplies the tension which holds the parts rigid in any position desired by the driver.

Monogram Lens

Monogram Lens Corp.,
277 American Circle Building, 1835 Broadway, New York City.
Price $3 to 8⅞ in.; $3.50 to 10 in.; Over 10 in. $4.



The lenses are designed to give a light 44 ft. wide with an intensity of over 80,000 candlepower on the roadway. The lens is perfectly smooth on the outside for washing. The inside center of the lens has a rectangular depression in which is molded the name of the car or the monogram of the owner can be put on with a decalcomania.

Westinghouse Junior Air Spring

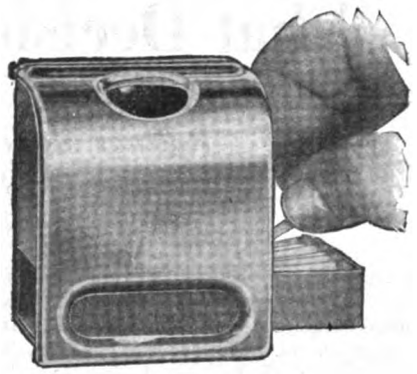
Westinghouse Air Spring Co.,
William and Henry Streets, Long Island City, New York.
Price $175 per set of four installed.

The Junior air springs are substantially of the same type and construction as the larger air springs which have been in production for some years. The Junior set is especially adapted to medium weight cars such as Studebaker, Grant, Essex, Oldsmobile, Maxwell, Chandler, Wills St. Claire, Dodge, etc. The stationary member of the device consists of a ground steel cylinder with a forged, bronze dome in a malleable iron bottom or guide. This unit is attached to the car frame with steel brackets. A cross bar between the air springs increases the rigidity of the frame. The moving element is a ground steel piston rod which is attached to the leaf spring. The piston head operates in a bath of oil against the air chamber, which is inflated from the top. The springs are kept at the proper height by increasing or decreasing the air pressure.



Ruby Match-Ash Holder

Ruby Mfg. Co., Springfield, Ohio.
Price $1.75.



The device is complete with two small screws for fastening to wood and two bolts for metal. The choice of six holes for fastening to the back permits its being installed almost anywhere. It is operated with one hand and can be easily cleaned.

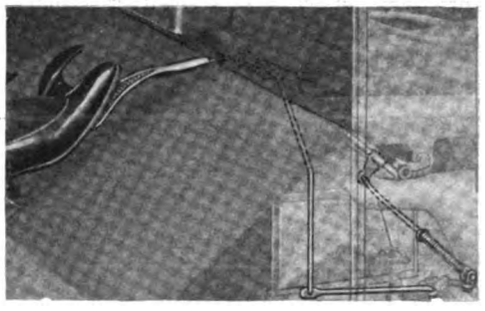
Veedol Fordol

Tide Water Oil Sales Corp.,
11 Broadway, New York City.

A compounded oil especially for Fords. A fatty oil with a higher flash and fire point than mineral oil to eliminate chatter and which will stick to the surfaces of the bands.

Ruby Foot Accelerator for Fords

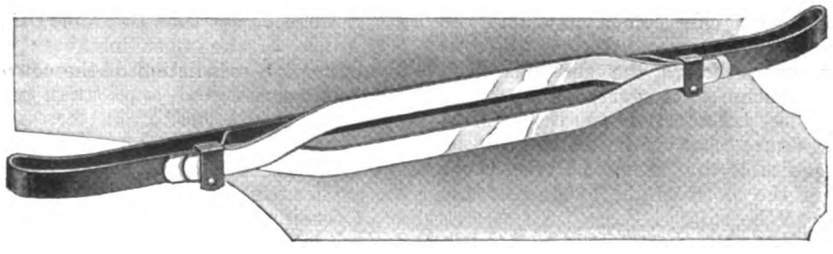
Ruby Mfg. Co., Springfield, Ohio.
Price $1.75.



The accelerator is attached to one of the rear cylinder head bolts and requires practically no alteration of the car. It does not interfere with the removal of toe or floor boards and the rod connection to the carbureter eliminates lost motion. There is no interference with the functioning of the hand trottle. The finish is in nickel and the weight about 1 lb.

Weed Safety Bumpers for Fords

American Chain Co., Inc., Bridgeport, Conn.
Prices, Front $13. Black enamel, nickel plated front bars $14. Rear, black enamel $14. Nickel plated front bars $15.



The bumper is made of 1¾ in. spring steel hardened in oil and tempered. The wide front space made by an up-kick and drop, prevents other bumpers from going under, over or in between. It fits all models of Ford cars, front and rear and does not interfere with shock absorbers or other working parts.

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What Decisions Bind the Individual Dealer

Rulings Made by Courts of Dealer's Own State Must Be Followed—The Structure of the Federal Court System Explained

Editor Motor World: From time to time we see reports of cases, but we cannot figure out just what decisions are binding on us. Will you please try to make this clear to us.—J. L., Trenton, N. J.

Answer.—As you live in New Jersey the decisions of the courts of New Jersey must be obeyed by you. Except as a matter of interest, you are not concerned with the decisions of the courts of New York, Connecticut or any other state courts.

The decisions of the U. S. Supreme Court must likewise be obeyed by you and rulings of any federal courts in your State. When a dealer sees a New York case reported, it may or may not be true that the same rule of law applies in his State.

When the Court of Appeals of New York State hands down an opinion in one case, however, and the Supreme Court of New Jersey passes on the second, while the third opinion is possibly rendered by the United States Supreme Court, the dealer begins to wonder a little about the formation of our court system, why there are so many courts and what cases they are respectively entitled to decide.

Let us suppose that John White is a manufacturer of magnetos, with his principal office in New York City. If he should have any disputes with any other residents of New York State and desires to bring suit, the case would naturally be tried by one of the New York courts, the particular court chosen being determined according to the amount involved.

If, on the other hand, he desires to sue a resident of the State of New Jersey, Connecticut or some other nearby State, the courts of the particular state in which that person lived would be the ones in which the case would come up for trial. In the event of the person whom he desires to sue coming to New York State, a summons might be served upon him there. In that instance it might be tried in New York.

Whenever a case comes up where the parties to it are residents of different States, even though the suit has been started in some state court, it may nevertheless be transferred to the United States Court as it is deemed to be more equitable that a case be tried there than in the home state of one of the parties to the suit.

Some law suits can only be started in the United States courts, and the state courts cannot deal with them at all, as, for example, where a case arises under the patent and copyright laws. The United States court system is composed of the Supreme Court, which is the highest court in the country, the Circuit Court of Appeals, of which there are nine, and the various District Courts, the Court of Claims, the Court of Customs Appeals and the Commerce Court.

Cases are usually started in the District Courts in one of the States. There are about 75 District Courts in the United States, each state being divided into one or more districts, according to its size and population, for example: in New York there are four District Courts, the Northern, Eastern, Southern and Western respectively. Suit may be started in the United States Court in a great many different cases.

In some cases, when the United States is a party, or a State is a part, or when it is brought for infringement of letters patent, etc., it must be brought only in the United States Court.

The intermediate courts between the Supreme Court and the District Courts, which are the low courts, are the Circuit Court of Appeals. There are nine Circuits in the United States, or, in other words, nine branches of the Circuit Court of Appeals. These courts review final decisions in the District Courts, except where such appeals may be taken direct to the Supreme Court, which are in the most instances cases involving the jurisdiction of the court, or the construction and application of the United States Constitution, etc.

Where the jurisdiction of the court is dependent entirely upon the fact that the parties are citizens of different states, or of foreign states, cases arising under the patent and copyright laws, revenue laws, criminal laws and the admiralty cases, the decision of this court is final, except that it may certify questions of law to the Supreme Court if it so desires, and the Supreme Court may then review the whole case as if it had been carried there by appeal.

The Supreme Court of the United States is the highest court in the country. It has a chief justice and eight associate judges, any six of whom constitute a quorum and are able to hear and decide cases brought before it.

The Supreme Court has exclusive jurisdiction in all cases where ambassadors, public ministers, etc., are parties, and also of cases where a State is a party, except where the suit is between the State and its own citizens, or those of some other State or aliens.

In some cases appeals may be taken direct to the Supreme Court from the District Courts, where there is a question of constitutional law involved. But ordinarily, cases come to it only for final decision from the Circuit Court of Appeals.

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

Foreclosure Not Worth While

Editor Motor World:

We have a car in our garage on which we did repair work amounting to about $30 under an agreement with the owner. We agreed we would make the car run. It does. He thinks it ought to run like a Rolls Royce for $30 and has refused to pay us. We still have the car. What can we do? C. G., Brooklyn, N. Y.

Answer: The best thing you can do considering the small amount of the bill is to sit tight and wait for him to start something, meanwhile holding on to the car. It would be a good plan in addition to send him a registered letter advising him that the car is ready for delivery upon payment of the repair bill and that if he does not call for it you will charge him storage at whatever you think is a fair rate per week. Of course you have a repairmen's lien but it would cost you too much to try to foreclose it to make it worth while on such a small bill.

Buyer Is Responsible

That where a delivery of goods has been made to a buyer or to a person authorized to accept delivery on his behalf, under a contract and the seller retains the property or title in the goods merely to secure performance by the buyer of his obligations under the contract the goods are at the buyer's risk from the time of such a delivery and any loss through fire, etc., falls on him. Standard Casing Co. vs. California Casing Co., 233 N. Y., pg. 413.

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Along the Automotive Newsway

By Leo Roche



ILLINOIS COMMERCE COMMISSION CALLS CONFERENCE TO COMBAT AUTOMOBILE RAILROAD CROSSING ACCIDENTS



AUTOMOTIVE EQUIPMENT MERCHANTS ARE GOING TO SELL MORE CHRISTMAS GIFTS THIS YEAR THAN EVER BEFORE



COAL AND GRAIN MOVEMENT IS DEMANDING ATTENTION OF RAILROADS BUT AUTOMOBILE DELIVERIES WILL GET THERE JUST THE SAME



A JAY WALKER GIVES NEW YORK COP AN ARGUMENT, AFTER WHICH HE PAYS MAGISTRATE A $2. FINE.



THE UNIVERSITY OF CALIFORNIA ANNOUNCES SEVERAL COURSES IN AUTOMOBILE MECHANICS



FORD REOPENS HIS PLANT

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Ford Factories Resume Operations

ARRANGEMENT MADE FOR FUEL SHIPMENTS

Production Schedules Will Be Speeded Up to 5,500 or 6,000 Daily

DETROIT, Sept. 22—Ford Motor Co., plants resumed operations at midnight Thursday employing all men formerly making up the different shifts. The company will speed up its daily production schedule to a point aggregating the 5500 to 6000 mark reached previous to the shut down.

In re-opening, the sales department made the statement that capacity operation will be necessary to meet requirements of branches and dealers.

Heavy Production Expected

In the four days the factory was down a stock of orders covering several weeks' operation was accumulated, factory heads report. Business was reported to be up to seasonal expectations and a heavy production schedule is expected to be necessary through the winter months. The service department, which was to have closed this week, will continue work uninterruptedly.

The detail of lining up work in all departments to a point where maximum production efficiency can be obtained probably will require 10 days or more. If sales continue to approximate the former daily production record, this will result in a further supply of deferred orders so that it will mean October production must be almost entirely devoted to meeting business running a month back.

The determination to re-open the factories followed the success attained by Edsel Ford in lining up satisfactory coal shipments from operators in Kentucky and West Virginia fields.

No Stocks on Hand

The company went into the period of closing with its branches and dealers absolutely devoid of any stock of cars and with sales aggregating to the last day of operation all the cars that it was possible for the factory to produce for the past four months. Retail sales were on an equal footing with production, running higher than 5000 daily. This condition, the factory points out, made it impossible for any stock of cars to be collected.

In connection with insistent reports that there would be a reduction in prices when operations were resumed, it was said that with sales taxing the capacity of the factory, the question of a change in price has not entered into consideration, and that until satisfactory arrangements were completed for the purchase of coal, steel and other materials, no thought of change will be entertained. If a reduction comes later, it will be determined upon business conditions and the terms upon which the company arranges for its materials.

Whether new models will be introduced now that the factory has been reopened depends upon the progress the experimental department makes with the work upon which it is steadily engaged, and upon which it continued during the closing of manufacturing operations. One of the models which the company has considerably advanced to this time is a new closed car which will be more commodious than the former model of its type.

PRIORITIES REMOVED ON COAL SHIPMENTS

WASHINGTON, Sept. 20 — Through the action yesterday of the Interstate Commerce Commission in connection with its new service order number 25, petroleum and its products are added to the list of commodities given preferred movement, effective at 12 o'clock to-night. The order means that there will be a freer transportation movement of gasoline. A number of other commodities also were added to the preference list.

The order is based upon the provision that the railroads can move all traffic as required and at the same time it abolishes the priorities created for the benefit of preferred users of coal, except when such preferences may be asked by the commission itself. The adding of gasoline and other products of petroleum to the preferred list has been the source of gratification to automotive interests. The action of the commission is further evidence of the easier transportation and coal situation due to settlement of the strikes.

TARIFF BILL SIGNED; HAS RE-IMPORT DUTY

WASHINGTON, Sept. 22—President Harding yesterday signed the tariff bill following the adoption of the conference report by the Senate.

Among the items included is that which places a 90 per cent ad valorem duty on all automobiles re-imported to this country.

Crude oil remains on the free list, which will mean millions of dollars saved the motoring public.

MICHIGAN PREPARES FOR SHOW CIRCUIT

Majority of Entrants of Last Year Join in Association's Plans

DETROIT, Sept. 20 — Approximately eighteen Michigan cities outside of Detroit will make up the show circuit of the Michigan Automotive Trade Association in 1923. Every city but one which made up the circuit of the 1922 season has come back strong for the plan of placing their shows under the supervision of the State association so that expense might be lessened and more elaborate shows held.

Tentative Dates Set

Cities entered for the new season and the tentative dates assigned are: Ann Arbor, week of Jan. 29; Lansing, Feb. 5; Kalamazoo and Flint, Feb. 12; Grand Rapids and Mt. Clemens, Feb. 19; Saginaw and Muskegon, Feb. 26; Bay City, March 5; Port Huron, March 12; Battle Creek, March 19; Alpena, April 2. Pontiac is the only city not re-entered, but this is because dealers in that city have not taken action on show plans yet.

Under the new plans of the association, two complete sets of decoration will be provided that shows may be held in the same week by cities at intervening points. One set of decorations will be designed especially for smaller exhibition halls, the other for halls in which the space is more adequate. Smaller halls will be considered as those in which there is less than 20,000 feet of floor space and the larger ones with space in excess of that figure. The show schedule will be so arranged that neither two large shows nor two small ones may be held in the same week.

Hope to Bring in Others

An early start has been made in arranging for the circuit so that W. D. Edenburn, manager of the state association, may work out plans for decorations and special exhibits, and also arrange to bring other cities into the circuit plan. Cities which it is hoped to bring in are Benton Harbor, Pontiac, Cadillac, Traverse City, Cheboygan, Mt. Pleasant and Owosso. Dealers in these cities are interested and, with a majority of them entered, the entire lower peninsula of the state will be completely covered so far as bringing shows home to residents is concerned.

Representatives of the cities in which the circuit shows were held last year were vigorous in their endorsement of

(*Continued on page* 41)

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Demand in Country Shows Increase

SEPTEMBER KEEPS UP IN FACTORY OUTPUT

First Week of Month Gains Twenty-five Per Cent Over Production of Year Ago

NEW YORK, Sept. 25—With a further marked awakening of interest on the part of the farmer, the demand for automobiles, while showing a slight decline in cities, is taking a perceptible swing upward in the agricultural districts. Improvement of general business conditions is equalizing the demand for motor trucks, dealers availing themselves of it as well as beginning to realize on the potential market the farmer offers.

Agricultural interest is most in evidence at the State fairs now in progress in many sections of the country and forms a good barometer of what the industry may expect during the coming months.

Month Maintains Pace

Present indications that September is keeping up with the steady pace maintained since early spring may upset predictions that this month will show the seasonal falling off in sales, as a whole, and with it a consequent curtailment of factory schedules. The first week of the month, for which reports have been received, shows a surprisingly good production record with an output from twenty-five to thirty per cent greater than for the similar period a year ago.

With Ford the only automobile factory closed, practically all other manufacturers are maintaining production at a high level. Securing coal has not been so serious a deterrent to producers in maintaining capacity schedules as has been the difficulty in getting through steel shipments. Up to this time, however, tie-ups that have come in steel deliveries have been merely temporary and not such as to cause deep concern.

May Not Reach August Level

Several factors will combine to keep production from reaching the high mark attained in August. A short month, the cessation of work over Labor Day and the closing of the Ford plants will effect a reduction in the total output for the month.

A further easing up in the coal situation through the order of the Interstate Commerce Commission abolishing priorities will place the industry in less danger of having to curtail their programs through lack of fuel.

De Palma Inspects Plant

MINNEAPOLIS, Sept. 25—Ralph De Palma, automobile racer, has been inspecting the plant of the Pan Motor Co. at St. Cloud, Minn., in the interest of a company which considers purchasing it for the purpose of manufacturing cars there. It is stated that he will return in a month with business associates to make another study of the plant. De Palma was accompanied by W. E. Merrill of the Lafayette Minnesota Motor Co. of Minneapolis during his inspection.

DISTRIBUTOR PLANS TO HAUL APPLE CROP

SPOKANE, WASH., Sept. 25—The Nelson Motor Co. has made preliminary arrangements for the hauling of the apple crop of the Hunters Land Co. from Hunters to Springdale, Wash., which will begin in a few weeks.

The Nelson company had the contract for the transportation of the apples last year, and kept a fleet of 25 trucks on the job for six weeks.

This year it expects to employ only 15 trucks, but will begin hauling as soon as the first apples are packed, instead of waiting until the packing houses are full, as it did last year, when there was 10,000 boxes ahead of it when it began hauling.

GASOLINE HEARINGS HALT UNTIL WINTER

WASHINGTON, Sept. 26—The subcommittee of the Senate Investigation Committee on Manufactures, which is investigating the gasoline situation, will postpone further hearings until the reconvening of the new session of Congress in December, it has been announced by Senator La Follette, Chairman of the Committee.

Further hearings are being postponed until a sufficient number of replies to questionnaires sent out have been received and digested, thus allowing the committee to get a line on subsequent procedure. Gilbert E. Roe, attorney for the sub-committee, who is conducting the investigation, states that replies are coming in daily and that digests of the same are being made as rapidly as possible.

Hardware Meeting in October

CHICAGO, Sept. 24—The Hardware Association will hold its annual convention at Atlantic City from Oct. 17 to 20. The motor accessories meeting will be held on Oct. 16 and 17. During the week a show will be staged at the Ambassador Hotel where the convention will also be held. It is expected that the accessories meeting will be especially well attended.

DEALERS IN CHICAGO KEEP ON ADVERTISING

No Let Up Despite Buying Movement and Slow Deliveries of Cars

CHICAGO, Sept. 27—Automobile dealers in Chicago, this year, despite the great buying spurt, have kept well out in front with their advertising, many dealers going even farther than to spend their regular amounts.

One advertising manager says that his firm has spent as much money this year advertising new cars as ever, even though deliveries were as far as two months behind.

"We have spent much money on advertising our shop and selling tires and accessories," says an outlying dealer who advertises in a community weekly, "and I believe that it has helped sales wonderfully."

Closed Cars Feature

At this time, the dealers are coming forward with a greater amount of advertising than has been seen for some time. Closed cars are given nearly all of the space and the success of the idea is proved by the fact that sales, after a two-week lull, are again on the upgrade and hold promise of mounting even to the late fall and early winter.

Used car sales are the only part of the dealers' commodities that are not moving with marked uniformity. Sales in these departments are gradually dropping off, "because," one salesman remarked, "we have not got enough of the real used cars to meet the popular demand." By "real used cars" is meant cars that are bargains.

ADDITION PLANNED FOR LINCOLN PLANT

DETROIT, Sept. 22—Work has been started on a large addition to the Lincoln plant of the Ford Motor Co. which is declared to be designed to meet the needs of Lincoln manufacturing. The new building will make possible a large increase in production but details as to how large this might be were declined. The question if it would reach 100 a day was met with the statement that definite totals could not be told at this time.

In addition to providing for more production, the new plant will take care of a lot of manufacturing which is now being done by outside companies. In this will be included some of the body work but it was not declared to what extent the company would go in building its own bodies.

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PACKARD EARNINGS EXCEED $1,000,000

May Reach $1,500,000—Company Is Now Building 2,000 Cars Monthly

NEW YORK, Sept. 23--The annual report of the Packard Motor Car Co. for the year ended Aug. 31, 1922, will show that after setting aside adequate reserves the net earnings will be more than $1,000,000. If no reduction in inventory is called for the company's net earnings for the period may reach $1,500,000. In a statement issued preliminary to the annual report, the company says:

This showing does not reflect the true operating condition of the company at the present time, for it was not until May, the last month of the third quarter, that the company began to receive benefit from the sales of its new single six car and from products manufactured from materials at current low prices.

Net earnings at present are running in excess of $500,000 monthly and there is no indication of slackening of business. The company is now on a production basis of about 2000 cars monthly and is planning a considerable increase in production.

"A MILLION MILES" IS MITCHELL SLOGAN

CHICAGO, Sept. 22—The return to Chicago of the first "white streak" car sent out by the Mitchell Motors Co. in its extensive demonstration campaign, was celebrated at a luncheon Monday at the Congress Hotel for Mitchell officials and guests at which announcement was made of the company's "million miles" advertising campaign.

"A Million Miles" has been selected as the new advertising slogan of the Mitchell company, it was explained, because the "white streak" demonstrating cars have completed more than 1,000,000 miles of demonstration running. It was stated that this new slogan will be extensively used hereafter by the factory, distributors and dealers.

COSTS 10 CENTS MILE FOR RUNNING OF CAR

MILWAUKEE, Sept. 25 — The Railroad Commission of Wisconsin has arrived at the intereeting figure of 10c a mile as the cost to the average owner of operating his car, and this is now used as a standard in all computations made by the commission in the distribution of costs between the public and railroads growing out of the relocation of grade crossings, separation of grades, etc.

If a grade crossing relocation shortens a highway two miles, and the average number of motor vehicles traveling over this particular highway is 300 a day, the commission figures that this saves 600 miles a day to car owners, and at the rate of 10c per mile, the saving to the public is $60 a day. Computed on the basis of 10 months, this is considered a saving of $18,000 in a given year, which saving will continue from year to year.

3000 Bodies at Durant Plant

NEW YORK, Sept. 26—Following the announcement of the determination of Durant to build bodies for the Durant four and the Star for the eastern territory in the Elizabeth plant, the company states that 3000 of these bodies will be built there during the month of October, so as to be ready for assembly work on Nov. 1. At the present time there are 165 men on the Elizabeth payroll, but it is hoped to increase this to 3000 by March 1.

CHEVROLET PURCHASES PROPERTY FOR PLANTS

Additional Factories Will Give Company Production of 2000 Cars Daily

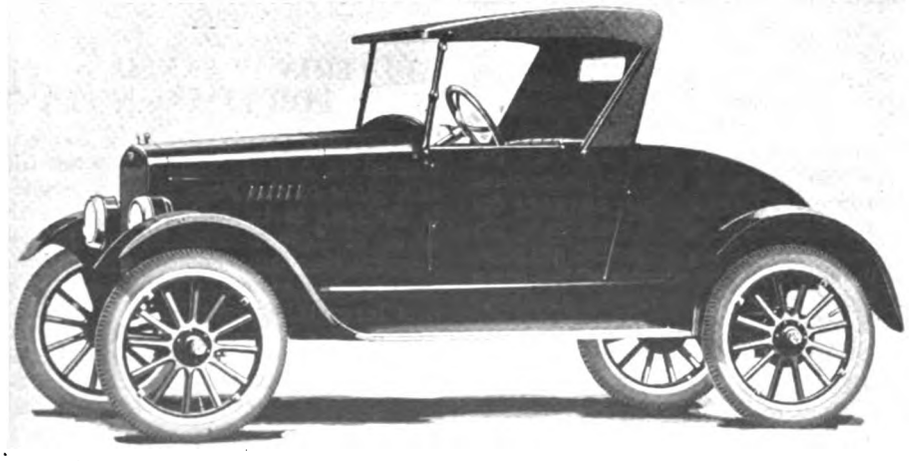
DETROIT, Sept. 27—The Chevrolet Motor Co. has purchased tracts of land in Buffalo and Cincinnati on which it will begin building operations at once in preparation for manufacturing soon after Jan. 1. These with the existing manufacturing plants in Flint, St. Louis, Tarrytown, N. Y., Oakland and Fort Worth will give it a production of over 2,000 daily.

The new manufacturing plants will provide building for the Fisher Body Co. which will be devoted solely to supplying bodies for Chevrolet cars. The Cincinnati property includes 16 acres and is located on B. & O. and P. C. C. and St. Louis railroads. The Buffalo plant will be located on 29½ acres of property on Erie Railroad.

Cincinnati will employ 1,200 men on Chevrolet work and 900 men in the Fisher plant and will have a production capacity of 300 cars daily. In the two plants there will be 350,000 feet of floor space. Buffalo will have 2,000 men on Chevrolet work and 1,800 in the Fisher factory with a production capacity of 500 cars daily. In these plants there will be 600,000 feet of space.

W. S. Knudsen, vice-president in charge of operations of the Chevrolet company, said that with the completion of the new plant Chevrolet will be prepared to enter a production schedule of 2,000 cars a day. At the present the capacity is about 1,100 cars daily, this figure being the one at which the Chevrolet factories have operated since early summer.

The Gray Roadster, $490



The Gray Motor Co. will shortly be in production as announced in the September 20 issue of Motor World. The price will be $490, the same as the phaeton model. The rear compartment of the roadster is exceptionally large, being suitable for commercial work and the rear deck is detachable so that a small commercial body may be attached when desired.

"ACCURATIME" MAKER ENTERS PISTON FIELD

MUSKEGON, MICH., Sept. 23—The Muskegon Motor Specialties Co., which has been for some time exclusive manufacturer of camshafts under the tradename "Accuratime," is about to enter the piston field. This company will specialize on lightweight, cast-iron pistons.

According to F. C. Whitney, general manager, an investigation of the field has been made showing that several manufacturers are buying piston castings at one point and shipping to another point for machining and then reshipping the finished products for assembly in the engine. The pistons will be both cast and machined in Muskegon, and this centralization, it is claimed, will result in a considerable saving in freight and, consequently, handling costs to the engine manufacturer.

The Muskegon Motor Specialties Co. has about completed its tooling operations for production and will be completing pistons by Oct. 1.

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PRICES OF ROAMER REACH LOWEST MARK

Reductions Range from $100 to $500 — New Special Phaeton Being Built

KALAMAZOO, MICH., Sept. 26—The Roamer Motor Car Co. announces reductions on its full line of open and closed models ranging from $100 to $500, effective immediately. The cars are now being fitted with the new model 12XD Continental engine.

The new schedule which is as follows brings the price of the Roamer lower than it has ever been:

Model 6-54-E	Old Price	New Price
4-passenger phaeton	$2,585	$2,485
4-passenger sport	2,750	2,750
7-passenger phaeton	2,785	2,685
Roadster	2,850	2,685
3-passenger cabriolet	3,585	3,285
5-passenger coupe	3,850	3,585
5-passenger sedan	3,850	3,585
7-passenger suburban sedan	4,150	3,950
5-passenger brougham	4,500	4,000
Special 5-passenger sedan	(New)	4,250
Model 4-75-E		
4-passenger phaeton	3,585	3,485
4-passenger sport	3,750	3,650
4-passenger sport sedan	4,650	4,650
2-passenger speedster	3,985	3,785

Although the price of the four-passenger sport model, 6-54-E, has not been changed it is announced that extra equipment has been added.

The company is building a special phaeton with wood wheels, priced at $2,285.

HUDSON AND ESSEX PRICES AGAIN CUT

DETROIT, Sept. 25—Another price reduction, effective Sept. 22, is announced by Hudson and Essex, which is the second within three months. The cuts do not affect the sedan and coupe in the Hudson line. The drops are $50 in Essex and $120 in Hudson. The new list:

HUDSON	Old Price	New Price
4-pass. phaeton	$1,645	$1,525
7-pass. phaeton	1,695	1,575
Coupe	2,570	2,570
Sedan	2,295	2,295
Coach	1,745	1,625
ESSEX		
5-pass. phaeton	1,095	1,045
Cabriolet	1,195	1,145
Coach	1,295	1,245

The Essex sedan, it is announced, has been discontinued.

Oldsmobile Reduced

LANSING, Sept. 25—A new list is announced by the Olds Motor Works. The four cylinder phaeton has been cut $120 and the others in proportion. The list follows: Four cylinder roadster, $975; phaeton, $975; semi-sport, $1,075; brougham, $1,375; coupe, $1,475. In the eight cylinder line the new prices are: Phaeton, $1,375; super sport, $1,675; sport roadster, $1,625; coupe, $1,875; sedan, $2,025.

DEALER CAMPS ON GROUND WHEN VISITING PROSPECT IN COUNTRY DISTRICT

San Antonio, Texas, Sept. 25.

A UNIQUE sales program has been put in use by Richard Drake, truck sales manager of the Chaddick Automobile Co., Oldsmobile distributor here.

Drake declares that the character of the country is such that it has often been found that a salesman would go many miles out into the country to interview a prospect. It has been found, he says, that the sale could not always be completed in a single day and it was equally impossible for the rancher or farmer to ask him to have dinner with his family or spend the night there.

With this end in view, Drake has fitted a truck with side curtains, two three-fourths width beds, mattresses and bedding, which fold up when not in use during the day. A duofold is also used as seat for day traveling and can be used as another bed at night, so that six people in all can be accommodated.

In addition to the use of this truck by the salesmen for the purpose of camping right on the ground of a prospective customer, Drake intends to have the salesmen invite the rancher, his wife and children and friends, if he cares to, into San Antonio for a visit and the party will use the truck to camp in Breckenridge Park for several days. In this way, he says, the prospect will be given both an outing and a great opportunity to study the truck.

The city buyer, on the other hand, will be taken out into the country for a day off, if he can be induced to go.

Lower Prices for Hawkeye

SIOUX CITY, IOWA, Sept. 22—New prices have been announced by the Hawkeye Truck Co., effective immediately. The schedule is as follows:

	Old Price	New Price
1 ton	$1,500	$1,375
1½ ton	1,850	1,645
2 ton	2,650	2,145

The 3½ ton and 5 ton models will be built on special order only.

Gary Prices Increased

GARY, IND., Sept. 22—The Gary Motor Corp. announces an increase in the prices of its trucks as follows:

	Old Price	New Price
Model F 1-1½ ton	$1,675	$1,775
Model I 2 ton	2,250	2,450
Model J 2½ ton	2,650	2,850
Model K 3½ ton	3,650	3,790
Model M 5 ton	4,100	4,450

Cox Brass Increases

ALBANY, N. Y., Sept. 25—The Cox Brass Manufacturing Co. reports a 60 per cent increase in business during the year ended Aug. 1 in the sale of Mo-lyb-den-um bumpers, mostly through dealers and distributors of passenger cars. Ground has recently been broken for an addition to the Albany plant, to be finished Jan. 1, which will double the capacity of that factory. Additions also are being made to the Cleveland plant, largely increasing its production facilities.

Adrian H. Boyce Dies

ROCHESTER, N. Y., Sept. 22—Adrian H. Boyce, well known automobile dealer of Western New York, died at his home here after a year's illness. He became identified with the trade in 1909, when he handled the Ford agency in Sheldrake. At the time of his death he was Chevrolet distributor.

DELIVERIES ESCAPE EFFECTS OF STRIKES

Rail Situation Good Although There Is No Surplus of Freight Cars

NEW YORK, Sept. 25—So far as the effects of the recent strikes are concerned, the automobile industry may be said to be back to normal in the matter of manufacture and delivery. Railroads are functioning once more in something like pre-strike form.

Transportation is in much better shape now than it was two weeks ago. Supplies of materials for the factories are coming in with comparatively no interruption so that production has not been hampered. Deliveries of finished cars to the dealers are being made without much handicap and it is likely that dealers will experience no trouble in this direction until such time as weather conditions may disturb the situation.

Cars in Good Shape

While there is no surplus of freight cars the railroads seem to be in good shape. As evidence of this statistics show that the percentage of bad order freight cars is lower than before the strike started. Whereas, this percentage was 14.3 before the strike, the last statement showed 14.1 per cent. This may be said to be better than normal, for in the last three years this range has been from 13 to 15 per cent. These figures show the railroads have rapidly recovered from the effects of the strike.

There should be no difficulty in getting enough coal to keep the smoke coming out of the chimneys of the industry's factories. The movement of coal is above normal as is shown by statistics which tell of 195,000 car loads being moved the week of Sept. 16. In the corresponding week of August only 81,959 car loads were moved.

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SHOW SEASON OPENED THROUGH NORTHWEST

Many Inquiries Received at Exhibit Staged by Dealers in Minnesota

MINNEAPOLIS, Sept. 23—The Northwest has had its first automobile show for the new season. It was held on the State Fair grounds midway between St. Paul and Minneapolis and consisted of a regular automobile and accessory display in the grand stand exhibition room, independent and individual shows by dealers in tents and separate buildings and in the tractor show and power farming parade before the grand stand on the mile dirt racing track.

While it cannot be truthfully said that it was a sales show, it was undoubtedly an inquiry show. While dealers sold cars occasionally, none of them was jubilant over the situation except as it developed a big crop of prospects.

In all 389,900 persons attended the fair in seven days. It is fair to suppose that automobile was the big word with all of them, because of the various motor car exhibits, the power farming display, the automobile races two days and the big exhibit by the State Highway Commission of its work, and its repair shop on the fair grounds.

Additional space had been provided in all parts of the grounds for the automotive exhibit, including a Ford industrial show in which some 53 pieces were at work. The accessory show was brought down to the main floor of the grand stand building.

In all, one hundred acres, or 20 more than last year, was devoted to tractors, threshers and road making machinery, and the parade, which was a mile long, on next to the last day, was a remarkable sketch of the growth of the business in the last few years, as well as in improvements. Tractors were on the track drawing all sorts of farm and road machinery.

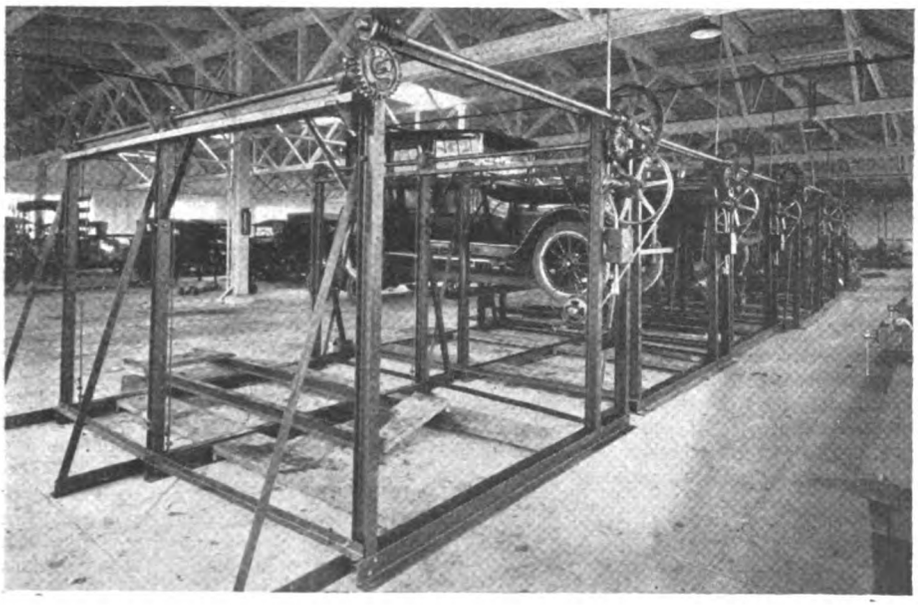
The power machinery parade was termed the pageant of progress and was in charge of E. S. Tectonious, W. R. Biggs, C. A. Claypool and L. C. Pryor, who is secretary of the Northwest Tractor Trade Association.

Two features of the parade, which lasted 45 minutes, were the State highway snow plow and a tractor with calliope attachment and the placard, "Music with your fall plowing." The parade is expected to give a big impetus to sale of tractors of all varieties as well as farm machinery of many types.

Anderson Schedule Doubled

ROCK HILL, S. C., Sept. 26—The production schedule for the Anderson Light Aluminum Six, originally set at 5000 for the year beginning Oct. 1, has been doubled. The reason for the increase is said to be due to the fact that parts will be more available than was first thought possible, coupled with requests from dealers for increased allotments for this model.

Repair Elevators Reduce Service Costs



A BATTERY of six elevators for raising cars to a convenient height has reduced service costs in the shop of the J. E. Sloan Co., Buick dealers in San Jose, Cal. The elevators are constructed of angle iron and can be either bolted in place on the floor or can be set down loosely so that they can be moved about. The operation is by means of a small electric motor for each elevator. The motor drives a worm shaft through suitable reduction gearing or chains and the two worms turn the two shafts which are on top of each of the side supports. These shafts wind up or let down the cables which are attached to the cradles going under the car. By this system more men can work on a car at the same time and the car can be placed at any height that is convenient for the work to be done on it

PALACE OF PROGRESS HOLDS CAR EXHIBIT

Dealers in Cleveland Aim to Make Retail Sales All-Year Business

CLEVELAND, Sept. 25—The importance of the automobile industry to this city has been demonstrated forcibly in the Palace of Progress, which is an exhibit and style show being conducted from Sept. 18 to 28 in the new $8,000,000 municipal auditorium under the auspices of the local merchants and manufacturers.

The ranking of the automobile industry is shown by the fact that dealers and makers of cars are the biggest factors in making the show a success; second, the industry is using as much space in the exhibition as are all other local industries combined, and, third, it is getting as much publicity in the papers here about its end of the exhibit as are all the other lines shown.

This Palace of Progress, which was started last Monday, is to be an annual fall affair. It is being conducted to center the attention of the shoppers of this city and Northern Ohio on Cleveland's wares. Through it the exhibitors hope to swell fall and winter buying by cooperative advertising and effort, and by means of the same sort of spectacular endeavor that proved so valuable when the Government was floating bond issues during the war.

To Avoid Seasonal Slumps

In addition to all the advantages that retail merchants in other lines expect from the show, the automobile distributors expect Cleveland to become a better territory for motor cars as a result of the show, and they also are banking heavily on making retail sales an all year business, free from seasonal slumps.

Retailers here expect to do this by making the closed car as popular in winter as the phaeton is in the summer. They have tried to do this through spasmodic efforts in previous falls and winters, and they have gradually sent the sales of the closed models up. They have been giving the closed car models a week of exhibit preference in their salesrooms, and they have set aside a week to boost it.

Advertise Freely

The Palace of Progress has given the dealers and makers an opportunity to cooperate, to pool their interests and put their strongest cards down in one place—the Municipal Auditorium.

They have taken liberal space in all the daily papers for advertisements. Only closed models are shown in these advertisements and in exhibition hall, where 39 firms are represented.

The automobile show is being staged under the auspices of the Cleveland Automobile Manufacturers and Dealers Association, of which Herbert Buckman is manager.

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MICHIGAN PREPARES FOR SHOW CIRCUIT

Majority of Entrants of Last Year Join in Association's Plans

(*Continued from page* 36)

the association idea. Savings of from $500 to $1,500 for decorations and other expenditures were effected, and better shows were given than had ever been held before. Larger crowds had been attracted by the special exhibits and dealers were enabled to capitalize this in increased sales both during the show and in the months following.

The opinion was expressed by many that with the success of last year in mind, the association should plan larger expenditures for decorations and other details this year, to give the public the best shows possible and thus foster future attendance and interest. It was shown, however, that with greater time for preparation, the association will be able to obtain much more satisfaction in the selection of its material and that the expense will be about the same as before. Larger cities will stand a slightly heavier burden of expense than the smaller ones, but the average will be about the same.

Specially Built Settings

This season the settings will be specially built and prepared for the halls to be decorated. Color plans and materials will be selected which are adapted to stand the strain and wear of transferral from town to town as the circuit progresses. A further detail will be added in decorations and special lights for the outside of the show buildings, a feature that was omitted last year due to the lateness of the start. Posters similar in design, but lettered according to the dates and show locations in each city, will be more elaborate than last year and will be distributed in larger numbers.

With the nucleus of the circuit started the association will speed the work of enrolling the other cities if they care to enter so that a composite idea of the needs of each city and the cars to be exhibited may be obtained. With this information compiled the aid of distributors and branch managers of these lines will be enlisted so that special chassis and special paint work cars may be obtained from factories to feature and add interest to the exhibits.

Only Members to Exhibit

The point has been made by the association of permitting only dealers to exhibit who are members. It was declared that through the medium of the circuit plan alone, dealers are enabled to save enough money from the expense of local shows, to more than compensate for the cost of membership. The circuit show plan is the best service that the association has to offer to dealers generally, it was declared, and for that reason if no other, they should enroll. In this connection it was stated the association had enrolled 91 new members in sixty days.

Admission prices will correspond with those of last year, the larger cities charging fifty cents and the smaller ones twenty-five.

Present at the meeting, when the plans were gone over, were M. L. Garlock, Lansing, president of the state association; Joseph Thompson, Ann Arbor; O. H. Boylan, Kalamazoo; O. R. Dickerson, Mt. Clemens; G. L. Simmons, Flint; F. R. Lusk, Grand Rapids; Guy S. Garber, Saginaw; C. A. Mitchell and George Weiler, Bay City; John C. Cawood, Port Huron; H. E. Loomis, Battle Creek; Louis Richards, Alpena; Guy O. Simons, Walter J. Bemb, A. L. Zeckendorf, Detroit; H. H. Shuart, secretary of the association, and W. D. Edenburn.

A directors' meeting was held following the show meeting at which legislative and membership plans were discussed. Joseph Thompson was elected a director at large.

FRANKLIN WILL MAKE 1923 BIGGEST YEAR

SYRACUSE, N. Y., Sept. 25—Production of Franklin cars will continue at full speed during the fall and winter months, according to H. H. Franklin, president of H. H. Franklin Manufacturing Co. Announcement has been made by Franklin that production of Franklin cars next year will, according to plan, aggregate 14,000 cars, the greatest in the company's history.

Shipments from the Franklin Automobile Co. during the first half of September exceeded shipments for the entire month of September of last year.

ROAD CONSTRUCTION REDUCED BY STRIKES

Federal Report Shows Curtailment Approximates 15 Per Cent of Program

WASHINGTON, Sept. 25—Curtailment of approximately 15 per cent in the Federal highway building program is reported by the United States Bureau of Public Roads, attributed to the twin railway and coal strikes, the effects of which are just being felt in the road building industry.

The significance of a 15 per cent reduction in the Federal-State program is seen when viewed in the light of the national program calling for the expenditure of $700,000,000 this year on good roads.

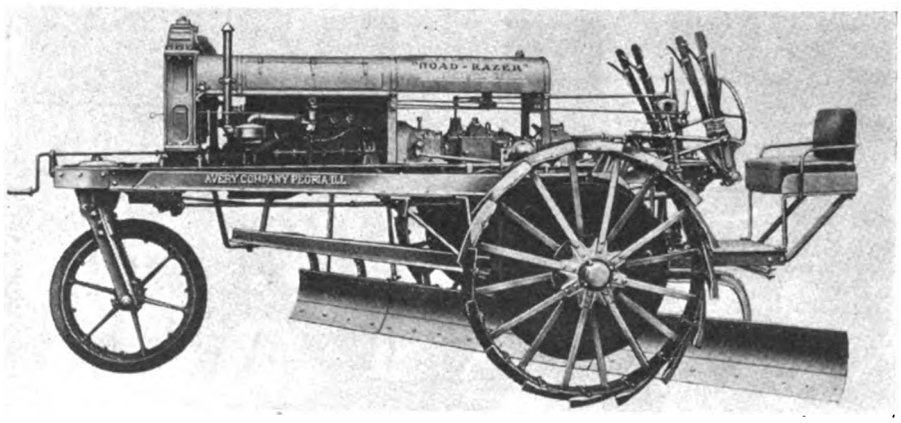
At this season of the year, when good road construction is proceeding at its fastest, the Federal and State governments are spending approximately $105,000,000 a month in road construction.

Figured on an average cost of $17,000 per mile for first class highway construction, this 15 per cent means a slow-down or decrease of 926 miles of roads being built per month.

The contributing causes for this reduction in the roads program are: bad order of cars, inability of rock crushers, cement mills, brick plants and asphalt companies to get railroad cars and also their inability to get coal.

The effects of the strikes, it is believed, will be even more pronounced during the next three or four months and officials of the bureau are of the belief that road building may, of necessity, fall off even more than the 15 per cent already felt, with the approach of winter and the necessity of greater shipments of coal.

Avery Road-Razer Has Powerful Lift



A new model of Road-Razer incorporating a power-lift is being manufactured by the Avery Co., Peoria, Ill. The power-lift feature enables the operator to raise or lower the blades by tripping a lever. In the new machine the blades are arranged so that their angularity may be changed. All gears have been inclosed and run in oil. Ball and roller bearing equipment is used throughout. A frictional brake, controlled from the driver's seat, is installed by means of which the front wheel may be held in any desired position to assist in turning. A platform, cushioned seat and back-rest are provided for the comfort of the operator. The fuel tank is now carried at the rear of the engine so that the hood may be without disturbing the tank. A drawbar attachment for pulling wagons, oil tanks, cement mixers, etc., is provided.

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PRODUCERS OF MILK CONSIDERING TRUCKS

Association Will Take Action on Adoption for Use at November Meeting

WASHINGTON, Sept. 26—The use of automotive transportation by the National Milk Producers Federation will be taken up in November when the executive committee of that association meets early in the month.

For more than three months the association has had under advisement the advantages of automotive transportation of their milk products over rail transportation. Because of excessive freight rates (all milk carrying a passenger freight rate) the federation is seeking the establishment of its own milk transports, if it can be done satisfactorily.

Data on the subject, submitted to the federation by the Truck Committee of the N. A. C. C., will be placed before the executive committee at its coming meeting, which will be held either in Utica, New York, or Boston. The scope of the project will be seen from the fact that the federation, which is composed of 26 associations, has 200,000 milk producing members.

Preliminary consideration of the milk producers' trucking problem was taken up last week in a meeting in Philadelphia.

Receivers for Comet

BLOOMINGTON, ILL., Sept. 25—Receivers have been named for the Comet Automobile Co. by Judge Baldwin, to avert foreclosure proceedings against the property, in behalf of the Citizens National Bank and the Farmers State Bank & Trust Co. of Decatur.

The Millikin Trust Co. and Roy W. Jones of the Comet company have been named receivers at the request of the company and with the consent of the bankers. They were instructed by the court to make an appraisal of the property before further action is taken.

President George W. Jagers looks upon the action as a most favorable way out of the financial difficulties, and believes that it will be beneficial to stockholders and creditors alike.

It is not planned to wind up the affairs, but it is hoped that the concern may be financed and given another opportunity to proceed with the manufacture of cars.

TRACTOR BUSINESS EXCEEDS LAST YEAR

CHICAGO, Sept. 22—Manufacturers of tractors agree that their business up to late in August was considerably better than for the corresponding period last year, according to the monthly review of trade conditions issued by the National Association of Farm Equipment Manufacturers. It is stated that the business of some of the larger companies compares very favorably with that of a normal year. One company stated that its business in the last year would amount to more than for any year previous to the war period.

August shipments of tractors were reported generally as equal to or greater than those of July. Production was reported to be still below normal, due principally to the fact that some companies are shipping from stock.

INDIANAPOLIS BUSY AS BUILDING BOOMS

Approximately $1,000,000 Involved in Real Estate Transfers and Leases

INDIANAPOLIS, Sept. 26—Meridian Street, automobile row of this city, is experiencing a brisk automotive building boom in five blocks just below Twelfth Street. Approximately $1,000,000 in real estate sales and leases for the five new automotive buildings will change hands and all of the buildings are expected to be up by late winter.

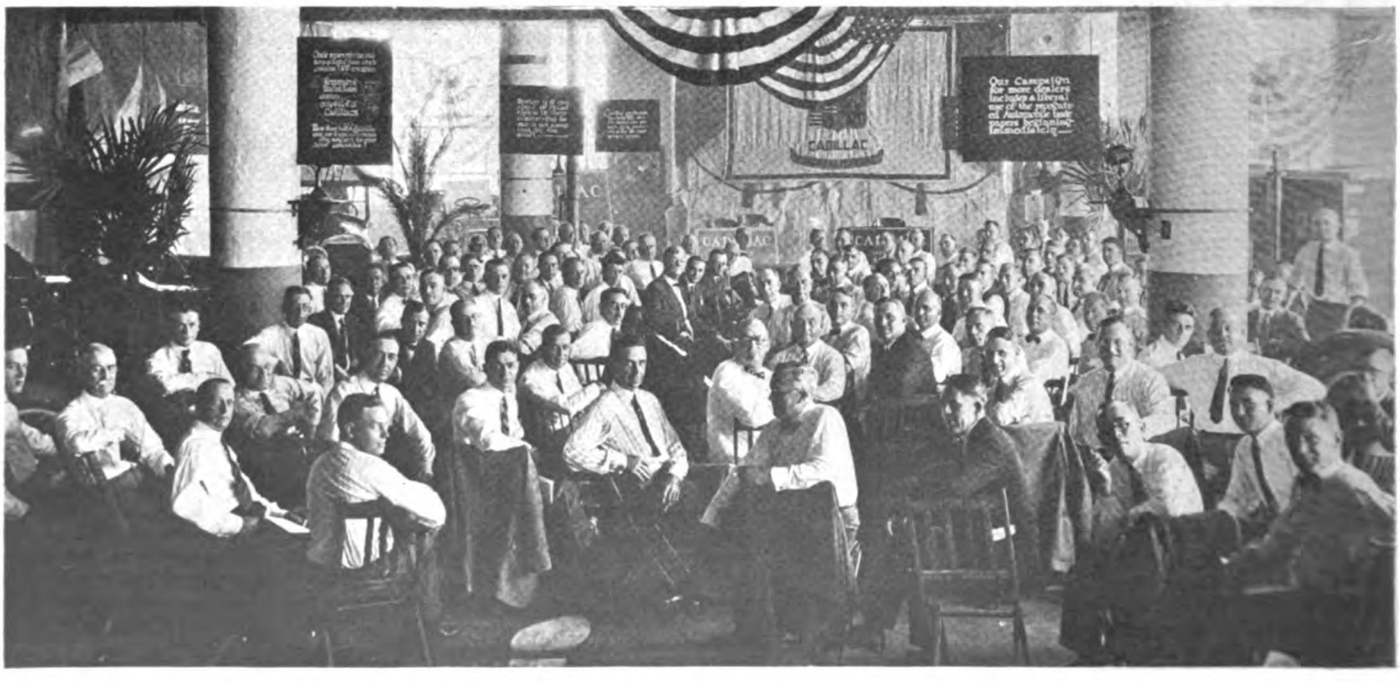
The Indiana Battery Service is the latest concern to announce a new building program acquiring land by lease for a total rental of $317,800. In the building to be erected on the Meridian Street front will be housed the Milburn salesrooms for which the company is distributor, and the Exide Service Station, also run by the concern.

The Olin-Wilmeth Co., Ford and Lincoln dealer, is rushing foundations for its four story building and will have a spacious plant adequate for its large sales and service rooms.

Conduit Automobile Co. is also actively at work on a four story plant for its Peerless, Chalmers and Maxwell business. This construction plan is one of the recent announcements.

Besides this there is the Hassler-Indiana Co. with its new three story building under way, and the Automotive Equipment Co. with another building not far from ready. There have been several new automobile "hotels."

Cadillac Distributors at Factory Meeting



Fall and winter sales plans were laid at a meeting of Cadillac distributors and dealers last week. The meeting radiated optimism. Incidentally it was announced that business in the past twelve months had exceeded the business for any other similar period, both in number of cars and in total value

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MUCH GOOD EXPECTED FROM TIRE MEETING

Official Statement of Recent Conference Issued by Associated President

CLEVELAND, Sept. 27—R. F. Valentine, president of the National Tire Dealers Association, has made public, through an official statement, what had been accomplished at the meeting of a special committee of the tire dealers association and the ruling board of the Rubber Association in New York City on Aug. 9.

Horace De Lisser, acting president of the Rubber Association, is quoted as saying: "This conference has been productive of incalculable good to both the manufacturer and the dealer and it has seldom been my privilege to sit in a conference holding more interest and where there was such evidence of clear understanding."

Re-equipment Sales Considered

In the matter of adjustments, the rubber association assured the committee that all available means were being used to acquaint the public more thoroughly with the new policy, which calls for the elimination of mileage guarantees. The rubber men also agreed to endeavor to induce certain manufacturers giving such guarantees to discontinue the practice.

Re-equipment sales were considered and on this subject the manufacturers pledged the use of every possible precaution to prevent the purchase of larger quantities than actual equipment requirements and that re-sale of equipment stocks through car agencies will be discontinued.

A discussion of the topic. "Re Car Manufacturer," developed that a few companies are now supplying five tires on equipment orders instead of the regular four tires. Future contracts will, in all probability be based on four tires, leaving the fifth to the dealer to be supplied.

The national and commercial accounts have been a problem to the tire dealer and when this subject was reached, one of the largest tire manufacturers announced that he had discontinued such accounts, with the exception of a few that run until the end of the year. The dealer representatives argued that there was no justification for such accounts and the rubber men agreed that this matter would be given the closest consideration by the sales organization.

Would Restrict Price Publication

The dealers' committee asked that the publication of all price lists other than the consumer lists be eliminated. They stated it would save money for the manufacturer and eliminate misunderstandings for the dealers. It was the consensus that if manufacturers found it necessary to issue lists other than consumer lists, their distribution should be carefully controlled.

Regarding the production of more than one line or grade of tires in one plant, the dealers questioned the practice of any company producing more than one line and grade and marketing the products under separate agreements and contracts. This brought the statement from some manufacturers that in the future or just as soon as practicable, their products would be offered through one channel and the same policy would apply on all lines.

Several manufacturers reported that dealer practices would come in for consideration and close scrutiny and that the flagrant abuses indulged in and practiced by a great many dealers would not be tolerated. Other companies reported that they already were enforcing many needed restrictions. The dealers promised every co-operation possible in the correction of these abuses and demoralizing practices indulged in by some dealers.

TIRE DISTRIBUTOR USES OLD BREWERY

MILWAUKEE, Sept. 22—The establishment of the Jung Tire & Supply Co. as distributor of Norwalk tires marks the conversion of part of a large former brewery property in Milwaukee into an automotive equipment business, at the head of which are the members of the former brewing concern, namely, the Jung Brewing Co.

Philip Jung, Jr., son of the founder of the brewery, is president of the new tire and supply concern.

The literature of the new company bears the familiar "Jung" name of pre-Volstead days, while the phrase, "Serves You Right," internationally known in connection with old-time Jung beverage, is applied to Norwalk tires and the Jung Tire & Supply Co.

COURIER TO BUILD 750 REST OF YEAR

SANDUSKY, OHIO, Sept. 27—The Courier Motors Co. which, under the name of the Aero Motors Co., purchased the assets of the Maibohm Motor Co., plans to build 750 cars for the balance of this year and has a tentative schedule of from 3000 to 4000 for next year.

It is reported that most of the old Maibohm distributors have continued with the new company, that others have been secured and that an aggressive dealer campaign is now under way. The old Maibohm has been considerably changed in everything except the lines of the car.

Durant Dealers Meet

CEDAR RAPIDS, IOWA, Sept. 26—Twenty-seven Durant dealers in this territory were guests at the Hutchings Motor Co. plant and heard C. Jackoby, district representative, discuss both the Durant and Star cars. Dealers plan to go to Flint, Mich., next week.

MURRAY RUBBER CO. TO SUCCEED EMPIRE

Products of Both Companies Will Be Continued—Officers Are Elected

TRENTON, N. J., Sept. 22—Steps have been taken for the organization under the laws of New Jersey of the Murray Rubber Co. as successor to the Empire Tire & Rubber Co. which was purchased at a receiver's sale last week by Campbell, Heath & Co. of New York and their associates. The purchaser backed the re-organization plan which was offered the creditors by William M. Pepper and J. Cornell Murray.

C. Edward Murray, Jr., will be elected president and general manager of the Murray Rubber Co. The other officers will be: William M. Pepper, vice-president and treasurer; Harvey R. Nason, secretary; Ray H. Paddock, director of tire sales; Robert M. Stuart, director of mechanical sales; W. W. Sanders, factory manager; Albert N. Alexander, comptroller; H. Earl Berrien, assistant treasurer; and Norman S. Conover, assistant secretary.

The directors will include William H. Peck, president of the Third National Bank of Scranton; H. J. Angermeier, vice-president of the National Bank of Kentucky; W. D. Campbell, president of the Van Camp Packing Co.; W. M. Pepper, treasurer of Campbell, Heath & Co., and C. E. Murray, Jr.

This is the exact organization that ran the plant successfully during its receivership. It is also announced that there will be no change in the personnel of district managers.

The Empire products inclusive of tires and tubes will be continued as in the past and in addition the Murray products will be manufactured. The Murray Rubber Co. is simply a new corporate name, the products being continued as at present.

Bendix Develops New Engine

CHICAGO, Sept. 21—The Gernandt engine, a full Diesel type, has been developed by the Bendix Engineering Works. It is claimed that it is adapted for use in cars, trucks and tractors, and for marine and stationary use. The Bendix Co. has been allowed basic patents on the new engine. It will not, however, manufacture the engine, but will license its manufacture by others. The engine will burn crude oil, distillate, kerosene and gasoline, and may be designed for operation on either a two or four stroke cycle.

Chandler Cleveland Branches

BOSTON, Sept. 25—Factory branches for the Chandler and Cleveland have been established here, following the taking over of the business of the Chandler Motors of New England by the respective factories. Ralph P. Nettleton and P. E. Underhill have been the controlling members of Chandler Motors.

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CHANGES IN THE TRADE

Mall Motor Co. of Cleveland has been appointed distributor of the Gray.

C. H. Reckford has entered partnership with **A. B. Hayes** in the **Kelly Tire Sales Co.**, Dubuque, Iowa.

Dowling Motor Co., Charlotte, N. C., has been made distributor in western North Carolina for the Star.

Don E. Barth, proprietor of Don's garage, Davenport, Iowa, has taken over the agency for the Earl motor car in this territory.

Harry W. Anderson, recently with the Duesenberg Motor Co., has taken charge of the eastern business of the Stutz Motor Car Co.

George B. Beaudry is president and Frank C. Magranis treasurer of the reorganized **F. C. Magranis Co.**, Hudson and Essex dealer, Northampton, Mass.

Murphy & Powers, Inc., a new firm composed of former employees of the **Dunbar-Laporte Motor Co.**, Holyoke, Mass., has taken over the tire and accessories department of that concern.

Morrow Motors Corp., 1761 Broadway, New York, has been appointed to handle the National for southern New York state, northern New Jersey, southeastern Connecticut and Long Island.

W. E. Lohr, formerly with the **Cunningham Auto Clearing House**, Des Moines, has joined the **Payne Motor Co.**, Paige distributor for Iowa, and will be in charge of the used car department.

G. H. Seagert has been appointed general sales manager of the Hoeveler-Stutz Co., Pittsburgh, distributor of Stutz and Cleveland cars, to succeed F. H. Hoover, who has become general manager.

Ideal Motor Corp. will distribute Moon cars for the Minneapolis territory. This is a new corporation, of which **Gordon Blake** is president and **W. G. Garber** of La Crosse, Wis., is vice-president and treasurer.

Clarence E. Beck, four years salesman for the **Hudson-Jones Co.**, Waterloo, Iowa, has resigned to become sales manager of the **Baum-McDonald Co.**, which handles the Lexington and Gardner cars.

Jones-Nyquist Co., Minneapolis, has been formed to take a sub-agency for the Buick by **Parke H. Jones** and **C. W. Nyquist**, who have been connected with the Pence Automobile Co. for eleven and seventeen years respectively.

Herring Motor Co., Des Moines, has taken over the business of **Beamer & Wissler**, jobbers of automobile accessories. Lee Wissler has joined the sales force of the Herring company and John Beamer is devoting himself to other business interests.

Therkelsen Motor Co. has been formed in Portland, Ore., to handle the distribution of the Rickenbacker car throughout the Oregon district. The company is headed by Lawrence Therkelsen, for the past five years sales manager of the Braly Auto Co., Franklin distributor.

Gluek-Hennessy Motor Co., Minneapolis, has been organized to succeed the **Madsen-Peterson Motor Co.**, selling Ford and Lincoln cars. The organizers are **Alvin** and **Eugene J. Gluek**, and **C. P. Hennessy**, formerly with the Lincoln Motor Co. and later general manager of the Madsen Co.

Robert N. Todd, for two years in the New York sales branch of the Pawling & Harnischfeger Co., Milwaukee, cranes, machine tools, etc., has resigned to join **Walter Price**, formerly eastern sales manager of the Milwaukee company, in the business of Ford dealer in Philadelphia.

Northwestern Republic Motor Truck Co. has opened headquarters in Minneapolis for distribution through the northwest. The company has taken over the stock of the former **Stevens Corp. P. S. Willis**, more than two years manager for the Master Truck & Tractor Co., is general manager of the new company.

F. G. W. Sudrow, for many years zone manager of the Chevrolet Motor Co. of Kansas City and recently identified with the Gardner Motor Co. of St. Louis, has resigned to become general sales manager of the **Hathaway Motor Co.** of Kansas City, Durant and Star distributor for Kansas City and the southwest. Sudrow's headquarters will be at **Kansas City.**

Van Cortlandt Vehicle Corp., metropolitan distributor of the Peerless, will remove Oct. 1 from its present quarters at the corner of Broadway and Sixty-third Street, New York, to the four-story building at the corner of Broadway and Sixty-second Street, which it is completely renovating. This property, formerly occupied by the Keystone Tire & Rubber Co., is opposite the New York Cadillac Co. and adjoins the Packard Motor Car Co.'s salesrooms.

C. P. Fisken, manager of the Wisconsin Sales Division, Mitchell Motors Co., Inc., Racine, Wis., has announced the following appointments of new Mitchell dealers in addition to the **Nelson-Mitchell Co.**, Milwaukee, distributor in Milwaukee, Ozaukee, Washington and Waukesha counties, and retail dealer in Milwaukee: **H. M. S. Motor Car Co.**, Manitowoc, Wis.; **Holterman Motor Co.**, Fond du Lac; **Mitchell Auto Sales Co.**, Madison; **Warner Mitchell Co.**, Janesville; **Schroeder Motor Co.**, Racine; **Frank X. Dietz**, La Crosse; **Genger Bros.**, Wausau; **Ballatine Garage**, Prairie du Chien; **Lawrence Warner**, Beloit; **J. B. Wilkes**, Watertown; **Sharp's Garage**, Mauston; **Edw. C. Wolf Co.**, Appleton; **Monroe Mitchell Co.**, Monroe; **West Racine Garage**, Racine; **Hollandale Auto Service Co.**, Hollandale; **Schroeder Motor Co.**, Plattsville; **Gem City Garage**, Baraboo; **H. Bruns & Son**, Madison; **Earl Wetmore**, Patch Grove; **Smith Auto Co.**, Oregon; **S. H. Shults, Jr.**, Walworth, Wis., and **A. A. Tillman & Co.**, Hancock, Mich.

AGREEMENT REACHED ON CHALMERS PLAN

NEW YORK, Sept. 23—Further steps in the adjustment of the affairs of the Chalmers Motor Co., by which it is expected that the Maxwell Motor Corp. will obtain title to the Chalmers company, were taken this week with the approval by the Noteholders' Protective Committee for the Chalmers first mortgage 6 per cent five-year gold notes of the plan under which the notes will be exchanged for stock in the Maxwell corporation. It is understood that a majority of the noteholders already have consented to the plan. Time for additional deposits of the Chalmers notes with the New York Trust Co., as depository, expires Oct. 5.

The plan provides for the exchange of notes on the basis of ten shares of Maxwell Class A, ten shares of Maxwell Class B stock and $60 in cash for each $1,000 note, or the alternative of $860 in cash. The Class A stock is of the par value of $100, and the Class B stock of no par value. Class A is entitled to noncumulative preferred dividends, and the rate of 8 per cent per annum and to participate equally with Class B stock in any year after 8 per cent has been paid on each class. Upon any liquidation of the corporate assets, Class A stock is entitled to receive par in priority to Class B stock. Both classes have voting power.

NEW PORTLAND FIRM HANDLES STUDEBAKER

PORTLAND, ORE., Sept. 25—Studebaker retail sales for the Portland district have been taken over by the John K. Leander Co., recently formed here and capitalized for $100,000. The firm is headed by Leander, who for three years was manager of the Portland branch of the Studebaker Corp. of America. Leander recently resigned from the corporation in order to form the retail company.

For about a year retail sales for the Studebaker in this section have been handled by the factory branch. Under the new arrangement Leander will handle both sales and service. For the time being the company will occupy quarters with the factory branch, but construction of a big building is planned for early spring. Prior to coming to Portland three years ago Leander was manager of the Studebaker branch at Denver and prior to that was with the firm in Chicago. He has been with the corporation for about nine years.

CALIFORNIA REPORTS SALES CURVE RISING

SAN FRANCISCO, Sept. 25 — California automobile dealers had next to the best month of their history during August, 1922, though they did not reach the number of sales made in June of this year when they smashed all records by selling 14,180 cars. August registrations showed sales of passenger cars totaling 13,893, which is 287 cars short of the June record, but enough to indicate that the sales curve is again rising, since the August volume of sales exceed that of July by 882 cars. There is more than a possibility that September sales will equal, or even surpass, the June highwater mark.

Aggregate sales for the month of August, 1922, were 4398 cars more than for August, 1921, a gain over the same month of last year of 46 per cent. Southern California keeps its lead over Northern California in number of sales, 7515 for the south, and 6378 for the north. Sales for the past August in the south were 2131 more than in August, 1921, a gain of 40 per cent.

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ASSOCIATION ACTIVITIES

Detroit Makes Show Plans

DETROIT, Sept. 23—The Detroit Automobile Dealers Association will hold a closed car show in the General Motors Building Auditorium in the week of Oct. 17 to 21, this show taking the place of the closed car week showing in dealers' salesrooms as held last year. The exhibition will be the largest exclusive closed car show the Detroit dealers have held.

Only exclusively closed cars will be permitted at the show, the association having ruled against showing convertible open and closed models such as California top jobs and others. It has also been decided that only one car of a type or model can be displayed. The exhibit space to members of the association has been allotted and other exhibits are invited. From two to six exhibits will be the range of the individual company showings.

The auditorium of the General Motors Building is on the fourth floor, the entrance being on the Grand Boulevard side of the building with transportation to the exhibit floor by the regular elevator fleet. Separate exits will be provided. Decorations to set off the models will be erected by the association and every effort will be made to attract a large attendance. An admission fee of fifty cents will be charged.

To insure the attendance of persons who might be expected to be prospective closed car buyers, the association will mail 10,000 engraved announcements from a specially compiled list. In addition, there will be regular newspaper announcements and posters.

Greenville Chooses Officers

GREENVILLE, S. C., Sept. 25—The Automotive Trades Bureau of the Chamber of Commerce has elected Eugene B. Smith president for the next term, succeeding O. B. Mills. Fred Plexico was elected vice-president and Browning Goldsmith, Charlie Upchurch and O. P. Mills, executive council. The bureau went on record as in favor of holding an automobile show in the city this year.

Spokane Honors Strickle

SPOKANE, WASH., Sept. 24 — R. L. Strickle, vice-president of the March-Strickle Co., Inland Empire distributors for the Durant products, was elected to the board or directors of the Spokane Automobile Chamber of Commerce at an association meeting recently. Strickle took the vacancy on the board left by the resignation of James F. Boyd, who has gone east. Discussion was given to problems of automobile men in general, as well as the association, according to P. J. Garnett, president.

Sales Managers Organize

PHILADELPHIA, Sept. 21—The Automobile Sales Managers Division of the Philadelphia Automobile Trade Association was formally organized in the quarters of the latter association and the following officers were elected A. P. Hawes, sales manager of the W E. W. Motor Corp., president; F. N. Delavan, Philadelphia-Nash Motors Co., first vice-president; William P. Berrien, Herbert Bros., second vice-president; Charles C. Bulkeley, executive secretary of the Philadelphia Automobile Trade Association, secretary, and A. J. Hamilton, Gomery-Schwartz Motor Car Co., treasurer.

In addition to the foregoing the directors include R. Scott Smith, Neel-Cadillac Co.; Fred Culver, Kip Motor Co.; N. S. Jorgensen, Girard Automobile Co., and the Messrs. Skilton, Larsen-Oldsmobile Co.; Casserly, Harper & Harper, and Moore, Philadelphia-Packard Motor Car Co. An admissions committee was appointed, consisting of the Messrs. Stankowitz, Thornton-Fuller Automobile Co.; Lockwood, Studebaker Corp. of America; Brown, Lexington Motor Co.; Horner, Locomobile Co. of America, and Clayton, Oakland Motor Car Co.

Bulkeley is now engaged in secretarial duties for the new organization, the Philadelphia Automobile Trade Association and the Automotive Service Association of Philadelphia.

Rules and bylaws were adopted. The object of the association is to establish a closer relationship among the sales organizations of the city's automobile companies and to stabilize sales methods throughout the industry.

Issues Used Car Manual

PHILADELPHIA, Sept. 21—The manual for the used car exchange of the Philadelphia Automobile Trade Association has just been issued containing the current list price for used cars and the schedule of allowance. The association's membership is 100 per cent in the exchange and it is agreed that the plan has been of material assistance to the industry.

Show for St. Paul

ST. PAUL, Sept. 26—A closed car show is planned by the Automobile Dealers Association for Oct. 11 to 14 in the municipal auditorium, the first in two years.

BIG TOURIST TRAVEL OVER OREGON ROADS

Forms One Fifth of Traffic—Census Shows Percentage of Cars

PORTLAND, ORE., Sept. 16—Tourist traffic over the state highways of Oregon this summer reached the point where it amounted to the amazing total of over one-fifth of the total travel, according to a road census taken by the Oregon State Highway Department during one day late in August. The complete figures for the census were made known to-day, after the figures had been secured, checked over and tabulated.

The census was taken by stationing men at 138 different points on the 30 most important roads of the state. A count was made of traffic both ways at every one of these points, the observers starting work at 6 a. m. and counting traffic until 10 p. m. All observation points were on highways outside of incorporated cities or towns, so as not to include the merely local city traffic. Every part of the state was represented in the list of observation points.

During the period a total of 57,589 vehicles were counted as traveling past the observation points. Of this number 11,537, or 20.03 per cent, were passenger automobiles bearing licenses of other states than Oregon. A large proportion of these were tourists, it was stated, although some were motorists from adjoining states using the roads for business purposes.

Of the total traffic, an overwhelming proportion consisted of passenger automobiles.

A Sticker That Asks for Courtesy



"We wish to apologize for taking the liberty of putting this 'Automobile Courtesy' paster on your car," says a notice which is left in the car when the above paster is put on the windshield. "We know you will want to have a part in this campaign to make it safer and more pleasant for motorists and pedestrians.

"Old time courtesy seems to have been forgotten. To-day many motorists assume a selfish attitude. It is your job and my job to educate the other fellow. This paster on your car will carry this thought to more people than would be possible in any other way.

"Courtesy is cheap."

The campaign has been inaugurated by the Chicago Automobile Trade Association and is assuming country-wide proportions through other associations taking it up.

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Calendar of Trade Events

CONVENTIONS

Santa Barbara.....October
Annual Convention of the California Automobile Trade Association.

Atlantic City.....Oct. 16-17
Motor Accessory Convention and Show incident to the Annual Meeting of the Hardware Association, Ambassador Hotel.

Chicago.....Oct. 18-19-20
National Association of Farm Equipment Manufacturers.

Washington.....Oct. 26-28
Second Annual Conference for the Study of Highway Transportation and Highway Engineering Problems under the auspices of the Highway Education Board.

Chicago.....Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

Toledo.....Dec. 6-8
Annual Convention of the Ohio Automotive Trades Association.

SHOWS

Memphis, Tenn......Sept. 23-30
Annual Automobile Show held under auspices of the Memphis Automobile Dealers Association, Tri-State Fair Grounds.

New York.....Sept. 23-30
Closed Car Show, under Auspices of Automobile Merchants Association, Grand Central Palace.

Dallas.....Oct. 6-16
Texas State Fair.

New York City.....Oct. 7-14
Annual Electrical and Industrial Exposition, Grand Central Palace.

St. Paul.....Oct. 11-14
Annual Closed Car Show, Municipal Auditorium, under the auspices of the Automobile Dealers Association.

Pittsburgh.....Oct. 14-21
Twenty-fifth Annual Automobile Show, Motor Square Garden, under the auspices of the Automotive Association, Inc., John J. Bell, manager.

Detroit.....Oct. 17-21
Closed Car Salon, General Motors Building, Detroit Automobile Dealers Association, H. H. Shuart, Manager.

Washington, D. C......Oct. 21-28
Annual Closed Car Salon held under auspices of the Washington Automobile Trade Association, Convention Hall.

Houston.....Nov. 8-18
South Texas Fair.

Jersey City.....Nov. 11-18
Third Annual Show, Fourth Regiment armory, under the auspices of the Hudson County Automobile Trade Association.

Chicago.....Nov. 13-18
Annual Show of Automotive Equipment Association.

Los Angeles.....Nov. 11-19
Automobile Show, Motor Car Dealers Association, Burt Roberts, manager.

Cincinnati.....Nov. 22-29
Second Annual Automobile Accessory and Radio Exposition, Music Hall, under the auspices of the Cincinnati Automotive Trade Association.

New York.....Dec. 3-9
Eighteenth Annual Automobile Salon, Commodore Hotel.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, auspices of the Automobile Body Builders Association.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Salon, Drake Hotel.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Minneapolis.....Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Brooklyn, N. Y.....Feb. 24-Mar. 3
Annual Automobile Show under auspices of the Brooklyn Motor Vehicle Dealers Association, 23rd Regiment Armory.

Syracuse.....Feb. 26-Mar. 3
Annual Automobile Show under auspices of the Syracuse Automobile Dealers Association.

Newark, N. J......Mar. 10-17
Annual Automobile Show under the auspices of the New Jersey Automobile Exhibition Co., Claude E. Holgate, manager.

RACES

Fresno, Cal.....Sept. 30
Los Angeles.....Nov. 30
San Diego.....January

To Investigate Frauds

NEW YORK, Sept. 15—William A. Golden, a former post office inspector, has been added to the staff of the National Vigilance Committee of the Associated Advertising Clubs of the World and will devote his energies especially to fraudulent and deceptive advertising practices in the motor car, tire, battery and motor accessory fields. Golden was formerly associated with the Goodyear Tire & Rubber Co.

M. A. M. A. Moves

NEW YORK, Sept. 26—The Motor and Accessory Manufacturers Association announces the removal of its office to the Fisk building, 250 West 57th Street, at Broadway.

The New Car and Truck Description Index

Giving the date and page number on which they appeared

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Oldsmobile (New Body).....July 26, 1922-17
Packard (New single six)....May 3, 1922-23
Peerless.....Aug. 23, 1922-18
Reo (Phaeton).....Aug. 9, 1922-31
Seneca (Phaeton and Roadster)...June 28, 1922-29
Star.....June 21, 1922-30
Star (Details).....June 28, 1922-28
Star.....Mar. 15, 1922-14
Stearns-Knight Six.....July 12, 1922-29
Studebaker (Big Six Speedster).....May 24, 1922-43
Stutz (1922 model).....Apr. 5, 1922-32
Westcott 7-pass. Phaeton....Aug. 9, 1922-30
Wills Sainte Claire (Brougham)..Aug. 30, 1922-42
Wills Sainte Claire (Sedan and Town Car)....Mar. 8, 1922-36

TRUCKS

Buick (Special Delivery).....Mar. 29, 1922-31
Commerce (Special Delivery).Sept. 20, 1922-27
Denby (Model 35).....May 10, 1922-23
F W D (3-ton Roadbuilder)..Mar. 8, 1922-41
Federal Express Chassis.....July 19, 1922-26
Indiana (One Ton Speed).....Aug. 30, 1922-26
Mack.....June 21, 1922-42
Milburn Electric (1 and 1½-ton).....Mar. 8, 1922-31
Overland (½-ton).....Apr. 19, 1922-41
Standard (Model 75).....July 5, 1922-43
Stewart Utility Wagon.....July 12, 1922-30
Transport (1, 1½, 2, 3, 3½ and 5-ton).May 17, 1922-22
United States (1½-ton).....Mar. 8, 1922-37
Vim (Speed Truck).....Aug. 30, 1922-24

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾–1	$1650a	3¾x5	34x5n	34x5n	W
Acason....RB	1½	1950	3¾x5¼	36x3½	36x6	W
Acason....I	2½	2750	4⅜x5¾	36x4k	36x8k	W
Acason....L	3½	3450	4⅜x5¾	36x5k	36x10k	W
Acason....M	5	4350	5 x8¼	36x6	40x12	W
Ace....C	1½	2295	3¾x5½	34x3½k	34x5k	W
Ace....A	2½	2795	1¾x5½	36x4k	36x7	W
Acme....2	1	....	3¾x5	35x5n	35x5n	W
Acme....3	1½	....	3¾x5	34x3½	34x5	W
Acme....4	2	....	3¾x5	34x3½	34x5	W
Acme....6	3	....	4½x5¼	36x4	36x7	W
Acme....6L	3	....	4½x5½	36x4	36x7k	W
Acme....9	4½	....	4½x5½	36x5	40x10	W
Acme....12	6½	....	4¾x6	36x6	40x12	W
American....25	2½	3350	4 x6	36x4k	36x4dk	W
American....40	4	4275	4½x6	36x5k	36x5dk	W
Armleder....20	1	....	3¾x5¼	34x3½k	34x6k	W
Armleder....21	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder....40-B	1½	....	1¾x5½	34x3½k	34x6k	W
Armleder....40-C	1½	....	4⅛x5¼	34x3½k	34x6k	W
Armleder..HW-B	2½	....	4¼x5½	36x4k	38x7k	W
Armleder..HW-C	2½	....	4⅛x5¼	36x4k	36x7k	W
Armleder..KW-B	3½	....	4¼x6	36x5k	36x5dk	W
Armleder..KW-C	3½	....	4½x5½	36x5k	36x5dk	W
Atlas....MD	1	1185	3½x5	32x4½n	32x4½n	W
Atlas....44	1½–2	....	3¾ 5⅛	36x6n	36x6n	W
Atterbury....20R	1½	2175	3¾x5	34x3½	34x5	W
Atterbury....22C	2½	3375	4⅛x5¼	36x4	36x4d	W
Atterbury....22C	2½	3375	4⅛x5¼	36x4	36x4d	W
Atterbury....22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury....22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury....8E	5	4975	4¾x6	36x5	40x6d	W
Atterbury....8E	5	5125	4½x6	36x5	40x6	W
Autocar....21UF	1½–2	1950	4⅜x4½	34x4k	34x5k	D
Autocar....21UG	1½–2	2050	4⅜x4½	34x4k	34x5k	D
Autocar....27H	2	2950	4 x5⅛	34x5	36x7	D
Autocar....27K2	2	3375	4 x5⅛	34x5	36x7k	D
Autocar....26T	5	3950	1¾x5½	34x6	36x12	D
Autocar....26-B	5	4100	1¾x5½	34x6	36x12	D
Available....H1½	1½	2175	4 x5	36x3½k	36x5k	W
Available....H2	2	2775	4 x5	36x3½k	36x6k	W
Available....H2½	2½	3160	4 x5	36x4k	36x8k	W
Available....H3½	3½	4175	4½x5½	36x5	40x5d	W
Available....H5	5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x4s	34x5n	34x5n	I
Beck....A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	I
Beck....B-33	1½	1725	3¾x5	34x5	36x6	
Beck....C-40	2	1810	3¾x5	36x6	36x6	
Beck....D-50	2½	2395	4½x5¼	38x7	40x8	
Ball....M (Iowa)	1	1495	3⅝x5½	35x5	35x5n	W
Ball....E (Iowa)	1½	2100	3¾x5¼	34x3½	34x5	I
Ball....O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Bessemer....G	1	....	3½x5	35x5n	35x5n	I
Bessemer....H-2	1½	....	3¾x5	36x3½	36x5	I
Bessemer....J-2	2½	....	4½x5¼	36x4	36x4d	I
Bessemer....K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem....KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem....CN	2	1595	4 x6¼	34x4½k	34x6k	I
Bethlehem....HN	3	2195	4 x5¼	36x4k	36x8k	I
Bridgeport....A	1½	....	3⅜x5½	34x3½	34x6	W
Bridgeport....B	2½	....	4½x5½	36x4	36x4d	W
Bridgeport....C	3½	....	4½x6	36x5	36x10	W
Brinton....C	2	2500	3¾x5	34x4	34x5	W
Brinton....D	3	2375	4½x5¼	36x4	36x7	W
Brockway....E	1	....	3½x5⅛	35x5n	35x5n	B
Brockway....S-S	1½	....	3½x5	36x4	36x6	W
Brockway....SK	1½	....	4⅛x5¼	36x4	36x6	W
Brockway....KR	2½	....	4½x5½	36x4	36x8	W
Brockway....K-S	2½	....	4½x5¼	36x4	36x8	W
Brockway....RT	3½	....	4¾x6	36x5	36x10	W
Brockway....R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway....T-4	5	....	4¾x6	36x6	40x6d	W
*Buick	½	945b	3⅜x4¾	31x4n	31x4n	B
Case	2	....	4¼x5¾	36x6	38x7	I
*Chevrolet	¼	510b	3⅛x4	30x3½n	30x3½n	B
*Chevrolet....G	¾	650	3⅛x4	34x4n	34x4½n	B
*Chevrolet....T	1	1035	3⅛x5¼	33x4n	35x5n	W
Chicago....C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago....C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago....C3½	3½	....	4½x5½	36x5	36x10	W
Chicago....D5	5	....	4½x5½	36x6	40x12	W
Clydesdale....10	¾–1½	1485	3¾x5	34x5n	34x5n	B
Clydesdale....18	¾–1½	1890	3¾x5	34x5	34x5	W
Clydesdale....20	1–1½	2395	3¾x5	34x5	34x5k	W
Clydesdale....42	1½–2	2475	3¾x5	36x3½	36x6	W
Clydesdale....6SX	2½–3	3250	4½x5¼	36x4	36x8	W
Clydesdale....6SEX	2½–3	3450	4½x5½	36x4	36x8	W
Clydesdale....90	3½–4½	4100	4½x5½	36x5	36x10	W
Clydesdale....125	5–6	4500	4¾x6	36x6	40x12	W
Comet....T	1½	1950	3¾x5	34x4	34x4	W
Commerce....T	¼–1	1450	3¾x5	34x4½n	34x4½n	B
Commerce....12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce....16	2	2150	3¾x5	35x5n	36x6n	I
Commerce....18	2½	2195	4½x5¼	36x6n	40x8n	I
Commerce....25	2½	2425	4⅜x5¼	36x4	36x7	W
Cook....51	2½	3600	4 x5⅛	36x6n	40x8n	W
Corbitt....E-22	1	1480	3¼x5	34x3½	34x4	W
Corbitt....D-22	1½	$2200	3¾x5	34x3½	34x5	W
Corbitt....C-22	2	2600	4⅛x5¼	36x3½	36x7	W
Corbitt....B-22	2½	3000	4½x5¼	36x4	36x7	W
Corbitt....R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt....A-22	3½–4	3800	4½x5½	36x5	36x10	W
Corbitt....AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder....AC	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder....B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder....D	2	2400	4⅛x5¼	36x4	36x7	W
Day-Elder....C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder....F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder....E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn....E	1	1600	3⅝x5⅛	35x5n	35x5n	W
Dearborn....FX	1½	2300	3¾x5⅛	34x4	34x5	W
Dearborn....F	1½	2180	3¾x5⅛	34x4	34x5	W
Dearborn....43	2	2500	3¾x5⅛	34x4½n	34x7	W
Defiance....G	1	1695a	3¾x5	35x5n	35x5n	B
Defiance....D	1½	2095a	3¾x5	35x5n	36x6n	I
Defiance....E	2	2275a	3¾x5	35x5n	38x7n	I
Denby....31	1¼	1485	3½x5	35x5n	35x5n	B
Denby....33	1½	2145	3¾x5	35x5n	38x7n	I
Denby....34	2	2395	3¾x5	36x4	36x6	I
Denby....35	2½–3	2795	4⅛x5¼	36x4	36x7	I
Denby....27	4	3895	4½x5½	36x5	36x5d	I
Denby....210	5	4295	4½x5½	36x6	40x6d	I
Dependable....A	¾–1	1650	3⅝x5⅛	34x5n	36x6n	W
Dependable....C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable....D	2½	2650	4 x5½	34x5	36x6	W
Dependable....E	3	2950	1¾x5½	36x4	36x7	W
Diamond T....O-3	1–1¼	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T....T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T....U	2–2½	2650	4 x5¼	36x4	36x7	W
Diamond T....K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T....EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T....S	5	4500	4¾x6	36x6	40x6d	W
Deane	2½	4100b	4¼x5¾	36x5	36x7	C
Deane	3½	5100b	4¾x5¾	36x5	36x5d	C
Deane	6	6030b	5 x8¼	36x6	40x6d	C
*Dodge Brothers	¾	730	3⅞x4½	32x4n	32x4n	B
Derris....K-4	2–2½	3400	4¼x5½	36x4	36x7	W
Derris....K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort	½	685a	3½x5	34x4n	34x4n	B
Double Drive..B	3	4000	4¼x5½	6	6	W
Duplex	2	2775	4 x5¼	35x5n	38x7n	W
Duplex....E	3½	3500	4¼x5½	36x8	36x8	I
Duty	2	1590	3½x5	34x3½	34x5	I
Eagle....101	1½	1875	3⅝x5½	34x5	34x5	I
Eagle....100-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D....B	3	4200	4¼x5½	36x6	36x6	B
Fageol....1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol....2½	2½	3900	4¼x5¾	34x4	36x7	W
Fageol....3½	3½	5000	4½x5¼	36x5k	40x5dk	W
Fageol....5	5	5700	4½x5¾	36x6	40x6d	W
Fargo....R	2	1700	3¾x5	36x4	36x6	I
*Federal	1½	1375	3¾x5	—x5n	—x5n	
Federal....SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal....TE	1½	2175	4⅛x5¼	36x3½	36x5	W
Federal....UE	2–2½	2425	4⅛x5¼	36x4	36x7	W
Federal....WE	3½–4	3150	4½x5½	36x5	36x5d	W
Federal....X2	5–6	4500	4¾x6	36x6	40x6d	W
*Ford	TT	1	430	3¾x4	30x3½n	32x4½n	W
Front Drive....C	1½	2800	3¾x5½	5	4	W
G & J**....2	1	2275	3⅝x5½	34x5n	34x5n	W
G & J**....A	2–2½	3375	4 x5¼	36x4	36x7	W
G & J**....B	3½–4	4475	4½x5½	36x5	36x10	W
G.M.C....K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C....K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C....K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C....K-41T	5†	2450	4 x5½	36x4	36x8	W
G.M.C....K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C....K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C....K-71T	10†	3700	4½x6	36x5	40x12	W
G.M.C....K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C....K-101T	15†	4050	4½x6	36x5	40x14	W
G.M.C....K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W	1½	1850	3¾x5½	35x5	35x5	I
*Garford....15	1	1590	3⅝x5⅛	34x5n	34x5n	W
Garford....25-B	1½	1990	3¾x5⅛	36x3½	36x5	W
Garford....75-H	2½	2750	1¾x5½	36x4	36x8	W
Garford....77-D	4	3750	4½x6	36x5	36x5d	W
Garford....65-D	5	4500	5 x6½	36x6	40x6d	W
Garford....150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary....F	1–1½	1675	3¾x5	36x3½	36x5	W
Gary....I	2	2250	4 x5½	36x3½	36x6	W
Gary....J	2½	$2650	1¾x5½	36x4	36x8	W
Gary....K	3½	3650	4½x6	36x5	40x5d	W
Gary....M	5	4100	5 x6½	36x6	40x6d	W
Gersix....M	1½	3100	4 x5½	36x3½	36x7	W
Gersix....K	2½	3500	4½x5½	36x4	36x8	W
Gersix	3½	4500	4½x6	36x5	40x12	W
Graham Bros	1	1265	3⅞x4½	33x4½n	34x5n	B
Graham Bros	1½	1325	3⅞x4½	33x4½n	36x6n	B
1Gramm-Pion..10	1	1245	3½x5	33x5n	33x5n	B
1Gramm-Pion..15	1½	1750a	3¾x5	36x3½k	36x5k	I
1Gramm-Pion..65	1½	2250a	3¾x5	36x3½k	36x5	W
1Gramm-Pion..20	2	2475a	4¼x5¾	36x4k	36x7k	W
1Gramm-Pion..30	3	3300a	4¼x5½	36x4k	36x4dk	W
1Gramm-Pion.75P	3½	4225a	4½x5½	36x6n	42x9n	W
1Gramm-Pion..40	4	3850a	4½x5½	36x5	36x5dk	W
1Gramm-Pion..50	5–6	4450a	4¾x6	36x6	40x6dk	W
Hall....1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall....2½	2½	3275	4⅛x5¼	36x4	36x6	W
Hall....3½	3½	4100	4½x5½	36x5	36x5d	W
Hall....5	5	5100	4½x5½	36x5	40x6d	W
Hall....7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey....WOA	2	2650	4¼x5½	34x4	34x7	W
Harvey....WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey....WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye....K	1½	1645	3¾x5½	34x3½k	34x5k	I
Hawkeye....M	2	2145	4¼x5	36x4k	36x6k	I
Hawkeye....N	3½	3700	4½x6¾	36x5k	36x10k	I
Hendrickson....O	1½	2200	3⅝x5½	36x4n	36x5n	W
Hendrickson....N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson....M	3½	3000	4¼x5	36x5k	36x5dk	W
Hendrickson....K	5	4000	5 x6¼	36x6	40x6	W
Huffman....B	1½–2	1795	3¾x5	34x3½	34x6	W
Huffman....C	1½–2	1695	3¾x5½	36x3½	36x6	I
Huffman....D	2–3	2895	4¼x5½	36x4	36x7	
Hurlburt....A-A	1–1½	1950	3¾x5	34x5n	34x5n	W
Hurlburt....B-B	2–2½	2800	4¼x5¼	36x4	36x4d	W
Hurlburt....C-C	3–3½	3475	4¼x5½	36x5	36x5d	W
Hurlburt....D-D	4–4½	4150	4½x6	36x5	36x6d	W
Hurlburt....E-E	6–6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa) B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa) G	1½	2040	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.).. HI	2½	2940	4½x5½	36x4	36x7	I
Indiana....12	1½–2	....	3¾x5¼	34x3½k	34x5k	W
Indiana....20	2	....	4⅛x5½	36x4k	36x7k	W
Indiana....25	2½–3	....	4½x5½	36x4k	36x8k	W
Indiana....35	3½–4	....	4⅜x5½	36x5k	36x5dk	W
Indiana....51	5–7	....	5 x6¼	36x5k	40x6dk	W
*International....S	1	1250	3½x5	34x5n	34x5n	I
International....21	1	1550	3½x5¼	36x3½	36x3½	I
International....31	1½	1650	3½x5¼	36x3½	36x4	I
International....41	2	2100	3½x5¼	36x3½	36x5	I
International....61	3	2400	4¼x5	36x4	36x6	I
International..101	5	3600	4¼x5	36x5	40x10	I
Jackson....4WD	3½	3850	4½x5½	36x7	36x7	B
K-Z....1	1	1750	3½x5	34x3½	34x5	W
K-Z....1½	1½	2075	3¾x5	36x4	36x6	W
K-Z....2½	2½	2550	4⅛x5¼	36x4	36x8	W
K-Z....3½	3½	3350	4½x5¼	36x5	40x10	W
K-Z....5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo....T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo....G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo....LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo....NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo....HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo....SK	4	3845	4¼x6	36x5	36x12	W
Kalamazoo....OK	5	4350	4½x6	36x6	40x6d	W
2Kelly-S....K-31	1½	2700	3¾x5¼	34x3½	36x6	C
2Kelly-S....K-34	1½	2700	3¾x5¼	36x3½	36x6	W
2Kelly-S....K-38	2½	2900	3¾x5¼	36x4	36x4d	W
2Kelly-S....K-35	2½	2900	3¾x5¼	36x4	36x4d	C
2Kelly-S....K-40	3½	3900	4½x6½	36x5	40x5d	C
2Kelly-S....K-41	3½	3900	4½x6½	36x5	36x10	I
2Kelly-S....K-42	3½	3900	4½x6½	36x5	40x5d	W
2Kelly-S....K-50	5	4400	4½x6½	36x6	40x6d	C
2Kelly-S....K-60	6	4600	4½x6½	36x6	40x7d	C
2Kelly-S....K-61	5–7	4800	4½x6½	36x6	36x7d	I
Kimball....AB	2	3675	4 x6	36x4	36x7	W
Kimball....AC	2½	3975	1¾x6	36x4	36x8	W
Kimball....AK	3	4500	4½x6	36x4	36x10	W
Kimball....AE	4	5000	4¾x6	36x5	40x12	W
Kimball....AF	5	5500	5 x6	36x6	40x7d	W
*Kissel....Express	1	1585	3¾x5½	34x5n	34x5n	W
Kissel....Utility	1½	1975	3¾x5½	36x3½	36x5	W
Kissel....Freighter	2½	2875	4¼x5½	36x4	36x7	W
Kissel....H. D.	4	3675	4¼x5½	36x5	36x5d	W
Kleiber....AA	1	2200	4½x5½	34x3½	34x5k	W
Kleiber....A	1½	3100	4½x5½	36x3½	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor. †Capacity with semi-trailer.

1—Gramm-Pioneer. 2—Kelly-Springfield.

The following price changes have been announced since the above tables were compiled:

Gary, F, $1,775; Gary, I, $2,450; Gary, J, $2,850; Gary, K, $3,790; Gary, M, $4,450; Hawkeye 1½-ton, $1,645; Hawkeye, 2-ton, $2,145.

Passenger Car Specifications on Page 50

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5½	36x4k	36x7k	W
Kleiber.....B	2½	3050	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....D	1½	2150	3½x5	34x3½	34x5	W
Koehler.....M	2½	3175	4 x5½	36x4	36x7	W
Koehler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Koehler.....F	3½	4470	4½x5½	36x5	36x10	W
Koehler,MT. Trac	5	3275	4 x5½	36x4	36x7	W
Krebs.....23	¾	1260	3½x5	34x4½	34x4½	B
Krebs.....24	1	1565	3½x5	34x5	34x5	W
Krebs.....45	1½	2125	4½x5½	36x4	36x7	W
Krebs.....75	2½	2375	4½x5½	36x4	36x8	W
Krebs.....110	3½	2975	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1925	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2100	3½x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3½x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½-3½	3150	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5-7	4800	4½x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4½x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	10x7	40x14	I
Mack...AB D.R.	1½	3150	4 x5	36x4	36x3½	D
Mack...AB Chain	1½	3000	4 x5	36x4	36x3½	C
Mack...AB Chain	2	3300	4 x5	36x4	36x4d	C
Mack....AB D.R.	2	3750	4 x5	36x4	36x4d	D
Mack....AB D.R	2½	3850	4 x5	36x4	36x4d	D
Mack...AB Chain	2½	3400	4 x5	36x4	36x4d	C
Mack...AC Chain	3½	4950	5 x6	36x5	40x5d	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac...AB	5	3400	4 x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Maplesleaf....	1½	3000	3½x5½	34x5n	36x6n	W
Maplesleaf...AA**	2	3600	4 x5½	36x4	36x7	W
Maplesleaf...BB**	3	4050	4½x5½	36x4	36x4d	W
Maplesleaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Maplesleaf...DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x5	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4½x5½	34x4	36x7	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x5d	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4½x6½	36x6	40x6d	W
Master.....F	5	5090	4½x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3½x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1½	2000	3½x5	34x3½	36x5	W
Menominee....H	1½	2475	4 x5	36x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3900	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4½x6	36x6	40x12	W
Meline.....10	1½	1985	3½x5	34x5n	36x6n	I
*Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-5	4600	4½x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3½x5½	34x3k	34x4k	I
Nash.....3018	2-2½	2150	3½x5½	34x4k	34x7k	I
Nash.....Quad	2-2½	2750	4½x5½	36x5k	36x8k	I
Nash..3018, LWB	2-2½	2200	3½x5½	34x4k	34x7k	I
Nash.Quad.LWB	2-2½	2800	4½x5½	36x5k	36x8k	I
Nash.....5018	2½	2250	3½x5½	34x4k	34x7k	I
*Nelson.....G2	1½	....	4½x5½	36x3½	36x6	W
*Nelson.....G3	2½	....	4½x5½	36x4	36x7	W
*Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
*Nelson.....G5	5	....	4½x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5½	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3900	4½x5½	36x4k	36x7k	W
Noble.....A21	1¼	1840	3½x5½	34x5	34x5	W
Noble.....B31	1½-2	2480	3½x5½	36x4	36x7	W
Noble.....D51	2½-3	2950	4½x5½	36x4	36x8	W
Noble.....E71	3½-5	3800	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3½x5½	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4½x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern...W	1½	2700	4½x5½	34x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E.Spec	1½	2285	3¾x5½	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3½x5	34x3½	36x5	W
Ogden.....E	2½	....	4 x5½	36x4	36x8	W
Old Hickory...W	1	$1775	3½x5	36x3½k	36x4k	W
Old Reliable.....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable.....B	2½	3500	4½x6	34x4	36x4d	W
Old Reliable.....C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4½x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4½x6½	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5½	35x5n	35x5n	I
Olympic.....A	2½	3200	4½x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5½	36x3½	36x7	
Oneida.....C9	2½	3200	4 x5½	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	3250	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	3400	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3850	4 x5½	38x7n	38x7n	B
Oshkosh.....BB	2½	4000	4 x5½	38x7n	38x7n	B
*Overland.....4	1½	450	3½x4	30x3½n	30x3½n	B
Packard.....EC	2-3	3100	4½x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4½x5½	36x6n	40x8n	W
Packard.....ED	3½-4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5½	34x3½	34x5	W
Paige.....54-20	2½	2120	4½x5½	34x4	34x8	W
Paige.....51-13	3½	3115	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3½x5½	34x5n	34x5n	W
Parker.....G-22	2½	3200	4½x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot...Revere	1	1383	3½x5	35x5n	35x5n	W
Patriot...Lincoln	3	2050	4 x5½	34x3½	34x5	W
Patriot .Washgt'n	3	2900	4½x5½	36x4	36x7	W
Pierce-Arrow....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow....	3½	4350	4½x6½	36x5	36x5d	W
Pierce-Arrow....	5	4850	4½x6½	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3½x5	36x4	36x6	
Pittsburgher.....	3	3800	4½x5½	36x5k	36x8	W
Power.....F	2	3150	4 x5½	36x5	36x7	W
Power.....C	3½	....	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier.....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4½x5½	34x4	34x6	W
Rainier.....R-20	2½-3	....	4½x5½	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-17	5-6	....	4½x6	36x6	40x6d	W
Ranger..TK-20-2	1½	2450	3½x5	30x6n	38x7n	W
*Reo.....F	¾-1½	1245	4½x4½	31x4½n	31x4½n	B
Reliance.....10A	1½	2400	4 x5½	36x3½	36x5	I
Reliance.....20B	2½	3100	4½x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3½x5	34x3	34x4	I
Republic..10 Exp	1	1695	3½x5	34x5n	34x5n	I
Republic.....11X	1½	1795	3½x5	31x4	34x6	I
Republic.....19	2½	2195	4½x5½	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rowe.....CW	1½	3000	3½x5	36x6n	36x6n	W
Rowe....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rowe....G.S.W.	3	4150	4 x6	31x5	36x5d	W
Rowe....G.P.W.	3	5250	3½x5n	38x7n	42x9n	W
Rowe.....HW	4	4500	4½x6	36x5	36x6d	W
Rowe.....F. W.	5	5500	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3½x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4-3½x4	32x4n	32x4n	B
Samson.....25	1¼	....	4-3½x5½	35x5n	35x5n	B
Sanford.....W-15	1½-2	2150b	3½x5	36x3½k	36x5k	
Sanford.....25	2½-3½	....	4½x5½	36x4	36x4d	W
Sanford.....35	3½-5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5-7	....	4½x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4½x5½	36x4	36x7	W
Schacht....3-Ton	3	3900	4½x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3½x5½	34x3½	34x7	W
Schwartz.....L	3	3600	4½x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½-2½	2250	3½x5	34x3½	34x5	W
Selden.....31	1½-2½	3350	4½x5½	34x5n	38x7n	W
Selden.....50	2½-3½	3250	4½x5½	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4½x6	36x6	40x12	W
Seneca.....M	½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3½x4½	32x4½n	32x4½n	B
*Service.....15	1¼	....	3½x5	34x4½n	35x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4½x5½	35x5n	38x7n	W
Service.....52	3	....	4½x5½	36x4	36x8	W
Service.....72	3½	....	4½x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	$1450	3½x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5½	34x4	36x6	W
Signal.....J	2½	2375	4½x5½	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x5d	W
Signal.....R	5	3900	4½x6	36x6	40x6d	W
*Standard.....75	1¼	1330	3½x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3½x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5½	36x4k	36x7k	W
Standard.....66	2½-5	3150	4½x5½	36x5	36x10	W
Standard.....5-K	5-7	4400	4½x6	36x6	40x12	W
*Star.....	½	610b	3½x4¼	30x3½n	30x3½n	B
Sterling.....1½	1½	2885	4 x5½	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5½	36x4k	36x6k	W
Sterling.....2½	2½	3290	4½x5½	36x4k	36x4k	W
Sterling.....3½	3½	4325	4½x6½	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6½	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6½	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6½	36x6	40x7d	C
*Stewart...Utility	1-1½	1245	3½x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3½x5½	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3½x5	34x3½	34x5	I
Stewart.....7	2-2½	2190	4½x5½	34x4	34x7	I
Stewart.....7-X	2½-3	2390	4½x5½	34x4	34x7	I
Stewart.....10	3½-4	3190	4½x5½	36x5	36x5d	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x5d	I
*Stewart.....	1¼	1245	4-3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1240	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3½x5½	34x5n	34x5n	W
Stoughton.....B	1½	2150	3½x5½	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....F	3	3150	4½x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4½x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Thomart.....	1½	1795	4 x5½	34x5	34x5	
Tiffin.....GW	1½	2100	4½x5½	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5½	36x4	36x3½	W
Tiffin.....PW	3½	3600a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4½x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4½x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4½x5½	36x4k	36x5k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4½x5½	35x5n	38x7n	W
Tower.....H	2½	2475	4½x5½	36x4	36x7	W
Tower.....G	3½	3475	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595a	3½x5	35x5n	35x5n	I
Traffic.....C	2	1595a	3½x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3½x5	36x4	36x7	I
*Transport.....15	1	1295	3½x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3½x5	34x3½k	34x4k	I
Transport.....35	2	1885a	3½x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5½	36x4k	36x8k	I
Transport.....60	3½	2585	4½x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Traylor.....B	1½	2390	3½x5½	34x3½	34x5	W
Traylor.....C	2-2½	2850	4 x5½	36x4	36x7	W
Traylor.....D	3-3½	2300	4½x5½	36x4	36x8k	W
Traylor.....F	5-6	4700	4½x6	36x6	40x8d	W
*Triangle.....AA	1	1285	3½x5	34x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3½x5½	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3½x5½	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5½	36x4k	36x7k	I
Twin City...B.W.	2	2750	4 x5½	36x6	40x8	I
Twin City...AW.	3½	3950	4½x6	36x5	40x5d	W
*Twin City.....B	3½	....	5½x6	36x6	36x6	I
*Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4½x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4½x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4½x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4½x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
United.....A	1½	2445	3½x5½	34x3½k	34x5k	W
United.....B	2½	3150	4½x5½	36x4k	36x7k	W
United.....C	3½	3975	4½x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States..U	1¼	1800	3½x5½	34x5n	34x5n	B
UnitedStates,NW	1½-2	2375	3½x5	36x5	36x3½	W
United States...N	1½-2	2175	3½x5	36x3½k	36x5k	I
United States...R	3	3300	4 x5½	36x4	36x4d	W
United States...S	4	4075	4½x5½	36x5	36x5d	W
United States...T	5-7	4975	4½x6½	36x6	40x6d	W
Velie.....46	1½	1585	3½x5	36x3½k	36x5k	I
Veteran.....M**	1½	2699	3½x5½	35x5n	35x5n	W
Veteran.....P**	2	3699	4½x5½	36x4	36x7	W
Veteran.....R**	3	4200	4½x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	½	1050	3½x4½	31x4n	31x4n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express, truck or delivery wagon. **—Canadian Make. trac.—tractor.

2—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
.....33	1½	$1175	3⅛x4½	32x4½	32x4½	W
.....53	1½-3	995	4 x5	32x4n	32x4n	B
.....31	1	1975	3¾x5⅛	35x5n	35x5n	W
.....22	2	3150	3¾x5⅛	36x4	36x6	W
.....23	3	3950	4¼x5½	36x5	36x5d	W
er-JohnsonA	2	2250	3¾x5	34x3½	34x6	W
er-JohnsonB	3	2750	4¼x5½	36x4	36x8	W
ter.....M	2½	3350	4½x5¾	36x4	36x8	D
er.....S	5	4850	4½x6¼	36x6	40x6d	W
..tson.....C	1	1465a	3⅝x5½	35x5n	35x5n	W
..tson.....N	3½	4250	4½x5½	36x5	36x10	W
·stern....W1½	1½	2550	4½x5¼	36x3½k	36x5k	W
..stern....L1½	1½	2550	3¼x5	36x3½k	36x5k	W
estern....W2½	2½	3250	4½x5¼	36x4	36x7	W
estern....L2½	2½	3250	4¼x6	36x4	36x7	W
·estern....W3½	3½	4250	4½x6	36x5	40x5d	W
·White.....15	¾	2100	3¾x5½	34x5n	34x5n	B

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
White.....20	2	$3250	3¾x5½	36x4k	36x7k	D
White.....40	3½	4200	3¾x5¾	36x5	40x5d	D
White.....45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick....E	1	1225	3¾x5	34x5n	34x5n	W
White Hick....H	1½	1375	3¾x5	36x3½	36x5	W
White Hick....K	2½	1675	4½x5¼	36x4	36x5	W
Wichita.....K	2	1875	3¾x5¼	36x3½	36x4k	W
Wichita.....M	1	2400	3¾x5¼	36x3½k	36x6k	W
Wichita.....RX	3	3200	4¾x5¾	36x4k	36x8k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost, n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac—tractor.

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Wichita.....O	4	$3500	4½x6½	30x5k	36x5k	W
Wilcox.....AA	1	1900	3¼x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4¼x5	30x4k	30x3½dk	W
Wilcox.....E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox.....F	5	4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¾x5	30x3½	36x5	W
Wilson.....EA	2½	2825	4½x5¼	30x4	36x7	W
Wilson.....G	3½	3685	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin.....A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin.....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin.....C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin.....D	3½	3000	4¾x5¾	36x6n	40x8	W
Wisconsin.....E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin.....F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will.....N	1½	2450	3¾x5	36x3½k	36x5k	W
Witt-Will.....P	2½	2900	4½x5¼	36x3½k	36x7k	W

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	LeR.	4-3⅛x4½	Gas.	1
Allis-Chalm.	15-25	1185	4	Midw.	4-4½x5¼	Gas.	3
Allis-Chalm.	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm.	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork...2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork.....C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T....	15-30	1900	4	Clim.	4-5 x6½	G,K	4
Aultman-T....	22-45	2800	4	Own	4-5½x8	G,K	6
Aultman-T....	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Automot. B-3	12-24	1250	4	Herc.	4-4 x5½	Gas.	2-3
Avery,SR.Cal.	5-10	....	4	Own	4-3 x4	G,K	..
Avery..Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4½x6	G,K,D	3-4
‡Avery.....	....	....	*	Own	4-4x5½	G,K,D	3
Avery.....	12-25	....	4	Own	2-6½x7	G,K,D	3-4
Avery.....	14-28	....	4	Own	4-4½	G,K,D	3-4
Avery.....	18-30	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7¾x8	G,K,D	8-10
Bates Mule..H	18-25	....	4	Mdlw	4-4½x5½	Gas.	3
Bates Mule..F	18-25	....	*2	Midw	4-4½x5½	Gas.	3
‡Bates MuleG	25-35	....	*2	Midw	4-4½x6	Gas.	..
Bear.....	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman...G	2-4	240	4	Own	1-3½x4½	Gas.	....
Best.....	30	....	*2	Own	4-4½x6½	G,K,D	4
Best.....	60	....	*2	Own	4-6½x8½	G,K,D	8-9
Boring.....	5-10	395	4	LeR.	4-3½x4½	G	..
Boring...1921	.....	1850	3	Wauk	4-4¾x5¾	GorK	2
**Bryan.....	15-30	....	4	Own	2-4 x5	K.	3
Capital.....	15-30	1000	2	Own	4-4¼x6	Gas.	3
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	3
Case.....	12-20	....	....	....	4-4½x5	....	2
Case.....	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case.....	22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case.....	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T35	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar .5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur.....	5-2½	345	2	N Way	2-4½x4½	GorK	1
Chicago.....40	40	2500	4	Own	4-4½x6	Gas.	4
Cletrac.....F	9-16	595	*2	Own	4-3¼x4½	G,K,D	2
Cletrac.....W	12-20	1345	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom,	4-4¾x6	Gas.	3
Depue.....A	20-30	2500	4	Buda	4-4½x6	Gas.	4
Dill.....D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dill.....R.W.	20	2980	4	Midw.	4-4½x6	Gas.	3
Do-it-All....A	3-6	495	..	Own	1-4½x5	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B.....AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol.....D	9-18	1525	4	Lyc.	4-3½x5	Gas.	2
Farm Horse.B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Farquhar.....	15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar.....	18-35	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar.....	25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch..4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	$ 395	4	Own	4-4x5	G,K	2
Franklin....G	18-30	4000	*2	Clim.	4-5 x6½	G or K	3-4
Franklin....C	18-30	3350	*3	Clim.	4-5 x6½	G or K	3-4
Franklin...G2	18-30	4350	2	Clim.	4-5 x6½	G or K	3-4
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt,..A	18-30	2150	4	Wauk.	4-4¾x6¾	G or K	4
Gray.....	20-36	1975	3	Wauk.	4-4½x6¼	Gas.	4
Gray.....	22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. Western St	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr..20	20	815	4	Own	2-5¼x6½	K.D.	2
Hart-Parr..30	30	1065	4	Own	2-6½x7	K.D.	3
‡Hart-Parr....	....	1695	4	Own	6½x7	K.D.	..
Heider.....D	9-16	870	4	Wauk	4-4¼x5¾	G,K	2
Heider.....C	12-20	995	4	Wauk	4-4½x6¾	G,K	3
Heider....Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4.	12-25	985	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4	15-30	1885	4	Midw.	4-4½x6	Gas	3
Illinois,...C	15-30	....	4	Clim.	4-5 x6½	G,K	4
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International.	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5¼x8	G,K,D	4
J-T.....N	25-40	3000	*2	Clim.	4-5x6½	G,K,D	3-4
¶Kinkade....	1½	190	1	Own	1-3 x3	Gas.	....
La Crosse.....	12-24	985	2	Own	2-6 x7	G,K	3
Lauson.....5	12-25	1295	4	Midw.	4-4½x5¼	Gas.	3
Lauson.....21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lauson Road	15-30	2000	4	Beav.	4-4¾x6	K	....
Leader.....B	12-18	985	4	Own	2-6 x6½	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn.....H4J	40-	4500	*	Cont.	4-4½x5½	Gas	4
Linn.....W	60	5000	*	Wauk	4-5 x6¼	Gas	6
Little Giant,.B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant,.A	26-35	3300	4	Own	4-5½x6	K	6
Lombard.1922	85-150	6950	*2	Wisc.	6-5½x6¾	Gas.	10
Lombard.1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2⅝x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Med.D	22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD	35-70	3850	4	Own	4-7¼x9	G or K	8-9
Mohawk .1922	8-16	650	2	Light	4-3½x4½	K or G	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch..	9-18	....	2	Own	4-3½x5	Gas.	2-3
‡Monarch....	20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Meter Macult.	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	425	4	Own	2-3¼x4	Gas.	1
Nichols-Shep.	20-42	2650	4	Own	8 x10	G or K	3-6
Nichols Shep.	25-50	3000	4	Own	9 x12	G or K	4-7
Nichols-Shep.	35-70	3850	4	Own	-10½x14	G or K	8-10
Nilson Senior..	20-40	1975	5	Wauk	4-5 x6¼	G,K	4
Oil Pull.....K	12-20	....	4	Own	2-6 x8	K,D	3
Oil Pull.....H	16-30	....	4	Own	2-7 x8½	K,D	4
Oil Pull ....G	20-40	....	4	Own	2-8 x10	K,D	5-6
Oil Pull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar ..K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Peoria.....L	12-25	1600	4	Clim.	4-5 x6½	G,K	3
Pioneer.....G	18-36	1750	4	Own	4-5½x6	G,K,D	4
Pioneer.....C	40-75	3550	4	Own	4-7 x8	Gas.	10
Plowman....A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable.....	10-20	800	4	Own	2-6 x7	Ker.	2
Rex.....	12-25	1600	4	Wauk	4-4½x5¾	G or K	3
Russell.....	12-24	1500	4	Own	4-4¼x5¾	G or K	2-3
Russell.....	15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson....M	....	445	4	Own	4-4 x5½	G,K	2
Sandusky,...J	10-20	1250	4	Own	4-4¼x5¼	G,K,D	2
Sandusky...E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
¶Shelby.....	1	150	3	B & S	1-2½x2½	G	..
Shelby.....D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby.....C	9-18	....	4	Wauk	4-3¾x5¼	G or K	2
Steady Pull..	12-21	1485	4	Own	4-4 x5	Gas.	3
Tioga.....3	18-32	....	4	Wisc.	4-4½x6	Gas.	3-4
Toro Cultivator	6	750	3	LeR.	4-3½x4½	Gas.	2
ToroTractor'22	6-10	495	3	LeR.	4-3½x4½	Gas.	2
Townsend....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend....	25-50	2500	2	Own	4-8½x10	Ker.	4-8
Traction Meter	40-50	....	4	....	8-3½x5	Gas.	4-5
Trayler....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundsar...10	25-40	3750	*2	Wauk	4-5 x6¼	G or K	4
Twin City....	12-20	1200	4	Own	4-4¼x6	G,K	3
Twin City....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City....	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle Sam C20	12-20	1295	4	Weid.	4-4 x5½	G	2-3
Uncle Sam B19	20-30	1985	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam D21	20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utiliter....501	2½-4	295	4	Own	1-3½x4½	G	1
Utiliter...501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	....	4	Own	4-4½x5¾	G,K	3
Waterloo....N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore 21-22	12-25	1185	4	Wauk	4-4 x5½	G,K	3
Whitney....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin...E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin...F	20-40	2050	4	Wauk	4-5 x6¼	G or K	4
Wisconsin...H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba....12-20	12-20	2400	*2	Wisc.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4¼x6	G,K,D	..
Yuba....20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba.....	25-40	4750	*2	Yuba	4-5½x7	D	..
Zelle.....	12-25	....	4	Buda	4-4¼x5½	G or K	3

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont.—Continental. Dom.—Domas Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type All others are wheel type. †Price includes plows. ¶Track Runner. ‡Industrial Tractor. ¶Garden Tractur. **Steam Tractor

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Specifications of Current Passenger Car Models

NAME AND MODEL	Engine Make	Cylinders Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Ambassador.....R	Cont..	6-3⅝x5¼	136	33x5	....	b4500	$4500	....	$6500
American.....D-66	H-S...	6-3½x5	127	33x4½	b1385	1785 b1850n	1850	....	2485
Anderson...Aluminum 6	Cont..	6-3⅛x4¼	114	32x4	....	1195	....	....	....
Anderson.....Series 40	Cont..	6-3¼x4½	120	33x4	1495	1495 b1595n	1595	$1995	1995
Apperson.....8-21-S	Own..	8-3¼x5	130	34x4½	....	2620	2645	3625	3695
Auburn.....6-51	Cont..	6-3⅜x4½	121	32x4	1575	1475	....	2275	2345
Auburn.....6-51	Cont..	6-3⅜x4½	121	32x4½	....	n1995	1545	....	....
Bay State.....	Cont..	6-3¼x4½	121	32x4	1800	1800	....	2400	2500
Biddle.....B1 & B5	Buda..	4-3¼x5⅛	121	32x4	2950	b2950	....	3950	3950
Brewster.....91	Own..	4-4 x5½	125	32x4½	5000	5000	....	....	7000
Buick..1922-34-5-6-7-38	Own..	4-3⅜x4¾	109	31x4	865	885	u 725	1175	1395 1325e
Buick....1922-41-4-5-47	Own..	6-3⅜x4½	118	33x4t	1175	1195	u975	1935e	1985
Buick.1922-48-9-50-4-55	Own..	6-3⅜x4½	124	34x4½	n1025v	n1675v	1435	1895	2195
Cadillac.....61	Own..	8-3½x5⅛	132	33x5	3100	3150	3150	b3875	4100
Case.....X	Cont..	6-3⅜x4½	122	32x4½	1750	1790	....	2550	2690
Case.....W	Cont..	6-3⅝x5¼	129	34x4½	....	2200	2250	2850	3250
Chalmers.....1922	Own..	6-3¼x4½	117	32x4	1185	1185	....	1595	2295
Chalmers.....1922	Own..	6-3¼x4½	122	32x4	....	....	1345	....	....
Chandler.....Six	Own..	6-3½x5	123	33x4	1495	b1495	1645	b1995	2295
Chevrolet.....Superior	Own..	4-3½x4	102	30x3½	510	525	u425	b840 k680	860
Chevrolet.....FB	Own..	4-3½x5¼	110	33x4	865	885	....	1325	1395
Cleveland.....41	Own..	6-3 x4½	112	32x4	1085	1095	n1260	1495	1585
Cole.....890	Nort..	8-3½x4½	127¼	33x5	2085	b2685n	2685	b3385	3685
Columbia.....De Luxe	Cont..	6-3⅜x4¼	115	32x4	1475	1475	b1475n	b1925	1995
Columbia.....Light Six	Cont..	6-3⅜x4¼	115	31x4	995	985	....	....	1395
Comet.....C-53	Cont..	6-3½x5¼	125	33x4½	....	1985	2085	....	2985
Courier.....	Own..	6-3½x4½	116	32x4	n1395 n1495n	1395	b1495n	2065	2165
Crawford.....22-6-60	Cont..	6-3⅝x5¼	122½	32x4	3000	3000	3000	....	4500
Crawford-Dagner...6-60	Cont..	6-3⅝x5¼	135	33x5	....	n3500	....	....	....
Daniels.....D-19	Own..	8-3½x5½	132	33x5	b4350	b4350	4350	5250	6000
Davis.....71	Cont..	6-3⅜x4¼	114	31x4	....	1295	....	....	....
Davis.....61-67	Cont..	6-3⅜x4½	120	32x4	1595	1595	b1695	2095	2195
Dixie Flyer.....H-S-70	H-S...	4-3½x5	112	32x4	1175	1175	b1295	1545	1595
Dodge Brothers.....	Own..	4-3⅞x4½	114	32x4	850	880	....	980h	1440 1195h
Dorris.....6-80	Own..	6-4 x5	132	33x5	....	b3900	3950	4985b	5750
Dort.....13-14	D-Ly..	4-3½x5	108	31x4	885	885	....	1265 1045k	1385 1095k
Driggs.....	Own..	4-2⅝x4½	104	30x3½	1275	1275	....	....	1975
Duesenberg...Straight 8	Own..	8-2½x5	134	33x5	6500	6500	6750	7800	7800
Du Pont.....A	Own..	4-3½x5½	124	32x4½	3000	3200	....	3800	4000
Durant.....A-22	Cont..	4-3⅜x4¼	109	31x4	n890	890	....	1335	1395
Durant.....B-22	Anst..	6-3¼x4½	123½	32x4½	1600	1650	....	2250	2400
Earl.....40	Own..	4-3 x5¼	112	32x4	1485	1095	950u	b1395	1795
Elcar.....K-4	Lyc...	4-3½x5	118	33x4	1095	1095	n1095	1345	....
Elcar.....7-R	Cont..	6-3¼x4½	118	33x4	1395	1395	n1395	2065	2165
Elgin.....K-1	Falls..	6-3⅛x4¼	118	33x4	1345	1295	b1345	1695	1695
Essex.....	Own..	4-3⅜x5	108½	32x4	....	1045	....	1145k	1395 1245k
Ford.....T	Own..	4-3⅜x4	100	30x3½	r319	s348	u285	580	645
Fox.....	Own..	6-3¼x5	132	32x4½	3900	3900	....	4900	4900
Franklin.....13-A	Own..	6-3½x4	115	32x4	1900	1950	u1750	2100 2750	2250 2850
Gardner.....T-R & C	Lyc...	4-3½x5	112	32x4	895	895	....	1095k	1345
Grant.....	Walk'r	6-3½x4½	110	32x4	1385	1385	....	1895	1945
Gray.....	Own..	4-3⅝x4	100	30x3½	....	490	....	....	760
H.C.S.....Series 3	Weid..	4-3⅝x5½	120	32x4½	2475	2475	....	3250	3475
Handley-Knight.....	Own..	4-4½x4½	125	32x4½	....	....	2650	3450	3450
Hanson.....30	Cont..	6-3½x4¼	114	31x4	....	995	....	....	....
Hanson Six.....60	Cont..	6-3⅜x4½	121	32x4	1595	1595	1795	b2475	2595
Hatfield.....A-42	H-S...	4-3½x5	115	32x4	....	1345	b1345	1950	1950
Haynes.....75	Own..	6-3½x5	132	34x4½	2395	b2395	2395	....	3395
Haynes.....55	Own..	6-3½x5	121	32x4½	1545 1895n	1495 1895n	....	2095 2195n	2395 2695n
Holmes.....Series 4	Own..	6-3½x4¼	126	34x4½	....	b2500	2500	b3300	3600
Hudson.....Super 6	Own..	6-3½x5	126	34x4½	....	b1525	1575	2570	2295 1625k
Huffman.....	Cont..	6-3⅜x4½	120	32x4	1395	1395	....	....	2295
Hupmobile.....Series R	Own..	4-3¼x5½	112	32x4	1150	1150	u1025	1635 1335k	1785
Jackson.....638	Cont..	6-3¼x4½	121	32x4½	....	1485	b1685	2985	2985
Jewett.....Six	Own..	6-3¼x5	112	31x4	n995	995	....	b1445	1455
Jordan.....AK	Own..	6-3⅞x4¾	120	32x4	1895	1795	....	2785	2785
Jordan.....	Own..	6-3⅞x4¾	124½	32x4	....	b2150n	....	....	....
Kelsey.....4	Grav..	4-3½x5	111	32x3½	....	995	....	....	1450
Kelsey.....6	Walk'r	6-3½x4½	118	32x4	....	1525	....	....	2175
Kenworthy.....8-90	Own..	8-3 x5¼	130	32x4½	5000	5000	5250	6000	6000
King.....K	Own..	8-3 x5	120	32x4½	1795	1795	b1795	2400	2550
Kissel.....45	Own..	6-3⅞x5½	124	32x4½	n2385	1895	2385	b2975	3075
Kline Kar.....5-55-K.	Cont..	6-3⅜x4½	121	33x4	1690	1690	1690	2750	2890
LaFayette.....	Own..	8-3½x5¼	132	33x5	3985	b4090	4090	5500	5500
Leach.....90	Own..	6-3¼x5¼	134	32x4½	5500	5500	5500	5500	5500
Lexington.....23	Anst..	6-3¼x4½	123	32x4½	1695	1695 2045n	1795	b2345	2545
Liberty.....13-D	Own..	6-3½x5	117	32x4	1575	1395	1575n	2085 1695k	2245

NAME AND MODEL	Engine Make	Cylinders Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Lincoln.....	Own..	8-3⅜x5	136	33x5	3800	b3800	$3800	$4400	$4700
Locomobile.....43	Own..	6-4½x5½	142	35x5	....	b7600	7600	10500	11000
Marmon.....34	Own..	6-3¾x5⅛	136	32x4½	3385	b3185	3185	3965	4385
Maxwell.....	Own..	4-3⅝x4½	109	31x4	885	885	....	1235	1335
McFarlan.....1922	Own..	6-4½x6	140	33x5	6300	b6300	6300	7500	7500
Mercer.....Series 5	Own..	4-3¾x6¾	132	32x4½	3050	b3050	c3950	4850	5250
Merit.....	Cont..	6-3¼x4½	119	32x4	1395	1895	....	....	....
Mitchell.....F-50	Own..	6-3½x5	120	32x4	a1490	1590	b1850	b2050	2275
Mitchell.....F-50	Own..	6-3½x5	127	32x4½	....	....	1690	....	....
Monroe.....1922-S-9	Own..	4-3¼x4½	115	32x3½	950	950	....	....	....
Moon.....6-40	Cont..	6-3½x4¾	115	31x4	....	1295	....	....	1695
Moon.....6-58	Cont..	6-3⅜x4½	128	33x4½	1765	1785	1765	2785	2785
Nash.....591-96-97	Own..	6-3¼xo	121	33x4	1210	1240	b1395n	....	2040
Nash.....692-94-95	Own..	6-3¼x5	127	34x4½	....	....	1390	b1890	2190
Nash Four.....41-4	Own..	4-3⅜x5	112	33x4	915	935	....	a1385 1195k	1545 1275k
National.....BB	Own..	6-3½x5¼	130	32x4½	a2475	b2475	2375	b3725	3825
Noma.....3C	Cont..	6-3¼x4½	128	32x4½	2500	b2500	c2600	....	3500
Noma.....1D	Bea...	6-3½x5½	128	32x4½	3000	b3100	c3200	....	5500
Norwalk.....430-KS	Lyc...	4-3½x5	116	32x3½	....	1035	....	....	....
Oakland.....6-44	Own..	6-2½x4¾	115	32x4	975	905 u705	b1165n	b1445 1185k	1545
Ogren.....6 T D Luxe	Cont..	6-3⅝x5¼	134	33x5		b3750	3750	3850	4500	4800
Oldsmobile.....43 A	Own..	4-3½x5¼	115	32x4	1095	1035 1305	b1225n	1595	1745 1425
Oldsmobile.....46	Own..	8-2⅞x4¾	122	33x4½	b1735	c1550	1735	....	2635
Oldsmobile.....47	Own..	8-2⅞x4½	115	32x4	1495	1495	b1725n	1995	2145
Overland.....4	Own..	4-3⅜x4	100	30x3½	525	525	425u	795	875
Packard.....Single-Six	Own..	6-3⅜x5	126	33x4½	2485	2485	u2250	3175	3275
Packard.....Single-Six	Own..	6-3⅜x5	133	33x4½	....	u2350	2685	....	3525
Packard.....Twin-Six	Own..	12-3 x5	136	35x5	3850	3850	3850	5240	5400
Paige.....6-44	Own..	6-3½x5	119	32x4	1465	1465	u1290	1995	2245
Paige.....6-66	Cont..	6-3¾x5	131	33x4½	a2495	n2245	2195	3100	3155
Paterson.....22-6-52	Cont..	6-3⅜x4½	120	32x4½	....	1390	1425	2395	2395
Peerless.....56-S-7	Own..	8-3¼x5	128	33x5	....	b2990	2900	b3400	3900
Pierce-Arrow.....	Own..	6-4 x5½	138	33x5	5250	b5250	5250	6800	7000
Pilot.....6-50	H-S...	6-3½x5	126	32x4½	2050	2000	2050	2950	3000
Premier.....6-D	Own..	6-3⅜x5½	126¾	33x5	3150	b3100	3250	4300	5100
Premocar.....6-40-A	Falls..	6-3½x4¼	117	32x4	1095	1095	....	1750	1825
R & V Knight.....R	Own..	4-3¾x5	116	32x4	....	1665	....	2365	2475
R & V Knight.....J	Own..	6-3½x4½	127	32x4½	2475	b2475	2475	3015	3105
Reo Series.....T5 & U5	Own..	6-3⅞x5	120	33x4	1595	n1645	1485	b2355	2435
ReVere.....C	Dues..	4-4¼x6	131	32x4½	3200	3200	3200	....	4000
Rickenbacker.....A	Own..	6-3½x4¾	117	32x4	....	1485	....	1685	1985
Roamer.....6-54-E	Cont..	6-3½x5¼	128	32x4½	2685	b2485 b2750	2685	a3285 3585	3585 3950
Roamer.....4-75-E	Dues..	4-4¼x6	128	32x4½	3785	b3485	b3650n	....	b4650
Rolls-Royce.....	Own..	6-4½x4¾	143½	33x5	....	10,900	....	....	....
Saxon.....125	Own..	4-3½x5	112	32x4	1195	1195	....	1795	1795
Sayers Six.....DP	Cont..	6-3¼x4½	118	33x4	1945	1945	....	2945	2945
Seneca.....L-2 & O-2	Lyc...	4-3½x5	108	30x3½	875	875	....	....	....
Seneca.....59 & 51	Lyc...	4-3½x5	112	31x4	1095	1095	....	....	....
Sperling.....A	Supr..	4-3⅜x5	114	32x4	900	980	....	1685	1685
Standard.....93	Own..	8-3¼x5	127	34x4½	2150	b2500	2500	2750	3200
Stanley.....	Own..	2-4 x5	130	32x4½	2700	2700	2700	3775	3950
Stanwood Six.....	Cont..	6-3¼x4½	118	33x4	1765	1765	....	2750	....
Star.....	Cont..	4-3½x4¼	102	30x3½	r319	s348	u285	580	645
Stearns-Knight....S&L4	Own..	4-3¾x5⅝	125	34x4½	2250	2250	2450	3150	3450
Stearns-Knight.....6	Own..	6-3⅝x5	130	34x4½	2700	2700	2850	3350	3700
Stephens.....90	Own..	6-3¼x4½	122	33x4½	1575	b1595	c1625	2450	2550
Stevens-Duryea.....E	Own..	6-4¼x5½	138	35x5	7250	b6900	6800	u5600	b8900
Studebaker....Light Six	Own..	6-3¼x4½	112	32x4	975	975	u785	1225	1550
Studebaker..Special Six	Own..	6-3¼x5	119	32x4	1250	1275	b1275	1875	2050
Studebaker.....Big Six	Own..	6-3⅞x5	126	33x4½	u1300	1650	n1785	2275	2475
Stutz.....	Own..	4-4⅜x6	130	32x4½	2450 2760n	b2790	c2640	3490	4450
Templar.....A-445	Own..	4-3⅜x5½	118	32x4	2025	2125	b2175	2650	2785
Tulsa.....E-1-2-3	H-S...	4-3½x5	117	33x4	1175	1175	....	....	....
Velie.....58	Own..	6-3½x4¼	115	32x4	1275	1275	....	1795	1795
Westcott.....C-48	Cont..	6-3½x5¼	125	32x4½	....	....	1890	....	2890
Westcott.....A-44	Cont..	6-3¼x4½	120	32x4	....	1690	n1890	....	2690
Wills Sainte Claire. A-68	Own..	8-3¼x4	121	32x4½	2475	2475	....	3275	3475
Willys-Knight.....20	Own..	4-3⅝x4½	118	32x4	1235 1135u	1235	1435	1795	1950 2195
Winton.....40	Own..	6-3¾x5¼	132	35x5	3400	n3600	3400	b4450	4550

a—3-passenger. b—4-passenger. c—6-passenger. n—Sport. h—All Metal Type. k—Soft Top Type. u—Chassis Price. r—Price without starter and demountable rims. Price with starter and demountable rims $414. s—Price without starter and demountable rims. Price with starter and demountable rims $443. t—Model 47—34x4½ Tires. v—Tire Sizes 32x4½. e—Touring Sedan.

Engine Make: Anst—Ansted. Bea—Beaver. Cont—Continental. Curt—Curtis. D.Ly—Dort Lycoming. G-B—Grey Beal. H-S—Herschell-Spillman. Lyc—Lycoming. Nort—Northway. Roch—Rochester. Rut—Rutenberg. Supr—Supreme. Weid—Weidely. Wisc—Wisconsin.

The following price changes have been announced since the above tables were compiled:

Standard, 4-passenger $2,395, 7-passenger $2,395; Davis, 71 coupe $1,795, sedan $1,795.

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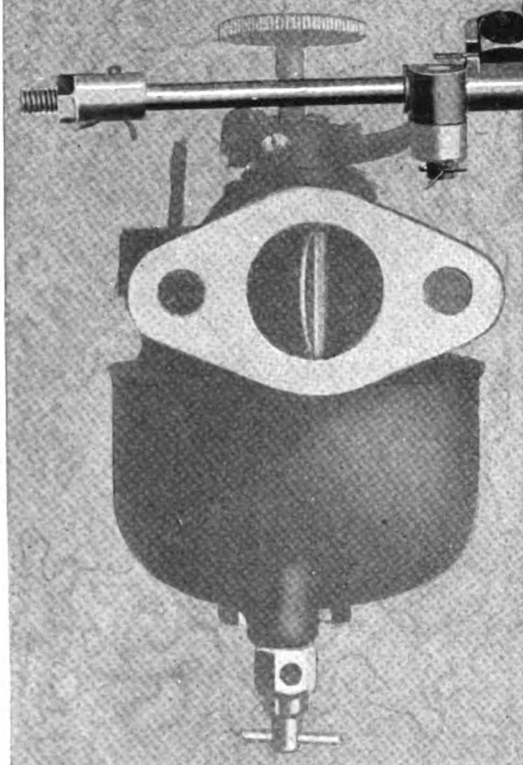
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There are very few parts to the Williams Accelerator, and these are designed for strength and accuracy of operation. The slide, to which the carburetor is attached, is made of high-grade babbitt with a long bearing surface, which assures long service. A few drops of oil, placed occasionally at a point shown by the arrow, is all that is necessary to keep the entire mechanism clean and perfectly lubricated.

* * * *

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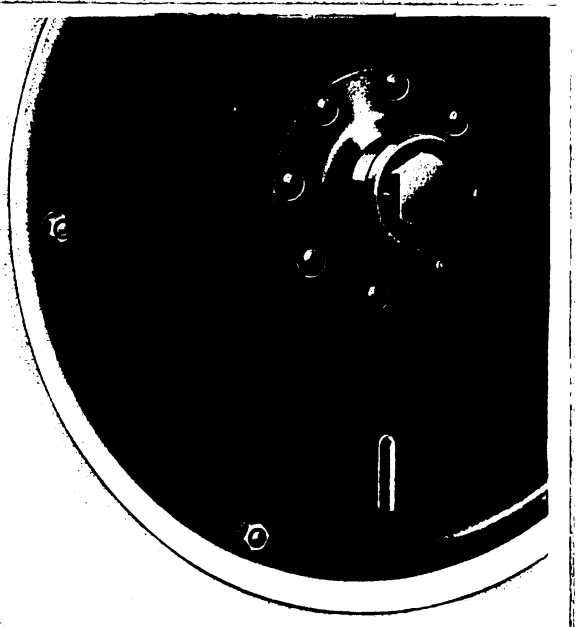
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Number 1

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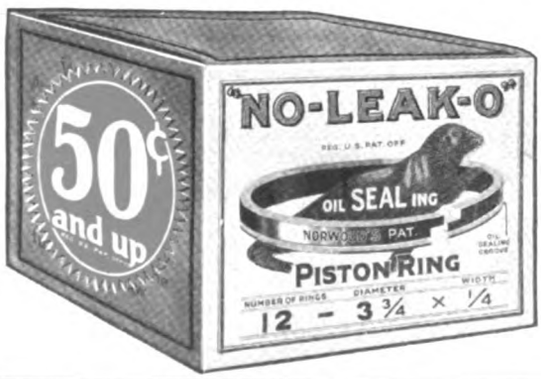
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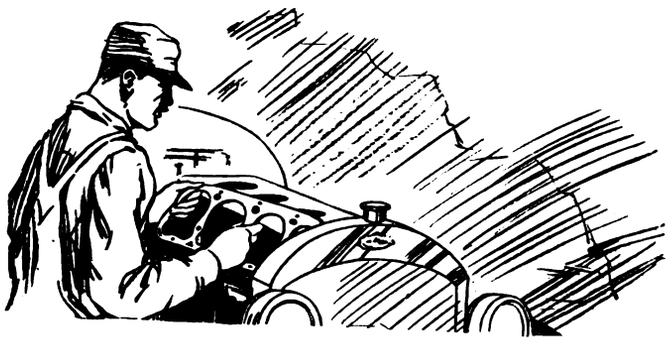
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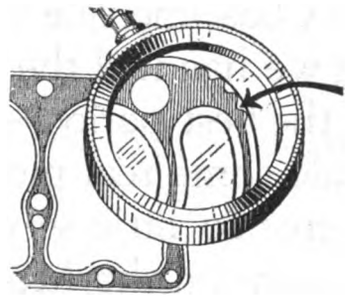
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This magnified view of a Never-Leak Gasket corner indicates plainly why Never-Leak is strongest where others are weakest. The advantages of a bound outer edge with scalloped corners are quickly evident to the experienced mechanic.



This new Never-Leak design increases the strength of the gasket more than 100 per cent over the old type open edge cylinder head gasket. It prolongs a good repair job — and keeps the customer sold. Write for details.

A Leaky Gasket May Spoil a Good Job

The mechanical work on an overhauling job may be well done and the whole job be knocked because of a leaky gasket.

No "pep" and loss of power are facts to a customer—the reason he may not know.

Never-Leak Gaskets can be used again and again, consequently they are the cheapest in the end.

Why take the chance of losing a good customer through a poor gasket.

A sample gasket for any car, truck or tractor sent upon request, either direct or through your jobber.

Never-Leak Gaskets are listed, pictured and priced in our catalogue—copy sent upon request.

The Fitzgerald Manufacturing Co.

TORRINGTON, CONN.



NEVER-LEAK

Cylinder Head Gaskets

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In Jamaica, N. Y.—

"We formerly handled no less than five different makes of automobiles—all standard makes—and can honestly say that we never knew what real business was until we took on the Olds line one year ago last January. And this considering we handled the other cars during what was conceded to be the best period—1918 to 1920. One reason that we have made some real money is the fact that it has been necessary to give so little service on Oldsmobile cars in general—for instance on the Model 47 it is not worth while mentioning. Long live the Oldsmobile!" —SCHMIDT & KASTNER MOTOR CO.

R. Schmidt

Can you say the same thing about the line you handle? Do you feel that you've made a friend with every car you sell?

And do your customers stay sold without a lot of gratis service? Is your present connection a happy one? Are you proud of it?

It's a good thing occasionally to take an inventory of your contract just as you take a periodic inventory of your parts department. If the count isn't satisfactory it's time to look around.

Be an Oldsmobile dealer and you have a complete line of famous cars with a wide price range, with one factory connection, one deposit, one parts account, one advertising message, and with the privilege of using the strong General Motors financing plan which has no equal in the help and cooperation given the dealer.

If you want this kind of a factory contract, communicate with us at once—don't hesitate because you think the territory may not be open. We may have plans which will give you just the opening you want.

The first step is yours—write, wire, or phone.

OLDS MOTOR WORKS, LANSING, MICHIGAN
Division of General Motors Corporation



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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXIII New York, U. S. A., Wednesday, October 4, 1922 No. 1

What Are You Doing to Cultivate Your Best Salesman, the Satisfied Owner?



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Making Satisfied Customers an Active Selling Force

High Development of Preventive Service Idea in Western Dealer Organization Contains Suggestions for Every Man in the Business of Selling Cars

"WHEREVER there is one of our cars in Northern California there is a candidate for another of our cars. Wherever in Northern California there is a motorist who bought his car from us there is an active salesman for the cars we sell."

This is the statement of R. B. Alexander, sales manager for the H. O. Harrison Co., 1600 Van Ness Avenue, Hudson and Essex distributor for San Francisco territory. When he made it he was sitting at his desk, not in a lofty office up in the three-story building, but right down next to the ground, among the salesmen, close to the repair division and within arm's reach of the cars in the salesroom. And he is making good on the statement, making good by means of progressive methods in service, with 50 capable service men helping him make good, and piling up car sales.

"We sell automobiles, we sell repairs, we sell some service, but the mainspring that keeps all our customers contented, makes them successful drivers, urges them to send us prospects, impels them to buy the same car when new models come out, and builds up our repair business, is what we call 'preventive service.' That is to say, the service which follows the owner home after he has paid us for his car, keeps track of him, teaches him how to get the most out of his car, how to drive it, and how to keep the car in the best condition at the lowest maintenance cost."

The H. O. Harrison Co. distributes and sells Hudson and Essex cars. B. M. Taylor, assistant general manager of the company, is responsible for the preventive service idea and for its installation in the organization.

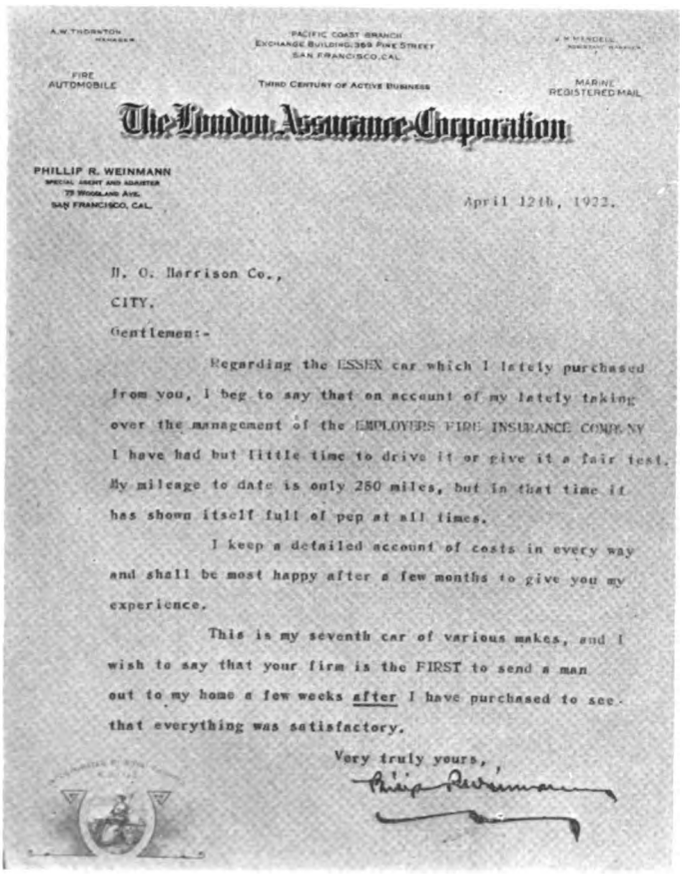
This is a story of how the service is given and the results it accomplishes in increased business for the firm and maximum satisfaction for the owner.

The Harrison company keeps two men, both expert automotive engineers, both men of good appearance, as capable of talking with a bank president as with an automobile mechanic. Each travels in one of the cars sold by the firm, and each keeps up his own car, so that he knows constantly all the inside secrets of that car. Each can be put on the floor as a salesman, and each has made good there. Each can go into a repair shop, take a Hudson or an Essex to pieces, put it together again, and make it run.

As soon as a car is sold, a complete record is made of the deal and of the buyer, and filed in the "Preventive Service" file. A day or two after the purchaser has driven away with the car, one of these service men calls on him, or her, as the case may be. If possible, this service man takes a ride, with the purchaser as driver, in the latter's car. If the customer is not a skilled driver, he is taught the things about driving that he does not know—gear shifts, controls, handling the car in traffic and on turns, all the troublesome little details that beset the driver on a highway filled with thousands of other cars and other drivers.

If the car is not working exactly as it should, the preventive service man knows it. He gets into the inside of the machinery at once, straightens out all the tangles, irons out the kinks, and demonstrates to the owner just how to keep the car in order. Time is not

After Your Customer Buys His Car—



PACIFIC COAST BRANCH
EXCHANGE BUILDING, 369 PINE STREET
SAN FRANCISCO, CAL.

FIRE AUTOMOBILE — Third Century of Active Business — MARINE REGISTERED MAIL

The London Assurance Corporation

PHILLIP R. WEINMANN
SPECIAL AGENT AND ADJUSTER
79 WOODLAND AVE.
SAN FRANCISCO, CAL.

April 12th, 1922.

H. O. Harrison Co.,
CITY.
Gentlemen:-

Regarding the ESSEX car which I lately purchased from you, I beg to say that on account of my lately taking over the management of the EMPLOYERS FIRE INSURANCE COMPANY I have had but little time to drive it or give it a fair test. My mileage to date is only 280 miles, but in that time it has shown itself full of pep at all times.

I keep a detailed account of costs in every way and shall be most happy after a few months to give you my experience.

This is my seventh car of various makes, and I wish to say that your firm is the FIRST to send a man out to my home a few weeks after I have purchased to see that everything was satisfactory.

Very truly yours,
Phil R. Weinmann

The last paragraph of the letter reproduced above shows what one owner thinks of a firm that shows interest in him AFTER the purchase. The story beginning on this page tells how a western dealer organization builds business on the basis of cultivating and satisfying the customer. To be sure, this is a large dealer organization, but what is there in the plan, generally, that cannot be carried out by any dealer on a scale fitting the resources of his organization? Read the story for suggestions for your business

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an object to this service man; if it requires an hour to teach the driver what he should know, or if it requires a half day, or even a whole day, the time is taken to do it, and time, training and effort are made entirely subservient to leaving the purchaser in that frame of mind in which he is glad that he bought that Hudson or that Essex, and no other car.

Two weeks later the service man calls again on the same customer. If there are any complaints, if there is the slightest dissatisfaction, if the driver is not clear on any point in the operation of his car, the service man gives him another lesson, solves his problems, makes him feel that the giving of his check for the car was merely an incident in the life of that automobile, not the breaking point of relations with the H. O. Harrison Co., and by no means the end of the dealer's interest in the customer. Thereafter, at least once a month, frequently more often than that, the service man calls on the car owner. If there is anything wrong with the car, if there is any overhauling or repair needed, the service man advises just what should be done, how much it will cost, and arranges the time for the making of the repairs in the repair plant at the headquarters of the Harrison company. Often the owner believes his car needs overhauling or repairing when some minor adjustment, made on the spot by this service man, will remedy the trouble.

Satisfactory Car, Satisfied Owner

"The result of this," says Alexander, "is longer life for every car we sell, and better care from the owner for his car. You would think that this would mean fewer sales for us; on the contrary, it has greatly increased our sales, for every man or woman who has bought a car from us, and received our preventive service, tells every other man, woman and child about it. We get more prospects from this service than from any other branch of our organization, and almost without exception the man or woman who has had this service comes to us for another car when he or she feels that the old one should be replaced with a new one.

Gets Repair Business

"Receiving such free service, which unquestionably cuts down the repair bills and maintenance costs for the individual motorist, brings that motorist to our repairshop when his car needs attention. Our repair business has been tremendously increased by this preventive service, until to-day we have more than 50 men in the service and repair department alone. Of course we keep road repair outfits and service trucks, for whose work we make the regular charge, but these have nothing to do with the free preventive service, unless they are called out by customers to tow in cars, to make roadside repairs, or to make adjustments in the home garage."

In connection with these repairs and service jobs, as soon as any work for which the charge is $5 or more is completed, a personal letter is sent to the customer, a letter written on the letter head of the company, and signed by B. M. Taylor, the assistant general manager, who has direct charge of the service department. This letter reads as follows:

Mr. B. Goodfriend,
680 Sutter St.,
San Francisco, Cal.
Dear Sir:

How can we improve our service?

That is a question we are continually asking ourselves, as it is our hope to render the very best service possible.

Just having taken your car from our shop, after having some repair work performed, you may be in a position to offer some constructive criticism that will help us to improve our work or methods.

Will you kindly answer the questions asked on the reverse side of the letter and mail it to us?

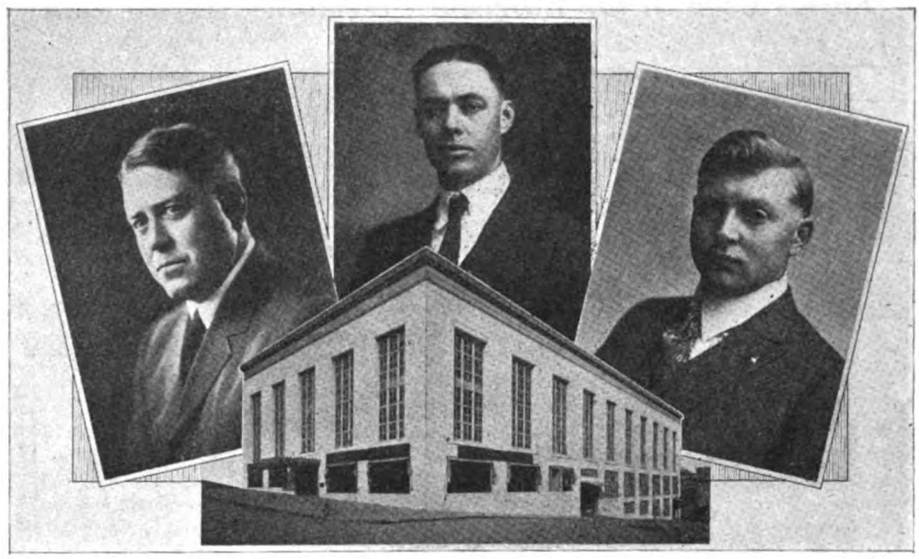
Thanking you for the consideration given us, we are

Yours very truly,
H. O. HARRISON CO.,
(Signed) B. M. Taylor,
Ass't General Manager.

On the reverse side of the letter, as mentioned, are printed the following questions:

Did you receive prompt and courteous attention? .....
Was the car ready when promised? .....
Have you any criticism to make in regard to the work performed?
.....
.....
.....
Have you any suggestions to make?

Heads and Headquarters of Western Firm That Makes Satisfied Customers the Foundation of Sales



Left, H. O. Harrison, president and general manager; center, R. L. Barrett, superintendent of service; right, B. M. Taylor, assistant general manager of the H. O. Harrison Co., Hudson and Essex distributor in San Francisco. The building is headquarters for sales and service

The replies to these questions—and it is worth noting that almost every customer takes the time to fill out and return the questionnaire—have furnished the company with suggestions which have resulted in material improvements in the service and repair department. They also have been of benefit to the salesmen and service men, as individuals, through showing them various methods by which they can increase the pleasant impression left with the motorist. The Harrison company seems to realize that the future of the automotive industry depends on the buyer more than it does on either the seller or the manufacturer, and their devotion of time, energy and ability to the pleasing of the customer has had material cash results.

The preventive service men, to get back to them after this brief digression, make daily reports on a blank form. These reports are filed, forming a continuous history, not only of the car sold, but of the owner's attitude toward the purchase, and of the work of the service man as well. A second report is made out by the service man after his call at the end of two weeks of ownership of the car by the customer. These reports are filed consecutively, and likewise show at all times a record of every car sold

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by the company. Out of these files come scores of prospects. As the years roll on, the owner of a Hudson or Essex eventually decides that the time is ripe for him to have a new car. The sales manager, watching his files, has a chance to learn when the psychological moment to make a renewal sale arrives.

Out goes the service man to the owner's home, or to his office, on his regular preventive service call, but this time he "feels out" the owner as to the latter's attitude toward a new car. If he finds him in a frame of mind to buy, he discusses the new models with him and eventually closes the sale, or reports to the sales manager and a salesman is sent out to make the deal. The number of new cars sold in this manner, of course, will be small, until the free preventive service has been in operation for a year or two, but already it is producing results.

A steadily increasing number of sales of new cars are being made as the result of this service, through letters written to the sales manager by the contented customer who has been made a better driver and been more completely equipped to care for his car by this service. Scores of these owners, hearing of a man or woman who wishes either a first car or to replace an old car, write or phone to the company, BECAUSE THEY HAVE RECEIVED REAL SERVICE AND INSTRUCTION FREE OF CHARGE from the company from which they bought their own car.

Every employee of the company is drafted to assist this preventive service in this manner:

Complaint reports, shown in an accompanying illustration, are furnished to every employee, no matter what his or her position with the firm. Every time that employee sees or hears of any dissatisfaction on the part of any Hudson or Essex owner, or meets any such owner who is not getting the best out of his or her car, a detailed report is made to the home office. That report is IMMEDIATELY investigated. A preventive service man is sent to the owner, and the department—sales, service or repair—is immediately called on to set that owner right, to restore his or her satisfaction with whatever deal he or she may have had with the company, and to see that the owner is left smiling, with the car in such condition that it will do everything in its power at the owner's command.

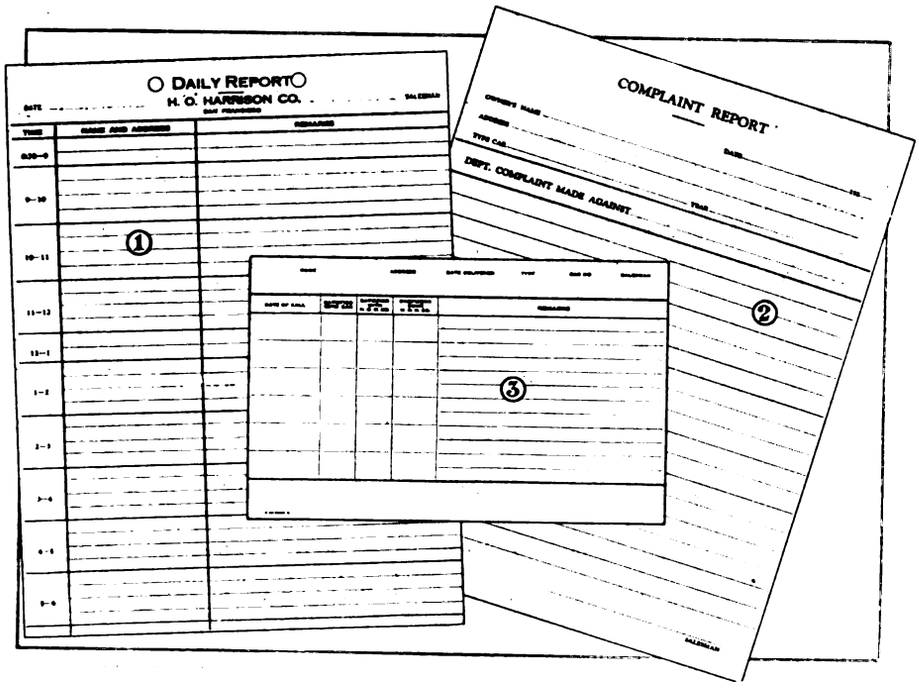
Says Alexander: "We are daily increasing our facilities for keeping in constant touch with the owner of every car purchased from us, *as long as he owns and drives that car.* We are as much interested in the three-year-old Hudson and Essex as is the owner. We are devoting a large part of our energies to letting the owner know this. We are making every effort to learn:

"1.—*How every owner of a car bought from us feels toward the car and toward us.*

"2.—*What every owner of a car bought from us needs to make his driving more enjoyable, his car more essential and his maintenance costs low.*

"3.—*How they like the service we are giving, and what we can do to improve that service.*

Forms Used in the Harrison Preventive Service Plan



1—Form for report of preventive service man who called on the car buyer two weeks after delivery of car. These reports, which are filed, become part of the record which is kept alive on every car sold by this San Francisco dealer. 2—Complaint form which is carried by every employee of the Harrison firm, who fills one out on discovering dissatisfaction on the part of any owner. Turning in of such a report results in the sending of a service man to see the owner. 3—Daily report card of preventive service men, who are constantly calling on owners of cars the Harrison company sells

Automobile Doctors

"Our 'preventive service' men are literally automobile doctors. They prescribe for cars and then report to the home office. Their object is not only to report dissatisfaction, expressed or implied, but to prevent the owners from becoming dissatisfied, to eliminate the occasion for complaints. When an owner is reported as dissatisfied with any feature of his dealings with us, or with the operation of his car after he gets it, we put a red flag on that report, and we NEVER TAKE IT OFF UNTIL THE CUSTOMER IS SATISFIED. If one of our preventive service men reports anything wrong with a car bought from us, we follow up the case, even when the owner does not bring in the car; we send experts to see the car and to talk with the owner, and many, many times their words of advice have averted a trip to the repairshop. We send out instructors to teach owners how to drive, and we are daily putting better drivers on the roads of California as a result of this service.

Makes Better Motorists

"Showing an interest in the customer after he or she gets the car not only makes him a better motorist, assists the movement of traffic and gives Hudson and Essex owners more pleasure out of their cars, but prevents him from becoming dissatisfied with us or with the automobile. From the commercial side, this system builds up a fine set of prospects and increases our repair work. But the best and most worth while result of all is the establishment in the customer's mind of the idea that this firm is not through with him or with his car when it gets his money."

Thanking the Buyer

MOST dealers write a letter after the sale of a car to show the purchaser their interest does not stop with the sale of the car. Here is one that is used by Frank P. Allen of the Wills Sainte Claire Co. of New England:

"This is to thank you for purchasing the Wills Sainte Claire which we have just had the pleasure of delivering to you.

"Believing that he profits most who serves best, it is our earnest desire to be informed at all times just how your car is running and how it pleases you.

"Your motor car problems are going to be ours from now on; and we want you to know that every resource we possess is at your command to the end that you may derive the greatest measure of satisfaction and enjoyment from the Wills Sainte Claire."

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Making Used Cars Pay a Profit and Sell New Ones

How the Parts and Service Departments, as Well as Sales, Benefit by Trading—And How Making 'em Look Right Counts

By JOE TROUT
General Manager, The Frank Hatfield Co., Indianapolis

NEARLY everybody in the automobile business admits that the rapid turnover of used cars stimulates new car business. With the maxim as stated, it is not difficult to decide that a conscientious effort should be made by every dealer to move used cars.

This moving of used cars is a science in itself and should not be confused with the new car business. In any plant where it is possible the used cars should be sold from one section of the building and the new cars from the regular sales rooms.

OURS is a Ford agency. When business slumped some months ago we came to the conclusion that one way to stimulate the sale of new cars was to rearrange our ideas about the used car.

When the idea strikes any of us that we want something we haven't got, we are in a buying mood. When we buy, we buy the particular thing we buy because of its appearance. There are a few exceptions to this, but mighty few. *Pleasing the eye is ninety-nine per cent of the battle of salesmanship.* Just for example, the other day I went down to the salesrooms of the local gas company. A woman came in and was in the market for a stove. The salesman showed the exceptional qualities of one range—its oven control and everything. But she bought one of another make because it was white enameled all over. There is no doubt she turned down the better stove. *It did not strike the eye.*

Buyers Consider Appearance

This thing of buying from the appearance standpoint is particularly true of women with the exception of when they choose a husband. *In our merchandising of used cars, we try first to appeal to the eye. Every car we send out has a new paint job.* Say it costs us twenty dollars or more to paint a job properly—the money is well invested. The job strikes the eye.

Only one man in our business makes an appraisal. I am he. The one man appraisal, we believe, is essential. In the appraisal, the condition of the transmission and the motor are the main points. I don't so much go into what the car is worth as it stands, but try to estimate accurately just how much it will cost to repaint it, replace worn parts, make the repairs needed and then estimate what the car will bring when it is put in shape. When this estimate has been made, I subtract the estimated cost of putting the car in shape from what I expect to get for it and make the offer.

$10 Profit per Car

We do not expect any great percentage of profit from the sale of used cars. When I make an appraisal, it is final—just like the umpire's decision. We feel we cannot sacrifice our legitimate profit on the sale of new cars to carry the losses incurred through paying too much for used cars. Nor do we lose sight of the fact that every used car purchase means a new car sale. It is because of this latter thought that we do not attempt to profit to any great extent through the sale of used cars. We figure on about $10 real profit from the sale of each used car.

When the appraisal has been made, the car is sent to the used car repair department. The superintendent of the department goes over it and lists what is needed. The repairs are made and the car is sent to the paint shop. If it is necessary to pull the motor, as is sometimes the case, the car is sent to the paint shop as soon as the motor has been taken out. In figuring the cost of repairs, we add to this cost the proportionate share of that car in the floor space overhead which is allotted the used car department. Naturally, to the purchase price of the car we add this fixed charge. Each piece of repair is listed, each minute of the mechanic's time is listed, every part is listed, the cost of painting is added and the car is ready for sale. To the total cost we add $10. We have made a profit on the repair work and on new parts and on the paint job. I don't know what the ten dollars represents unless it is my fee for appraisal. That seems like a small profit, but it moves used cars and incidentally new cars and amounts to about $300 a month clear profit.

You can build up more good-will for your company through the used car department than in any other way. First, if the department is handled correctly, you can satisfy the man from whom you buy it in the first place. Then the person to whom you sell it will be a friend of yours for life if you deal with him honestly. He is the very person you want to reach early. Here he is, without sufficient money to buy a new car, yet with the desire to have one of some sort. He eventually, as fortune smiles on him, will be in the market for a new car. Then, to whom do you suppose he will come?

Don't Force Trades

One should not be too anxious to get hold of good used cars. To illustrate: Some time ago one of our new car customers came in. He had had a sedan for a year. He asked concerning trading it in on a new car. I asked him what was the matter with his old car. He said nothing. Then I explained that until something radically wrong was the matter with it, to run it. His depreciation the next year will be slight and his repairs should not equal the depreciation. He saw the light and went away calling us blessed. It would not have taken much salesmanship to have sold him a new car, but while it may have been the business thing to do, it was not exactly the ethical thing to do.

When the repairs begin to amount up, then is the time to trade in the old car. We can make the repairs and repaint the car cheaper than the customer can, and he has a new car with none of these troubles. It is my firm conviction that the used car department can be made a business-getter for the new car department and for the parts and service department, if every used car is put in shape before it is sold and if it is painted and makes a good appearance.

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Make 'em Wear Their Trucks Out and Avoid Trade

A Dealer Who Does It Sidesteps Used Truck Losses and Gets Profitable Repair Business, All in One Motion—Some Thoughts on Truck Merchandising

By A MAN WHO KNOWS TRUCK DEALERS

I KNOW a dealer in trucks who when he found business poor during the depression kept his head above water by pushing service sales. Now it's his best winter plan.

He sold one of the best and most favorably known trucks on the market and was one of the last to feel the depression and the first to recover.

"I decided five years ago when I entered the truck field," said he, "that the cost of selling trucks would probably be higher than cars. In the beginning my salesmen asked better commissions, and I agreed with them that they deserved extra compensation for doing the pioneer work.

"I saw a big future but I realized that unless I took on a good line I might better keep away from trucks because it took the easy repeat orders to pay the initial expense of introduction and if I took hold of a truck that was going to fall down, the repeat business certainly could not be obtained."

I know this dealer by his first name. He is one of those semi-self-made men who has a backbone instead of a wishbone and he knows every day where he stands financially.

He goes to his banker with his monthly statement regularly and because he kept a liberal balance in the bank in good times, he was able to make a good-size touch frequently during the pinch.

My friend is a merchant; I have longed to see him in action in a department store. I'll bet that boy would have the ladies standing in such a long line to get into his store before it opened in the morning that it would make the advance seat sale for the World Series look like seven days of guaranteed rainy weather ahead.

He saw the trade-in feature looming up in the truck field the same as it did with passenger cars. He was also selling cars and had been through the mill.

He figured that some of those repeat orders would be straight sales in building up fleets at first but in four or five years they would start coming back on trades.

Where to find an outlet for used trucks was a problem. It was just about the time when the depression hit him the hardest that he was ready to launch his plan to get the best of the used truck situation and he killed two birds with one stone.

He decided that he could save his customer money if he could talk him into wearing the truck completely out and save himself the bother of handling the trade.

"I decided to do business on but one basis or not sell trucks," he explained. "If the truck is beyond repair I allow only scale prices at the junk yard. That's all it's worth to me. If it's worth more to a competitor I can't stop him from taking it in. I am all through attending personally conducted auction sales. If it is worth repairing I show the owner that it is just as cheap for him to use it after it is repaired as anyone else. Nine times out of ten, my argument sticks.

"Then when it wears out we can deal quickly on a brand new truck. We are just beginning to have a few of the first we sold get beyond the point where it pays to repair them.

"The owners already have them charged off on their books to depreciation and in several cases they have credited them back with appreciation and they know I know it. I try to educate them all to keep a cost system. Those who do are the easiest customers to deal with. And I am thinking of putting one man out to do nothing else but install cost systems for my customers free of charge. It will reduce the sales resistance when a trade comes up and I will have the figures to help me solicit new customers.

"I was getting all set to have my boys call on the owners and solicit their repair business. I figured it would be easier to induce them to get the old truck repaired before they came to us for an allowance on a trade-in. Then they would be prone to take it as an evasion while now they would take it as a straight solicitation for repair business.

"That was my object but coming just as it did during my worst few months of the depression from a sales standpoint, it kept my shop busy and I showed a slight profit."

My friend now banks on this scheme for keeping his winter business in balance.

Truck dealers find that one reason why owners would rather trade than have the old truck repaired is that they don't want to be without a truck.

So my friend has a truck he rents them.

The average dealer can enumerate a dozen reasons why renting is a bad piece of business but they are all bridges they cross before they get to

This Story Suggests—

MAKING a calendar to show the seasons when different businesses are booming—and will buy trucks.

Getting winter business and year round business for the repair department by inducing owners to wear their trucks out, thus avoiding trade-ins at the same time.

Renting trucks to owners while theirs are in the repairshop.

Keeping a chart of time payments due on trucks to avoid running too high on accounts receivable.

Holding used truck stocks down to a definite maximum, thus saving losses when new truck prices are cut.

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them and this dealer has never had a nasty argument or a bad loss resulting from this accommodation.

In this establishment the parts department is taught to sell. When a customer asks for a bevel gear they suggest he also purchase a pinion and it's a good suggestion from a mechanical standpoint. This is worked from every angle.

During the fall months they sell the overhauling idea. He makes money on parts and labor. He says there is as much profit in overhauling six trucks as selling one new one.

Besides, it educates the owners to wear them out, instead of trading them in.

In the proprietor's office is a table of business rotation. He knows what months are the height of the furniture business and when the manufacturing plants are operating at maximum.

This table shows that the opportunity for selling trucks is about as good one month as any other.

He starts campaigning the fish and oyster houses in August and cashes in in September. In January he goes after the milk producers, creameries and condenseries and sells them in April. In March he shoots at the berry growers and takes their orders in June.

Some business is enjoying its heaviest trade every month and there are truck sales the year around, winter being no exception.

Any dealer who will analyze his locality will find both truck and parts business aplenty.

This dealer is not satisfied with what the trial balance alone tells him about the bills receivable account.

That he should have $9782 due him on notes is not enough information.

Every time he sells an automobile on the partial payment plan he not only posts the notes to the right account on his ledger, but he also posts it on a special chart. If the note covers six monthly payments of $50 each and the first payment became due in January he would post a $50 item on this chart in parallel columns for each of the six months.

In this way he can have before him the amount of money that should be turned in each month providing everybody pays.

I was talking to him five months before the depression hit and he told me at the time that he had advised the salesmen and the bookkeeper that on January 1, 1920, he wanted the amount outstanding on notes cut down to a certain figure. He had a minimum for June 1 and September 1.

With this chart system of keeping account of the separate payments in addition to the grand total of bills receivable they were in position to regulate the outstanding paper several months in advance.

When the depression hit, his notes were in good shape and not one penny was lost.

At the time he gave instructions to cut down on credit he also stated the maximum amount he was willing to have invested in used trucks on these same dates and when the depression blew over he had to take only less than a $200 loss on the mark-down.

Winter's Coming—Are You Looking for Winter Business Ideas?—

YOU will find something like a hundred pages of them in the Winter Business Number of Motor World, which will come from the press Oct. 18.

You know the Winter Business Numbers of Motor World—there have been six of them before this, all practical, helpful numbers for the man engaged in automotive sales or repair work. You know these numbers, yet we can't resist the temptation to tell you about the one that is to appear in two weeks. We want you to be prepared to use it.

This Winter Business Number will show how to use the winter months to—

Get winter business.

Prepare to get spring business.

Improve your business in personnel, methods, building and equipment.

There will be sections applying particularly to the business of the car dealer, truck dealer, tractor dealer, automotive equipment and tire dealer and repairman.

For these different branches of the business there will be—

A canvassing campaign.

An advertising campaign.

A display campaign.

Some readers of Motor World, successful dealers and garagemen, will tell in their own words how they make shop profits in winter.

And here is something that we'll just mention—you can't appreciate its bigness until you see it:

Page after page of illustrations will show *how the automotive man can make his place of business an active selling force.* Other trades do it. Why not ours? There will be suggestions aplenty in this picture section.

Put this down on your desk pad:

Watch for the Winter Business Number of Motor World, October 18

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How California Enforces Its Headlight Law

State Dealer Association Campaign Provides Better Driving Lights for Motorists and Makes Sales of Equipment and Labor for Dealers and Garagemen

By ROBERT W. MARTLAND, Jr.

Managing Editor, The Radiator, Official Organ of the California Automobile Trade Assn.

WHEN the California Automobile Trade Association announced its intention of appointing official headlight adjusting stations there was skepticism on all sides. To say "skepticism" is putting it mildly. Business and civic organizations said it would be impossible to make illuminating experts out of mechanics and helpers. Many said that motorists would have to be driven in by traffic officers before they would have their lights adjusted. Others maintained that the Motor Vehicle Department would never give the stations official recognition.

The only ones who were right were those who sat tight and waited. Illuminating experts *have* been made out of mechanics, 22,000 motorists *have* come in of their own free will and the State Motor Vehicle Department *has* given official recognition, plus its entire support. To trace the early history of this achievement would fill a book but the details of its present status are interesting to say the least.

An adjusting station applicant must first have his establishment inspected by an illuminating engineer of the California Automobile Trade Association. If he is accepted, the engineers undertake to instruct all of his employees who will adjust headlights. There is no guesswork about it. Any man who cannot pass the final examination, which is the adjustment of lights with about 25 different makes of lenses, is not to be registered in the State office as an authorized adjuster for that station. To give an idea of the thoroughness of these engineers:—it has taken 8 months to appoint 200 stations. Usually only two or three men in one garage are given the course.

After appointment the State office forwards credentials for display and also complete adjusting equipment, which includes screen and frame, headlight rim removing wrench, bracket bending wrench, reflector polishing materials and many other items. In the initial shipment 500 certificates of adjustment are also furnished. These are in triplicate and numbered. One is given to the car owner, properly filled out, one kept by the adjusting station, and the other is sent into the State office for filing. The cost of the entire equipment is $30.00.

When Mr. Jones of Alameda County is picked up for glaring lights and presents his certificate, the officer looks it over. He reads that the lens requires a 21 candlepower bulb, and if he finds that the motorist has supplemented this with a 31 candlepower bulb—the cop wins. On the other hand, the motorist may have changed the certificate. In this case the officer writes into the State office asking for the original copy of the certificate. Not many car owners do this, as most of them are extremely well satisfied with their lights after the adjustment, but the association has left no loopholes.

THIS story tells how the efforts of the California Automobile Trade Association to secure general compliance with the State Headlight Law have reacted to the good of the public in general and to the profit of the automotive trades. By the appointment of large numbers of headlight testing stations with the equipment and men to do this work, the association has made it convenient and inexpensive for the motorist to comply with the law. And, by placing the enforcement of the law in the hands of dealers and garagemen, sales of lenses and bulbs, as well as of other equipment and service have been materially increased.

The work of the association has resulted in better and safer driving conditions, thus furthering the sale and use of motor vehicles. It has also resulted in direct benefit to the trade in increased sales of equipment and labor.

The charge for adjustment is 75 cents, which covers only the proper focusing and aligning of the lights. Parts and repair are extra. Eighty-five per cent of the stations report that their customers usually write a blanket order covering "the complete adjustment and installation of equipment necessary to have the lawful maximum of roadlight." The average order as taken from State records show $2.85 per car. Adjusting stations are "asking 'em to buy" and making money at it.

The possibility of selling new parts and equipment is unlimited. Bulbs, lenses, replacement sockets, reflectors, plating jobs, wiring and other things are easy to sell when a man drives in who really wants good light. Adjusters are forbidden to mention other lenses until after the adjustment is made. To do so will cause the revocation of their license. If, after adjustment, the car owner is not satisfied with the lens he is using, the dealer is then at liberty to demonstrate another lens and prove its superiority.

A Northern California dealer has this angle down pat.

He has mounted two headlights on the swivel bracket which swings out from the wall, facing the adjusting screen. These lights have been adjusted very carefully and are equipped with excellent lenses. When the car owner says he is not satisfied with the lens he is using, Mr. Dealer swings his headlights onto the screen and tells the owner he can have the same light if he wants it. That demonstration usually clinches the sale.

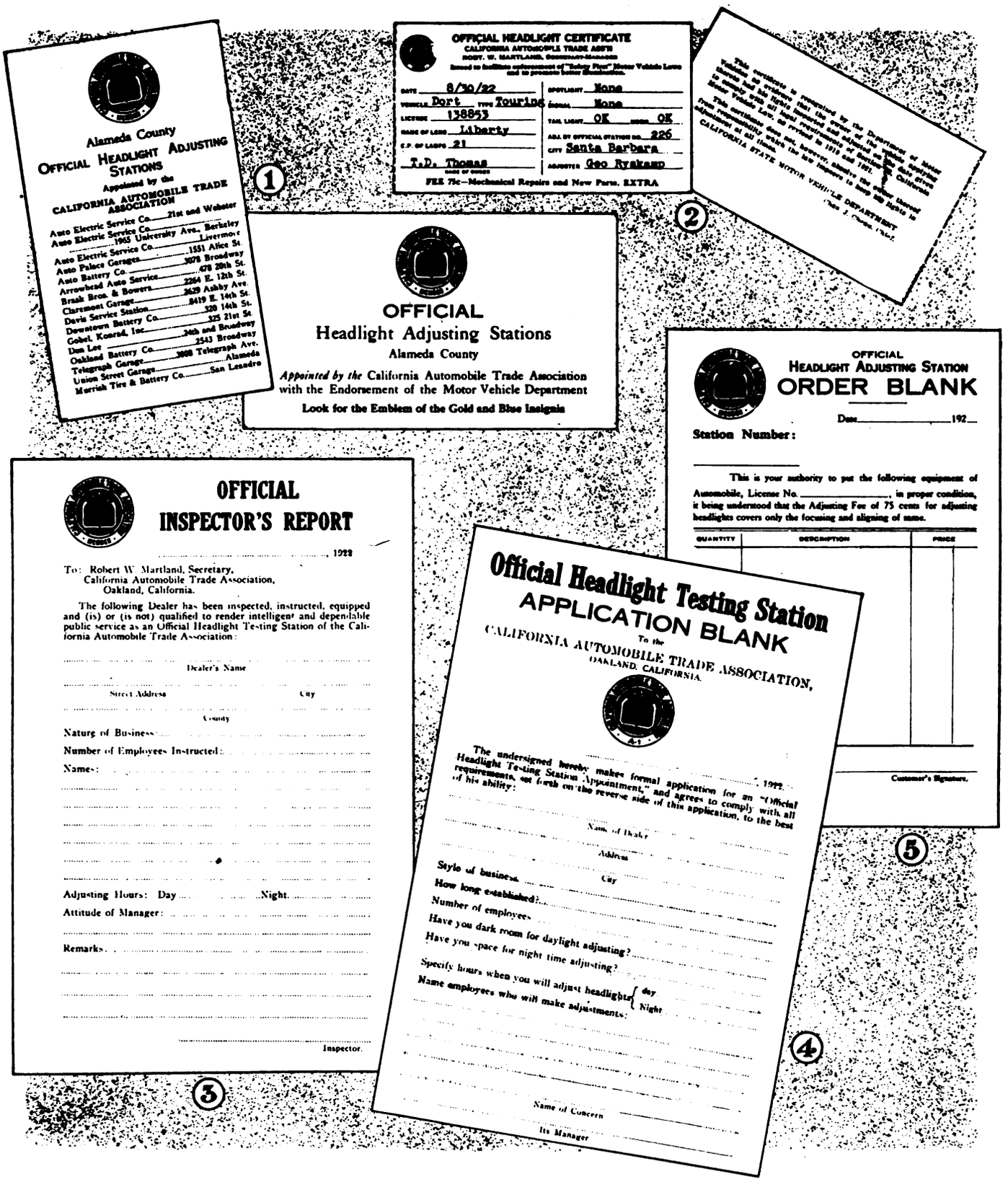
Another station has put in a small reflector plating outfit, and it has proven so profitable that he is installing a larger unit. This man gives 24 hour plating service and has a set price for various sizes of reflectors. He has been an electrical expert for years and finds that headlight adjusting not only turns out pleased customers, but brings in considerable electrical work.

A Ford dealer in Southern California employs one man at $250 per month to do nothing but adjusting. This dealer has averaged for the past 90 days over $35.00 per day net. He has advertised in the local newspapers until the motorists think he is the only adjusting station in the county. As a general thing, adjusting stations do considerable advertising, both independently and cooperatively.

Another source of business is through traffic officers. Very few actual arrests have been made, but it is common for State inspectors to stop from 100 to

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Forms Used in Headlight Law Enforcement Campaign



Alameda County
OFFICIAL HEADLIGHT ADJUSTING STATIONS
Appointed by the
CALIFORNIA AUTOMOBILE TRADE ASSOCIATION

Auto Electric Service Co. ..... 21st and Webster
Auto Electric Service Co. ..... 1965 University Ave., Berkeley
Auto Electric Service Co. ..... Livermore
Auto Palace Garages ..... 1551 Alice St.
Auto Battery Co. ..... 3078 Broadway
Arrowhead Auto Service ..... 478 20th St.
Brask Bros. & Bowers ..... 2264 E. 12th St.
Claremont Garage ..... 3629 Ashby Ave.
Davis Service Station ..... 8419 E. 14th St.
Downtown Battery Co. ..... 320 14th St.
Gobel, Konrad, Inc. ..... 325 21st St.
Don Lee ..... 24th and Broadway
Oakland Battery Co. ..... 2543 Broadway
Telegraph Garage ..... 3008 Telegraph Ave.
Union Street Garage ..... Alameda
Merrish Tire & Battery Co. ..... San Leandro

1

OFFICIAL HEADLIGHT CERTIFICATE
CALIFORNIA AUTOMOBILE TRADE ASS'N
ROBT. W. MARTLAND, Secretary-Manager
Issued to facilitate enforcement of "Safety First" Motor Vehicle Laws and to promote better Illumination.

DATE 8/30/22 SPOTLIGHT None
VEHICLE Dort TYPE Touring SIGNAL None
LICENSE 138853 TAIL LIGHT OK HORN OK
MAKE OF LENS Liberty ADJ. BY OFFICIAL STATION NO. 226
C.P. OF LAMPS 21 CITY Santa Barbara
T.D. Thomas ADJUSTER Geo Ryakamp
NAME OF OWNER

FEE 75c—Mechanical Repairs and New Parts, EXTRA

This certificate is presented by the Department of Motor Vehicles of California to certify that the owner of the motor vehicle described hereon has complied with the provisions of the Motor Vehicle Law as pertaining to lighting equipment of motor vehicles in 1919 and 1921.

This certificate does not, however, absolve the owner thereof from compliance with the law hereafter in force in this State.

CALIFORNIA STATE MOTOR VEHICLE DEPARTMENT
Chas. J. Cooper, Chief.

2

OFFICIAL
Headlight Adjusting Stations
Alameda County
Appointed by the California Automobile Trade Association
with the Endorsement of the Motor Vehicle Department
Look for the Emblem of the Gold and Blue Insignia

OFFICIAL
HEADLIGHT ADJUSTING STATION
ORDER BLANK

Date ..... 192..

Station Number:

This is your authority to put the following equipment of Automobile, License No. ....., in proper condition, it being understood that the Adjusting Fee of 75 cents for adjusting headlights covers only the focusing and aligning of same.

QUANTITY	DESCRIPTION	PRICE

Customer's Signature.

5

OFFICIAL
INSPECTOR'S REPORT

....., 1922

To: Robert W. Martland, Secretary,
California Automobile Trade Association,
Oakland, California.

The following Dealer has been inspected, instructed, equipped and (is) or (is not) qualified to render intelligent and dependable public service as an Official Headlight Testing Station of the California Automobile Trade Association:

Dealer's Name

Street Address City

County

Nature of Business .....

Number of Employees Instructed: .....

Names: .....

Adjusting Hours: Day ..... Night .....

Attitude of Manager: .....

Remarks .....

Inspector.

3

Official Headlight Testing Station
APPLICATION BLANK
To the
CALIFORNIA AUTOMOBILE TRADE ASSOCIATION,
OAKLAND, CALIFORNIA.

The undersigned hereby makes formal application for an "Official Headlight Testing Station Appointment," and agrees to comply with all requirements, set forth on the reverse side of this application, to the best of his ability:

Name of Dealer .....

Address .....

City .....

Style of business .....

How long established? .....

Number of employees .....

Have you dark room for daylight adjusting? .....

Have you space for night time adjusting? .....

Specify hours when you will adjust headlights { day / Night

Name employees who will make adjustments: .....

Name of Concern .....

By .....

Its Manager

4

1—*A list of official stations like this is published by each local unit of the California Automobile Trade Assn. Pads of these lists are given to traffic officers for distribution.* 2—*Front and back of certificate given to motorist who has had his headlights tested and adjusted at a headlight adjusting station.* 3—*The official inspectors make out this report after approving station and instructing employees. Names of employees are filed in the State office, and each certificate is checked to see that only licensed adjusters are adjusting lights.* 4—*Dealer's application blank for adjusting station appointment. The reverse of this blank carries the rules and regulations.* 5—*All extra equipment and labor furnished the customer over the regular test and adjustment is covered by this blank*

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750 cars in one night warning them that lights must be adjusted to comply with the law. The usual answer to this is, "Well, you tell me where to have it done *right* and I'll do it." The traffic officer then presents a small card with the names and addresses of all the adjusting stations in the county on it, and the motorist is told that he will receive a certificate from any one of those stations, which will be honored by all officials.

Every certificate has the California Automobile Trade Association insignia on it. The car owner sees it on sign boards, in newspapers, on his certificate, sometimes even in street cars. The great project has done more to secure the motorist's good-will and run business into members' establishments than any other program ever attempted.

Statewide adjustments by all official stations are now averaging 3901 per week, according to a recent check. It is estimated that 50 per cent of all adjustments call for a new pair of lenses.

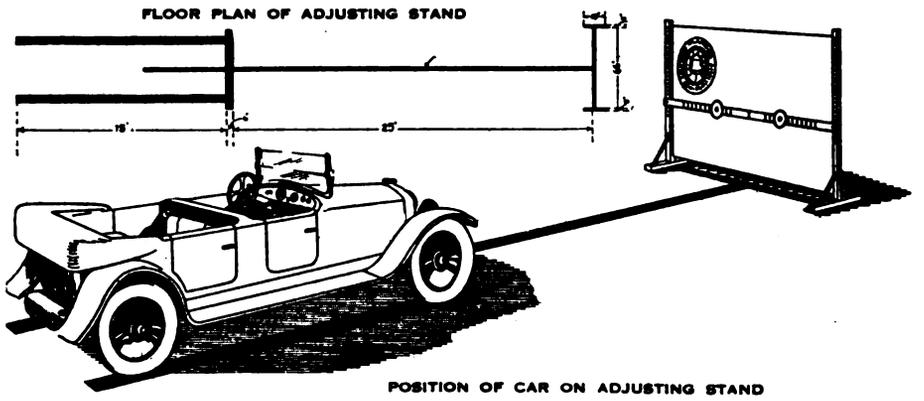
The accompanying illustration shows the layout of the headlight adjusting station and the construction of the screen. The cross bar carrying the two circular targets is adjustable vertically and the distance between the targets is also adjustable. The following instructions are issued to Headlight Adjusting Stations by the association:

Headlight Adjusting Instructions

1—Line up car on adjusting stand, headlights 25 feet from screen.
2—Remove headlamp fronts.
3—Inspect device to be adjusted and determine:
A. Candle power "bulb" permitted.
B. Tilt adjustment, if any.
C. Focus position of "bulb" for device to be used.
4—Measure height of centers of headlamps, and distance between centers of headlamps.
5—Set cross bar of screen as follows:
For "No Tilt Device" same height as centers of headlamps.
For "One-Foot Tilt Device" 3 inches below centers of headlamps.
For "Two-Foot Tilt Device" 6 inches below centers of headlamps.
For "Three-Foot Tilt Device" 9 inches below centers of headlamps.
For "Four-Foot Tilt Device" 1 foot below centers of headlamps.
Note—If a device requires any other tilt than given above, divide the distance by 4 and place cross bar of screen accordingly.
6—Move "bull's-eyes" on cross bar so they are the same distance apart as centers of headlamps.
7—Inspect "light bulbs" for candlepower.
8—Polish reflectors if necessary.
9—Focus beams of light so that centers of beams can easily be determined.
10—Align headlamps so that centers of beams are on "bull's-eyes" of screen.
11—Focus lamps to requirements for device to be used.
12—Install device, making sure nothing has disturbed the position of the "bulb" reflector or device.

Spotlight Adjustments

1—Place car on adjusting stand.
2—Measure height of center of spotlight from floor or ground.



This diagram showing the arrangement of the testing station is furnished on a card which also carries complete instruction for making tests and adjustments

3—Set cross bar of adjusting screen according to following schedule:

When Center of Spotlight Measures Above Floor	Set Cross Bar of Adjusting Screen
44 inches	39 inches
48 inches	42 inches
54 inches	47 inches
60 inches	51 inches
64 inches	54 inches
68 inches	57 inches
72 inches	60 inches

4—Set spotlight so that top of beam cannot be raised above cross bar when beam is ahead of car.

Miscellaneous Instructions

1—Sidelights, except spotlights, must not have larger than 4 C.P. "bulbs."
2—Inspect tail-light for operating efficiency (tail-lights must show a red light).
3—Inspect signal devices, if any, for mechanical or electrical operation.
4—Test horn.
5—Always get written order from customers for any extra work done for which you charge extra.
6—Fill out Official Headlight Adjusting Certificate carefully in ink—write plainly and neatly.

Don'ts

1—Don't leave adjusting certificates around carelessly.
2—Don't touch reflector surface with anything but camel-hair brush or soft polishing cloth—don't use cloth except when polishing tarnished reflector with polish.
3—Don't ever, under any circumstances, put a larger candlepower lamp than is permitted for the particular device used.
4—Don't use circular motion for dusting or polishing reflector—remove "bulb" and stroke from center of reflector toward edge.
5—Don't polish reflector before dusting with camel-hair brush.
6—Don't issue certificates unless headlamps are in good condition.
7—Don't mark "O. K." on certificates if devices are not O. K.
8—Don't leave finger marks on light "bulb."
9—Don't let motorists leave your station without advising them on good safe driving illumination.

Universal Instruments Carry Starting Current

MANY of the early electric lighting and starting systems were of the single unit type in which the unit functioned as a motor in starting and as a generator when the engine attained a predetermined speed. At least two well known makes of cars still employ that type of system. With a system of this type, any ammeter or indicator connected in the circuit to show charging and discharging conditions usually must carry the cranking current. Obviously, the ordinary ammeter or indicator, which is designed to carry only the charging and lighting current would burn out very quickly in this service.

The Roller-Smith Company, New York City, supplies a line of ammeters and indicators called the "Universal" Type, which were designed especially for cranking circuit use. These instruments, which are offered in a variety of ranges and case styles and finishes may be inserted direct in the cranking circuit and will carry the heavy cranking current without injury and still indicate correctly the charging and lighting currents.

These "Universal" ammeters and indicators may be used on any car. The universal feature reduces the stock the dealer or jobber must carry to provide efficient service. The "Universal" instruments are especially recommended for early models of Buick, Chalmers, Dodge Brothers, Franklin, Holmes, Hupmobile, Scripps-Booth, White.

The ability of these instruments to carry the cranking current simplifies the matter of installation and connection, instead of having to trace the wiring to locate the proper point, it is only necessary to open the main battery lead and connect the instrument in circuit. This information will be of special interest to those called on to supply instruments for old cars where wiring diagrams are difficult to obtain.

Each instrument is packed in an individual box with complete instructions for installation and connection.

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Barley Brings Out a Light Low Priced Six

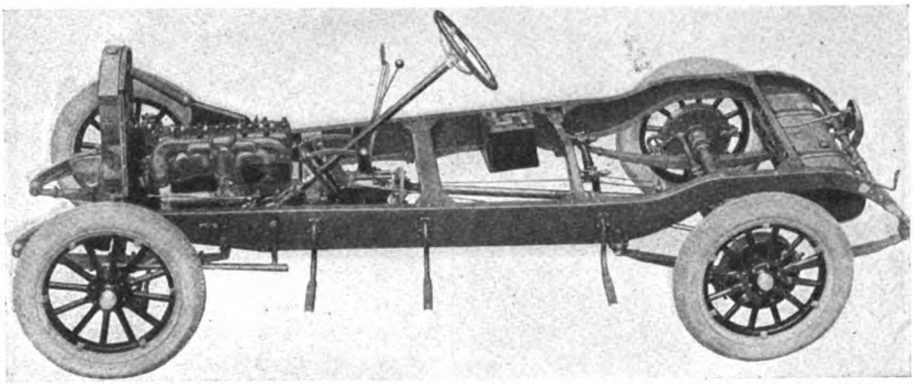
Car Assembled with Standard Units But Embracing Several Novel Constructions—Two Body Models Ready and Two to Be Announced Later

THE Barley Motor Car Co., manufacturers of the Roamer, have entered the low priced six cylinder field with a car bearing the company name and known as the Barley Six. This car includes a set of units well known in the automobile field. They are notably the Continental 6-Y engine, Borg & Beck 10-in. clutch, Fuller transmission gear set, Merchant & Evans fabric universals, Columbia axles, Jacox steering gear, and Delco electrical equipment.

These units are brought together in a chassis of 118 in. wheelbase and will be supplied with a complete line of bodies shortly to be put into production. The bodies are made at the Barley plant and are similar in appearance and characteristics to the low straight line types which have characterized the Roamer.

Although this is a car made up of units purchased on the outside it has nevertheless a number of distinctive points of design which distinguish it. The frame forming the structural foundation for the car has been made exceptionally stiff, the side rails are of channel with an 8-in. web and 2-in. flanges. The stock is ⅛ in. Integral gussets are employed for anchoring the cross members and there is a box section cross member at the center which contributes largely to the rigidity of the frame. In addition there is a heavy tubular cross member against which the side rails are drawn up by a continuous through bolt.

To prevent distortion of the radiator when mounting it to the frame this unit rests on two ball plates which find their own seat and is not apt to be distorted in mounting. The radiator is a Modine with a Spirex core.

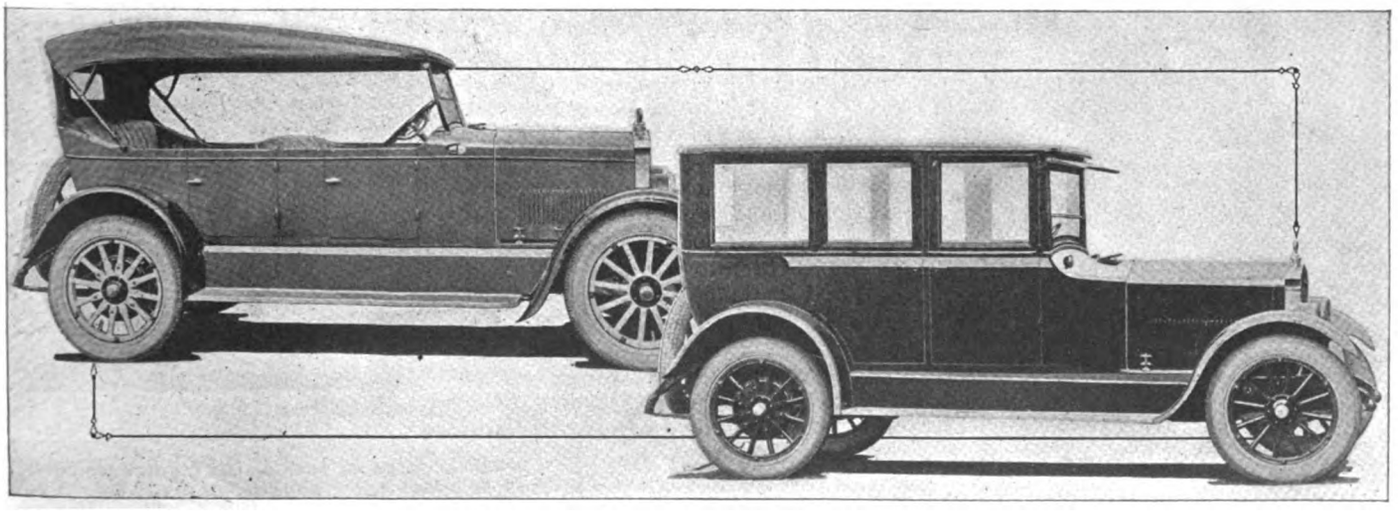


The chassis of the Barley Six

Both brakes are located on the rear wheels without equalizers. The brake-drums are 14 in. in diameter with a 2 in. face width. The spring suspension is semi-elliptic and Hotchkiss drive is taken through double front leaves both of these being wrapped about the front eye thus distributing the load. The rear springs are 56 in. in length and on the touring cars one dead leaf is inserted to reduce rebound. In the sedan there are two of these dead leaves. The front springs are 38 in. in length and are fitted with rebound plates. A ¾ in. caster is given the front wheels as a steering measure. The car has a 30-ft. outside turning diameter. Wood wheels 32 x 4 are standard. These wheels have twelve spokes each and on the rear wheels the spokes are embossed and carry six extra bolts for increased strength.

The bodies are so dimensioned as to be swung between the axles for suspension balance. The bodies, like the frame, are unusually rigid and substantially braced with structural forgings. The upholstery is genuine leather, an option being given of tan spanish, gray spanish or black long grain. Three color combinations are also afforded in the bodies, these being liberty blue, coach painters' green deep or moleskin deep, all with black fenders and chassis. The fenders are 10 in. wide with deep crown braced and bolted to frame and body.

Equipment includes one-man top with bevel plate rear window, Stewart-Warner speedometer, adjustable drum type head lamps, Empress lubricator system, complete set tools. The price of the phaeton is $1,395. There are three other types of bodies including a 5-pass. sedan at $1,850, a touring sedan and 5-pass. sport on which price has not been set.

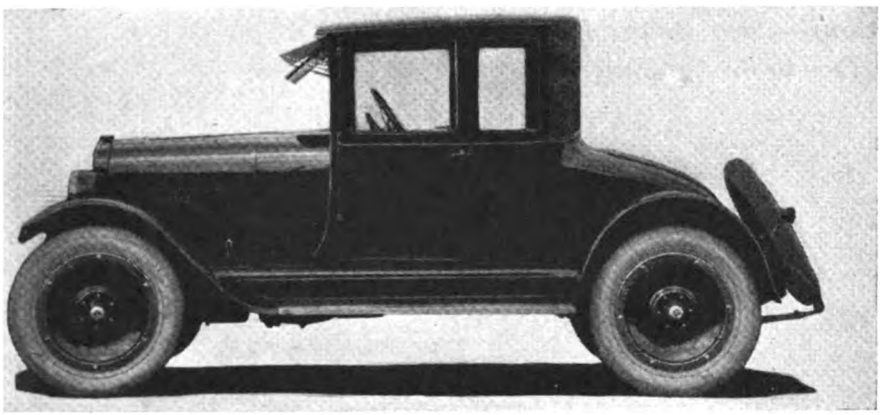


The Barley Six phaeton, $1395

The Barley Six touring sedan, $1850

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Features of New Body Models

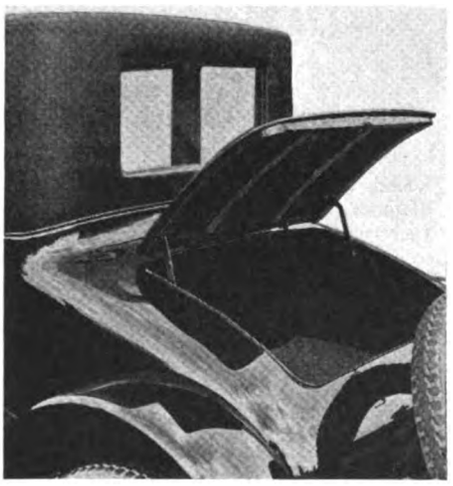


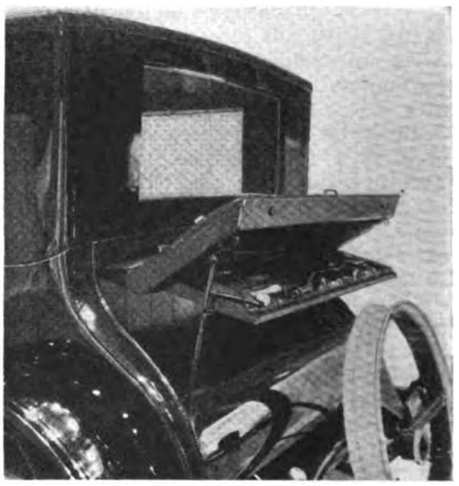
Maxwell Club Coupe, $985

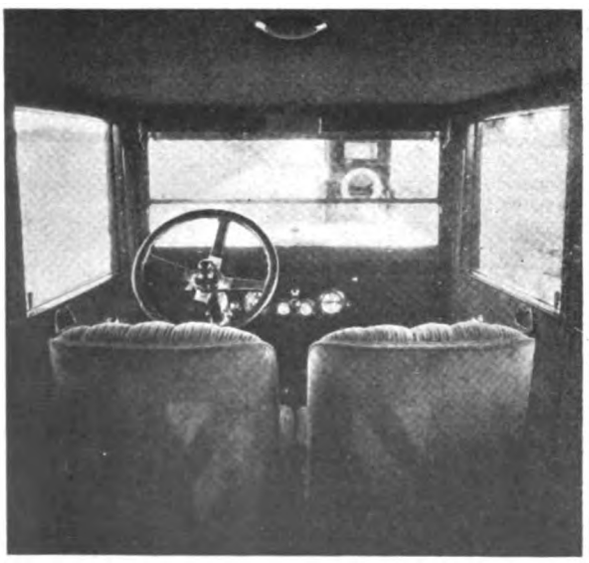
The quarter windows are a feature of this new model. They drop full length. The seating arrangement is the same as the roadster and there is a special type of windshield in which both sections swing outward. This has also been placed on other Maxwell closed cars

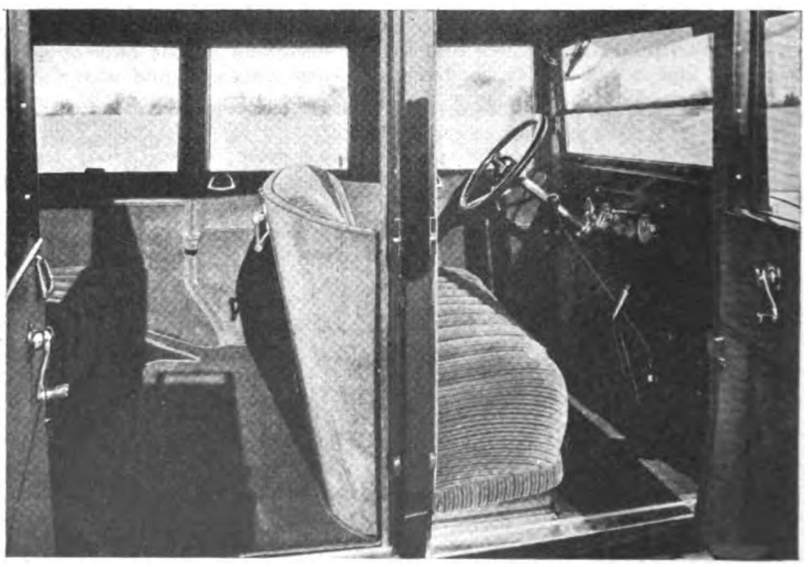
Two Ideas in Storage Space

At the left is the rear of the new Maxwell Club Coupe in which space is provided for tools and equipment. At the right is the tool and storage compartment of the Oldsmobile brougham in which the tools are buttoned on a hinged board









Interiors of the New Oakland Bodies

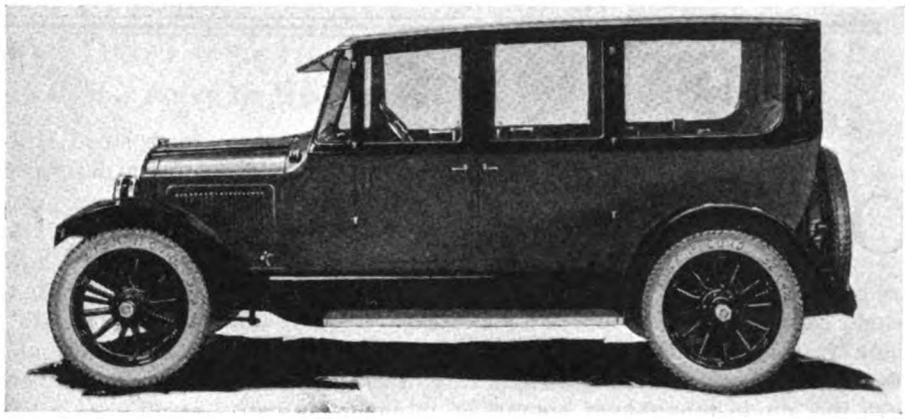
The coupe, at the left, and the sedan, at the right, are Fisher Body Corp. products fitted as part of the regular Oakland line. The bodies are distinguishable from their predecessors by a lower body belt line and a slightly lowered roof. The windows are deeper and wider and all pillars are metal covered. The door windows have crank control. The coupe is $1,545 *and the sedan* $100 *less*

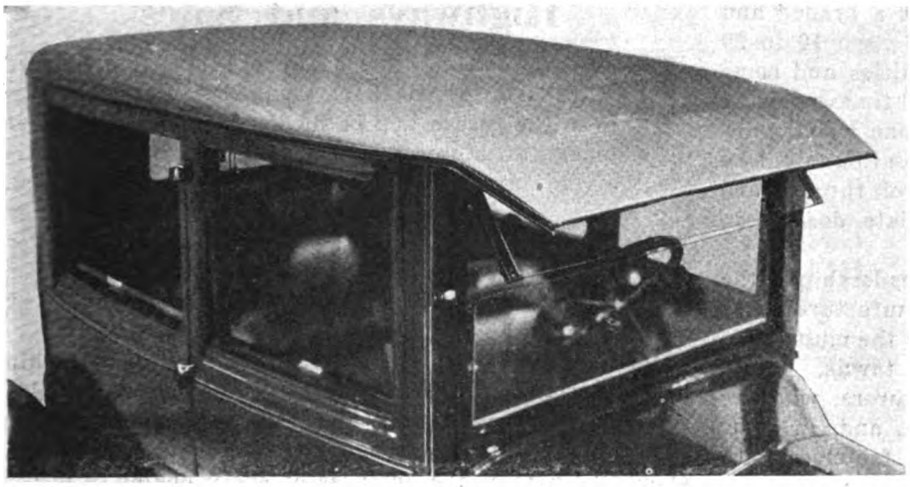
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Bidding for Fall Business

The New Willys-Knight 7-Passenger Sedan

This is known as Model 27 and sells for $2,195. The general lines of the car are in conformity with the rest of the line. The rear quarter window is very wide and there are four doors, the rear ones opening forward and the front ones opening to the rear



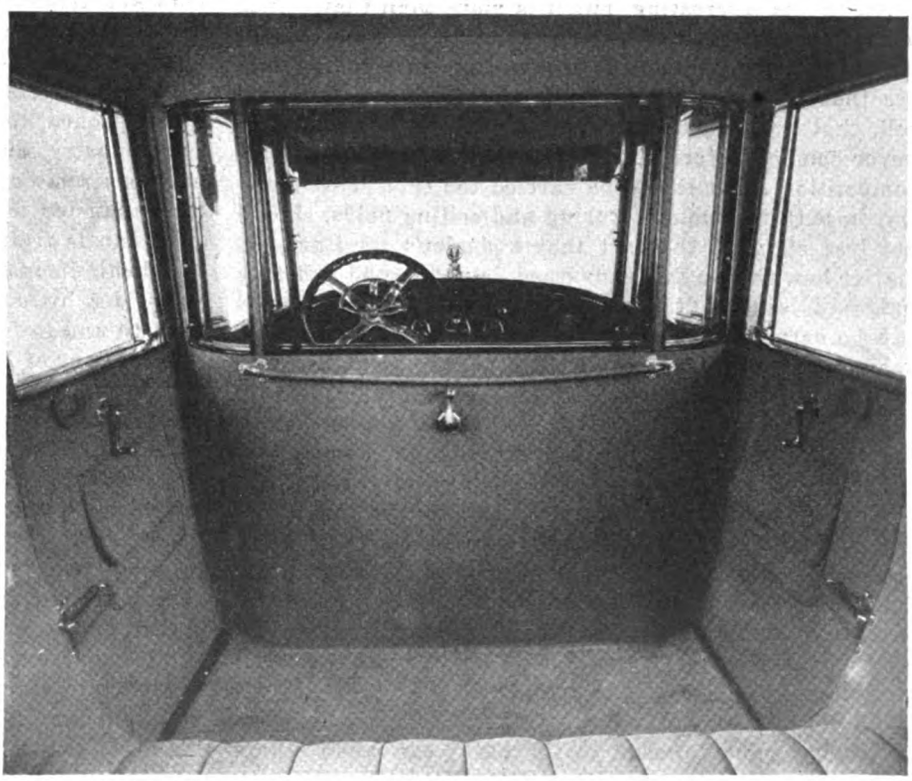


Something New in Sun-Shades

A special body on a Dodge Brothers chassis. The top is extended forward to form the sunshade which is made solid and non-adjustable. The top covering which goes over both the sunshade and the top, is in one piece. The construction is such that side brackets are not necessary

A New Packard Body

The interior of the Packard Limousine Sedan fitted to the Single Six chassis. The price is $3,275. Two doors serve the rear compartment, which is separated from the driving compartment by curved quarter lights and a sliding glass which is lowered or raised by a crank the same as the door windows. Commodious pockets are fitted to the rear doors and the door stops are fitted with a link break to keep them out of the way when the doors are closed



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Editorial Notes

Multiplying Dealers

OUTSIDE the larger cities the trade probably has not paid much attention to the appointment in many of the large communities of literally hundreds of associate dealers and sales agencies for passenger cars. The big production manufacturers, through their factory branches and larger distributors, have been multiplying agencies at a rapid rate in the past year, with the single thought, of course, of intensifying canvassing to find more buyers. In New York, for instance, several manufacturers who formerly had a branch and four or five dealers now have anywhere from 10 to 20 or more dealers, some with service facilities and some with salesrooms only, and perhaps several times as many garagemen acting as agents on commission without investment in cars. As another instance mention might be made of a car which formerly sold in Detroit through one distributor, who now has eleven associate dealers in addition to his own retail department.

The movement is part of the race for leadership in the industry in which a number of big manufacturers are close contenders. It is having an echo in the multiplication of dealers in the smaller cities and towns. "More dealers" is the cry of the big manufacturers, who are competing with each other to get them, and, in some cases, who are taking them away from factories with cars of lesser popularity.

All this is interesting, but it is more than that. It is a gigantic experiment in the efficiency of intensive selling. It will accomplish something in teaching many dealers that the more people they see the more cars they sell, that they must comb their territories as they were never combed before if they expect to stand the gaff of competition. But it can be carried too far. The industry, in both the manufacturing and selling fields, should not lose sight of the fact that a dealer's territory, no matter how thoroughly canvassed, is not a good territory unless it is a profitable one. Restriction of territories can be carried too far and so can the multiplication of dealers competing against each other in a single territory. It would be a pity if this race for leadership should result in the "breaking" of dealers to an extent to frighten capital, already wary enough, away from financing of automobile merchandising enterprises.

In this transitional stage of the industry manufacturers should be giving the most serious thought to the profit-making possibilities of every dealership they establish and dealers urged to take factory contracts should be equally inquisitive to learn before they sign contracts whether they can make money with the car and the territory offered.

This is no time for wild-catting. The automobile industry has gone forward in the past year when others have stood still and the inevitable replacement market, plus a natural growth in new demand arising from bettered living conditions and improved roads, promises a substantial future, but factories and dealers should consider every new contract proposal on this basis. Is it to be the basis of stable, profitable relations or is it just a makeshift to seize a few immediate orders? If the latter is the object either of factory or dealer the contract would better be left unsigned.

Highways and Sales

IN a recent letter to his dealer organization Edward S. Jordan observed that "Quantity sales of motor cars in the future will be in direct proportion to the development of highways." Jordan follows his statement of opinion with a request of his dealers to read the address of T. H. MacDonald, Chief of the United States Bureau of Public Roads, urging as a basis for future highway financing, long-time serial bonds for road building and current revenues for maintenance of roads already built.

Jordan's observations as to the direct relationship between road building and the future of motor car sales reinforce the urgings of Motor World extended over a period of years that agitation for better highways should be part of the business of every dealer in motor cars and trucks. One has but to look at the motor vehicle registration figures and note the tremendous growth of motor vehicles used in such good roads states as New York, Pennsylvania, California and others that might be mentioned, to realize that the growth of the automotive industry, and so of every manufacturer, merchant and repairman connected with it, is directly tied up with the expansion of improved highway mileage.

Jordan is trying to put the influence of his organization behind constructive development of the better highways idea by asking his dealers to read the MacDonald address and to forward to him their own and their bankers' opinions of MacDonald's suggested method of financing future highway building and maintenance. Other manufacturers and associations of the industry, national, state and local, are co-operating in one way or another with better highways movements. It remains a fact, however, that many hundreds of distributors, jobbers, dealers and garagemen are paying little or no attention to good roads and doing little or nothing to encourage their building and adequate maintenance.

Any dealer or garageman who shows indifference to the pleas of a state or local association that he lend his influence to secure legislation for highway building and maintenance, is building a fence of limitations around his own future.

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An Association Secretary Writes a Used Car Letter

Aftermath of National Used Car Conference Seen in Stirring Letter of Secretary to His Dealers

EDITOR Motor World:—Perhaps some of your readers would be interested in the effort we are making to put a stop to used car trading losses by adoption of the Boston plan of maximum allowances and market value information reports. As we have yet to work out the details of the plan, I would rather you would not publish the name of our association. My letter to our association members follows.—A. B. C., executive secretary, —— Automobile Dealers Association, ——, N. Y.

If you are one of those who think that the used car problem cannot be cured, ask Boston.

Boston has done what many dealers have said for years could not be done.

Boston's plan came before the National Used Car Conference at Chicago. It stood out above a score that were discussed.

Boston dealers have practically no used cars on hand. Their prices are such that practically every used car is sold as soon as it is taken in. *Boston's allowances are right.*

What Boston has done this city is going to do.

It is going to be a big job, but we are going to do it.

$233,000,000 Lost In Used Cars

Did the figures we sent you a short time ago relative to the number of dealers who have gone out of business in this city in the past year mean anything to you? They did to me and to some others with whom I have talked. They show why our bankers are none too kind to us. They show that slowly but surely the "wild-cat" used car processes we have been practising for years are driving us to the wall.

This is by no means the only city where this is true. There are a lot of other association secretaries and managers who went home from the National Used Car Conference with fire in their eyes, vowing that their city would no longer let the tail of its second greatest industry wag the dog.

Do you realize that $233,000,000 was lost by new car dealers in this country last year in used car transactions? Boston alone lost over $300,000.

What are we going to do about it?

Well, first we ask you to read carefully the statement below on the Boston plan of operation. Think it over. Then in a few days we will call a meeting of all dealers. At that meeting the plan will be discussed in full and you will be given an opportunity to line up for a system that is going to mean doing away with the used car losses.

Take Stock of Yourself

In the first place, the success or failure of this system lies with you—with every individual dealer.

Are you ready to deal squarely with every other dealer? Will you play fairly every minute and in every deal that comes along? You have got to be certain that you are capable of living up to the rules of the business. certain that you will not allow a few dollars more than the fellow up the street "for the sake of making the sale." No dealer is worthy of a place in the Automobile Dealers' Association or its used car system who cannot positively purge himself of all past practices and answer those questions wholeheartedly in the affirmative, and then stick to his answer year in and year out.

Having made that vow, you will be ready to consider the plan.

In the first place, Boston dealers took the Chicago Blue Book and the local reports on the sales of used cars and figured out an appraisal, a take-in value, for every make and type for a period of five years back. Notice, they did not allow any dealer to fix his own value on his own cars.

Having accumulated this data, they then deducted from each figure 10 per cent to cover selling expense and overhead in handling cars taken in. The resulting figure was set down as the maximum that could be given for any car. If certain repairs were needed to put the car in salable condition, the cost of such repairs were also deducted before giving the owner his allowance figure on the car to be taken.

The maximum valuations for each car and type were printed in a loose-leaf book that could be carried in the dealer's pocket. These books were not put into the hands of salesmen. They were only for the use of the dealer or his sales manager.

To keep a sharp watch on what is going on, every dealer files with the Boston Used Car Bureau detailed reports of his used car business. These reports give the used car sales, showing make, number, type and year of each car sold, whether or not another used car was taken in and if so the value of that used car and its number, amount allowed for the first used car mentioned, amount spent on it for repairs or reconditioning and the total sale price. This complete record shows the bureau instantly how every dealer is handling his used cars and whether or not he is living up to the rules of the system. Padding of the reports also easily crops out.

While the allowances were arrived at from the current market prices, they in reality are based on the percentage basis for yearly depreciation. It varies. An allowance for the year-old car is based on a deduction of 42 per cent, increasing year by year until the fifth year, when 82 per cent is the deduction. There is a 2 per cent change in these allowances from month to month to take care of the advancing season A 1921 car sold in November, 1921, would have a smaller deduction than a 1921 car sold in March, 1921.

Deductions are made from the factory list prices and not from the delivered prices.

Whenever there is a change in the factory list prices of new cars, the allowances are changed correspondingly. That is, a 5 per cent reduction in the factory price of a certain make immediately brings about a 5 per cent reduction in the allowance on the used cars of that make, and new allowance sheets are furnished each dealer to take care of the change.

In the Boston plan dealers live up to these allowances regardless of trade allowances or special factory offers when a change in model is contemplated. In such instances the dealers apply the extra margin to a lower price on the new car rather than a greater allowance on the old car.

Are You Ready?

There is the plan as far as space will permit.

I have talked with several of our members and they are ready to go into it heart and soul.

Our allowances must be made right. That 10 per cent handling charge must be provided for.

You are losing thousands of dollars that you cannot afford to lose. If you do not think so, look over your accounts and see if you have not failed to charge some items that should be charged against used cars.

If your association is worth anything, it is its duty to plug this disastrous waste. It is going to do it.

Write to Motor World About It

This page every week is devoted to discussions of topics of the trade by Motor World readers. Have you a suggestion to overcome a difficulty or improve some condition within the industry? Write to Motor World about it.

The Equity Plan

Editor Motor World: In the issue of Motor World of Sept. 6, there was an article by "Eastern Dealer" regarding the handling of used cars in trade for new.

I think, without doubt, that comes nearer solving the trade-in proposition than any plan I have ever heard of. Howatt & Lee, Inc., Flushing, N. Y.

The County Fairs

Editor Motor World: We have found it worth while to have salesmen at the county fairs in our territory, picking farmers and others on the grounds and giving them demonstrations. The people at the fairs are in a holiday spirit and they yield readily to invitations to take a ride. We have made several sales and obtained many good prospects in this way.—Ohio Dealer.

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The Foundation of Shop Profits

Getting the Business—Possible Sources of Repairshop Custom and How to Sell Repairshop Facilities—Advertising, Mail and Personal Selling

Article No. 4

By J. HOWARD PILE

THE automobile repair business, like any other repair business, must have a definite aim and be able to serve a definite class of customers. If the shop is part of a selling organization for a particular line of cars, it will be the aim and object to service this particular line of cars. By specializing it will be possible not only to perform this service economically and make a profit for the shop, but also to give such satisfaction to owners that the sales organization will be benefited by repeat orders when the owners desire new cars. The general garage repair shop will serve owners best by being able to take care of various models of cars and trucks quickly and efficiently, The specialty shop, taking care of batteries, carburetors, electrical equipment or tires, serves car and truck owners by reason of its speed and specialized knowledge on the particular equipment it specializes in.

Getting the business is the result of organized effort along certain definite lines. It is just as important to plan the sales of repair work as it is to plan the sales of cars and trucks. There are certain prospects that any repair shop can expect to get business from and all other effort is more or less wasted. It is therefore necessary to lay out a plan of sales which will be applied to bring results in more shop work.

Sources of Repairshop Custom

There are five definite sources of custom for the repair shop. These are:

1. Regular storage customers.
2. Transient storage customers.
3. Owners to whom you have sold cars or trucks.
4. Other car owners in your territory.
5. Gasoline and oil customers.

Not all of these classes can be utilized by every shop. If you are specializing in one or two makes of automobiles, the list is somewhat changed and some items eliminated. However, by taking your own particular case and taking those sources that fit your case, you can put a list of classes down on paper as the beginning of a plan.

Ordinarily the car owner brings the car to the shop after the damage is done. He has never been sold on repairs that would prevent accidents or damage. If the shop is depending on service work of this nature, the amount of work is sure to be erratic and far from regular in volume. It is not only profitable to the shop to perform light service, adjustments and minor necessary replacements, but it is far less expensive for the owner. The only thing you have to do is to convince the owner that a regular inspection and minor adjustments and replacements will save him money. Sell it as accident insurance if you will.

If the organization with which the shop is connected handles one or more lines of cars or trucks it is comparatively easy to educate owners to the advantages of regular inspections. This can and should be started under the guarantee period when any car will need certain minor adjustments and other attention. A weekly inspection of a new car will save expense for the dealer because it will enable him to catch any loose nuts or bolts or parts out of adjustment before the damage is done and it will also insure more satisfactory car service to the owner. The owner generally realizes this and as he does not have to pay for these minor adjustments it is not very difficult to get him to come into the shop for a regular inspection.

After the guarantee period has passed and the owner has to pay for adjustments and repairs, it is not quite so easy, but if the shop has been successful in bringing him in regularly before, it should not be very difficult to sell him on the economy idea of getting a dollar's worth of service before hand to save ten dollar's worth of service later. If this idea is diplomatically carried out, it can be made to bring in regular profitable business. It saves accident jobs which, in addition to the possibility of personal injury to the owner, are generally a losing proposition to the shop. The most profitable shop operations are minor preventative service jobs and overhauling jobs. It is pretty difficult to repair a bad wreck and expect the job to be perfect. The free service on the job afterwards generally cuts out most of the profit and sometimes brings a loss. Some other part that did not get broken or bent is strained or loosened and consequent trouble develops.

Inspections as Source of Business

When the shop is attached to a general garage business the inspection idea can still be carried out, but in a different way. There will be a certain number of regular customers that come to the garage for storage, gasoline, oil or supplies. A man who knows a good deal about the different makes of cars can be employed profitably in some position where he has a chance to observe all cars as they come in the door. Where the customers are regular storage patrons, inspections can be made at night or at other times when the cars are on the floor. A rough inspection of the exterior and a drive from one end of the shop to the other should provide sufficient material to call the owner's attention to something that needs fixing. Here are a few of the things that could be done during the owner's absence:

Test the battery with a hydrometer.

Run engine to observe general running conditions, noise, knocks, generator charging rate, clutch adjustment, water leaks, etc.

Inspect front wheels for bearing adjustment and alignment.

Observe tire condition, need for tire

Better Mechanics

Article No. 259

A Series of Four Stories on Shop Profits.

I—Layout and Equipment appeared in the September 13 issue.

II—Systematic Arrangement of tools and parts appeared in the September 20 issue.

III—Records and Forms appeared in the September 27 issue.

IV—Getting the Business appears in this issue.

The dealer or repairman can make shop profits if the business is properly conducted. These stories suggest fundamentals of profit making in the repair business.

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repairing, etc. A spare tire is often neglected after a puncture or blowout.

Inspect springs for broken leaves, need of lubrication, etc.

Headlamp focus and alignment.

Lost motion or need for adjustment on steering gear.

Condition of service and emergency brakes.

Need for oiling and greasing car.

General condition of body, top and curtains.

Such inspections as listed here might be made once a month and the results of the inspection given to the owner with recommendations as to repairs or adjustments that would correct defects. Often owners do not know about some of these things because they have not the time or the mechanical ability to discover them for themselves. Sometimes they know of the condition of their cars but put off having the things done and the shop can sell them on the idea of repairs now to save bigger repairs later.

Transient cars do not offer an opportunity to go as deeply into inspections as this and it would hardly pay to do it anyway because from the nature of the custom, the owner will not be staying any longer than necessary. It is possible, however, to call attention to parts of the car in dangerous driving condition. Wobbly front wheels can be quickly picked out by simply shaking them and the steering gear can be given a very rough test in the same way.

Inspections at the curb while serving gasoline or oil will often reveal the need for necessary repairs that may be made while the owner waits or at some other time more convenient to him.

Crankcase service is becoming more and more an important part of the shop business. The present make-up of fuel makes it positively necessary to change the engine oil at periods from 500 to 700 miles in warm weather and not over 500 miles in winter. As winter approaches it is time to think of putting a thinner oil in the crankcase, depending on the temperature. The first touch of frost is generally the right season to change to the thinner oil. Selling this kind of service requires asking the owner when the oil was changed last and suggesting the change, which can be made in 15 minutes. If the owner has not changed the oil for some time, he should be told of the possible damage to bearings, cylinders and pistons through the thinning out of oil by condensed fuel.

Courtesy Helps Sell Repairs

Initial courtesy paves the way to selling anything and especially automobile repairs. There are several ways of asking a man to back up a little so you can get the gasoline hose in the tank. The way you ask him will determine how he will receive your suggestions as to buying something else or having some work done. The same thing is true in assisting him to back his car into a space in the garage. Some people have a knack of offending by tone of voice, by the selection of words or by facial expression. Others, by employing directly opposite methods, are able to make a customer feel friendly and apparently without effort encourage further conversation, which is the entering wedge for selling repairs and adjustments on the car. Almost every owner likes to talk about his car for a few minutes, and a few well directed questions will generally bring out a possibility of work to be done.

Using the Advance Estimate

A big assistance in selling repairs is the use of the advance estimate. In spite of all the advantages of the flat rate system that have been pointed out, there are some who, because of local conditions or for other reasons, believe some other system is better. Regardless of whether a straight flat rate or a maximum estimate system is used, some form of advance estimate will help materially.

A small shop will not find it economical to go very extensively into detail flat rates, especially if a number of makes of cars are to be handled. It would work out better to concentrate on a few of the more common operations and confine these to cars which are most liable to come into the shop. Other operations can sometimes be estimated from the shop foreman's experience and at other times some part of the car will have to be taken down for inspection in order to render an intelligent estimate to be made.

Fulfillment of Promises

The first order is always the hardest and also the most expensive. The repeat orders are the ones that pay because the sales expense is less. This principle can be applied to repair work as well as the sale of cars, accessories or parts. In order to get repeat work, the first job must be done well and must be done on time. In the past promises have been so glibly made and so poorly kept that the shop which finishes work on time almost creates surprise. Be one of the surprisers and the repeat orders will not be hard to get. A job poorly done and finished a couple of days after it is promised is almost an absolute bar to further work from that customer.

The fulfillment of promises is merely a matter of routine and system and the forms illustrated in Article No. 3 of this series (published last week) will assist materially in keeping track of things in the shop so that work will get out on time.

Repairshop Promotion

The promotion of the shop business is taken care of through local advertising, mail campaigns and personal solicitation. Advertising, to bring results, must be regular and must say something. It is not sufficient to buy a certain regular amount of space and expect to get results. The copy and the type or illustration arrangement can be made very attractive. One thing that brings good results, not only in newspaper advertising but in mail campaigns, signs, and other methods is a definite offer of some thing or some group of things for a definite price. This should bring in not only a reasonable amount of the work advertised for but should bring in other work. Here are some things that could be offered singly or in groups at different times. The prices can be made to conform to your own costs:

Clean spark plugs and adjust breaker points	$2.00
Drain oil and refill crankcase	2.00
Oil and grease entire car, including draining crankcase	10.00
Tighten body, fender and runningboard bolts	3.00
Adjust brakes, service and emergency	4.00
Flush cooling system and refill	.50
Wash car, clean inside and apply body polish	$3.00 to 10.00

An Effective Bumper Window



In this window bumpers are effectively displayed by using, as decorative properties, catalogs, cutouts and other factory literature supplied by the manufacturer. The bumpers rest on a dark cloth covering on the floor of the window. The cutouts and catalogs speak the merchandising message

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A Schedule of Flat Rates for the Cadillac

Operations Totaling Three Hundred and Twenty-Five Distributed Under Twenty-Three Headings—Operations Include a Large Majority of Jobs Brought Into Any Shop

A SCHEDULE of flat rates on 325 operations has been developed by the Cadillac factory. The work on this schedule has covered a period of several years, and for the past year the schedule has been in practical operation at the Cadillac Detroit branch. All work at this branch is estimated according to the list which is sufficiently broad to allow that work to be done within the time limits in any shop that has the proper tool and jig equipment and is manned by competent mechanics.

In addition to operating on the flat rate system, this branch operates a flat rate of payment to mechanics on jobs. This system has worked out very successfully in conjunction with the flat rates. The schedule was originally in dollars and cents but has been converted into hours.

Group A—Wheels

		Hours
A-1	Installing One New Rim Lug	.2
	Each additional	.2
A-2	Installing One Rim Lug and Bolt	.2
	Each additional	.2
	Includes taking out rim lug and installing new one.	
A-4	Changing Tire	1.2
	Includes dismounting old tire and installing new tube and remounting tire. Does not include any repairs.	
A-4a	Changing Complete Set of Tires. Includes dismounting and remounting same.	5.2
A-4b	Changing Complete Set of Tires and Rims	2.0
	Does not include dismounting and remounting of tires.	
A-5	Lining Up Wabbly Rim	1.4
A-6	Tramming Front Wheels to Toe in 3-16" to ¼"	.6
A-7	Installing Disteel, Wire or Wood Wheels ..... Hourly basis	
	Includes changing mounting in hubs, changing the carrier and tail light, mounting of tires not included. Refer to A-4 reference to dismounting and mounting tires.	
A-8	Installing New Hub in Rear Wheel	1.6
	Each additional	1.6
A-9	Examining Wheel Bearings and Mountings in One Wheel and Installing New if Needed	1.0
	Each additional	1.0
A-10	Greasing All Wheels	1.6
	Includes adjusting of bearings. No charge if done in conjunction with A-9.	
A-11	Installing New Wood Parts and Felloe Band in Rear Wheel	6.4
	Each additional	6.4
A-12	Installing New Wood Parts and Felloe Band in Front Wheel	6.4
	Each additional	6.4
A-13	Installing One Spoke in Wire Wheel ..... Hourly basis	
A-14	Installing New Hub Cap on One Wheel	.2

Group B—Front Axle

		Hours
B-1	Removing and Installing New Front Axle or Overhauling Old	7.0
	Includes taking out and putting back axle, installing any new parts necessary, adjusting wheel bearings, and tramming wheels. Does not include straightening of axle.	
B-2	Straightening Front Axle Out of Car	12.0
B-3	Installing One New Spindle	2.0
	Two	4.0
	Includes examining bearings, greasing and adjusting same and aligning front wheels.	
B-4	Rebushing and Installing New Bolt in One Spindle	2.0
	Two	3.8
	Includes same as B-3.	
B-4a	Installing New Parallel Rod Bolt in One Spindle	1.6
	Including aligning front wheels.	
B-5	Installing New Parallel Rod	1.0
	Includes new parallel rod if needed, and aligning front wheels.	
B-6	Installing New Parallel Bolts Only	1.0
	Includes aligning front wheels.	
B-7	Aligning Front Wheels	.6

Group C—Frame

C-1	Installing New Frame	Estimate furnished on request
	Includes taking off body and installing same.	
C-2	Straightening and Repairing Frame	Estimate furnished on request
C-3	Installing Front Engine Support	18.4

Group D—Springs

D-1	Installing One New Front Spring. Includes new shackle bolts as needed.	2.6

THIS is the twelfth flat rate schedule published in Motor World. The previous schedules covered Buick, Chandler, Chevrolet 490 and FB, Dodge, Dort, Hupmobile, Marmon, Oakland, Overland 4, Paige and Studebaker.

D-2	Installing One Rear Side Spring. Includes same as D-1.	2.6
D-3	Installing One New Cross Spring. Same as D-2 and D-1.	2.4
D-4	Repairing One Front Spring Or Rear	4.4
	Includes taking down, replacing necessary leaves, rebuilding and installing.	
D-5	Installing New Shackle Bolts in Rear Side and Cross Spring	5.6
D-6	Installing New Shackle Bolts and Bushings in Rear of Front Springs, One	2.0
	Two	4.0
D-7	Installing New Shackle Bolts and Bushings in Front Springs	6.0
	Includes new bushings and bolts in rear end of spring and new hangers, also new bolts and bushings if needed in front of front springs.	
D-8	Installing One New Shackle Bolt and Bushing or Both as Needed in Any Spring Excepting Rear of Front Spring	2.2
D-9	Installing New Center Bolt in Front Spring	2.0
D-10	Installing New Center Bolt in Rear Side Spring	2.0
D-11	Rebushing Entire Chassis	34.0
	Includes spring shackle bolts and bushings, new parallel rod bolts, spindle bolts and bushings, torque arm, front and rear universal joints and swedge axle shafts.	
D-12	Tightening All Shackle Bolts and Spring Clips, Models 51-53	3.6
D-13	Tightening All Shackle Bolts and Spring Clips, Models 55-57-59	4.8
D-14	Cleaning and Painting Springs with Oil	.6
D-15	Cleaning and Spreading Springs with Graphite on Car	3.6
	Five springs.	
D-16	Tightening All Spring Clips	1.6
D-17	Installing New Rubber Bumper on Front Spring	.6
	Includes loosening of caps, installing new bumper and tightening clips.	
D-18	Installing Rubber Bumper on Rear Spring	.8
	Attach rg to frame.	
D-19	Removing Broken Bolt in Any Spring	1.0
D-20	Tightening Front Spring Shackles and Clips	1.6

Group E—Steering Gear

E-1	Overhauling Steering Assembly	24.0
	Including removing from car, completely disassembling and installing necessary parts, rebuilding, installing and adjusting throttle control.	
E-2	Taking out Lost Motion in Steering Mechanism	2.2
	Includes adjusting of worm and sector, adjusting thrust bearing, adjusting drag link and spindle bolts.	
E-3	Taking Rattle Out of Spark and Throttle Control at Sector	4.4
	Includes installing necessary parts.	
E-4	Freeing Up Spark and Throttle Control Installing New Parts if Necessary	1.0
E-5	Taking Play Out of Drag Link Both Ends	.6
	Includes taking off joint boots and packing with grease, making necessary adjustments. Also includes tightening of steering arm.	
E-6	Installing New Gear for Spark or Throttle Control	3.6
	Includes installing necessary parts. Same must be working correctly and spark and throttle control at top of steering must have full throw.	

Group F—Engine

F-1	Overhauling Engine	80.0
	Includes: Cleaning engine, dropping oil pan, pulling pistons, micrometering pistons and cylinders, installing reground blocks, fitting new pistons and rings, wrist pins and bushings, if needed, removing and overhauling generator, overhauling rocker plate, examining distributor and installing any new plates needed, taking up or installing new main	

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		Hours
	and rod bearings, replacing with new if necessary, reinstalling new or reground camshaft if needed, installing new camshaft sprockets, examining oil pump and replacing any new parts, checking oiling system, including oil check relief valve, making necessary repairs if needed, installing timing chains and fan bearings, overhauling carbureter, replacing new parts where needed, overhauling starter clutch, flushing radiator, installing new hose where needed, seeing that throttle and spark control is working properly, replacing new parts where needed, replacing oil pan with new gaskets, regulating oil pressure, stopping all leaks and tuning engine.	
F-1a	**Installing New Crankshaft or Redressing Old Crankshaft and Fitting New Undersize Bearing in Conjunction with Above (Extra)**	2.0
F-2	**Installing New Crankcase**..... Includes disassembling and reassembling entire engine, using old parts. Does not include adjusting of bearings.	96.0
F-3	**Installing Reground Blocks and Pistons** ..... Includes draining of radiator, removing and putting back lamps, removing, cleaning and adjusting carbureter and generator, removing dirt pan and oil pan, pistons, removing valves and resetting in new blocks, adjusting connecting rod bearings, installing new if necessary, fitting pistons to cylinders, installing new wrist pins and bushings, reassembling, put up oil pan using new gaskets, installing dirt pan, radiator and tuning engine. Fitting new center main bearing in conjunction with above (extra).....	48.0 6.6
F-4	**Installing New Spiral Gears**..... Includes removing radiator and oil pan, removing water pump and installing new gears, also new thrust bearings and water pump shaft if needed.	13.6
F-5	**Cleaning Engine With Spraying System**	1.6
F-6	**Installing Timing Chains and Sprockets and Fan Bearings**.... Includes removing headlights, radiator, jacking up engine, removing timing case, removing chains and fan bearings and installing new, using new gaskets where needed, replacing radiator and headlights, refilling radiator.	11.6
F-6a	**Installing Front End Chains, Fan Bearings or Bushings, Sprockets and Spiral Gears**..... Includes same as F-6.	20.0
F-7	**Installing New Timing Chains**... Same as F-6a with the exception of fan bearings.	9.6
F-8	**Installing New Fan Bearings Type 51**	4.4
F-9	**Installing New Fan Bearings Type 55 and 57**	4.4
F-10	**Installing New Fan Bushings Type 59**	8.4
F-11	**Overhauling Wiggle Joint Type 59** ..... Includes taking off headlights and radiator, removing fan from case, examining crosses, sprockets, and driver, using new parts where needed, reinstalling case using gaskets, replacing fan radiator and headlights.	10.8
F-12	**Cleaning Baffle Plate**..... Includes removing dirt pan, taking down oil pan, removing and cleaning baffle plate, checking oil float and seeing that same is working properly, replacing baffle plate and pan using gaskets.	2.6
F-13	**Pulling Pistons, Micrometering and Reporting** ..... This operation subject to cancellation should engine be overhauled or new blocks installed. See operations F-1 and F-3.	4.0
F-13a	**Installing Same Pistons Without Replacing New Parts**..... Includes installing rods, pistons and bearings, installing oil pan using new gaskets, refilling with new oil, refer to F-12.	4.8
F-14	**Installing New Wrist Pins and Bushings** ..... (With pistons and connecting rods out of car)	4.8
F-15	**Fitting New Bearings in Conjunction with the Above Operations**..	6.4
F-16	**Adjusting Main Bearings**..... Pan off. Refer to F-12.	8.0
F-17	**Fitting New Center Main Bearings** ..... Pan off. Refer to F-12.	4.0
F-17a	**Fitting New Center Main Bearings** ..... In Conjunction with F-16.	4.0
F-17b	**Indicating Main and Rod Bearings** ..... Includes removing and replacing of pan. Refer to F-20 for new bearing.	4.4
F-18	**Installing New Pistons, Wrist Pins and Bushings. Taking Up or Installing New Main and Connecting Rod Bearings** ..... Includes taking down of pan, cleaning baffle plate, fitting new pistons and rings for cylinder, replacing baffle plate and oil pan, using new gaskets, refilling with new oil.	20.8
F-20	**Taking Up or Installing New Main and Connecting Rod Bearings**.... Includes removing and replacing of oil pan using new gaskets. Refilling engine with oil.	20.0
F-21	**Adjusting Single End Rod Bearings**	6.8

Synopsis of the Cadillac Flat Rate Schedule

In This Issue

Group A.....Wheels
Group B.....Front Axle
Group C.....Frame
Group D.....Springs
Group E.....Steering Gear
Group F.....Engine
Group G.....Cooling System
Group H.....Carbureter
Group I.....Electric Equipment
Group J.....Clutch
Group K.....Gearset

In Next Week's Issue

Group L.....Tire Pump
Group M.....Universal Joint
Group N.....Rear Axle
Group O.....Torsion Arm
Group P.....Brakes
Group Q.....Exhaust System
Group S, Fenders, Runningboards, Floor Boards
Group T.....Windshield
Group U.....Oiling and Greasing
Group V.....Speedometer
Group X.....Accessories

		Hours
F-22	**Overhauling Rocker Arm Plate. Refer to F-38**..... Includes removing generator, carbureter and rocker arm plate and overhauling, installing new rocker arms, new shafts and new bushings, installing cam slides and guides if needed, adjusting tappets and touching up valves, putting back generator and carbureter and tuning motor.	21.6
F-22a	**Overhauling Rocker Arm Plate When Done as Additional Order to Change Blocks**	11.6
F-23	**Grinding Valves Type 57-59-61**.... Includes burning of carbon and adjusting tappets, removing and cleaning carbureter, installing new port plug gaskets if needed, reinstalling carbureter and adjusting plugs.	12.8
F-23a	**Grinding Valves Type 51**..... Includes removing generator and carbureter, burning carbon, removing and refacing valves; and regrinding, adjusting tappets, replacing generator, carbureter and tuning engine.	16.0
F-23b	**Grinding Valves Type 53-55**..... Includes burning of carbon, adjusting tappets, removing and cleaning carbureter, installing new port plug, gaskets if needed.	14.0
F-24	**Burning Carbon Type 51-53-55**.... Includes freeing up of valves with kerosene.	3.2
F-25	**Cleaning Carbon Type 57-59**.....	3.2
F-26	**Adjusting Valve Tappets Type 53-55-57-59** ..... Includes removing carbureter and generator, adjusting tappets and oiling valve stems, replacing generator, cleaning and installing carbureter.	3.0
F-27	**Adjusting Valve Tappets Type 51** Includes removing carbureter and generator, adjusting tappets and oiling valve stems, replacing generator, cleaning and installing carbureter.	6.0
F-28	**Installing One New Valve Spring** When done in connection with adjusting tappets.	2.0
F-29	**Installing New Port Plug Gasket.**	.2
F-30	**Installing One Set of New Port Plug Gaskets**.....	2.4
F-31	**Installing New Priming Cup**..... Additional	.2 .2
F-32	**Installing New Fan Spring**.....	1.8
F-33	**Installing New Fan Disk or Hub and Spring**	1.8
F-34	**Tightening Fan and Installing New Cotter Key**.....	1.2
F-35	**Adjusting Timing Chains Type 59**	.8
F-36	**Eliminating Fluttering in Oil Spillway** .....Hourly rate	
F-37	**Installing New Felts in Distributor Housing** ..... Includes removing from engine, installing new felts and replacing.	4.8
F-38	**Overhauling Rocker Plate and Grinding Valves** ..... Includes same as F-22.	28.8
F-38a	**Installing New Camshaft Front End Chains or Overhauling Wiggle Joint in Conjunction with Above**	8.8
F-39	**Painting Engine**	2.8
F-40	**Installing Spiral Gears**..... This operation only applies when front end is torn down.	6.4

Group G—Cooling System

		Hours
G-1	**Flushing Radiator**..... Includes draining radiator and condenser, flushing out entire cooling system and refilling.	.6
G-2	**Removing Radiator** ..... Includes draining radiator and taking same off car.	1.2
G-3	**Removing and Installing Radiator** Includes draining radiator, installing new hose where necessary and refilling and stopping any water leaks in hose. Refer to G-6.	2.8
G-4	**Removing Strainers from Radiator on Type 51-53-55**..... Includes removing strainers from radiator or water pump, replacing hose connections and installing new hose if needed, refilling radiator.	2.4
G-5	**Removing Strainers from Radiator on Type 57-59**..... Includes removing plug on each side of radiator, taking out screens, replacing plug and refilling radiator.	.8
G-6	**Removing and Installing Radiator Shell** ..... Radiator off car. Refer to G-3.	1.4
G-7	**Installing One New Hose Connection T Hose**.....	.4
G-8	**Stopping Water Leaks at Hose Connections with White Lead, All Connections** ..... Includes installing new hose where needed.	2.0
G-9	**Tightening Water Pump Gland Nuts** ..... Includes refilling grease cups on pumps.	1.4
G-10	**Overhauling Water Pumps, Two.** Includes taking down dirt pan, removing water pump and installing any new parts found necessary and repacking, taking out and testing thermostats, installing new if needed, installing pumps, filling radiator with water and testing for water leaks, replacing dirt pan.	8.0
G-11	**Repacking One Water Pump**.... **Two** ..... Includes draining and refilling radiator, taking down and putting back dirt pan, removing pump, repacking and installing new hose on water pump if needed.	2.0 4.0
G-12	**Installing New Thrust Bearing on Water Pump Shaft**..... Includes draining and removing radiator and dirt pan, removing oil pan, installing new thrust bearing shaft, if needed, replacing oil pan and dirt pan, putting clean oil in engine.	8.8
G-13	**Testing and Adjusting Thermostats** ..... Includes replacing with new if necessary.	4.8

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		Hours
G-14	**Installing New Lace on Radiator Shell** ..... Includes removing old and installing new.	.8
G-15	**Installing New Lace on Cowl**.... Includes removing old and installing new.	.8

Group H—Carbureter

H-1	**Carbureter Overhaul**..... Includes installing new parts needed, removing and installing same.	3.2
H-2	**Carbureter Cleaning**..... Includes removing, cleaning and installing, also adjusting.	1.2
H-3	**Adjusting Carbureter** .....No charge Includes adjusting air valve and leaning device.	
H-4	**Carbureter gasket** ..... Includes installing new top gasket to manifold.	.4
H-5	**Installing New Leather Seat in Carbureter**	1.4
H-6	**Removing and Installing Intake Manifold** ..... Includes using new gaskets.	1.2
H-7	**Installing One New Gasket in Intake Manifold** ..... Two	.6 1.0
H-8	**Regulating Air Pressure** ..... Includes finding if any obstruction in pump lines or valves and correcting same.	2.2
H-9	**Removing and Installing Gas Tank** ..... Includes cleaning gas lines and tank, installing new packing at shut-off valve and tank if needed, does not include any repairs to tank.	2.2
H-10	**Tightening Gas Tank**.....	.6
H-11	**Repairing Gas Tank Gage**..... Includes removing gas gage, setting float, adjusting same so that it operates correctly.	.6
H-12	**Gas Gage-Installing New Glass or Gasket. Test for Leaks**..... No charge if done in connection with H-11.	.2
H-13	**Throttle Control Overhaul**..... Includes new sector gear and pinion gear, removing and installing spark control and throttle gears on pinion to gas or spark or both, installing new shaft if needed, throttle must be working correctly, also includes removing and installing dirt pan.	4.8
H-14	**Installing New Air Pressure Regulator**	.8
H-15	**Installing New Choke Lever Complete and Adjusting Same**.....	.8
H-16	**Installing New Stop Pin on Choke or Steering Column**.....	.3
H-17	**Installing Gasoline Tank Filler Cap or Gasket or Both**.....	.2
H-18	**Repairing Air Pump on Engine**... Includes cleaning and inspecting and replacing any new parts needed.	1.2
H-19	**Removing and Installing New Hand Air Pressure Pump**..... Includes making any necessary repairs.	.6
H-20	**Installing One Length of Gas or Air Pipe**	1.2
H-21	**Cleaning Gasoline Strainers and Draining Sediment Chamber at Gas Tank**	.6
H-22	**Installing New Springs in Carbureter and Adjusting**	.6
H-23	**Cleaning Gas Screens, Battery Terminals. Adding Necessary Water, Painting Springs with Oil**	1.2

Group I—Electrical Equipment

I-1	**Ammeter Installation** ..... Includes installing new, test must be made for correct operation of ammeter.	.8
I-2	**Battery, Cleaning Battery Terminals** .....No charge Includes Testing and Refilling with distilled water.	
I-3	**Battery removal**..... Includes removing and installing. Repairing additional.	.6
I-4	**Installing New Battery Ground Lead** ..... Includes removing old ground wire, cleaning contact surface and installing new wire.	1.2
I-5	**Installing New Circuit Breaker**....	.6
I-5a	**Minor Repairs on Circuit Breaker** Includes removing, cleaning, adjusting and reinstalling.	1.6
I-6	**Installing New Negative Wire from Generator to Battery** ..... Includes removing old and installing new	.8
I-7	**Installing New Hold Down Rod Strap on Battery Box and Clamp** ..... Two	.4 .6
I-8	**Cleaning Terminals on Battery Connecting Posts**	.4
I-9	**Removing and Installing Combination Switch**	1.0
I-10	**Combination Switch Overhauling**.. Includes removing, repairing and installing.	3.2
I-11	**Stopping Grease Leak in Distributor Head** ..... Includes removing distributor housing, installing new felt washers, replacing housing, connecting up generator shaft and installing distributor cover.	4.8
I-12	**Installing New Distributor Head Type 51**.....	.6
I-11a	**Stopping Grease Leak in Distributor Head Type 59**..... Removing distributor housing, installing new felts and bushings if necessary.	9.2
I-13	**Installing Distributor Head on Types 53-55-57-59**	.8
I-14	**Installing New Condensor on Type 51** ..... Includes removing and installing carbureter, removing old condensor and installing new, connecting up and installing new resistance unit and spool if needed.	2.0
I-15	**Installing New Resistance Spool Type 51** ..... Includes installing new fiber bushing.	2.4
I-16	**Installing New Condensor Unit, Types 53-55-57-59**	.6
I-17	**Installing New Resistance Unit, Types 53-55-57-59**	.4
I-18	**Removing and Installing Generator**	2.8
I-19	**Overhauling Generator on Type 51** Includes removing carbureter, removing generator, disassembling, cleaning all parts, inspecting all working parts, renewing spiral hub driving clutch if needed, replacing of any ignition parts in generator, turning up armature, cutting down mica, sanding in brushes, reassembling in engine, connecting all wires, testing for proper operation in circuit, replacing carbureter and retiming engine.	10.0
I-20	**Overhauling Generator, Type 51**... Includes taking generator off car. Includes same as I-18.	6.4
I-21	**Overhauling Generator, Types 53,-55-57-59** ..... Includes removing generator from engine and disassembling, cleaning parts, inspecting all working parts, installing new driving clutch where needed, turning down armature, cutting down mica, sanding in brushes; reassembling and installing in engine, connecting up generator shaft, connecting all wires and testing for proper operation of generator circuit.	7.2
I-21a	**Installing New Brushes in Generator, Type 53-55-57-59**..... Type 51	4.8 7.0
I-22	**Overhauling Generator, Types 53-55-57-59** ..... Includes taking generator off car. Includes same as I-21.	7.2
I-23	**Installing Generator Clutch, Types 53.55-57-59** ..... Does not include removing and replacing generator.	1.2
I-23a	**Installing New Generator Clutch Type 51** ..... Includes removing and installing generator, disassembling and installing new clutch and reassembling.	6.4
I-24	**Regulating Charging Rate**..... Includes cleaning of commutator, sanding in brushes, inspecting for proper operation.	.6
I-25	**Turning Down Armature Out of Generator**	1.6
I-26	**Removing Short Circuit or Wire Trouble**	1.6
I-27	**Repairing Starting Mechanism**.... Includes removing generator, making necessary repairs and installing any new parts needed; replacing generator	6.0
I-28	**Installing New Outside Starter Pedal Pin**	2.0
I-29	**Installing New Inside Starter Pedal Pin**	2.4
I-30	**Installing New Throw Back Spring on Starter Pedal**	1.6
I-31	**Ignition Coil** ..... Includes removing, testing and installing new if needed.	1.0
I-32	**Installing New Bulb in one light**..	.30
I-33	**Installing One Head Light Complete** ..... Two ..... Includes focusing of lights.	.8 1.6
I-34	**Taking Rattle Out of Headlight Reflectors**	.6
I-35	**Installing One Side Light Complete** ..... Two	.8 1.6
I-36	**Minor Repairs on Lighting System**	1.0
I-37	**Focusing Headlights** ..... Does not include tilting mechanism.	.6
I-38	**Adjusting Tilting Device**.....	.8
I-39	**Removing and Installing Clock Light Complete**	.4
I-40	**Removing and Installing Speedometer Light Complete**.....	.4
I-41	**Installing New Horn and Bracket, Cadillac Standard**	.8
I-42	**Tuning and Adjusting Horn**.....	.6
I-43	**Installing New Wire from Distributor Spark Plug**	1.2
I-44	**Installing Complete Set of Ignition Wires**	4.4
I-45	**Overhauling Distributor** ..... Includes removing housing from car; disassembling and installing any parts needed, reinstalling on car, retiming engine.	6.4
I-45a	**Overhauling Distributor on Type 51** ..... Includes removing of carbureter and generator.	8.4
I-46	**Checking Timing (Ignition)**.....	1.4
I-46a	**Points and Plugs** ..... Includes checking of timing.	2.8
I-47	**Cleaning Headlight Reflectors**....	.6
I-48	**Installing New Felts in Distributor** ..... Includes removing housing from engine.	4.8
I-49	**Installing New Tail Light Complete**	.6
I-50	**Installing Tail Light on Fender**...	1.6
I-51	**Repairing Horn** .....Hourly Includes installing new diaphragm.	
I-51a	**Installing New Diaphragm and Adjusting Points and Tuning Horn**	2.2
I-52	**Installing New Cigar Lighter Tip**..	.6
I-53	**Overhauling Cigar Lighter**.....	1.6
I-54	**Removing Short Circuit in Tail or Dash Light or Both**.....	1.0

Group J—Clutch

J-1	**Clutch and Gearset**..... Includes removing and installing.	6.4
J-2	**Overhauling Clutch** ..... Includes removing clutch from car and disassembling and aligning plates, installing new if necessary, installing any other new parts needed; installing new bearings if needed, reassembling and installing in car, making all proper adjustments.	8.8
J-2a	**Overhauling Clutch Out of Car**.... Same as J-2.	4.8
J-3	**Adjusting Clutch Pedal** ..... Allowing 1 in. play.	.4
J-4	**Clutch Ball Race Grease** ..... Includes removing floor boards. Packing clutch inspection plate with grease, installing inspection plate and floor board.	.6

Group K—Gearset

K-1	**Overhauling Gearset** ..... Includes removing from car, installing the necessary parts, reassembling and installing.	20.0
K-1a	**Overhauling Gearset Out of Cars**..	14.4
K-2	**Filling Gearset with New Grease**.. Includes draining, washing out, examining and installing fresh grease, removing gearset cover, cleaning out old grease, installing gearset cover.	.6
K-3	**Installing New Gasket on Gearset Cover Plate**.....	1.2
K-3a	**Installing New Gasket on Top of Gearset** ..... Includes removing of shifter forks.	.6
K-4	**Gearset** ..... Includes draining and refilling with oil.	.4
K-5	**Tightening Gearset Flange**	.6
K-6	**Installing New Jackshaft in Gearset** ..... Includes taking down gearset cover, draining gearset, removing jackshaft, replacing with new or necessary gear, replacing with new gaskets, putting up cover, filling gearset with oil.	6.0
K-7	**Installing New Clutch Connection Shaft Only** ..... No guarantee given as to quietness of gearset.	12.0
K-8	**Installing New Slipper Gear in Gearset** ..... Includes disassembling and reassembling of gearset.	10.4

(Concluded in next issue)

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Getting the Election Day Idea Into an Ad

How a Los Angeles Dealer Capitalized the Value of Timely Advertising with Special "Copy"

THE Paul G. Hoffman Co., Studebaker dealers in Los Angeles, used a most timely piece of advertising copy on the day following the primaries in the California State election. With the newspapers featuring the returns of the election, the Hoffman company bought preferred positions in all daily newspapers and published advertisements featuring the heading: "California Goes Studebaker —Studebaker Elected." Motorists were shown lining up before the ballot box casting their votes for Studebaker.

The "copy" in the box in the ad read as follows:

"When the final returns of the election came pouring in, Studebaker Six showed a big majority over all other candidates for six-cylinder popularity in the city, county and state. Its total poll of votes in Los Angeles exceeded that of the combined totals of the next five six-cylinder candidates as figured from the returns for 1922. Studebaker Six leads its nearest rival by more than 50 per cent.

"Every section showed a strong vote for this popular medium priced car; in Hollywood, where style is a big factor, it has a remarkable lead, while in the mountain and desert counties, where real hard service is a requisite, it has a wonderful preference.

"Studebaker Six ran on its platform of satisfactory performance. Every man who has driven one has gained from experience a true conception of the valuable transportation service it has been rendering.

"Every class was backing Studebaker Six. The working man who demanded economy of operation and preferred style and the smoothness of six-cylinder performance forsook his former four-cylinder candidate and voted Studebaker. The business man whose first consideration is reliability and low maintenance cost again supported Studebaker Six. Among the wealthier classes it made a wonderful showing for the closed models were in harmony with the finest homes and afforded a luxury of comfort and appointment that appealed to the taste of the discriminating buyer.

"After serving the original owner for thousands of miles many a Studebaker Six has passed into the hands of the second, third or fourth buyer and continued to maintain its record for satisfactory transportation performance.

"Judging Studebaker Six by years of past performance it is easy to understand its overwhelming majority. Going back for seventy years the name Studebaker has stood for good transportation. The high ideals, progressive methods and advanced ideas of Studebaker well deserve this public recognition of merit."



The ad, which was widely commented on in Los Angeles, may offer a suggestion to dealers in other cities where elections are to be held this fall. It is one of those ideas which catch popular fancy because of their timeliness, like ads which bring in the Thanksgiving, Christmas and New Year seasons when people are thinking and talking about those special days.

Advertising of this kind gets away from the usual run of copy. It attracts attention because it is different, and every dealer knows that attention is the necessary forerunner of interest and sales.

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Date of Lien Fixes Priority in Michigan

Ruling in Recent Case Makes Time Deciding Factor Where Garageman's and Chattel Liens on Car Exist

IN a recent Michigan case it was held by the court that a garageman's lien in that state does not take priority over a prior chattel mortgage, but that different liens upon the same property have priority according to the time of their creation.

The garageman claimed possession of the automobile by virtue of his statutory garageman's lien. The defendant claimed possession by reason of the fact that it had properly filed a chattel mortgage before the work was done for which the lien was claimed.

The Michigan Garageman's Lien Law reads:

> Sec. 1. That every garage keeper who shall in pursuance of any contract express or implied, written or unwritten, furnish any labor, material or supplies shall have a lien upon any automobile or other motor propelled vehicle, stored, maintained, supplied, or repaired by him for the proper charges due for the storage, maintenance, keeping or repairing thereof, and for gasoline, electric current, or other accessories and supplies furnished or expended or expenses bestowed or labor performed thereon at the request or with the consent of the registered owner of the license plates of said motor vehicle and such garageman may detain such motor vehicle, automobile or other motor propelled vehicle at any time it may be in his possession within ninety days after the last labor or furnished the last supplies for which the lien is claimed. Act 312 Pub. Acts, 1915—Michigan.

The counsel for the garageman contended that the purpose of the legislature was to give a prior lien to garagemen but the court in refusing to follow this theory said:

In the absence of any language indicating a contrary intention we assume that the legislature did not intend to change the general rule of law to the effect that a prior lien gives a prior claim which is entitled to prior satisfaction out of the subject it binds for the benefit of garagekeepers. Sloat vs. Mid West Finance Corp., 189 N. W., pg. 52.

Liability Depends on State Laws

Editor Motor World: I am starting a livery automobile business and would like some information regarding the liabilities attached to this business. I am renting the cars out by the hour and am employing no drivers, the person renting the car doing his own driving. I would appreciate it very much if you would let me know just what the liabilities are and any information in connection with the business. I read several accounts in Motor World regarding a hire of autos, but none that covers a person doing his own driving.—A. Q., Paterson, N. J.

Answer—In the State where you live—New Jersey—the same rule of law applies as in New York, Connecticut, Massachusetts and most other States—a car owner is only responsible for accidents when a car is being driven under his control or on his business—so where you rent a car without a driver you would not be liable, unless perhaps you might be held for renting a car to an idiot or an infant.

It must be remembered, however, that all the States do not agree on this proposition, and some States like South Carolina have special statutes which give injured parties a lien on the car which injures them. Some States like Michigan have statutes providing that an injured party need merely show ownership on the part of another to make the other liable for injuries caused by a car owned by him, and that then the owner is responsible unless car was driven without his knowledge or consent.

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

Billing Federal Tax on Parts

Editor Motor World:

We want some information concerning the application of the 5 per cent revenue tax law as it applies to the retailer of automobile parts.

We understand that it is illegal for a retailer to invoice a part for a price including war tax but must show a separate amount as "war tax, etc.," paid the manufacturer.

For instance the retail list price of a part is $6.00. The manufacturer charges 10 per cent to cover transportation to his branch and to cover war tax. The manufacturer authorizes the retailer to charge $6.60 for the part over the counter but states that in billing the part, if an invoice is given the list price of $6.00 must be given and a separate item of 60 cents added and called "transportation and war tax paid the manufacturer."

Could we not bill the parts just as we sell them over the counter and have a rubber stamp to stamp on all invoices worded, for instance, "all prices for parts include Federal war tax."

We will appreciate some information on this subject.—C. B. Orangeburg, So. Carolina.

Answer: There would certainly be nothing illegal about the use of the rubber stamp you mention. Your manufacturer probably has some reason for wanting these items set out separately. It is a question whether or not it would be wise to set out the items other than as the manufacturer desires them set out. Why not write and ascertain the manufacturer's reason? It is very likely to prevent overcharging on the part of some dealers that it requires all dealers to set out the items this way.

Mortgage Must Be Re-Recorded

The Supreme Court of Washington in the recent case of Muller vs. Bardsher reported in 205 Pac. Reporter, at page 845, decided that where an automobile is removed from one county to another, if there is a chattel mortgage on it, the mortgage must be re-recorded in the county to which the property is taken within 30 days, or else the lien of the mortgage is lost as against a purchaser of it in good faith, in that county.

Salesmen Representations Are Binding

The fact that a contract for the sale of an automobile contained a clause providing that "there are no promises, verbal understandings or agreements of any kind pertaining to this order not clearly specified in it" was held by the New York Courts not to preclude a car purchaser from suing for damages on the claim that it was induced to make the contract by the false oral representations of the seller as to the condition and character of the car. Benedict Co. vs. McKeage, 201 Ap. Div. (N. Y.) pg. 162.

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Repairshop Shortcuts

Read What Readers Write

SOME months ago we referred to a department conducted by a New York newspaper entitled "What did you see." This newspaper, the Evening World, has found the department so interesting that in addition to the usual prize for contributions it is now worth while to offer a first prize of a Ford car each day. It has been proved that the things that readers write are eagerly read by the rest of the readers. Motor World readers have for years been careful readers of this department, contributed by other readers. Let others in the trade hear of your time and labor saving ideas. We pay $1 for each contribution accepted. We will accept any that are practical and that have not been previously used.

No. 3405—A Spark Plug Scraper.—A scraper for cleaning the carbon from the inside of a spark plug shell is made from one blade of an old pair of scissors. If the edge is sharpened on a grinding wheel the carbon will cut out easily.—Edward Ruesch, Buffalo, N. Y.

No. 3406—Headlamp Door Clamp.—A clamp to remove or replace headlamp doors that fit tight is made from a piece of square lumber to which is securely fastened a length of fan belting. The leverage obtained will move the door without marring it.—William B. Wheatley, R. G. Edgerton & Co., Norfolk, Va.

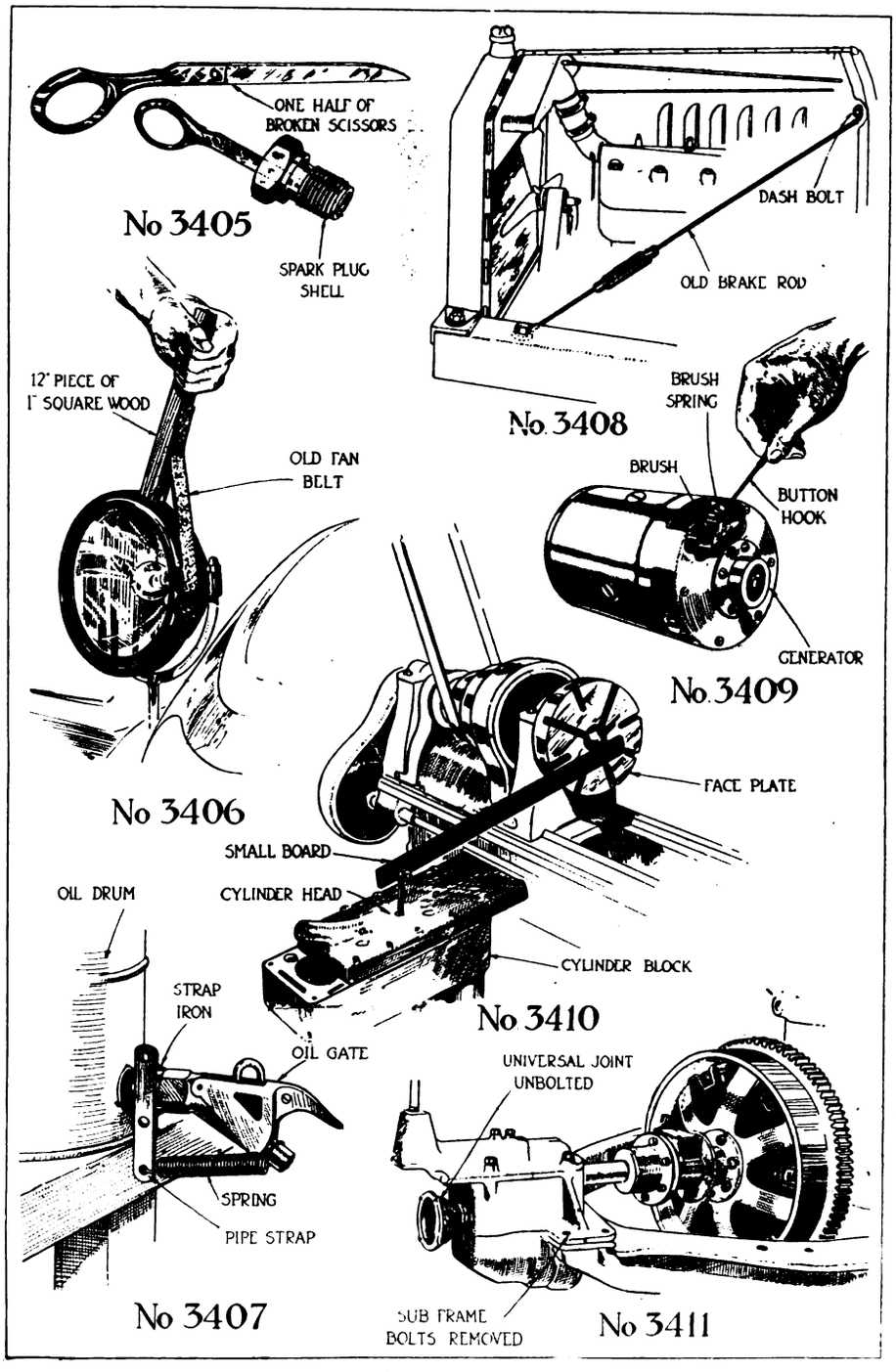
No. 3407—Self Closing Oil Spigot.—The spigot is of the gate type and provided with a spring to close it as soon as the handle is released. This prevents men walking away, leaving the oil running.—Charles R. Kitts, Page Garage, Denver, Col.

No. 3408—To Ease Up Ford Front Doors.—When Ford front doors will not close, the cause is sometimes due to the sagging of the dash backward. This is overcome with a brace rod and turnbuckle from the dash to the frame.—H. R. Grigsby, Garage Superintendent, Oklahoma Gas & Electric Co., Oklahoma City, Okla.

No. 3409 — Lifting Ford Generator Springs.—Ford generator springs are lifted with a shoe button hook when removing the brushes.—H. V. D. Sweet, Canajoharie, N. Y.

No. 3410—Lapping a Cylinder Head.—When a cylinder head is warped it can sometimes be brought to a fit by lapping. To do this mechanically a crank arm extends from a lathe face to a bolt on the cylinder head.—H. R. Ong, Smith's Garage, Spring Valley, Ill.

No. 3411—Removing Chevrolet Gearset.—By unbolting the universal joint ball and loosening the gearset sub-frame bolts on the Chevrolet 490, it is possible to lift the gearset out without pulling the rear end.—Floyd D. Elmore, Bethesda, Md.



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Equipment to Sell

New Devices for the Car and Truck

Direx Rear Traffic Signal

The Akron Signal Co.,
1178 Edison Avenue, Akron, Ohio.
Price $10.



The signal indicates left, right and stop. The stop signal works automatically from the service brake and the right and left signals are controlled by nickel plated buttons mounted on a steel arm which is japanned and baked and attached to the steering wheel column bringing control within easy access of the finger tips without moving the hand. If desired, the buttons may be placed on the instrument board, door or wheel.

Aske Electric Fuelizer for Fords

The Kase Electric Co., Duluth, Minn.
Price $9.50.



The fuelizer consists of a complete new intake manifold for the Ford included in which is the heating element of the fuelizer midway between the carbureter flange and the branch. The manifold is of cast iron with a chamber formed in the gas passage for the reception of the heating element which consists of four metal grids cased in a thermoplax cover, one terminal of which is grounded to the aluminum cap of the fuelizer. Only one wire is required for connecting up the fuelizer which operates by pressing a switch button for about five seconds. The current is automatically shut off when the finger is removed from the switch button. The current used is approximately one tenth that used by the starting motor. The device is not used when the engine is running.

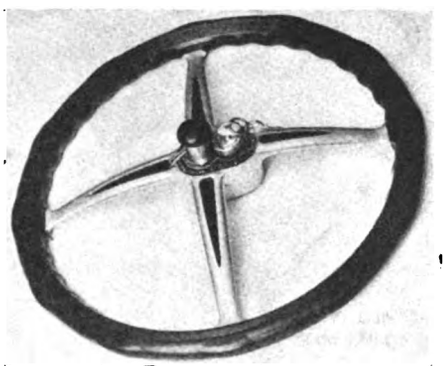
Amalie Oil

L. Sonneborn Sons, Inc.,
New York City.

A Pennsylvania base lubricating oil. It is packed in steel and wood barrels, half barrels, steel quarter drums, 5 and 1-gal. cans. The standard brand is Amalie 1-2-3 Non-Carbon. Special grades are made for Cadillacs and Franklins.

Surlok Steering Wheel Lock

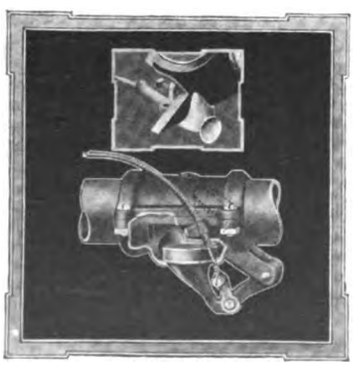
Detroit Motor Casting Co., Detroit.



The lock is mounted in the case-hardened steel head of the steering wheel. It has two positive locking positions and when in one of these it is impossible to drive or tow the car in other than a circle. In the other the car can only be moved in an absolutely straight line. The device does not replace or modify any existing parts of the steering parts. The wheel is knobbed inside and out and has an aluminum spider. The keyhole of the lock is on top and easily accessible.

Ruby Muffler Cutout

Ruby Mfg. Co., Springfield, Ohio.
Price $3.75 to $7.



The cutout is controlled by a plunger on the instrument board through a wire in a flexible metallic cable from the instrument board to the cutout. It has no spring and has a heavy round valve machined to accurately fit the narrow angle seat. The valve pivots outside and away from the heat and carbon. The cutout clamps over a slot in the exhaust pipe.

Paul Tires and Tubes

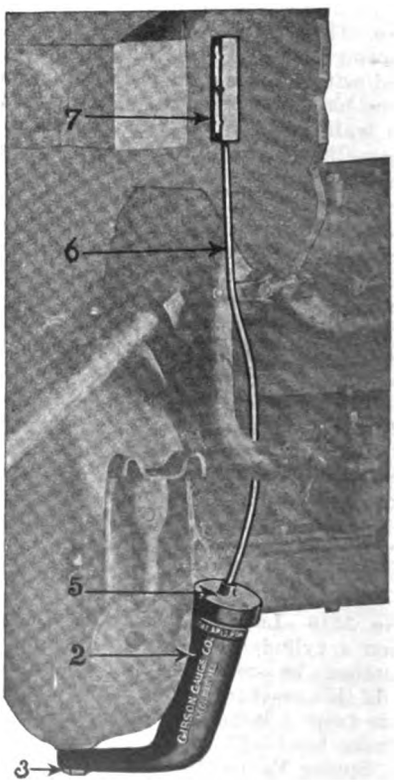
The Paul Rubber Co., Salisbury, N. C.



The cord casings are known as Clover-Leaf Cords and are made in sizes from 30 x 3½ to 35 x 5. The 30 x 3½-in. size is $14.50. Oversize fabrics are made in 30 x 3 and 30 x 3½ at $9.65 and $10.65. Two grades of tubes are made, gray and red. The red tubes are all equipped with Tirometer valves, which show the pressure in the tire at all times. The 30 x 3½ gray tubes are $2.25, red tubes with valves, $2.95.

Gibson Oil Gage for Fords

Gibson Gage Co.,
2304 Seventh Avenue, Moline, Ill.
Price $3.

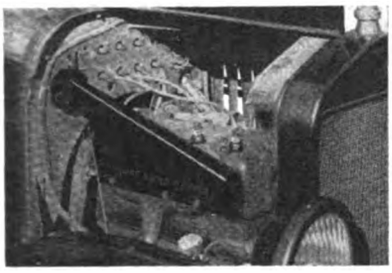


The gage is attached at the bottom of the flywheel housing by removing the drain plug. The plug chamber extends upwards in front of the flywheel housing and a tube extends from the float chamber to an indicator on the dash. Owing to the fact that the flywheel picks up the oil when it is running, the gage only indicates the correct level when the engine is stopped.

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Fyrac Heater for Fords

Fyrac Mfg. Co., Rockford, Ill.
Price $2.50.



A car heater for Fords. It takes the heat from over the Ford exhaust manifold and to the dash through a metal pipe. The heat can be regulated from the driver's seat and can be shut off entirely when desired.

Detroit Tire Lock

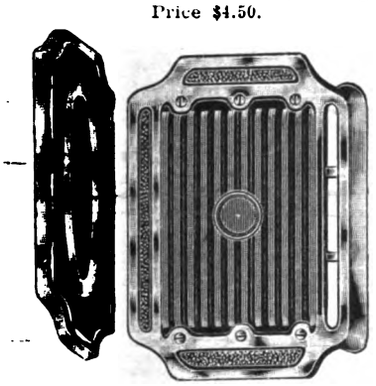
Detroit Carrier & Mfg. Co.,
Comant and Derr, Detroit, Mich.
Price $3.50.



The device locks the spare tire to the carrier. It consists of two parts, one of which is bolted to the carrier and the other is snapped over to lock the tire. The lock is a regular cylinder Yale type, two keys being provided with each one. A revolving snap cover prevents dust and water from getting into the keyhole of the lock itself.

Sterling Aluminum Step Plates

Sterling Auto Devices Co., Inc.,
206 South Jefferson Street, Chicago.
Price $4.50.



The step and kick plate is made of aluminum highly finished and polished. It is complete with frame, rubber mat and kick plate, size 13 x 9. Packed two complete sets in a box, furnished with nickel plated screws.

Blue-Tip Transmission Lining for Fords

Libby Mfg. Co.,
111-121 Watchung Avenue, Plainfield, N. J.
Price, $2.50 per set.

The set consists of three lengths of brake lining, each length of a different type best adapted for the work it has to do. The reverse lining is 48 picks, the slow speed is extra heavy and the brake is asbestos. The set is furnished in a carton, complete with the necessary rivets.

Bu-Nite Steel Band Piston

Butler Mfg. Co.,
3234 West Washington Street, Indianapolis.



A light weight piston with a low expansion co-efficient due to thermostatic control. The weight is approximately one half that of a cast iron piston and it has solid steel bands cast within the skirt, which is a feature of expansion.

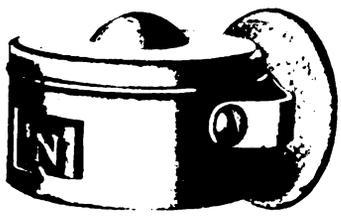
No-Rad Rust Oil

No-Rad Rust Oil Co.,
413-419 North Water Street, Lancaster, Pa.
Price, $1 per can.

A liquid which is claimed to dissolve slime, rust and scale in the radiator and cooling system of a car, truck or tractor.

Cooper Directometer

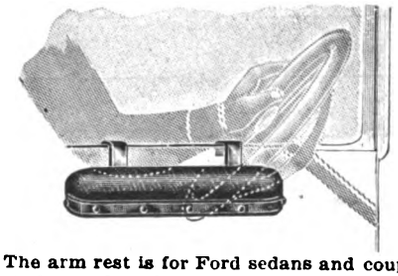
Cooper Mfg. Co., Marshalltown, Iowa.
Price, $7.50.



A device for telling the direction that the car is traveling. The eight principal points of the compass have been marked on the dial in aluminum letters and are discernible either by day or night. It is made of brass and aluminum and is insulated after being attached to the windshield.

Comfy Arm Rest for Fords

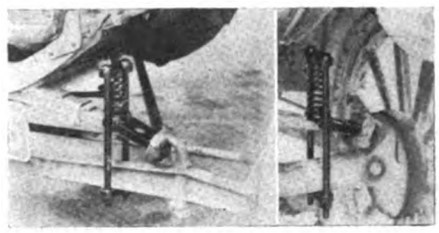
Sterling Auto Devices Co., Inc.,
206 South Jefferson Street, Chicago.
Price $1.50.



The arm rest is for Ford sedans and coupes and is made of black leather, well upholstered. The arms are of aluminum and fit to the sides snugly.

ReDee Shock Absorbers for Fords

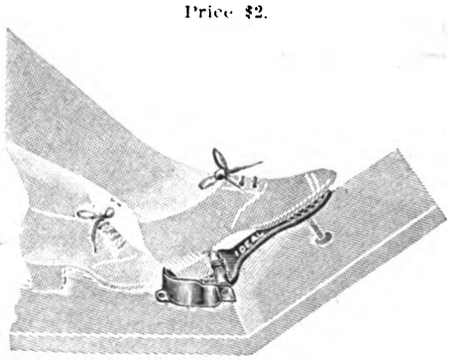
Detroit Motor Casting Co.,
1067 Beaufait Avenue, Detroit.



The outstanding feature of this shock absorber is the loading of the springs in a way to produce the equivalent of a loaded car. The device is designed to put 600 lbs. of load on the springs, but only 12 lbs. on the tire. A stout coil spring rides on a cast saddle held in compression on the regular Ford spring, thus furnishing the stablized load. The same mechanism that loads the spring also checks the rebound.

Ideal Foot Accelerator

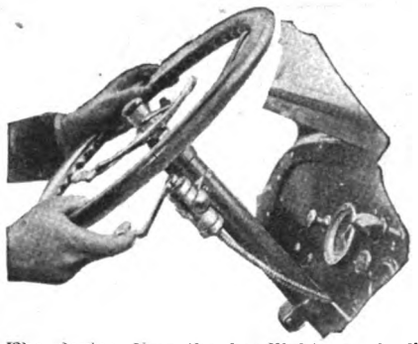
Sterling Auto Devices Co., Inc.,
206 South Jefferson Street, Chicago.
Price $2.



The accelerator is made of aluminum with a heavy spring to give the foot a rest at all times. It does not touch the gas pedal until pressure is applied. It is 11 in. long and fits any model car. Packed one in a box.

Universal Headlight Controller

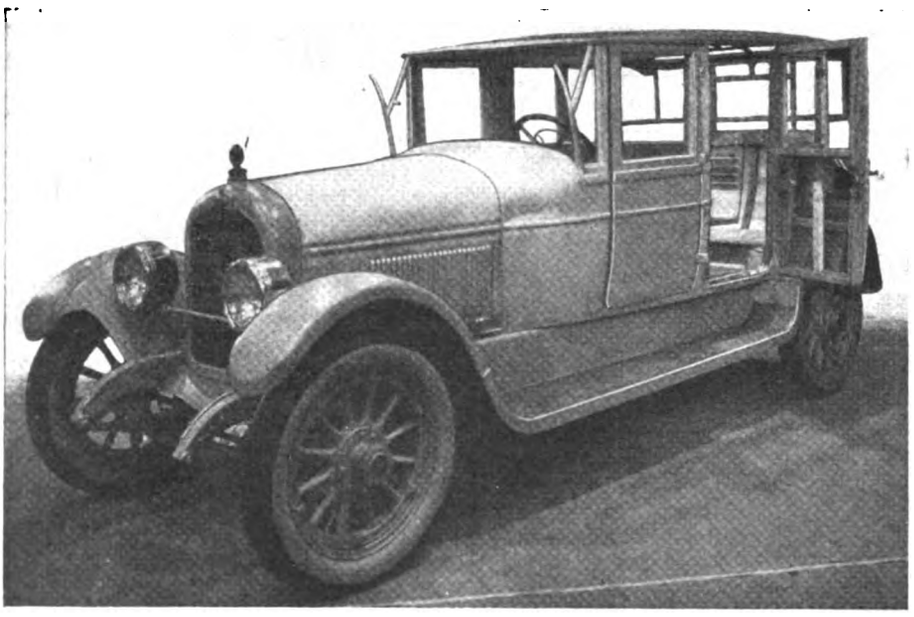
Universal Headlight Controller Co.,
Fisk Building, New York City.
Price $7.50.



The device dims the headlights gradually instead of abruptly. It is installed on the steering post and located so that the controlling lever is operated by a pressure of the finger without removing the hand from the steering wheel. The lights are dimmed by pushing the lever forward. The wiring consists of one control wire attaching to the switch and the other to the bright headlight wire, which has previously been disconnected. The controller and wire conduit are nickel plated and polished.

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Things the Camera Man Saw Here



Showing How the Body Is Built

AT the New York Closed Car Show Marmon had an interesting educational feature, a partly finished body which salesmen used to tell the story of Marmon body lines and construction to prospects. The exhibit attracted almost constant attention.

Closed Cars in Show Setting at Grand Central Palace, New York



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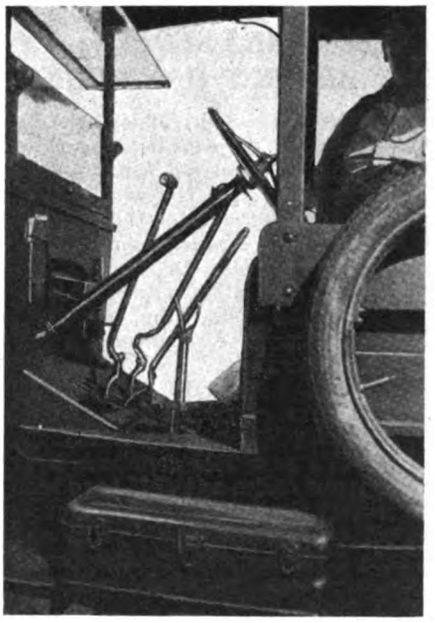
and There in Automotive Circles

A Legless Man's Ford

(At Right)

A HAND operated Ford truck is being used every day in Cincinnati, being driven through heavy traffic by the owner, J. A. Callahan, ice dealer and expressman. Being without the use of his lower limbs, he conceived the idea of installing levers to take the place of the necessary foot manipulation.

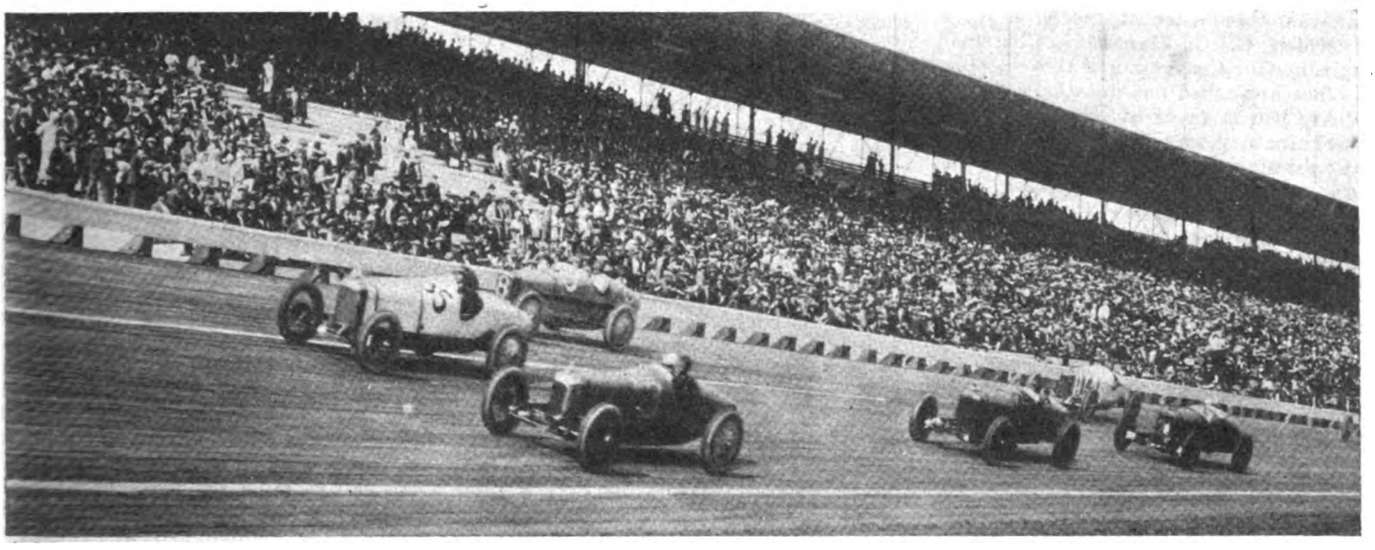
Two holes were drilled in each of the foot pedals and the levers attached with bolts. The low speed lever has a hand grip, as has the brake lever, while the reverse is a perpendicular bar.



At the New Kansas City Speedway

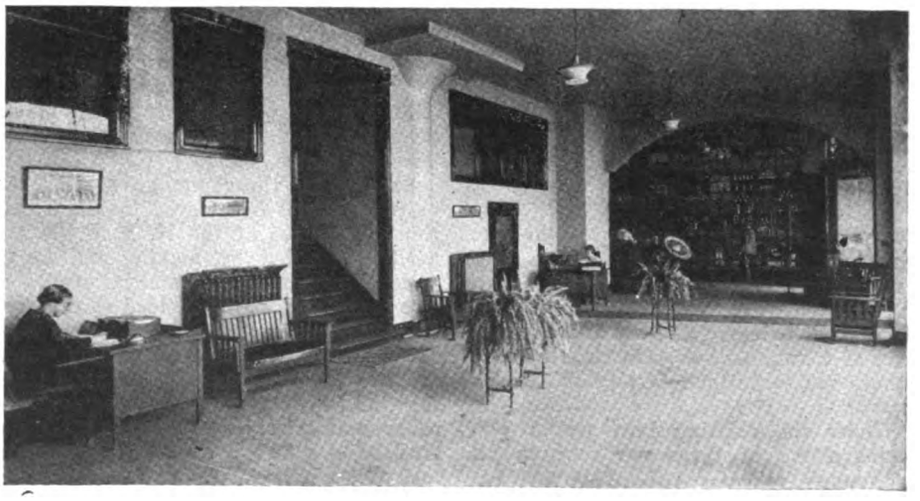
(Below)

THE new track was opened Sept. 16 with a race that resulted in one fatal and several serious accidents. In the picture car No. 35, in the lead, is being driven by Jimmy Murphy. It is a Miller Special. Tommy Milton, in a Leach Special, won the race. Milton is A. A. A. champion, having won the Indianapolis classic last May.



Display Helps Dealer Sell Accessories

EVERY day in the year there is either an accessory or a parts display in one of the windows of the Wangelin-Sharp Co., Ford dealer in Indianapolis. A merchandising plan that presents accessories as real necessities to new and used car buyers sells $65,000 worth of equipment and parts a year for this firm.



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Will Ask Repeal of War Tax Laws

CONGRESSIONAL AID SOUGHT BY N. A. C. C.

Desire Is Not for Special Privileges But to Remove Discrimination

WASHINGTON, Sept. 29—The repeal of the discriminatory war excise tax laws of 1918 and 1921 will be sought by the National Automobile Chamber of Commerce in a campaign, launched here today, placing facts and figures before Congress, setting forth the Chamber's argument as to why the laws should be repealed and citing the present inequalities of the existing law.

The opening "guns" of the Chamber are being trained on the members of the House, Senate and more than 1000 nominees for seats in these two bodies.

Letter Asks Question

In a letter, carefully planned by the Taxation Committee of the N. A. C. C. of which C. C. Hanch is Chairman, aspirants for Congress and those already in office are asked one question:

"Are you in favor of the repeal of all discriminatory war excise taxes?"

Continuing the letter states:

The desire of Congress to repeal discriminatory war excise taxes was definitely indicated in amending the 1918 Federal tax law by removing such taxes on some articles and reducing them on others. In no case did Congress increase such taxes or add new ones.

The discriminatory war excise taxes in the Federal tax laws of 1918 and 1921, and the changes made in the 1918 law by the 1921 law, are graphically shown in the attached memorandum.

Apparently Congress believed it of greater importance to relieve musical instruments, sporting goods, chewing gum, thermos bottles, fur articles, picture frames, perfumes, toilet waters and hair dyes than individual transportation. In this belief we do not concur, and we feel that the only equitable thing in the interests of fair play and the welfare of all industry, as a whole, is to repeal all discriminatory war exise taxes.

The Chamber's letter closes with the request that the addressee favor the Chamber with his opinion in the premises.

Seeks Fair Taxation

The opening "shot" makes it clear that the automobile industry is not seeking any special privileges for itself as an industry but is merely seeking fair taxation on all industry and not the elimination of taxation on certain classes while others must continue to pay the excise taxes.

Under the existing law, section 900 levies a tax of three per cent on all automobile trucks, tires, parts and accessories and five per cent on all other automobiles, tires, parts and accessories.

The law of 1921, repealing in part the law of 1918, relieves manufacturers of musical instruments, sporting goods, chewing gum, thermos bottles, toilet soaps, toilet powders, picture frames, motion picture films, perfumes, toilet waters, hair dyes, patent medicines and ice cream from payment of the excise taxes. This the Chamber points out is unfair discrimination against the manufacturers of other, and in the majority of cases, more useful commodities.

Just what the excise tax means to the automobile industry is seen in the light of government reports showing that owners of motor vehicles paid into the public federal treasury in 1921 a total of $117,322,000 in excise tax alone, in addition to $212,978,000 in the way of state taxes and $11,000,000 in municipal taxes, or a total of $341,300,000 taxes for the year.

Accompanying the letter and extract of the war excise tax laws of 1918 and 1921 is a vest pocket story of the motor vehicle showing the census of automobiles by states, etc.

Success for the campaign against the existing law it is believed by the Taxation Committee of the N. A. C. C. can best be courted by making the broad general appeal for the removal of all excise taxes and it was decided at the concluding meeting of the committee in New York on Sept. 6-7 that the policy would be pursued that was adopted, thus leaving the way open for the support of other industries who feel that they are entitled to a measure of relief from war and post-war legislation.

2,809 CARS STOLEN; ALL BUT ONE FOUND

CHICAGO, Sept. 30—Reduction of about 37 per cent in automobile stealing as compared with the corresponding period last year in Chicago has been effected through the operation of a special motor division of the Police Department, according to statistics prepared by Captain John Naughton, commanding the motor division of the Police Department.

From Jan. 1 to Oct. 1, 1921, 4477 cars were reported stolen in Chicago and 2972 were recovered. So far this year 2809 cars have been reported stolen and 2808 have been recovered. The discovery of a number of organized theft rings and the arrest of the operators went a long way toward the reduction of theft.

PACKARD WILL ENTER INDIANAPOLIS RACE

Company Returns to Field with Factory Team After Interim of Many Years

INDIANAPOLIS, Sept. 27—The Packard Motor Car Co. will return to automobile racing in 1923 with a factory team, the first of the big factories to engage in the speed sport after once having retired. Incidentally the Packard is the first of internationally famous American factories with big production to engage in racing in the last decade.

This was announced by T. E. Myers, secretary and general manager of the Indianapolis Motor Speedway, who has been advised by Colonel J. G. Vincent that the Packard team would participate in the eleventh annual 500 mile international sweepstakes race next Memorial day.

Three Types of Engines

Colonel Vincent has not given out the details of the construction of the cars but they are now being built by the Packard organization. Three types of engines will compete for the $50,000 purse, four, six and eight. Packard has selected the six for its team because it believes the six will be most efficient in competition in this class. The cars will be one man, with the driver seated in the center. No drivers have been announced by the company as yet.

The return of Packard to racing will revive memories of the Packard Gray-Wolf, which was a sensation 15 years ago and one of the most successfully campaigned cars in the days when the acme of speed competition was achieved on the dirt tracks and beaches. It also will call to mind the work of Ralph De Palma four and five years ago when he successfully campaigned a Packard 12 on the speedways and smashed many straightaway records on the beach at Daytona, Fla. De Palma has been engaged by Packard as a consultant in the building of its team of racing cars for the Indianapolis event of 1923. He is working with Col. Vincent and the Packard engineering staff in perfecting the design of the cars.

Tests New Principles

DETROIT, Sept. 27—The Packard Motor Car Co. is re-entering automobile racing as a means of testing out new engineering principles and theories of design under the extreme conditions which racing presents. The team entered in the 1923 race will drive under the personal direction of Col. J. G. Vincent, vice-president in charge of engineering.

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Freight Shortage Spurs Driveaways

SHIPMENTS HELD UP IN DETROIT SECTION

Dealers Notified of Conditions —Permanent Driving Staffs May Be Formed

DETROIT, Sept. 29 — Shortage of freight cars and congestion of shipping on the lake boats are causing factories considerable difficulty in shipping automobiles and are adding daily to the number of cars that must be driven to dealers. One company has gone to the extreme of notifying all distributers within one thousand miles of the factory to plan for driveaways on all cars required in the next ninety days.

The freight car shortage is more acute in the adjoining cities to Detroit than in Detroit itself, but even here shipments are being held up for several days to get shipping accommodations. There is almost a complete dearth of the big automobile cars, and companies making shipments to the coast are compelled to resort in a great many instances to cars holding only three automobiles as compared to five in the larger cars. This is entailing an additional burden to the already high cost of coast shipments.

Driveaways for Quick Delivery

Congestion in the Cincinnati railroad terminals is causing many factories to advise dealers in districts reached through Cincinnati to arrange for driveaways where cars are required quickly. Congestion in Eastern shipments is also marked and many delays are ensuing in getting cars through to cities in New England and along the Atlantic seaboard. This condition is made worse by the difficulty in obtaining space on the Buffalo boats. Independent boat companies are helping out somewhat but infrequent sailings make this meager at best.

Because of delays in getting cars on the boats distributers and dealers are compelled to hold their driveaway crews for days at a time in Buffalo and Chicago, and in an increasing number of cases the crews are coming through to Detroit and making the driveaway over the entire distance. Permanent driving staffs will be formed by many distributers for several months at least, it now appears.

Piston Ring Injunction

BALTIMORE, Oct. 2—Judge Hugh M. Morris of the United States District Court of the District of Delaware has enjoined the Bowman-Gould Co. and restrained it "permanently from making or selling, directly or indirectly, any one-piece piston rings so similar to the peculiar and distinctive type of piston rings manufactured by the No-Leak-O Piston Ring Co. as to be liable to deceive purchasers."

SAN DIEGO BOY WINS HIGHWAY ESSAY PRIZE

WASHINGTON, Oct. 3 — The first prize for the best essay on "How I Can Make the Highways More Safe," offered by the National Automobile Chamber of Commerce to the school children of the Nation, was won by 13 year old Stanley Newcomb of San Diego, Cal. He won from 400,000 competitors.

The prize winner is entitled to a gold watch and a trip to Washington, all expenses paid, where he will be the guest of the Highway Education Board and the N. A. C. C.

Second prize went to Miss Merlene Beck of Draper, Utah, and third honors to James Gillenwaters of Knoxville, Tenn. Many other prizes were distributed through the different States.

The contest has been beneficial in reducing the number of accidents among children, and a similar contest is being announced again by the Highway Education Board as part of its "Safety Season" for 1922.

COMMANDER MOTORS H. W. O. SUCCESSOR

NEW YORK, Sept. 29—The Commander Motors Corp., with headquarters at 49 Wall Street and a factory in Chicago, is the successor to the H. W. O. Motors Corp. of Chicago. It will build the Commander, a $5,000 car, designed by Hugo W. Ogren, at one time head of the Ogren Motors Co. of Milwaukee.

The officers of the new company are: Charles H. Wilcox, president; Nicholas Schmidt, vice-president; Hugo W. Ogren, vice-president and general manager, and Sidney R. Flett, secretary-treasurer. K. W. Zoeller is sales director.

The company is capitalized at $2,000,000. The Milwaukee plant will be used until the factory at Chicago, occupying 40,000 sq. ft., is completed. It is expected that the Chicago plant will be in operation by the middle of November.

Hydro-United Resumes

PHILADELPHIA, Sept. 29—The Hydro United Tire Co., has resumed operation at Pottstown, according to Receivers, John P. Hill and Ephraim Lederer. The resumption means a minimum production of 600 tires daily

SHOW DRIVES HOME CLOSED CAR UTILITY

Sales Made at Display in New York Exceed Expectations of Dealers Exhibiting

NEW YORK, Sept. 30—The Automobile Merchants Association's second annual closed car show was closed tonight with a decidedly satisfactory record of business. Dealers in practically all lines made some sales and quite a number in the popular and near-popular classes had sales records far exceeding what would be done in an ordinary fall week on the salesroom floor.

Aside from getting immediate business the show served two other important purposes:

First, it educated a great many people in the metropolitan territory regarding the utility and comfort of the closed car, and also regarding the widespread reduction of the differential between open and closed car prices. This education will have its effect in better closed car business throughout the fall and in promotion of the closed car idea.

Offer Convenience to Public

Second, the show served as an accommodation to a great many people who had their minds made up to buy closed cars but were uncertain as to the make or model which would meet their desires. The show enabled these people to compare makes and models without the inconvenience of traveling from salesroom to salesroom. That this convenience was appreciated was evidenced by remarks of many show visitors made throughout the week.

The attendance was large for a closed car show. Newspapers gave the show and the closed car idea a great deal of constructive publicity. Even some of the distributors and branch managers who went into the show only half convinced of its value admitted at the end of the week that they had got their money back in profits on immediate sales and, in addition, had added to their prospect lists names that they might not otherwise have obtained.

National Show Drawing Oct. 5

NEW YORK, Oct. 2—Drawings for space at the two national shows, New York and Chicago, will take place Thursday at the headquarters of the N. A. C. C. There will not be any more exhibitors this year than last for the reason that every available inch of space is used and there is no room for expansion. Applications are on file for space for 82 car manufacturers at New York and 81 at Chicago. The accessories exhibits will number more than 200 at each place.

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CHEVROLET TO USE JANESVILLE PLANT

General Motors, However, Will Not Discontinue Making Samson Tractors

MILWAUKEE, Oct. 2—General Motors has decided to employ the greater part of unused capacity of its mammoth Samson tractor plant in Janesville, Wis., to relieve the tremendous pressure upon the present facilities of the Chevrolet division at Flint, Mich., and elsewhere.

Reports say that the prospective Janesville Chevrolet division will serve the northwestern territory, and will be the forerunner of a probable system of branch assembling and distributing plants similar to that maintained by Ford. Chevrolet business has experienced a remarkable increase, especially in the past six to eight months, which demands a very material enlargement of production and more ample means of distribution as well.

More Buildings for Samson

DETROIT, Oct. 3—Location of a unit of the Chevrolet Motor Co. in a section of the plant of the Samson Tractor Co. at Janesville, Wis., will not have the effect of decreasing the tractor capacity of the Samson company according to a statement by General Motors Corp. Chevrolet will take over some of the buildings formerly occupied by Samson and will erect additional buildings, but in giving up these plants Samson is moving into new buildings recently completed for its use.

Equipment and stock of the company will be moved from the present assembly building into the new foundry and implement plant. General Motors has no intention of quitting the tractor business, but is taking advantage of the present lull in this business to divert some of its facilities to taking care of the pressing needs of the Chevrolet company.

PHILADELPHIA FIRM FORMED BY DE BEAR

PHILADELPHIA, Sept. 28—The De Bear Motor Car Co. has been organized in this city by Harry J. De Bear, president; Fred J. Finkenauer, treasurer and secretary, and his brother, Elmer R. Finkenauer, vice-president. The company will distribute Maxwell and Chalmers cars in this city and vicinity, including a part of Southern New Jersey.

De Bear, during his previous residence in Philadelphia, was associated with the advertising departments of both the *Record* and *Evening Bulletin* and for a time was identified with the Philadelphia branch of the Olds Motor Works. For the last 11 years he has been connected with the trade in New York City, where he served as assistant sales manager for the Studebaker Corp.'s factory branch, and in 1914 opened the New York Maxwell-Chalmers branch as president and general manager. In that capacity he remained for eight years, leaving just prior to his coming to this city, when the Maxwell-Chalmers interests in New York were taken over by the Colt-Stewart Co. as distributor.

ASK DELAY IN MAKING NEW ANNOUNCEMENTS

CHICAGO, Sept. 30—Acting upon the complaints received from a number of individual members, the Board of Directors of the Chicago Automobile Trade Association has adopted a resolution protesting against the announcement of manufacturers of their new models and new prices as much as six months in advance of the season for which they are intended. It was stated that the association opposes the policy of mid-season announcement of new models and new prices because it has a tendency to slow up buying not only of the cars in question but of other cars as well.

FAIR GETS FIRST STAR LANSING FACTORY MADE

DETROIT, Sept. 30—The first Star car to be turned out at the Lansing plant of the Durant Motor Co. has been shipped to the Intermountain Motor Sales Co., which will exhibit it at the Utah State Fair at Salt Lake City. The assembly lines for the Star are reported almost ready for production at the Lansing factory.

Sales of the Durant four are reported to be brisk, a trainload being shipped to Chicago this week, with other trainloads to be shipped to other points in the next few weeks.

KELSEY GEAR-DRIVEN CAR NOW PART OF LINE

NEW YORK, Sept. 29—The Kelsey car may now be purchased either with the Kelsey friction drive or with the conventional gear transmission. The friction and gear-driven chassis are identical, except that the latter, instead of the Kelsey propeller shaft, friction clutch, transmission and rear axle, has a 10 in. Borg & Beck clutch, Detroit three-speed gearset, Standard Parts semi-floating rear axle and Snead propeller shaft. Torque and drive are taken through the springs. The tires are 32 x 4 in. and the gear ratio is 4.75 to 1.

Prices on the gear driven car are the same as for the friction drive models: Five-passenger phaeton, $985; five-passenger sport, $1,185; suburban sedan, $1,450.

Double Drive in New Plant

BENTON HARBOR, MICH., Sept. 28—The Double Drive Truck Co. announces that it is now located in its new plant in this city, which it recently purchased and is now equipping and getting ready for production.

DRIGGS WILL PRODUCE NEW DIAMOND TAXICAB

Expects to Turn Out 2,000 Within Year—Operator May Buy on Time Payments

NEW YORK, Oct. 2—Driggs Ordnance & Manufacturing Corp., New Haven, Conn., maker of the Driggs passenger car, has contracted with the Diamond Taxicab Co. to produce the vehicles which this new concern will put into operation. It is expected that 2000 taxicabs will be turned out inside the year.

Inasmuch as the Diamond company has announced that it will furnish transportation at 20 cents a mile, New York City, Driggs has been called upon to produce a light vehicle capable of economical operation.

The Diamond taxicab is powered with the same four cylinder engine that is used in the Driggs passenger car, an L head type with block cast cylinders 2⅝ x 4½. The chassis, however, has been especially designed to meet the demands of taxicab operation. The wheelbase is 108½ in., with the frame pressed steel and 2 in. alloy steel springs. The front axle is a drop forged I-beam section of 40-50 point carbon steel and the rear axle, of Driggs design, is of the three-quarter floating type. Cooling is thermo syphon and lubrication pump and splash. The carbureter is a Zenith and the ignition American Bosch. The weight of the chassis is 1400 lb. and the taxicab complete weighs 2200 lb.

Body a Landaulet

The body is made of 22 gauge steel and is a landaulet. One of the features is a removable panel in the rear which permits of replacement of that part in case of collision damage without forcing the cab to go to the repair shop. The official colors of the cabs are to be blue and white.

The Diamond Taxicab Co., for which this vehicle is being built, will sell it to the individual taxicab operator for $1,950, delivered in New York City. If desired this will be sold on time payments, one-third down and the balance paid in daily installments which are taken out of each day's receipts as reported by the driver. It is the intention of the Diamond company to extend its operation to other large cities.

White Co. Dividend

CLEVELAND, Sept. 28—The White Co. on Sept. 30 will mail to stockholders a dividend at the rate of $1 a share. Quarterly earnings from Jan. 1 to Aug. 31 have exceeded dividend requirements for the entire year, and a continued improvement in business is indicated by the volume of orders on hand and in prospect. The company employs 3700 men and is producing on a basis of 10,000 trucks a year. Rumors of a proposed consolidation with one or more other truck companies are denied.

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A. E. A. STANDS FIRM; SHOW TO BE CLOSED

Board of Directors Meets to Set at Rest Rumors of Change in Plans

CHICAGO, Oct. 3—The annual merchandise show of the Automotive Equipment Association at the Chicago coliseum in November will be closed to non-members as authorized by the board of directors last March. This definite announcement is made in a letter to the membership, authorized by the board of directors at a meeting here to set at rest rumors that the closed show authorization would be rescinded.

The meeting of the board was called upon the petition of a number of members for the purpose of considering the closed show question, some agitation having been conducted in favor of opening the show to non-member jobbers. The board, in its letter, points out that at the summer meeting at Colorado Springs the earlier action authorizing the closed show was re-considered and affirmed and that later the membership failed to rescind the closed show action although a motion to that effect was offered.

New Members Admitted

Charles P. Hughes, secretary of committees of the A. E. A., tendered his resignation which was accepted by the board.

A number of membership applications were considered and the following were elected to membership:

Jobbers—Julius J. Bantlin Co., Cincinnati; Belcher & Loomis Hardware Co., Providence, R. I.; Corpus Christi Hardware Co., Corpus Christi, Tex.; L. L. Ensworth & Sons, Hartford, Conn.

Manufacturers — Buffalo Forge Co., Buffalo, N. Y.; Douglas-Dahlin Co., Inc., Kansas City, Mo.; General Automotive Corp., Chicago; Globe Manufacturing Co., Battle Creek, Mich.; Kokomo Automotive Mfg. Co., Kokomo, Ind.; King Sewing Machine Co., Buffalo; David Lupton's Sons Co., Philadelphia; Perfection Heater Co., Cleveland; Webster Electric Co., Racine, Wis.

All except 10 of the 265 available show exhibit spaces were allotted to applicants, the 10 being held open for new members.

LINSCOTT GETS KEY OPENING REO PLANT

BOSTON, Sept. 30 — Thirty-three members of the Linscott Motor Co.'s dealer organization, representing Vermont, New Hampshire, and eastern Massachusetts, were guests of the Reo factories in Lansing. One year ago their visit was the occasion of the shipment of Linscott's third trainload; this year his sixteenth trainload was traveling east as the dealers arrived. The party was met at Jackson by a special car bearing banners, "Trainload Linscott's Reo Salesmen," and the Reo Band, which met them in Lansing, led them to the factory, where they were greeted by the directors, who presented Linscott with a heroic replica of the key to the works.

In the evening the dealers were guests of the company officials at a banquet, where both dealers and factory heads gave testimony to J. M. Linscott as a leader and friend. As a representative of the department heads in the plant put it, "When production begins to get ahead of sales and cars begin to fill up the corners of the storage spaces, it is—Linscott! — Trainload!!—and everything is cleaned out again."

SHERMAN ON COAST IN A. E. A. CAMPAIGN

CHICAGO, Sept. 29—Ray W. Sherman, merchandising director of the Automotive Equipment Association, has left the Pacific Coast to conduct an extended campaign with the "Ask 'Em to Buy" and "Shop Profits" motion pictures among the jobbers, dealers and garage proprietors of that section. He will be gone until about Nov. 1.

Among the cities in which he is scheduled to hold meetings are El Paso, Tex.; Phoenix, Ariz., and the following California cities: San Diego, Santa Anna, Long Beach, Los Angeles, Bakersfield, Fresno, Sacramento, San Jose, Oakland and San Francisco.

500,000 STAR ORDERS PLACED FOR DELIVERY

Only 120,000 Accepted—Dealer Application Total 10,000 —Approval to 1000

NEW YORK, Oct. 2—Of orders received for 500,000 cars for delivery by Aug. 31, 1923, Star Motors, Inc., has accepted 120,000. Of 10,000 applications for appointments as distributors and dealers, 1000 have been accepted.

While the Star is in production right now at four plants—Lansing, Leaside, Ont., Oakland, and Long Island City—deliveries are slow at present. It is expected, however, that by the end of the first week in November the various plants will be up to the scheduled production and turning out 8000 Stars a month. Contracts accepted call for the construction of 18,000 cars by the first of the year and it is thought this obligation will be met.

Plants Have 330,000 Capacity

Whether or not Durant will manufacture to capacity between now and the end of its fiscal year, Aug. 31, 1923, is a question that has not been settled. The various plants have a capacity of 330,000 for both Durants and Stars in this period.

AUTOMOBILE ACCESSORY MAKERS PREPARE FOR ANNUAL MEETING AT ATLANTIC CITY

PHILADELPHIA, Sept. 28—The fifth annual meeting of the automobile accessories branch of the National Hardware Association will be held at the Ambassador, Atlantic City, Oct. 16 to 17. In connection with the meeting there will be an exhibit of accessory manufacturers. Both meeting and exhibit are open to wholesalers who are not members of the association.

A preliminary list of exhibitors is given below.

Advance Automobile Accessories Corp., Ajax Auto Parts Co., American Hammered Piston Ring Co., Appleton Electric Co., Apco Manufacturing Co., Apex Electric Mfg. Co., Asch & Company, Inc., and Automotive Products Corp.

The Benzer Corp., Franklin T. Berry, Biflex Products Co., Blublaze Motor Specialties Corp., Bonney Forge & Tool Works, Boyce & Veeder Co., Inc., and Buffalo Forge Co.

The Carborundum Co., Carter Carburetor Corp., A. C. Spark Plug Co., Clayton & Lambert Manufacturing Co., Columbia Tire & Rubber Co., The Corcoran Manufacturing Co., Crawford Manufacturing Co. and Culver-Stearns Manufacturing Co.

The Davies-Young Soap Co. and The Duluth Show Case Co.

E. Edelman & Co.

J. H. Faw Co., Folberth Auto Specialties Co., Fitzgerald Manufacturing Co. and The Fulton Co.

Gardner Printing Co., Gemco Manufacturing Co., General Asbestos & Rubber Co., Giant Grip Manufacturing Co., The Goodrich-Lenhart Manufacturing Co., Grigsby-Grunow Hauss Co. and Greenfield Tap & Die Corp.

Ideal Clamp Manufacturing Co.

J. & B. Manufacturing Co.

W. E. Kemp and Kraeuter & Co.

The LeCompte Co.

The J. C. McAdams Sales Co., McCord Manufacturing Co., Inc., The Mansfield Tire & Rubber Co., Marquette Manufacturing Co., Inc., Metal Specialties Manufacturing Co., Mitchell & Smith, Inc., Monkey Grip Rubber Co., Frank Mossberg Co. and Mitchell Specialty Co.

National Lamp Works of General Electric Co., National-Standard Co., A. Nelson Manufacturing Co., New England Tube & Stamping Co., Inc., No-Leak-O Piston Ring Co. and North Bros. Manufacturing Co.

Pennsylvania Piston Ring Co., N. A. Petry Co., The Polson Rubber Co., The Protexall Co. and Pyrene Manufacturing Co.

Rajah Auto Supply Co.

C. A. Shaler Co., H. D. Smith Co., Splitdorf Electrical Co. and F. W. Stewart Manufacturing Co.

Templeton, Kenly & Co., Ltd., Chas. O. Tingley & Co., The Trexler Co. and Thompson Neylon Manufacturing Co.

United States Chain & Forging Co.

Victor Manufacturing & Gasket Co.

The F. W. Wakefield Brass Co., Walden-Worcester, Inc., Warner-Patterson Co. and Wolverine Lubricants Co.

"X" Laboratories.

King Sewing Machine Co.

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ALL INTERESTS UNITE TO FRAME GOOD LAWS

Seven Units Included in Newly Formed California Automotive Conference

LOS ANGELES, Sept. 28—In order to bring about a plan for concentrated effort in legislative matters there has been organized in this state what is known as the California Automotive Conference. This conference is composed of the following seven units: Passenger car dealers, truck dealers, franchised freight haulers, franchised passenger haulers, individual truck owners, fleet owners and motor draymen. Each unit has its committee with a chairman, who is alone empowered to vote.

The conference has been organized for the sole purpose of uniting the interests concerned upon proposed changes in the state motor vehicle laws. In the past when changes have been advocated or opposed the legislature has had to listen to claims from so many different sources that nothing but confusion resulted.

When candidates for legislative office this year were approached, they stated their willingness to help the industry if it were united on a definite plan. Numerous problems are involved and to date the conference has held five meetings in the effort to smooth out the difficulties. It was agreed among the various units that whatever decision was reached as advisable for the majority, all would support. This will result in a very much simplified procedure before the legislatture, which convenes in January.

More strict enforcement of motor vehicle laws is desired. California officials have claimed their laxity in enforcement has been due to inadequate funds. One of the proposals in the tentative platform of the conference provides for a charge of fifty cents for each motor vehicle operator's license.

No claim is advanced that a motorist should be required to pay for the privilege of driving a car any more than a clerk should pay for the privilege of selling hats, but the idea is to create a fund from the operator's license tax which would be used exclusively in the enforcement of the provisions of the motor vehicle act. A fifty cent operator's license in this state would raise approximately $400,000, and it is believed that with this sum an adequate patrol and enforcement system could be created and maintained.

Another one of the most important problems the conference is seeking to solve has to do with the tax on owners of motor stage and freight lines. At present these lines are taxed on their personal property values.

SAYS PRIVATE CARS USE DEALER PLATES

SPARTANBURG, S. C., Oct. 2—The South Carolina State Highway Commission has practically decided to discontinue the practice of issuing demonstration plates because of the gross abuse of the privilege. In the future such plates will be issued only for the full fee. As a courtesy to dealers they were issued by the highway commission for the nominal sum of fifty cents.

It was pointed out that instead of keeping them only for demonstration cars, hundreds of privately-owned cars are running about over the state with a fifty cent plate on the rear.

TRUCK USERS EXPAND ASSOCIATION SCOPE

Plan Will Permit More Members to Be Enrolled in Indiana Organization

INDIANAPOLIS, Oct. 2—Allied Motor Commerce of Indiana, which was organized last fall as a federation of organized trade associations of the state whose members used motor transport, has been reorganized, and the scope of its work broadened. While the federated idea is still a part of the organization plan the new constitution and by-laws make room for the thousands of individuals and firms of the state who use trucks but who are not members of other organized trade bodies.

There is also provision for the membership of those who though not commercially interested in motor transport or highway development are in sympathy with further expansion of the highway building and of the greater use of motor transport.

The three main features of the policies and plan of the organization are "Public Highway Development," "Fair (Motor Vehicle) Legislative Regulation," and "Reciprocal Highway Courtesy." The body will stand for the idea that the state ought to be vested with the regulation of rates of motor transport to the end that fair treatment will be accorded the transport people, the shippers and the general public.

Educational campaigns are planned that will make motor transport and its public benefits better understood by the general public and bring about more careful observance of motor vehicle and traffic regulations by all truck owners and drivers.

New York Service Men and Their Families



Nearly a hundred attended the third annual outing and clam bake of the Automotive Service Association of New York on Long Island Sound on Sept. 24. Anyhow, there are seventy-four in the picture. Count 'em! But it is one of those ring-around-a-rosy pictures where the camera starts at the left and swings to the right and the birds that have had the

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GOVERNOR DEFEATED BY MOTORISTS' VOTE

California Executive Had Program for Enormous Increase of Tax Burden

LOS ANGELES, Sept. 29—The political power and influence of motorists were demonstrated as probably never before in connection with the recent California primary election. Faced by the announced plan of the present administration to increase the tax burden on motorists enormously, the defeat of William D. Stephens, present governor, and candidate for the nomination was accomplished.

Friend W. Richardson, the successful candidate, based his campaign on the policy of an economical administration. He appealed direct to the 800,000 owners of motor vehicles, telling them that if Stephens continued in office they would be called upon to meet heavily increased license burdens and a gasoline tax.

Stephens had all the influence of a powerful political machine behind him and his nomination was looked upon as a certainty until the votes were counted. Then it was learned Richardson had defeated him by approximately 25,000 votes, and there is no question of doubt but that it was largely the motoring vote that brought this about.

The State's Highway Commission had announced its needs as $12,000,000 annually for the next five years. Under the law, if the highway commission received that sum, the same amount would have had to be raised for distribution among the counties, with a ten per cent allowance for the conduct of the motor vehicle department. This would have meant that if the commission received $12,000,000 a year as its share, the total amount motorists would be called upon to contribute would be $27,000,000, and in addition the Stephens line-up had advocated a gasoline tax.

Not only was the influence of the motoring public brought to bear against the Stephens candidacy, but it also was directed along the line of choosing candidates for the legislature who would support Richardson and oppose heavy increases in motor fees. Many of those candidates for the legislature who in the past had followed the Stephens program were defeated for this reason more than any other and the turnover politically was the biggest on record in California.

RAILWAY MECHANICS FILL REPAIR SHOPS

BLOOMINGTON, ILL., Oct. 2—The strike of the railway shop crafts has been a blessing in one way as it has enabled motor vehicle repair shops to secure all the mechanics they required for the first time in many years.

Of late years, the majority of first class mechanics in the railroad shops, due to increased wages, as a result of the late war, purchased an automobile and most of them looked after their own repairs. When the strike was called July 1, many of these men, gravitated to the automobile repair shops, and, with a little coaching, developed into first class motor car mechanics.

It is likely that a large number of them will remain with the garages, even though the strike has been settled.

CHICAGO TRADE JOINS IN CLOSED CAR WEEK

To Be Held in Place of Show—Association Appropriates Advertising Fund

CHICAGO, Sept. 30—A concerted showing of new models of closed cars with attractive seasonal decorative settings will be made in the sales rooms of all dealers affiliated with the Chicago Automobile Trade Association from Oct. 14 to 22, inclusive. This was decided at a special meeting of the association this week at which $18,000 was appropriated to advertise the show.

This will be the first time that Chicago dealers have conducted a special display simultaneously in their stores and under the general direction of the trade association. Desire to hold a closed car show was general among the dealers, but some were of the opinion that it should be held in the Coliseum or other central place. The question was thoroughly discussed by all the dealers attending the meeting before a decision was reached.

The chief arguments in favor of the sales room show were that each dealer would have room to display all his models, the salesmen would feel more at ease in their own places of business and the visitors would be in a more receptive mood than in a combined show room. The final vote was unanimous.

Chevrolet "Superior"

A schedule of flat rates for both Chevrolet models, published in Motor World of Sept. 13, page 24, contained the heading "Supreme" as one of the models. This should have been "Superior." The model Superior is the model that was previously known as the 490.

Enjoy an Outing and Clam Bake on Long Island



experience always sit on the end, then run around to the other end and get in the picture twice. In addition to the abundance of clams and lobsters consumed, the crowd had a good time competing for prizes that were offered by manufacturers and dealers for various athletic events

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JORDAN CUTS PRICES; MAKES SOME CHANGES

Closed Models Drop from $2,785 to $2,485—No Change Made in Open Cars

CLEVELAND, Sept. 29—Jordan Motor Car Co. announces a reduction of $300 in the prices of its brougham and sedan, the drop being from $2,785 to $2,485. No change has been made in the lists on the open models.

Several slight changes have been made in both of these closed models. The sharp corner lines have been changed to a broomstick radius, roof lines have been lowered two inches and the seats dropped a corresponding amount. The rear seats are wider and the pitch changed slightly. Both bodies are now trimmed in Windsor weave cloth. In the brougham this cloth is worked in plain trim without pleats, but in the sedan pleats are used.

A worm type regulator replaces chains in the doors, while removable panels make it easy to get at the regulators. Platinum finish hardware is used in dome lights, door pulls and regulator handles. A new steering wheel with walnut spider and rim, similar to that used on the new Play Boy, is standard on both closed jobs, with small polished aluminum control levers mounted in the center.

The sedan body has been lengthened to allow more room in the front compartment and a little more in the tonneau. A large trunk has been mounted on the rear of the brougham, carrying two large suit cases and having an extra compartment for packages.

Republic Truck Receivership

DETROIT, Oct. 2—On petition of the Acme White Lead & Color Works a receiver for the Republic Motor Truck Co., Alma, Mich., has been named by the United States District Court. The Security Trust Co. has been appointed receiver. The petition alleges that $2,500,000 of creditors have been secured by a mortgage on the plant which should be reviewed.

The company has answered the petition and has joined with petitions consenting to the receivership. Assets are claimed to be in excess of $7,000,000. Reorganization plans are said to be already under way. It is stated that the Republic Motor Truck Sales Co. is not affected and will continue to function as usual.

CANADIAN FORD CUTS PRICES OF ALL CARS

DETROIT, Sept. 30—The Ford Motor Co. of Canada, Ltd., has made reductions ranging from $30 to $60. The chassis now is $395; runabout, $455; phaeton, $495; truck chassis, $545; coupe, $780; sedan, $870. Starting and electric lighting are standard on closed models. On all others, $85 extra.

The Ford Motor Co. of Canada is independent of the American company, though Henry Ford controls both plants. No price change on the American side is announced.

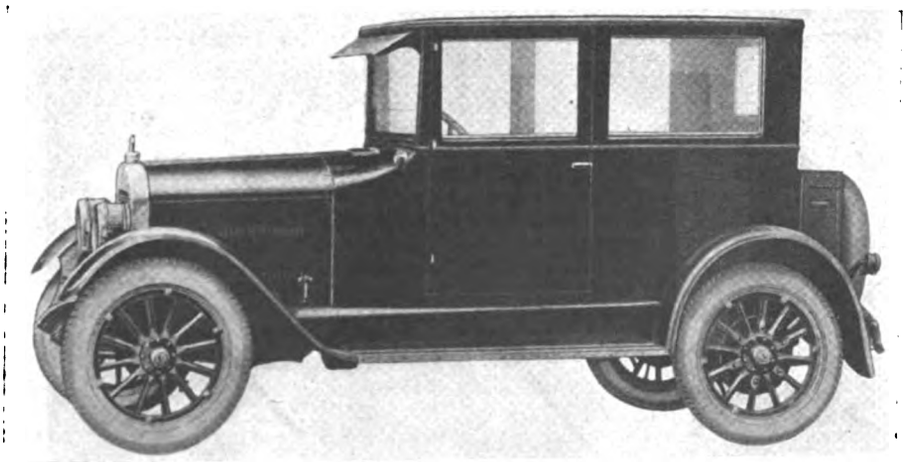
Franklin Sedan Week

SYRACUSE, Sept. 30—During the week of Oct. 8, according to notice issued to-day by the Franklin factory, the sales organization throughout the country will devote its entire efforts to the showing and demonstrating of the company's sedan.

Receivership for Holmes

CANTON, OHIO, Oct. 2—Holmes Automobile Co., manufacturer of the Holmes air-cooled car, has been placed in the hands of a receiver, E. A. McCuskey being appointed, following the application of four petitioners with claims aggregating less than $4,000. Tangible assets of $850,000 and liabilities of $1,500,000 are reported. The company in a statement claims assets of $2,500,000.

Velie Six Model 58 Brougham, $1795



A new body added to the Velie line. It carries five passengers and is of the two door type. The front seats tip forward. Upholstery is broadcloth with head linings to match. The interior fixtures are dull silver finish. A trunk containing two suit cases and a hat box is part of the standard equipment

CLOSED CARS SHOWN AT MONTREAL EXHIBIT

Dealers Abandon Former Plan of Holding Displays in Separate Salesrooms

MONTREAL, Sept. 30—The interior of the Drill Hall is resplendent with decorative features for the opening of the closed car show which takes place to-night. Permission was secured from the military authorities and the Federal Government by the Montreal automobile dealers for the use of the hall.

The exhibition will be officially opened to-night when it is promised that among those present will be the Hon. Geo. P. Graham, minister of militia, Hon. J. L. Perron, minister of roads, Walter Mitchell, M. P., and Mayor Martin, who will be accompanied by the directors of the Montreal Automobile Trade Association under whose auspices the show is being held.

The interior of the drill hall has been elaborately decorated to give a winter garden effect. Special electric lighting helps to give the impression of a myriad of suspended icicles, forming a canopy over the whole area of the exhibition.

Depart from Custom

For several years Montreal distributors have held what they called closed car shows. The exhibits were, however, on view in the different salesrooms. This year the Montreal Automobile Trade Association decided that it was the opportune time to hold a big closed car show. The admission has been placed at 30 cents which includes the amusement tax outside of Society Night when the general admission will be $1. Band concerts will be given every afternoon and evening by the Royal Montreal Regiment.

Adelstan Levesque is show manager, and it is fully expected that the success of the first closed car show in Montreal will merit its repetition in future. The majority of dealers are linking up their show windows with the show by featuring special displays of closed jobs in their windows together with special decorations for the occasion.

Thirty-eight makes of cars will be exhibited, the space having all been allotted some time ago.

Appleton Truck Formed

APPLETON, WIS., Sept. 30—The Appleton Motor Truck Co. has been incorporated with an initial capital of $25,000 by A. G. Brusewitz, M. Rossmeissl and W. G. Jamison for the purpose of manufacturing and dealing in motor vehicles, parts and equipment. Brusewitz was one of the principal officers and stockholders in the Reliance Motor Truck Co. of Appleton.

New Buick Record

FLINT, MICH., Sept. 29—During the week of Sept. 23 a new high point of production was reached by the Buick company when the plants in this city and Detroit turned out a total of 4058 cars.

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DEALERS WILL ATTEND OAKLAND 'DURANT DAY'

Four Pacific Coast States to Be Represented—Trade Undergoes Changes

OAKLAND, CAL., Sept. 29—All the cities around San Francisco Bay have joined forces with the Oakland Chamber of Commerce in the celebration of Oct. 12 as "Durant Day," to honor the official opening of the Durant Motor Co.'s plant in this city. Durant dealers from four Pacific Coast states will be here for the celebration, and dealers from virtually every town in California between the Tehachapi Mountains and the northern boundary of the state will drive in from their places of business in Durant cars.

The northern delegation will start at Seattle and pick up the Portland dealers on the way south. The southern delegation will start from San Diego and will be joined by another delegation at Los Angeles. The dealers will hold a sales convention at the Durant factory Oct. 12 and 13. The city will be decorated on the 12th, and there will be concerts, speeches, barbecues and other events on the program.

Changes on Row

Several important changes have taken place along Automobile Row in Oakland within the past week or ten days. Harold D. Knudsen has been appointed Chevrolet dealer for this territory, and is operating under the firm name of Harold D. Knudsen & Co.

Don Shortz, who has been manager of the F. H. Dailey Motor Car Co., Maxwell and Chalmers distributor in Oakland, has started in business for himself, having taken the Maxwell agency for San Pedro and Wilmington, in southern California. J. L. Brambila, formerly Maxwell man here, is now installed as Maxwell agent in Long Beach, and his movement southward induced Shortz to go along to the neighboring cities.

The Auto Necessity Co., formerly the Luthy Battery Co., has been named Vesta battery representative in Oakland by the J. P. Schiller Co. of San Francisco, northern California distributor. C. A. Anderson and D. R. Ruddington own the Auto Necessity Co.

Two former executives of the B. F. Goodrich Rubber Co., T. A. Worden and Carl Fitch, have opened a retail tire depot. Fitch was for fifteen years director of Goodrich service at Akron, and Worden was branch manager of the Goodrich company in Sacramento.

Scharps Succeeds Wetmore

NEW YORK, Sept. 30—John C. Wetmore, well known throughout the industry, with which he has been identified since its inception, as automobile editor of the New York Mail, has retired from the field of daily journalism and is removing to Los Angeles, which will be his future home. He will continue his connection with the automobile industry through the medium of a publicity bureau which he will establish on the Pacific Coast.

Wetmore is succeeded by C. E. T. Scharps, sales manager of the Poertner Motor Car Co., agent for the Durant. Scharps formerly was automobile editor of both the New York Tribune and Sun.

WIDEN CHICAGO ROAD PAST DEALERS' ROW

CHICAGO, Sept. 29—Work has been commenced to add 14 ft. to the width of Michigan Avenue from Twelfth Street to Thirty-third Street, through practically the whole extent of Chicago's automobile row. The widening is to be accomplished by taking 7 ft. from the space between the curb and the building line on each side of the street. This will greatly relieve the congestion along the city's most popular automobile highway, and, in the opinion of leading automobile dealers, will make it far more pleasurable to own and drive an automobile in Chicago.

"The widening of Michigan Boulevard is a pronounced step in the direction of progress for Chicago's motor way system," declared Henry Paulman, a veteran dealer.

MASON TIRE PLANS INCREASED OUTPUT

CLEVELAND, Sept. 30—The Mason Tire & Rubber Co. of Kent has found it necessary to raise more money to increase tire production.

The company will issue $2,000,000 of first mortgage bonds and will increase the capital stock from 150,000 to 350,000 shares of no par value, provided the stockholders ratify the plan. The income will be used to finance the purchase of the plant of the Owen Tire & Rubber Co., at Bedford, Ohio, near Cleveland, and to refund $540,000 worth of outstanding 7 per cent serial notes.

The company is producing 500 tires a day at its Owen plant and plans to increase the number to 1500. This will give an output of 6000.

CALIFORNIA FORBIDS TESTS OVER HIGHWAYS

SAN FRANCISCO, Sept. 30—No more long-distance, endurance, or any other kind of automobile racing or contests is to be allowed on the paved highways of California, according to announcement by the California State Motor Vehicle Department. In its campaign to stop such contests, inspectors of the department, late in September, arrested Wells Bennett, when he had only 100 miles to finish on non-stop run from Canada to the Mexican border.

ALL PARTS OF TEXAS REPORT IMPROVEMENT

Cotton Crop That Brings Good Prices Is Regarded as Chief Factor

DALLAS, Sept. 28—The retail lines of the automotive business in Texas have improved from five to 15 per cent during the past fifteen days according to reports from all sections of the state. The greatest increase in sales of cars is reported from North and Central Texas, the chief cotton belt. There has been a considerable gain in sales in South Texas while West Texas has been holding its own and East Texas showing increases.

In accessory and tire lines the dealers say there have been gains in business of from five to ten per cent. Garagemen report their business improving and the outlook generally better.

Truck and tractor men report business ten per cent better than for the first fifteen days of August with the outlook better than it has been for three years.

Back to Normalcy

A good cotton crop which is now reaching the market at a good price is given as a reason for better conditions. Retailers of cars, tires and accessories declare business should be humming for the next two months, and that it will probably not get in the doldrums again in this section. The automotive business in Texas is back to normalcy.

The distributors report better business than they have had for many months. One Dallas distributor placed an order for a train of thirty-five car loads of automobiles last week. This week he was trying to get another train load of the same make of cars. Other dealers were ordering heavily and reporting that practically all the cars they could get had been taken. The medium price cars are the favorites in this section.

DEALERS IN FORDS ORGANIZE ON COAST

LOS ANGELES, Sept. 28—Ford dealers of the Pacific Coast territory under the jurisdiction of B. L. Graves, regional director for the Ford Motor Co. over the branches at San Francisco, Los Angeles, Portland, Seattle, Salt Lake and Denver are being organized, and announcement has been made that the policy will extend throughout the entire country.

The purpose of the organization is said to be to familiarize the dealer with the improved sales plans, service policies and other matters of general interest as they affect each representative in his own locality.

Service is the point receiving most consideration. Attention is also being given to plans for furthering the sale of the Fordson industrial tractor. The meeting held here was attended by 100 Ford dealers.

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CHANGES IN THE TRADE

H. P. Baldwin is to distribute the Haynes in Springfield, Mass.

William B. King has taken over the Brooklyn distribution of the Davis car.

E. M. Walcutt, Columbus, has been named central Ohio distributor for the Anderson.

Laybourn Auto Co., Minneapolis, has been formed to represent the King 8 in that territory.

Arthur Golden has been appointed assistant sales manager of the Advance Rubber Co. of Brooklyn.

Daggett-Yewdale Motor Co. has been appointed distributor of the Gray in Milwaukee and vicinity.

Tivoli Motors Co. of Chicago, distributor of the Noma, has also been appointed distributor for the Templar.

Meagher & Bouchie have organized **Hampden Motors, Inc.,** to distribute the Gray in Springfield, Mass.

B. W. Ellis and **Frank Babbitt** have organized the **Jordan-Columbus Co.,** to handle the Jordan in Columbus.

Wallis Baird, Galesburg, Ill., has been appointed distributor for the Star car in the Knox and Warren counties territory.

Hilmer Motor Sales Co., Springfield, Ill., has been appointed distributor for the Cleveland car in the Sangamon county territory.

Hallwood Motors is the name of a new concern in Columbus to handle the Westcott. **Nathan Hallwood** is at the head of the concern.

W. E. Heinemann, formerly eastern representative of the Templar Motor Co., is now with the Matthews Engineering Co., Sandusky, Ohio.

Columbus-Liberty Motor Co. has been organized with **E. T. Ash** as manager to distribute the Liberty in Columbus and central Ohio.

A. S. Johnson, formerly manager of the Stutz Chicago Co., has been appointed sales manager of the **John Nicol Co.** of Chicago, distributor of the Saxon and Liberty.

E. P. Hedberg has purchased the **Dodge Street Garage,** Omaha, from **Hastings & Hayden** and will operate it as a storage, repair shop and general service building.

Henry Gail Mason, formerly with the Allison Rood Co. of Chicago, has been appointed sales manager of **Lloyd Shanesey Co.,** Ford and Lincoln dealers in that city.

Ert Palmer Co. manufacturers' representative has been organized at Milwaukee. **Michael Ert** is president and **Paul E. J. Palmer,** vice-president and director of sales.

Templar Motor Sales Co. has been incorporated in Atlanta to distribute the Templar in the southeastern territory. Incorporators are: **J. H. Joyner, F. Waterman** and **F. C. Tindall.**

Russell Motor Car Co., Columbus, has been chartered under Ohio laws to distribute the Dort throughout central Ohio. **E. N. Russell** is president and **G. E. Spicer,** secretary and treasurer.

W. E. Grimes has opened a wholesale and retail accessory business in Dallas, Texas, under the name of the W. E. Grimes Co. He will institute a day and night service for his retail trade.

Orland Cadillac Co. has been formed at Orlando, Fla. to distribute Cadillac cars in that section of Florida. Officers are: **W. D. Rogers,** president and treasurer, **F. N. Bass,** vice-president; **B. B. Rogers,** secretary.

Haas Auto & Supply Co., Philadelphia, **Stephen Haas,** proprietor, has been appointed distributor of Ames-built bodies for Ford cars in the Philadelphia territory, which includes Pennsylvania, southern New Jersey and Delaware.

W. B. Fitzgerald, formerly secretary of the Atlanta Automobile Association, and later general manager of the Ford Car Clearing House Association, has been named to head the sales department of the Atlanta branch of the Ford Motor Co.

Arthur M. Kennedy, who has been sales manager of the Franklin Motor Car Co. of Philadelphia, has resigned and has established an independent business in sales, research and promotion which is intended to serve manufacturing and sales organizations.

Empire State Sales Co. headed by **W. C. Link,** former southeastern district manager for Durant motors, has established sales rooms and service station in Atlanta, for the distribution of the Durant and Star automobiles in Georgia and part of Tennessee.

L. O. Naylor, who recently severed his connection with his brother, T. W. Naylor, in the **T. W. & L. O. Naylor Co.,** Salt Lake City, has been appointed distributor for the Nash, for Utah, most of Idaho, Southern Oregon, Western Wyoming and Eastern Nevada.

James D. Flowers has purchased the interest of Williams in the **Futch-Williams Motor Co.,** of Montgomery, Ala. The name of the concern has been changed to the **Futch-Flowers Motor Co.** The concern handles Fords, Lincolns, and Ford trucks and Fordson tractors.

Rhoda-Rems Motors, Allentown, Pa., has been appointed Anderson distributor for that territory. **W. W. Griffin Motor Car Co.,** Portland, Me., will handle the car throughout the state. **Smith Brothers Motor Sales Co., Inc.,** Providence, R. I., has been named as Rhode Island distributor.

Ross C. Lowrie has been made director of the new Oldsmobile show room in the General Motors Building, Detroit, following a number of years of successful service in the Oldsmobile branch in Detroit. The company will continue to operate the branch under the management of **William J. Clemens.**

Jo H. Anderson has purchased the business of the Asheville, N. C., branch of the Byrd Motor Co., dealer in Reo passenger cars and trucks. The new firm will be known as the **Anderson Motor Co.** Anderson has been connected with the Byrd Motor Co. of Knoxville and Asheville for many years.

U. H. Strider has been named manager of the Hudson Motor Car Co. factory branch in Detroit, which succeeds **Bemb-Robinson Co.** as wholesaler of Hudson-Essex cars in the Detroit district. Strider was formerly wholesale manager for Bemb-Robinson, which continues to handle Hudson-Essex retail sales.

McWilliams-Moore Motor Co. will handle the Durant and Star cars in Madison, Limestone, Jackson and Morgan counties, Alabama. This concern is a partnership between **D. B. McWilliams** and **A. J. Moore.** They have purchased the repair shops of the **Love Tire & Supply Co.,** and will have their headquarters there.

Roy C. Ellis, for the past four years assistant sales manager and field representative of the automotive division of the Standard Steel Car Co. of Pittsburgh, has joined the sales staff of the **Courier Motors Co.** of Sandusky, Ohio, as factory representative. Ellis will devote much of his time to special dealer work.

Fred J. Crowley has been appointed salesmanager for Peterson Motors, Inc., Philadelphia, distributor of the Jordan car. Crowley for four and half years was connected in an executive capacity with the Studebaker Corp. of America and was salesmanager of the Cleveland branch of Willys-Overland, Inc., for a year and a half.

Max Geisler has been appointed secretary and general manager of the **Gillette Rubber Sales Co.** which has opened offices in Chicago. The sales company acts as wholesale distributor for the products of the Gillette Rubber Co. at Eau Claire, Wis. The ultimate aim of Geisler and his associates is to establish a national organization of dealers taking in the entire country.

Staff Selling Organization, with its central office at Canton, Ohio and eastern office at Lake Waramaug, New Preston, Conn. has been appointed exclusive factory distributor for the Lomar shock absorbers for Canton and Youngstown, Ohio, Pittsburgh and the states of Connecticut, Rhode Island and Massachusetts. It is appointing a number of sub-distributors in these districts.

H. H. Collins and **Earl B. Smith** have taken over the Chevrolet sales and service franchises in Houston and South Texas. The business for this line will be handled by two companies, the Collins Chevrolet Co. and the Smith Chevrolet Co., both located here. While the companies maintain separate headquarters and salesrooms and staffs they have a consolidated service station.

S. de B. Keim, general sales manager of Rolls-Royce of America, Inc., has returned from a trip through the Middle West making a survey of the sales situation, with the idea of increasing distribution. Keim is enthusiastic over the interest shown everywhere in the product. These sales representatives have been appointed: **R. E. Bell,** Milwaukee; **P. B. Burry,** Cleveland; **Curry & Southworth,** Denver, and **Van Kleeck Motor Co.,** Pittsburgh.

Wheeler & Manning, Inc. have opened three salesrooms to handle the Durant line in New York City. **F. J. Manning** was formerly sales manager for the Poertner Motor Car Co., Durant distributer for the metropolitan district. **Thos. R. Wheeler** has been indentified with the automobile business at New York for several years. The three salesrooms are located at Broadway and 106th Street, Seventh Avenue at 125th Street, and St. Nicholas Avenue at 161st Street.

Earl Philadelphia Motor Car Co. has disposed of its business to the **E. A. Myers Co.** of Pittsburgh, which, with the addition of the Philadelphia territory, will be operating in six states. The Philadelphia office will be headed by **L. M. Myers,** who for several years has served as sales manager of the Pittsburgh house. The territory will be in charge of **C. S. Miller,** formerly wholesale manager of the Pittsburgh office and more recently holder of an Earl dealer's franchise under the Myers organization. The former headquarters of the Earl Philadelphia Co. will be retained.

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ASSOCIATION ACTIVITIES

New York State Organization

NEW YORK, Oct. 2—Dealers and dealer association representatives of seven New York state cities met here as guests of the Automobile Merchants Association of New York and discussed a proposal for a state dealers' association. It was decided to call a convention of dealers in Albany Nov. 9 and 10, when a decision will be reached as to whether such an association should be formed.

It was brought out at the meeting that it would be to the advantage of the trade throughout the state to be able to present a united front before legislative and administrative officers of the state on legislative and other questions affecting the sale and use of motor vehicles. It was felt that if dealers throughout the state in sufficient numbers want a central organization, and are willing to finance it, this fact will become apparent at the Albany meeting and plans can then be made to go ahead with the project.

The conference here was attended by representatives from New York, Brooklyn, Buffalo, Syracuse, Poughkeepsie, Utica and Binghamton. C. W. Bull, of Syracuse, acted as chairman of the meeting which was called by Thomas F. Moore, secretary of the New York association.

New Hampshire Dealer Outing

MANCHESTER, N. H., Oct. 2—There were 150 dealers and salesmen present at the annual outing of the New Hampshire Automobile Dealers Association held at Rye Beach. Following the dinner the business meeting began with the election of Perley P. Pillsbury of Manchester as president and Fred H. Lowe of Tilton, secretary-treasurer. The general report showed the association in good condition numerically and financially.

Governor Brown was introduced as the principal speaker. He gave a talk on the present registration fees, and the possibilities of taxing gasoline to increase the state revenues for better highways. Amos J. Shorey, New England distributor of the Velie, from Boston, representing the N. A. D. A. as its Eastern director, gave a strong talk on the need of belonging to a National organization. George H. Leghorn, New England distributor of the Gardner, also from Boston, spoke on the problems of the dealer in the big cities.

Bowling League in Louisville

LOUISVILLE, KY., Oct. 2 — A bowling league has been organized by the Louisville Automobile Dealers' Association. There are eight teams in the league made up from as many firms in the association. Trophies will be awarded at the end of the season to the winning team, and several handsome prizes will be given for various individual records.

Following are the firms having teams entered, with the captain of each team: Hannah-Miles Co., Sam Schang; Hite D. Bowman Co., Ernest McAllister; Price Wells Co., Theo. A. Henle; Roy E. Warner Co., H. M. Leslie; Leyman Motor Co., E. H. Menart; Triangle Motors Co., L. S. Buddington; O. K. Motors Co.; Packard Louisville Motor Co., L. G. Hannah.

The league was organized at a meeting held in the office of the association. L. J. Hannah of the Hannah-Miles Co., was elected president of the league and George T. Holmes, secretary of the association, was elected treasurer.

Syracuse Considers Show

SYRACUSE, Sept. 30 — Members of the Syracuse Automobile Dealers Association will hold either a closed car week or a fall automobile show. Secretary H. H. Smith recently sent a questionnaire to the membership on a number of questions but opinion was so divided that no plans will be made until later.

The questionnaire revealed that most of the local dealers are in favor of operators' licenses for all cars. Those favoring this proposal urged that the operators carry insurance and that proper examinations should be held to determine the fitness of car owners to drive. The dealers are opposed to a double license number for cars. They favor the warning card system in operation in New York City for the punishment of minor traffic violations.

George H. Norris and C. W. Bull were elected delegates to the New York State Conference of Automobile Dealers at Geneva.

Meeting of Midwest Regrinders

OMAHA, Oct. 2—At its second meeting here, the Midwest Regrinders' Association outlined a basis for permanent, constructive work on behalf of the regrinders of this section. Regrinders from Nebraska, Iowa and Illinois were present and others from Minnesota, Missouri, Kansas and Colorado have signified their intention of joining.

Different departments were formed as follows: Membership, J. G. Pence, chairman; selling, A. H. Kurtz; production, Carl Youngstrom; accounting, J. J. Fuchs and adjustments, M. Fleetwood, the last from Fort Dodge, Iowa.

The officers of the association are: President, J. J. Fuchs of Fuchs-Elrod Machine Co., Omaha; vice-president, Carl Youngstrom of Carl Youngstrom, Des Moines; J. G. Pence of W. H. Pence Machine Co., Fairfield, Iowa; treasurer, A. H. Kurtz of Sunderland Machine and Supply Co., Omaha and director, F. A. Jahn of Jahn Grinding Works, Davenport.

California to Meet Oct. 16

OAKLAND, CAL., Sept. 29—The annual convention of the California Automobile Trade Association will be held Oct. 16 and Oct. 17 at Santa Barbara. In addition to a fixed program it is expected that there will be important discussions of proposed legislation derogatory to the automobile industry. One of the proposed bills to come before the next legislature would exempt one truck and one car in every family from execution. This would mean that a dealer and maintenance shop could not attach or hold a car for a repair bill.

Detroit Service Heads Organize

DETROIT, Sept. 29—Service managers of Detroit retail establishments have formed a group affiliated with the Detroit Automobile Dealers Association, for the purpose of studying general problems arising in servicing of cars and will have monthly meetings at which these will be talked upon by factory engineers. The first of these discussions will be upon lubrication and carburetion in cold weather, set for Oct. 10.

Officers of the group are George W. Stroh, president; E. W. Baker, vice-president, and N. C. Rodgers, J. H. Ellis and J. F. Collier, directors. Headquarters of the service men will be in the D. A. D. A. quarters, with H. H. Shuart, secretary of the dealers association, acting in this capacity for the service men.

Secretaries Meet

OAKLAND CAL., Sept. 28—Secretaries and managers of the local automobile trade associations affiliated with the California Automobile Trade Association held a meeting early this month at the summer home of George Haberfelde in the Kern Mountains. Fifteen secretaries were present, among them being George Haberfelde, W. J. Haberfelde, Harry Leonard, Jim Granger, Arthur D'Ettel, Walter Biddick, L. H. Bennett, Otis Hymer, Dick Ingvolstad, A. F. Morris, Robert W. Martland and George Elliot.

Lynn Shaw, assistant manager of the National Automobile Dealers Association, explained the "One of a 1,000" membership program of the N. A. D. A.

Association of Associations

WASHINGTON, Sept. 27—Interest in a proposal for an Atlantic Coast Association of Automobile Trade Associations has been shown by dealers in the following cities: Boston, Brooklyn, New York, Newark, Philadelphia, Baltimore, Norfolk, Richmond, Greensboro, N. C., and Atlanta. A number of these dealers have offered to support the movement and, now that the vacation season is over, a meeting of delegates will soon be called to discuss possibilities of organization.

Oklahoma City Elects

OKLAHOMA CITY, Sept. 30—At the annual meeting of the Oklahoma City Motor Car Dealers Association the following officers were elected: President, E. L. Howard of the McDanial Auto Co.; vice-president, S. L. Lindsey; treasurer, Henry Lewis and secretary, Edgar T. Bell.

Pittsburgh Elects Hoeveler

PITTSBURGH, Sept. 28.—George A. Hoeveler, president of the Hoeveler-Stutz Co., Pittsburgh, Stutz and Cleveland distributor, has been elected president of the Pittsburgh Dealers Association.

HILL TAKES FRESNO RACE; MILTON NEXT

FRESNO SPEEDWAY, CAL., Oct. 2—Bennett Hill, driving a Miller motored special, took first place from Tommy Milton in the 150-mile race here Saturday afternoon, by a margin of less than 15 yards. Time for the winner was 1 hr. 27 min. 46 1/5 sec., an average of 102 m.p.h., the fastest time ever made on this wooden bowl.

Other drivers finished as follows: Kurtz, third; Wonderlich, fourth; Elliott, fifth; Hearne, sixth; Klein, seventh, Murphy, eighth. Melcher, the only other starter, went out at the 124th lap with engine trouble and did not finish.

About 30,000 saw the race. There were no accidents, though Milton hit Klein and turned the latter's car twice around, after Klein had blown a tire in the 149th lap.

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Calendar of Trade Events

CONVENTIONS

Santa Barbara.....Oct. 16-17
Annual Convention of the California Automobile Trade Association.

Atlantic City.....Oct. 16-17
Motor Accessory Convention and Show incident to the Annual Meeting of the Hardware Association, Ambassador Hotel.

Chicago .....Oct. 18-19-20
National Association of Farm Equipment Manufacturers.

Washington .....Oct. 26-28
Second Annual Conference for the Study of Highway Transportation and Highway Engineering Problems under the auspices of the Highway Education Board.

Chicago .....Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

Toledo.....Dec. 6-8
Annual Convention of the Ohio Automotive Trades Association.

SHOWS

Dallas.....Oct. 6-16
Texas State Fair.

New York City.....Oct. 7-14
Annual Electrical and Industrial Exposition, Grand Central Palace.

St. Paul .....Oct. 11-14
Annual Closed Car Show, Municipal Auditorium, under the auspices of the Automobile Dealers Association.

Pittsburgh .....Oct. 14-21
Twenty-fifth Annual Automobile Show, Motor Square Garden, under the auspices of the Automotive Association, Inc., John J. Bell, manager.

Detroit .....Oct. 17-21
Closed Car Salon, General Motors Building, Detroit Automobile Dealers Association, H. H. Shuart, Manager.

Washington, D. C.....Oct. 21-28
Annual Closed Car Salon held under auspices of the Washington Automobile Trade Association, Convention Hall.

Houston.....Nov. 8-18
South Texas Fair.

Jersey City.....Nov. 11-18
Third Annual Show, Fourth Regiment armory, under the auspices of the Hudson County Automobile Trade Association.

Chicago .....Nov. 13-18
Annual Show of Automotive Equipment Association.

Los Angeles.....Nov. 11-19
Automobile Show, Motor Car Dealers Association, Burt Roberts, manager.

Cincinnati .....Nov. 22-29
Second Annual Automobile Accessory and Radio Exposition, Music Hall, under the auspices of the Cincinnati Automotive Trade Association.

New York.....Dec. 3-9
Eighteenth Annual Automobile Salon, Commodore Hotel.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, auspices of the Automobile Body Builders Association.

Chicago .....Jan. 27-Feb. 3
Annual Salon, Drake Hotel.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Minneapolis .....Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Brooklyn, N. Y.....Feb. 24-Mar. 3
Annual Automobile Show under auspices of the Brooklyn Motor Vehicle Dealers Association, 23rd Regiment Armory.

Syracuse.....Feb. 26-Mar. 3
Annual Automobile Show under auspices of the Syracuse Automobile Dealers Association.

Newark, N. J.....Mar. 10-17
Annual Automobile Show under the auspices of the New Jersey Automobile Exhibition Co., Claude E. Holgate, manager.

RACES

Los Angeles.....Nov. 30
San Diego.....January
Ann Arbor, Mich.....Jan. 29-Feb. 3
Lansing, Mich.....Feb. 5-10
Kalamazoo and Flint, Mich.....Feb. 12-17
Grand Rapids and Mt. Clemens, Mich. Feb. 19-24
Muskegon, Mich.....Feb. 26-March 3
Bay City, Mich.....March 5-10
Port Huron, Mich.....March 12-17
Battle Creek, Mich.....March 19-24
Alpena, Mich.....April 2-7

The New Car and Truck Description Index

Giving the date and page number on which they appeared

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾–1	$1650a	3¾x5	34x5n	34x5n	W
Acason RB	1½	1950	3¾x5½	36x3½	36x6	W
Acason H	2½	2750	4½x5½	36x4k	36x8k	W
Acason L	3½	3150	4¼x5½	36x5k	36x10k	W
Acason M	5	4350	5 x6¼	36x6	40x12	W
Ace C	1½	2295	3¾x5½	34x3½k	34x5k	W
Ace A	2½	2795	4¼x5½	36x4k	36x7	W
Acme 20	1	....	3¼x5	35x5n	35x5n	W
Acme 30	1½	....	3¼x5	34x3½	34x5	W
Acme 40	2	....	3¼x5	34x3½	34x5	W
Acme 60	3	....	4½x5½	36x4	36x7	W
Acme 60JL	3	....	4½x5½	36x4	36x7k	W
Acme 90	4½	....	4½x5½	36x5	40x10	W
Acme 125	6½	....	4¼x6	36x6	40x12	W
American 25	2½	3350	4 x6	36x4k	36x4dk	W
American 40	4	4275	4½x6	36x5k	36x5dk	W
Armleder 20	1	....	3½x5½	34x3½k	34x6k	W
Armleder 21	1½	....	3½x5½	34x3½k	34x6k	W
Armleder 40-B	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder 40-C	1½	....	4½x5½	34x3½k	34x6k	W
Armleder HW-B	2½	....	4¼x5½	36x4k	38x7k	W
Armleder HW-C	2½	....	4½x5½	36x4k	38x7k	W
Armleder KW-B	3½	....	4½x6	36x5k	38x5dk	W
Armleder KW-C	3½	....	4½x5½	36x5k	36x5dk	W
Atlas MD	1	1185	3½x5	32x4½n	32x4½n	W
Atlas 4A	1½–2	....	3¼ 5½	36x6n	36x6n	W
Atterbury 20R	1½	2475	3¾x5	34x3½	34x5	W
Atterbury 22C	2½	3375	4½x5½	36x4	36x4d	W
Atterbury 22C	2½	3375	4½x5½	36x4	36x4d	W
Atterbury 22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury 22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury 8E	5	4975	4¼x6	36x5	40x6d	W
Atterbury 8E	5	5125	4¼x6	36x5	40x6	W
Autocar 21UF	1½–2	1950	4¼x4½	34x4k	34x5k	D
Autocar 21UG	1½–2	2050	4¼x4½	34x4k	34x5k	D
Autocar 27H	2	2950	4 x5½	34x5	36x7	D
Autocar 27K2	2	3375	4 x5½	34x5	36x7k	D
Autocar 26Y	5	3950	4¼x5½	34x6	36x12	D
Autocar 26-B	5	4100	4¼x5½	34x6	33x12	D
Available H1½	1½	2175	4 x5	36x3½k	36x5k	W
Available H2	2	2775	4 x5	36x3½k	36x6k	W
Available H2½	2½	3160	4 x5	36x4k	36x8k	W
Available H3½	3½	4175	4½x5½	36x5	40x5d	W
Available H5	5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x4s	34x5n	34x5n	I
Beck A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	I
Beck B-3	1½	1725	3¾x5	4½x5	36x6	
Beck C-4	2	1810	3¾x5	36x6	36x6	
Beck D-5	2½	2395	4½x5½	38x7	40x8	W
Bell M (Iowa)	1	1195	3½x5½	35x5	35x5n	W
Bell E (Iowa)	1½	2100	3½x5½	34x3½	34x5	I
Bell O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Bessemer G	1	....	3½x5	35x5n	35x5n	I
Bessemer H-2	1½	....	3¾x5	36x3½	36x5	I
Bessemer J-2	2½	....	4½x5½	36x4	36x4d	I
Bessemer K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem CN	2	1595	4 x5½	34x4½k	34x6k	I
Bethlehem HN	3	2195	4 x5½	36x4k	36x8k	I
Bridgeport A	1½	....	3¾x5½	34x3½	34x6	W
Bridgeport B	2½	....	4½x5½	36x4	36x4d	W
Bridgeport C	3½	....	4½x6	36x5	36x10	W
Brinton C	2	2500	3¾x5	34x4	34x5	W
Brinton D	3	2975	4½x5½	36x4	36x7	W
Brockway E	1	....	3¼x5½	35x5n	35x5n	B
Brockway S-5	1½	....	3¼x5	36x4	36x6	W
Brockway SK	1½	....	4¼x5½	36x4	36x6	W
Brockway KR	2½	....	4½x5½	36x4	36x8	W
Brockway K-5	2½	....	4½x5½	36x4	36x8	W
Brockway RT	3½	....	4¼x6	36x5	36x10	W
Brockway R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway T-4	5	....	4¼x6	36x6	40x6d	W
*Buick	½	945b	3½x4¾	31x4n	31x4n	B
Case	2	....	4¼x5¾	36x6	38x7	I
*Chevrolet	¼	510b	3½x4	30x3½n	30x3½n	B
*Chevrolet G	¾	650	3½x4	34x4n	31x4½n	B
*Chevrolet T	1	1095	3½x5¼	33x4n	35x5n	W
Chicago C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago C3½	3½	....	4½x5½	36x5	36x10	W
Chicago D5	5	....	4½x5½	36x6	40x12	W
Clydesdale 10	¾–1½	1485	3¾x5	34x5n	34x5n	B
Clydesdale 18	¾–1½	1890	3¾x5	34x5	34x5	W
Clydesdale 20	1–1½	2385	3¾x5	34x5	34x5k	W
Clydesdale 42	1½–2	2475	3¾x5	36x3½	36x6	W
Clydesdale 65X	2½–3	3250	4¼x5½	36x4	36x8	W
Clydesdale 65EX	2½–3	3450	4½x5½	36x4	36x8	W
Clydesdale 90	3½–4½	4100	4½x5½	36x5	36x10	W
Clydesdale 120	5–6	4500	4¼x6	36x6	40x12	W
Comet T	1½	1950	3¾x5	34x4	34x4	W
Commerce 9	¾–1½	1150	3¾x5	32x4½n	32x4½n	B
Commerce T	¾–1½	1450	3¾x5	34x4½n	34x4½n	B
Commerce 10	1½	1895	3¾x5	34x4½	34x4½	I
Commerce 12	1½	1300	3¼x5	35x5n	35x5n	I
Commerce 13	2	1995	3¾x5	34x4	34x6	I
Commerce 15	2	2150	3¼x5	35x5n	36x6n	I
Commerce 17	2½	2150	4¼x5½	36x4	36x7	I
Commerce 18	2½	2195	4½x5½	36x6n	40x8n	I
Commerce 25	2½	$2425	4½x5¼	36x4	36x7	W
Commerce 25	2½	2770	4½x5½	36x6	40x8n	W
Cook 51	2½	3600	4 x5½	36x6n	40x8n	W
Corbitt E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt D-22	1½	2200	3¾x5	34x3½	34x5	W
Corbitt C-22	2	2600	4½x5¼	36x3½	36x7	W
Corbitt B-22	2½	3000	4½x5¼	36x4	36x7	W
Corbitt R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt A-22	3½–4	3800	4½x5½	36x5	36x10	W
Corbitt AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn E	1	1600	3½x5½	35x5n	35x5n	W
Dearborn FX	1½	2300	3¾x5½	34x4	34x5	W
Dearborn F	1½	2180	3¾x5½	34x4	34x5	W
Dearborn 43	2	2590	3¾x5½	34x4½	34x7	W
Defiance G	1	1695a	3¾x5	35x5n	35x5n	B
Defiance D	1½	2095a	3¾x5	35x5n	33x6n	I
Defiance E	2	2275a	3¾x5	35x5n	38x7n	I
Denby 31	1½	1485	3½x5	35x5n	35x5n	B
Denby 33	1½	2145	3¾x5	35x5n	38x7n	I
Denby 31	2	2395	3¾x5	36x3½	36x6	I
Denby 35	2½–3	2795	4½x5½	36x4	38x7	I
Denby 27	4	3895	4½x5½	36x5	38x5d	I
Denby 21D	5	4295	4½x5½	36x6	40x6d	I
Dependable A	¾–1	1650	3½x5½	34x5n	35x6n	W
Dependable C	2	2350	3¾x5½	31x3½	31x5	W
Dependable D	2½	2350	4 x5½	34x5	36x6	W
Dependable E	3	2950	4½x5½	36x4	33x7	W
Diamond T O-3	1–1¾	1975	3¼x5½	36x3½n	36x4n	W
Diamond T T	1½	2250	3½x5½	30x3½	36x5	W
Diamond T U	2–2½	2650	4 x5½	36x4	36x7	W
Diamond T K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T E	5	4325	4½x5½	36x6	40x6d	W
Diamond T S	5	4500	4¾x6	36x6	40x6d	W
Doane	2½	4100b	4½x5¾	30x5	33x7	C
Doane	3½	5100b	4¾x5¼	30x5	36x5d	C
Doane	6	6000b	5 x8¼	36x6	40x6d	C
*Dodge Brothers	¾	730	3¾x4½	32x4n	32x4n	B
Derris K-2	1	2490	4 x5½	33x5	33x5	B
Derris K-4	2–2½	3400	4¼x5½	36x4	33x7	W
Derris K-7	3½	4400	4¼x5½	36x5	33x10	W
*Dort 103	½	685a	3½x5	34x4n	34x4n	B
Double Drive B	3	4000	4¼x5½	6	6	W
Duplex A	2	2775	4 x5½	35x5n	38x7n	W
Duplex E	3½	3500	4¼x5½	36x8	36x8	I
Duty 22	2	1500	3½x5	34x3½	34x5	I
Eagle 191	1½	1375	3¾x5¼	31x5	34x5	I
Eagle 100-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D. B	3	4200	4¼x5½	36x6	36x6	B
Fageol 1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol 2½	2½	3900	4¼x5¼	34x4	36x7	W
Fageol 3½	3½	5000	4½x5¼	36x5k	40x5dk	W
Fageol 5	5	5700	4½x5¼	36x6	40x6d	W
Fargo R	2	1700	3¾x5	36x4	36x6	I
*Federal	1½	1375	3¾x5	—x5n	—x5n	
Federal SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal TE	1½	2175	4½x5¼	36x3½	36x5	W
Federal UE	2–2½	2425	4½x5½	36x4	33x7	W
Federal WE	3½–4	3150	4½x5½	36x5	36x5d	W
Federal X2	5–6	4500	4¾x6	36x6	40x6d	W
*Ford TT	1	430	3¾x4	30x3½n	32x4½n	W
Front Drive C	1½	2800	3¾x5½	5	4	W
G & J** 20	1	2275	3½x5½	34x5n	34x5n	W
G & J** A	2–2½	3375	4 x5¼	36x4	36x7	W
G & J** B	3½–4	4475	4½x5½	36x5	36x10	W
G.M.C. K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C. K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K-41T	5†	2450	4 x5½	36x4	36x8	W
G.M.C. K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C. K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C. K-71T	10†	3700	4½x6	36x5	40x12	W
G.M.C. K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C. K-101T	15†	4050	4½x6	36x5	40x14	W
G.M.C. K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W.	1½	1850	3¾x5½	35x5	35x5	I
*Garford 15	1	1590	3½x5½	34x5n	34x5n	W
Garford 25-B	1½	1990	3¾x5½	36x3½	36x5	W
Garford 70-H	2½	2750	4¼x5½	36x4	36x8	W
Garford 77-D	4	3750	4½x6	36x5	36x5d	W
Garford 68-D	5	$4500	5 x6½	36x6	40x6d	W
Garford 150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary F	1–1½	1775	3¾x5	36x3½	36x5	W
Gary I	2	2450	4 x5½	36x3½	36x6	W
Gary J	2½	2850	4¼x5½	36x4	36x8	W
Gary K	3½	3790	4½x6	36x5	40x5d	W
Gary M	5	4450	5 x6½	36x6	40x6d	W
Gersix M	1½	3100	4 x5½	36x3½	36x7	W
Gersix K	2½	3500	4½x5½	36x4	36x8	W
Gersix	3½	4500	4½x6	36x5	40x12	W
Graham Bros.	1	1265	3½x4½	33x4½n	34x5n	B
Graham Bros.	1½	1325	3½x4½	33x4½n	36x6n	B
1Gramm-Pion. 10	1	1245	3½x5	33x5n	33x5n	B
1Gramm-Pion. 15	1½	1750a	3¾x5	36x3½k	36x5k	I
1Gramm-Pion. 65	1½	2250a	3¾x5	36x3½k	36x5	W
1Gramm-Pion. 20	2	2175a	4½x5½	36x4k	36x7k	W
1Gramm-Pion. 30	3	3300a	4¼x5½	36x4k	36x4dk	W
1Gramm-Pion. 75P	3½	4225a	4½x5½	36x6n	42x9n	W
1Gramm-Pion. 40	4	3850a	4½x5½	36x5	36x5dk	W
1Gramm-Pion. 50	5–6	4450a	4½x6	36x6	40x6dk	W
Hall 1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall 2½	2½	3275	4½x5¼	36x4	36x6	W
Hall 3½	3½	4100	4½x5½	36x5	36x5d	W
Hall 5	5	5100	4½x5½	36x5	40x6d	W
Hall 7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey WOA	2	2650	4¼x5½	34x4	34x7	W
Harvey WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye O	1	1375	3½x5½	34x5n	34x5n	
Hawkeye K	1½	1645	3¾x5½	34x3½k	34x5k	I
Hawkeye M	2	2145	4¼x5	36x4k	36x6k	I
Hawkeye N	3½	3700	4½x6¾	36x5k	36x10k	I
Hendrickson O	1½	2200	3½x5½	36x4n	36x5n	W
Hendrickson N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson M	3½	3000	4¼x5	36x5k	36x5dk	W
Hendrickson K	5	4000	5 x6¼	36x6	40x6	W
Huffman B	1½–2	1795	3¾x5	34x3½	34x6	W
Huffman C	1½–2	1695	3¾x5½	34x3½	36x6	I
Huffman D	2–3	2895	4¼x5½	36x4	36x7	
Hurlburt A-A	1–1½	1950	3¾x5	34x5n	34x5n	W
Hurlburt B-B	2–2½	2800	4¼x5½	36x4	36x4d	W
Hurlburt C-C	3–3½	3475	4¼x5½	36x5	36x5d	W
Hurlburt D-D	4–4½	4150	4½x6	3 x5	36x6d	W
Hurlburt E-E	6–6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa) B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa) G	1½	2940	3¾x5½	34x3½	34x5	I
Indep'd't(Ia.) HI	2½	2940	4½x5½	36x4	36x7	I
Indiana 12	1½–2	....	3¾x5½	34x3½k	34x5k	W
Indiana 20	2	....	4½x5½	36x4k	36x7k	W
Indiana 25	2½–3	....	4½x5½	36x4k	36x8k	W
Indiana 35	3½–4	....	4½x5½	36x5k	36x5dk	W
Indiana 51	5–7	....	5 x6¼	36x5k	40x6dk	W
*International S	1	1250	3½x5	34x5n	34x5n	I
International 21	1	1550	3½x5½	36x3½	36x3½	I
International 31	1½	1650	3½x5½	36x3½	36x4	I
International 41	2	2100	3½x5½	36x3½	36x5	I
International 61	3	2100	4¼x5	36x4	36x6	I
International 101	5	3600	4¼x5	36x5	40x10	I
Jackson 4WD	3½	3350	4½x5½	36x7	36x7	B
K-Z 1	1	1750	3½x5	34x3½	34x5	W
K-Z 1½	1½	2075	3¾x5	36x4	36x6	W
K-Z 2½	2½	2550	4½x5½	36x4	36x8	W
K-Z 3½	3½	3350	4½x5½	36x5	40x10	W
K-Z 5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo T	1	1295	4 x5	31x5	34x5n	B
Kalamazoo G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo LG	2	2615	4 x5	36x4	36x7	W
Kalamazoo NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo SK	4	3815	4½x6	36x5	36x12	W
Kalamazoo OK	5	4350	4½x6	36x6	40x6d	W
2Kelly-S K-31	1½	2700	3¾x5½	36x3½	36x6	C
2Kelly-S K-34	1½	2700	3¾x5½	36x3½	36x6	W
2Kelly-S K-38	2½	2900	3¾x5½	36x4	36x6d	W
2Kelly-S K-35	2½	2900	3¾x5½	36x4	36x6d	C
2Kelly-S K-40	3½	3900	4½x6½	36x5	40x5d	C
2Kelly-S K-41	3½	3900	4½x6½	36x5	36x10	I
2Kelly-S K-42	3½	3900	4½x6½	36x5	40x5d	W
2Kelly-S K-50	5	4400	4½x6½	36x6	40x6d	C
2Kelly-S K-60	6	4600	4½x6½	36x6	40x7d	C
2Kelly-S K-61	5–7	4800	4½x6½	36x6	36x7d	I
Kimball AB	2	3675	4 x6	36x4	36x7	W
Kimball AC	2½	3975	4¼x6	36x4	36x8	W
Kimball AK	3	4500	4½x6	36x4	36x10	W
Kimball AE	4	5000	4¾x6	36x5	40x12	W
Kimball AF	5	5500	5 x6	36x6	40x7d	W
*Kissel Express	1	1585	3¾x5½	34x5n	34x5n	W
Kissel Utility	1½	1975	3½x5½	36x3½	36x6	W
Kissel Freighter	2½	2875	4¼x5½	36x4	36x8	W
Kissel H. D.	4	3675	4¼x5½	36x5	36x12	W
Kleiber AA	1	2200	4½x5½	34x3½k	34x5k	W
Kleiber A	1½	3100	4½x5½	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor. †Capacity with semi-trailer.

1—Gramm-Pioneer. 2—Kelly-Springfield.

Passenger Car Specifications on page 50

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5½	36x1k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....D	1½	2150	3½x5½	34x3½	34x5	W
Koehler.....M	2½	3175	4 x5⅛	36x4	36x7	W
Koehler.....MCS	2½	3275	4 x5⅛	36x4	36x7	W
Koehler.....F	3½	4470	4½x5½	36x5	36x10	W
Koehler.MT. Trac	5	3275	4 x5⅛	36x4	36x7	W
Krebs.....23	¾	1260	3¾x5	34x4½	34x4½	B
Krebs.....24	1	1565	3¾x5	34x5	34x5	W
Krebs.....45	1½	2125	4½x5½	36x4	36x7	W
Krebs.....75	2½	2375	4½x5½	36x4	36x8	W
Krebs.....110	3½	2975	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1925	3¼x4½	34x5n	34x5n	B
Larrabee.....U	1½	2100	3¾x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½-3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5-7	4800	4½x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	10x7	40x14	I
Mack...AB D.R.	1½	3150	4 x5	36x4	36x3½	D
Mack...AB Chain	1½	3000	4 x5	36x4	36x3½	C
Mack...AB Chain	2	3300	4 x5	36x4	36x4d	C
Mack...AB D.R.	2	3750	4 x5	36x4	36x4d	D
Mack...AB D.R	2½	3850	4 x5	36x4	36x4d	D
Mack...AB Chain	2½	3400	4 x5	36x4	36x4d	C
Mack...AC Chain	3½	4950	5 x6	36x5	40x5d	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4 x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Mapleleaf.....**	1½	3000	3¾x5½	34x5n	36x6n	W
Mapleleaf...AA**	2	3600	4 x5¼	36x4	36x7	W
Mapleleaf...BB**	3	4050	4¼x5½	36x4	36x4d	W
Mapleleaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Mapleleaf...DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x5	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4½x5½	34x4	36x7	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x5d	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3¾x4¾	32x3n	32x1n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1¼	2000	3¾x5	34x3½	36x5	W
Menominee....H	1½	2475	4 x5	36x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4¾x6	36x6	40x12	W
Meline.....10	1½	1985	3½x5	34x5n	36x6n	I
*Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-5	4600	4¾x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3¾x5½	34x3k	34x4k	I
Nash.....3018	2-2½	2150	3¾x5½	34x4k	34x7k	I
Nash.....Quad	2-2½	2750	4¼x5½	36x5k	36x5k	I
Nash..3018, LWB	2-2½	2200	3¾x5¾	34x4k	34x7k	I
Nash Quad. LWB	2-2½	2800	4¼x5½	36x5k	36x5k	I
Nash.....5018	2½	2250	3¾x5¼	34x4k	34x7k	I
*Nelson.....G2	1½	....	4¼x5½	36x3½	36x6	W
*Nelson.....G3	2½	....	4¼x5½	36x4	36x7	W
*Nelson.....G4	3½	....	4¼x5½	36x5	36x5d	W
*Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5½	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Nilco.....E	2	3900	4½x5½	36x4k	36x7k	W
Noble.....A21	1¼	1840	3¾x5⅛	34x5	34x5	W
Noble.....B31	1½-2	2480	3¾x5¼	36x4	36x7	W
Noble.....D51	2½-3	2950	4¼x5½	36x4	36x8	W
Noble.....E71	3½-5	3800	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3¾x5¼	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4¼x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4¼x5¼	34x4	36x6	W
Northwestern.WS	2½	3500	4¼x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3¾x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3¾x5	34x3½	34x3½d	W
Norwalk,35E-Spec	1½	2285	3¾x5¼	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	36x3½	36x5	W
Ogden.....E	2½	....	4½x5¼	36x4	36x8	W
Old Hickory...W	1	$1775	3¾x5	36x3½k	36x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4¼x6	34x4	36x4d	W
Old Reliable....C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4¾x6	36x6	40x6d	W
OldReliableKLM	7	6000	4¾x6¼	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5¼	35x5n	35x5n	I
Olympic.....A	2½	3200	4¼x5½	36x4	36x8	W
Oneida.....B	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C	2½	3300	4 x5¼	36x4	36x8	
Oneida.....D	3½	4050	4½x5½	36x5	36x10	
Oneida.....E	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	3250	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	3400	3½xn	36x6n	36x6n	B
Oshkosh.....B	2½	3850	4 x5⅛	38x7n	38x7n	B
Oshkosh.....BB	2½	4000	4 x5⅛	38x7n	38x7n	B
*Overland.....4	½	450	3½x4	30x3½n	30x3½n	B
Packard.....EC	2-3	3100	4½x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4½x5½	36x6n	40x8n	W
Packard.....ED	3½-4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige.....54-20	2½	2420	4½x5½	34x4	34x8	W
Paige.....51-15	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot...Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot...Lincoln	2	2050	4 x5¼	34x3½	34x5	W
Patriot .Washgt'n	3	2990	4½x5½	36x4	36x7	W
Pierce-Arrow.....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow.....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow.....	5	4850	4½x6¼	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3½x5	36x4	36x6	..
Pittsburgher.....	3	3800	4½x5¼	36x5k	36x8	W
Power.....F	2	3150	4 x5¼	36x5	36x7	W
Power.....C	3½	....	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier.....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4½x5½	34x4	34x6	W
Rainier.....R-20	2½-3	....	4½x5½	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	36x6	40x6d	W
Ranger...TK-20-2	1½	2450	3¾x5	36x6n	38x7n	W
*Reo.....F	4-4½	1245	4½x4½	31x4½n	34x4½n	B
Reliance.....10A	1½	2400	4 x5¼	36x3½	36x5	I
Reliance.....20B	2½	3100	4½x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3¾x5	34x3	34x4	I
Republic..10 Exp	1	1695	3¾x5	34x5n	34x5n	I
Republic.....11X	1½	1795	3¾x5	34x4	34x6	I
Republic.....19	2½	2195	4½x5½	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rewe.....CW	1½	3000	3¾x5	30x6n	36x6n	W
Rewe....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rewe....G.S.W.	3	4150	4 x6	31x5	36x5d	W
Rewe....G.P.W.	3	5250	3¼x5r	38x7n	42x9n	W
Rewe.....HW	4	4500	4½x6	36x5	36x6d	W
Rewe.....F. W.	5	5500	4½x6	36x6	40x6d	W
Reggies.....20	1	1195	3¾x5	34x5n	34x5n	B
Reggies.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4-3½x4	32x4n	32x4n	B
Samson.....25	1¼	....	4-3½x5½	35x5n	35x5n	B
Sanford....W-15	1½-2	2150b	3¾x5	36x3½k	36x5k	..
Sanford.....25	2½-3½	....	4½x5¼	36x4	36x4d	W
Sanford.....35	3½-5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5-7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ton	3	3800	4¼x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4¾x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5¼	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Seldon.....30	1½-2½	2250	3¾x5	34x3½	34x5	W
Seldon.....31	1½-2½	3350	4½x5¼	34x5n	38x7n	W
Seldon.....50	2½-3½	3250	4½x5¼	36x4	36x7	W
Seldon.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Seldon.....70	3½-5	3750	4½x5½	36x5	36x10	W
Seldon.....90	5-7	4950	4¾x6	36x6	40x12	W
Seneca.....M	½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3¼x4½	32x4½n	32x4½n	B
*Service.....15	1¼	....	3½x5	34x4½n	35x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4½x5½	35x5n	38x7n	W
Service.....52	3	....	4½x5½	36x4	36x8	W
Service.....72	3½	....	4½x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	$1450	3¾x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5¼	34x4	36x6	W
Signal.....J	2½	2375	4½x5¼	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x5d	W
Signal.....R	5	3900	4¾x6	36x6	40x6d	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5¼	36x4k	36x7k	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x10	W
Standard.....5-K	5-7	4400	4¾x6	36x6	40x12	W
*Star.....	½	610b	3½x4¼	30x3½n	30x3½n	B
Sterling.....1½	1½	2885	4 x5¼	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5¾	36x4k	36x6k	W
Sterling.....2½	2½	3290	4⅜x5¼	36x4k	36x4.k	W
Sterling.....3½	3½	4325	4½x6¼	36x5k	40x5.k	W
Sterling.....5-W	5	4950	5 x6¼	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6¼	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6¼	36x6	40x7d	C
*Stewart...Utility	1¼-1½	1245	3¾x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1¾	1445	3¾x5½	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3¾x5	34x3½	34x5	I
Stewart.....7	2-2½	2190	4½x5¼	34x4	34x7	I
Stewart.....7-X	2½-3	2390	4½x5½	34x4	34x7	I
Stewart.....10	3½-4	3190	4½x5½	36x5	36x5d	I
Stewart.....10-X	3½-4	3190	4½x5½	36x5	36x5d	I
*Stewart.....	1¾	1245	4-3½x5½	34x4½n	34x4½n	
*Stoughton.....C	¾	1240	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3¾x5¼	34x5n	34x5n	W
Stoughton.....B	1½	2150	3¾x5¼	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....F	3	3150	4½x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4½x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Thomart.....	1¼	1795	4 x5½	34x5	34x5	C
Tiffin.....GW	1½	2100	4½x5¼	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5¼	36x4	36x3½d	W
Tiffin.....PW	3½	3600a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4¼x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4½x5¼	35x5n	38x7n	W
Tower.....H	2½	2475	4½x5¼	36x4	36x7	W
Tower.....G	3½	3475	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595a	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595a	3¾x5	34x3½k	34x5k	I
Traffic.....	2	1895a	3¾x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5½	34x3½k	34x4k	I
Transport.....35	2	1885n	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5½	36x4k	36x8k	I
Transport.....60	3½	2585	4½x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Trayler.....B	1½	2390	3¾x5½	34x3½	34x5	W
Trayler.....C	2-2½	2850	4 x5½	36x4	36x7	W
Trayler.....D	3-3½	3300	4½x5½	36x4	36x8k	W
Trayler.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3½x5	31x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3¾x5½	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5½	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5½	36x4k	36x7k	I
Twin City...B.W.	2	2750	4 x5½	36x6	40x8	I
Twin City...A.W.	3½	3950	4½x6	36x5	40x5d	W
*Twin City.....B	3½	....	5½x6	36x6	36x6	I
*Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4½x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4½x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4½x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4½x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
United.....A	1½	2445	3¾x5½	36x3½k	34x5k	W
United.....B	2½	3150	4½x5½	36x4k	36x7k	W
United.....C	3½	3975	4½x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States .U	1¼	1800	3½x5½	34x5n	34x5n	B
UnitedStates,NW	1½-2	2375	3¾x5	36x5	36x3½	W
United States...N	1½-2	2175	3¾x5	36x3½k	36x5k	I
United States...R	3	3300	4 x5¼	36x4	36x4d	W
United States...S	4	4075	4½x5½	36x5	36x5d	W
United States...T	5-7	4975	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Veteran.....M**	1½	2699	3¾x5¼	35x5n	35x5n	W
Veteran.....P**	2	3699	4½x5½	36x4	36x7	W
Veteran.....R**	3	4200	4½x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	½	1050	3½x4½	31x4n	31x4n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. 4—8 cyl. 6—6 cyl. 12—12 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express, truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Vim	30	1½	$1175	3½x4½	32x4½	32x4½	W
*Vim	50	1½-3¼	995	4 x5	32x4n	32x4n	B
Vim	31	1	1975	3¾x5½	35x5n	35x5n	W
Vim	22	2	3150	3¾x5½	36x4	36x6	W
Vim	23	3	3950	4¼x5½	36x5	36x5d	W
Walker-JohnsonA	2		2250	3¾x5	34x3½	34x6	W
Walker-JohnsonB	3		2750	4¼x5½	36x4	36x8	W
Walter	M	2½	3850	4½x5¾	36x4	36x8	D
Walter	S	5	4850	4½x6¼	36x6	40x6d	W
*Watson	C	1	1465a	3¾x5½	35x5n	35x5n	W
Watson	N	3½	4250	4½x5½	30x5	36x10	W
Western	W1½	1½	2550	4½x5¼	36x3½k	30x5k	W
Western	L1½	1½	2550	3¾x5	36x3½k	36x5k	W
Western	W2½	2½	3250	4½x5¼	36x4	36x7	W
Western	L2½	2½	3250	4¼x6	36x4	36x7	W
Western	W3½	3½	4250	4½x6	36x5	40x5d	W
*White	15	¾	2400	3¼x5½	34x5n	34x5n	B
White	20	2	$3250	3¾x5½	36x4k	36x7k	D
White	40	3½	4200	3¾x5¾	36x5	40x5d	D
White	45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick	E	1	1225	3¾x5	34x5n	34x5n	W
White Hick	H	1½	1375	3¾x5	36x3½	36x5	W
White Hick	K	2½	1675	4½x5¼	36x4	36x5	W
Wichita	K	2	1875	3¾x5¼	36x3½	36x4k	W
Wichita	M	1	2400	3¾x5¼	36x3½k	36x6k	W
Wichita	RX	3	3200	4¾x5¾	36x4k	36x8k	W
Wichita	O	4	$3500	4½x6½	36x5k	36x5k	W
Wilcox	AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox	BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox	D	2½	3000	4¼x5	36x4k	36x3½dk	W
Wilcox	E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox	F	5	4350	4¾x6½	30x5	40x6d	W
Wilson	F	1½	2270	3¾x5	36x3½	36x5	W
Wilson	EA	2½	2825	4½x5¼	36x4	36x7	W
Wilson	G	3½	3085	4½x5½	36x5	36x5	W
Wilson	H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin	A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin	B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin	C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin	D	3½	3000	4¾x5¾	36x6n	40x8	W
Wisconsin	E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin	F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will	N	1½	2450	3¾x5	36x3½k	36x5k	W
Witt-Will	P	2½	2900	4½x5¼	36x3½k	36x7k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	Lelt.	4-3½x4½	Gas.	1
Allis-Chalm.	15-25	1185	4	Midw.	4-4½x5¼	Gas.	3
Allis-Chalm.	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm.	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork	2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork	C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22		3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T.		15-30	1900	4	Clim.	4-5 x6½	G,K	4
Aultman-T.		22-45	2800	4	Own	4-5½x8	G,K	6
Aultman-T.		30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Automot. B-3		12-21	1250	4	Hero.	4-4 x5½	Gas.	2-3
Avery,SR.Cul.		5-10	....	4	Own	4-3 x4	G,K	..
Avery..Cult-C		....	....	3	Own	6-3 x4	G,K	..
Avery	B	5-10	....	4	Own	4-3 x4	G,K	2
Avery	C	....	....	4	Own	6-3 x4	G,K	..
Avery		8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery		12-20	....	4	Own	4-4½x6	G,K,D	3-4
‡Avery		....	....	*	Own	4-4x5½	G,K,D	3
Avery		12-25	....	4	Own	2-6½x7	G,K,D	3-4
Avery		14-28	....	4	Own	4-4½	G,K,D	3-4
Avery		18-30	....	4	Own	4-5½x6	G,K,D	4-5
Avery		25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery		45-65	....	4	Own	4-7¼x8	G,K,D	8-10
Bates Mule	H	15-25	....	4	Midw	4-4½x5½	Gas.	3
Bates Mule	F	18-25	....	*2	Midw	4-4½x5¼	Gas.	3
‡Bates MuleG		25-35	....	*2	Midw	4-4½x6	Gas.	..
Bear		25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman	G	2-4	240	4	Own	1-3½x4½	Gas.	....
Best		30	....	*2	Own	4-4¾x6½	G,K,D	4
Best		60	....	*2	Own	4-6½x8½	G,K,D	8-9
††Beloss		....	....	4	B & S.	1-2½x2½	G.	..
Bering		5-10	395	4	LeR.	4-3½x4½	G	..
Bering	1921	....	1850	3	Wauk	4-4¾x5¼	GorK	2
**Bryan		15-30	....	4	Own	2-4 x5	K.	3
Capital		15-30	1000	2	Own	4-4¼x6	Gas.	3
Case		12-20	1050	4	Own	4-4½x5	G,K,D	3
Case		12-20	....	....	....	4-4½x5	....	2
Case		15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case		22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case		40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T3S		15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar 5T		25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T		40	....	*2	Own	4-6½x7	Gas.	6
Centaur		5-2½	345	2	N Way	2-4½x4½	GorK	1
Chicago		40	2500	4	Own	4-4½x6	Gas.	4
Cletrac	F	9-16	895	*2	Own	4-3¼x4½	G,K,D	2
Cletrac	W	12-20	1315	*2	Own	4-4 x5½	G,K,D	2-3
Dakota	4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Dupoe	A	20-30	2500	4	Buda	4-4½x6	Gas.	4
Dil	D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dil	R.W.	20	2980	4	Midw.	4-4½x6	Gas.	3
De-le-All	A	3-6	495	..	Own	1-4½x5	Gas.	1
Eagle	F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle	H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B	AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol	D	9-18	1525	4	Lyc.	4-3½x5	Gas.	2
Farm Horse	B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Farquhar		15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar		18-35	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar		25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch..4 Drive		20-35	1950	4	Clim.	4-5 x6½	GorK	3-4
Ferdson		-19	$ 395	4	Own	4-4x5	G,K	2
Franklin	G	18-30	4000	*3	Clim.	4-5 x6½	G or K	3-4
Franklin	C	18-30	3350	*3	Clim.	4-5 x6½	G or K	3-4
Franklin	G2	18-30	4350	3	Clim.	4-5 x6½	G or K	3-4
Frick	A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick	C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt	A	18-30	2150	4	Wauk.	4-4¾x6¾	G or K	4
Gray		20-36	1975	3	Wauk.	4-4½x6¼	Gas.	4
Gray		22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. Western St		20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr	20	20	845	4	Own	2-5¼x6½	K.D.	2
Hart-Parr	30	30	1065	4	Own	2-6½x7	K.D.	3
‡Hart-Parr		....	1695	4	Own	6½x7	K.D.	..
Heider	D	9-16	870	4	Wauk	4-4½x5¾	G,K	2
Heider	C	12-20	995	4	Wauk	4-4½x6¾	G,K	3
Heider	Cult	5-10	800	4	Lelt.	4-3½x4½	Gas.	1
Huber Light 4		12-25	985	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4		15-30	1885	4	Midw.	4-4½x6	Gas	3
Illinois	C	15-30	....	4	Clim.	4-5 x6½	G,K	4
Indiana	F	5-10	665	2	Lelt.	4-3½x4½	Gas.	1-2
International		8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan		10-20	†700	4	Own	2-6½x8	G,K,D	3
International		15-30	1750	4	Own	4-5¼x8	G,K,D	4
J-T	N	25-40	3000	*2	Clim.	4-5x6½	G,K,D	3-4
¶Kinkade		1½	190	1	Own	1-3 x3	Gas.	....
La Crosse		12-24	985	2	Own	2-6 x7	G,K	3
Lausen	5	12-25	1295	4	Midw.	4-4½x5¼	Gas.	3
Lausen	21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lausen Read		15-30	2000	4	Beav.	4-4¾x6	K	....
Leader	B	12-18	685	4	Own	2-6 x6¼	G,K,D	2-3
Leader	N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader	GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn	H4J	40-	4500	*	Cont.	4-4½x5½	Gas	4
Linn	W	60	5000	*	Wauk	4-5 x6¼	Gas	6
Little Giant, B		16-22	2200	4	Own	4-4½x5	K	4
Little Giant, A		26-35	3300	4	Own	4-5½x6	K	6
Lombard.1922		85-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922		50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922		2	210	2	Evin	1-2½x2½	Gas.	..
Minne...All-P		12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P		17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Mod.D		22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD		35-70	3850	4	Own	4-7½x9	G or K	8-9
Mohawk .1922		8-16	650	2	Light	4-3½x4½	K or G	1-2
Moline Univ D		9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch.		9-18	....	2	Own	4-3½x5	Gas.	2-3
‡Monarch		20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Motor Macult,		1½	195	2	Own	1-2¾x3½	Gas.	..
NB	1	3-6	425	4	Own	2-3¾x4	Gas.	1
Nichols-Shep.		20-42	2650	4	Own	8 x10	G or K	3-6
Nichols Shep.		25-50	3000	4	Own	9 x12	G or K	4-7
Nichols-Shep.		35-70	3650	4	Own	-10½x14	G or K	8-10
Nilson Senior		20-40	1975	5	Wauk	4-5 x6¼	G,K	4
Oil Pull	K	12-20	....	4	Own	2-6 x8	K,D	3
Oil Pull	H	16-30	....	4	Own	2-7 x8½	K,D	4
Oil Pull	G	20-40	....	4	Own	2-8 x10	K,D	5-6
Oil Pull	E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar	K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Peoria	L	12-25	1600	4	Clim.	4-5 x6½	G,K	3
Pioneer	G	18-36	1750	4	Own	4-5½x6	G,K,D	4
Pioneer	C	40-75	3550	4	Own	4-7 x8	Gas.	10
Plowman	A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable		10-20	390	4	Own	2-6 x7	Ker.	2
Rex		12-25	1600	4	Wauk	4-4½x5¾	G or K	3
Russell		12-24	1500	4	Own	4-4½x5¾	G or K	2-3
Russell		15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell		20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell		30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson	M	....	445	4	Own	4-4 x5½	G,K	2
Sandusky	J	10-20	1250	4	Own	4-4½x5¼	G,K,D	2
Sandusky	E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
¶Shelby		1	150	3	B & S	1-2½x2½	G	..
Shelby	D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby	C	9-18	....	4	Wauk	4-3¾x5¼	G or K	2
Steady Pull		12-21	1485	4	Own	4-4 x5	Gas.	3
Tioga	3	18-32	....	4	Wisc.	4-4½x6	Gas	3-4
Tore Cultivator		6	750	3	Lelt	4-3½x4½	Gas.	2
ToreTractor'22		6-10	495	3	Lelt	4-3½x4½	Gas.	2
Townsend		10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend		15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend		25-50	2500	2	Own	4-8½x10	Ker.	4-5
Traction Motor		40-50	....	4	....	8-3½x5	Gas.	4-5
Trayler	TB	6-12	500	4	Lelt.	4-3½x4½	Gas.	1-2
Trundaar	10	25-40	3750	*2	Wauk	4-5 x6¼	G or K	4
Twin City		12-20	1200	4	Own	4-4¼x6	G,K	3
Twin City		20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City		40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle Sam C20		12-20	1295	4	Weid.	4-4 x5½	G	2-3
Uncle Sam B19		20-30	1985	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam D21		20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utiliter	501	2½-4	295	4	Own	1-3½x4½	G	1
Utiliter	501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis	K	15-25	....	4	Own	4-4¼x5¾	G,K	3
Waterloo	N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore 21-22		12-25	1185	4	Wauk	4-4 x5¾	G,K	3
Whitney	D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita	T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin	E	15-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin	F	20-40	2050	4	Wauk	4-5 x6¼	G or K	4
Wisconsin	H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba	12-20	12-20	2400	*2	Wisc.	4-4½x6¾	G,K,D	3
Yuba	15-25	15-25	2750	*2	Wisc.	4-4½x6	G,K,D	..
Yuba	20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba	25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba		25-40	4750	*2	Yuba	4-5½x7	D	..
Zelle		12-25	....	4	Buda	4-4½x5½	G or K	3

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav. —Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont. —Continental. Dom.—Domas Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. ¶Track Runner. ‡Industrial Tractor. ¶Garden Tractor. **Steam Tractor ††—Power Hoe.

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Specifications of Current Passenger Car Models

NAME AND MODEL	Engine Make	Cylinders Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Ambassador.....R	Cont..	6-3⅝x5¼	136	33x5	....	b4500	$4500	....	$6500
American.....D-66	H-S...	6-3½x5	127	33x4½	b1885	1785 b1850	1850	....	2495
Andersen...Aluminum 6	Cont..	6-3⅛x4¼	114	32x4	....	1195	....	....	....
Andersen.....Series 40	Cont..	6-3¼x4½	120	33x4	1495	1495 b1595n	1595	$1995	1995
Apperson.....8-21-S	Own..	8-3¼x5	130	34x4½	....	2620	2645	3625	3695
Auburn.....6-51	Cont..	6-3⅜x4½	121	32x4	1575	1475	....	2275	2345
Auburn.....6-51	Cont..	6-3⅜x4½	121	32x4½	....	n1995	1545	....	....
Bay State.....	Cont..	6-3¼x4½	121	32x4	1800	1800	....	2400	2500
Biddle.....B1 & B5	Buda..	4-3½x5⅛	121	32x4	2950	b2950	....	3950	3950
Brewster.....91	Own..	4-4 x5	125	32x4½	5000	5000	....	....	7000
Buick..1922-34-5-6-7-38	Own..	4-3⅜x4¾	109	31x4	865	885	u 725	1175	1395 1325e
Buick....1922-41-4-5-47	Own..	6-3⅜x4½	118	33x4t	1175	1195	u975	1935	1985
Buick.1922-48-9-50-4-55	Own..	6-3⅜x4½	124	34x4½	n1625v	n1675v	1435	1895	2195
Cadillac.....61	Own..	8-3½x5⅛	132	33x5	3100	3150	3150	b3875	4100
Case.....X	Cont..	6-3⅜x4½	122	32x4½	1750	1790	....	2550	2690
Case.....W	Cont..	6-3⅜x5¼	129	34x4½	....	2200	2250	2850	3250
Chalmers.....1922	Own..	6-3¼x4½	117	32x4	1185	1185	....	1595	2295
Chalmers.....1922	Own..	6-3¼x4½	122	32x4	....	....	1345	....	....
Chandler.....Six	Own..	6-3½x5	123	33x4	1495	b1495	1615	b1995	2295
Chevrolet.....Superior	Own..	4-3⅛x4	102	30x3½	510	525	u425	b840 k680	860
Chevrolet.....FB	Own..	4-3⅛x5¼	110	33x4	865	885	....	1325	1395
Cleveland.....41	Own..	6-3 x4½	112	32x4	1085	1095	n1260	1495	1585
Cole.....890	Nort..	8-3½x4½	127¼	33x5	2685	b2685n	2685	b3385	3685
Columbia.....De Luxe	Cont..	6-3⅛x5¼	115	32x4	1475	1475	b1475n	b1925	1995
Columbia.....Light Six	Cont..	6-3⅛x4¼	115	31x4	995	985	....	....	1395
Comet.....C-53	Cont..	6-3½x5¼	125	33x4½	....	1985	2085	....	2985
Courier.....	Own..	6-3½x4½	116	32x4	a1395 a1495n	1395	b1495n	2065	2165
Crawford.....22-6-60	Cont..	6-3⅜x5¼	122½	32x4	3000	3000	3000	....	4500
Crawford-Dagner...6-60	Cont..	6-3⅜x5¼	135	33x5	....	n3500	....	....	....
Daniels.....D-19	Own..	8-3½x5¼	132	33x5	a4350	b1350	4350	5250	6000
Davis.....71	Cont..	6-3⅛x4¼	115	31x4	....	1295	....	1795	1795
Davis.....61-67	Cont..	6-3⅜x4½	120	32x4	1595	1595	b1695	2095	2195
Dixie Flyer.....H-S-70	H-S...	4-3½x5	112	32x4	1175	1175	b1295	1545	1595
Dodge Brothers.....	Own..	4-3⅞x4½	114	32x4	850	880	....	980h	1440 1195h
Derris.....6-80	Own..	6-4 x5	132	33x5	....	b3950	3950	4935b	5750
Dort.....19-14	D-Ly..	4-3½x5	108	31x4	885	885	....	1265 10 5k	1385 1095k
Driggs.....	Own..	4-2⅝x4½	104	30x3½	1275	1275	....	1650	1975
Duesenberg...Straight 8	Own..	8-2⅞x5	134	33x5	6500	6500	6750	7800	7800
Du Pont.....A	Own..	4-3⅛x5⅛	124	32x4½	3000	3200	....	3800	4000
Durant.....A-22	Cont..	4-3⅛x4¼	109	31x4	n890	890	....	1365	1395
Durant.....B-22	Anst..	6-3½x4½	123½	32x4½	1600	1650	....	2250	2400
Earl.....40	Own..	4-3 x5¼	112	32x4	1485	1095	950n	b1395	1795
Elcar.....K-4	Lyc...	4-3½x5	118	33x4	1095	1095	n1095	1315	....
Elcar.....7-R	Cont..	6-3½x4½	118	33x4	1395	1395	n1395	2065	2165
Elgin.....K-1	Falls..	6-3⅛x4¼	118	33x4	1315	1295	b1315	1635	1635
Essex.....	Own..	4-3⅛x5	108½	32x4	....	1045	....	1145k	1895 1245k
Ford.....T	Own..	4-3⅛x4	100	30x3½	r319	s348	u285	580	645
Fox.....	Own..	6-3⅜x5	132	32x4½	3900	3900	....	4900	4900
Franklin.....10-A	Own..	6-3½x4	115	32x4	1900	1950	u1750	2100 2750	2250 2850
Gardner.....T-R & G	Lyc...	4-3½x5	112	32x4	895	895	....	1095k	1345
Grant.....	Walk'r	6-3⅛x4½	116	32x4	1385	1395	....	1895	1945
Gray.....	Own..	4-3⅜x4	100	30x3½	....	490	....	....	760
H.C.S.....Series 3	Weid..	4-3¼x5½	120	32x4½	2475	2475	....	3250	3475
Handley-Knight.....	Own..	4-4⅛x4½	125	32x4½	....	....	2650	3450	3450
Hanson.....30	Cont..	6-3⅛x4¼	114	31x4	....	935	....	....	....
Hanson Six.....60	Cont..	6-3⅛x4½	121	32x4	1595	1595	1795	b2475	2585
Hatfield.....A-42	H-S...	4-3½x5	115	32x4	....	1345	b1345	1950	1950
Haynes.....75	Own..	6-3½x5	132	34x4½	2395	b2395	2395	....	3395
Haynes.....55	Own..	6-3½x5	121	32x4½	1515 1805n	1495 1895n	....	2095 2195n	2395 2695n
Holmes.....Series 4	Own..	6-3½x4¼	126	34x4½	....	b2590	2590	b3300	3600
Hudson.....Super 6	Own..	6-3½x5	126	34x4½	....	b1525	1575	2570	2295 1625k
Huffman.....	Cont..	6-3⅜x4½	120	32x4	1395	1395	....	....	2295
Hupmobile.....Series R	Own..	4-3¼x5½	112	32x4	1150	1150	u1025	1635 1335k	1785
Jackson.....638	Cont..	6-3¼x4½	121	32x4½	....	1485	b1685	2085	2985
Jewett.....Six	Own..	6-3¼x5	112	31x4	a995	995	....	b1415	1465
Jordan.....MX	Own..	6-3⅛x4¾	120	32x4	1895	1795	....	2485	2485
Jordan.....	Own..	6-3⅛x4¾	124½	32x4	....	b2150	....	....	....
Kelsey.....4	Grav..	4-3½x5	111	32x3½	....	935	....	....	1150
Kelsey.....6	Walk'r	6-3⅛x4½	118	32x4	....	1525	....	....	2175
Kenworthy.....8-90	Own..	8-3 x5¼	130	32x4½	5000	5000	5250	6000	6000
King.....K	Own..	8-3 x5	120	32x4½	1795	1795	b1795	2400	2550
Kissel.....45	Own..	6-3⅜x5½	124	32x4½	n2385	1885	2385	b2975	3075
Kline Kar.....6-55-K	Cont..	6-3⅛x4½	121	33x4	1690	1690	1690	2750	2890
LaFayette.....	Own..	8-3¼x5¼	132	33x5	3085	b1090	4090	5500	5500
Leach.....999	Own..	6-3¼x5½	134	32x4½	5500	5500	5500	5500	5500
Lexington.....23	Anst..	6-3¼x4½	123	32x4½	1695	1695 2015n	1795	b2345	2545
Liberty.....10-D	Own..	6-3½x5	117	32x4	1575	1395	1575n	2085 1695k	2245

NAME AND MODEL	Engine Make	Cylinders Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Lincoln.....	Own..	8-3⅜x5	136	33x5	$3800	b3800	$3800	$4400	$4700
Locomobile.....48	Own..	6-4½x5½	142	35x5	....	b7600	7600	10500	11000
Marmon.....34	Own..	6-3⅜x5⅛	136	32x4½	3385	b3185	3185	3985	4385
Maxwell.....	Own..	4-3⅛x4½	109	31x4	885	885	....	1235	1335
McFarlan.....1922	Own..	6-4½x6	140	33x5	6300	b6300	6300	7500	7500
Mercer.....Series 5	Own..	4-3¾x6¾	132	32x4½	3950	b3950	c3950	4850	5250
Merit.....	Cont..	6-3¼x4½	119	32x4	1895	1895	....	....	....
Mitchell.....F-50	Own..	6-3½x5	120	32x4	a1490	1590	b1850	b2050	2275
Mitchell.....F-50	Own..	6-3½x5	127	32x4½	....	....	1690	....	....
Monroe.....1922-S-9	Own..	4-3¼x4½	115	32x3½	950	950	....	....	....
Moon.....6-40	Cont..	6-3⅛x4¼	115	31x4	....	1295	....	....	1695
Moon.....6-58	Cont..	6-3⅜x4½	128	33x4½	1785	1785	1785	2785	2785
Nash.....691-96-97	Own..	6-3¼x5	121	33x4	1210	1240	b1395n	....	2040
Nash.....692-94-95	Own..	6-3½x5	127	34x4½	....	....	1390	b1890	2190
Nash Four.....41-4	Own..	4-3⅜x5	112	33x4	915	935	....	a1385 1195k	1545 1275k
National.....BB	Own..	6-3½x5¼	130	32x4½	a2475	b2475	2375	b3725	3825
Noma.....3C	Cont..	6-3¼x4½	128	32x4½	2500	b2500	c2600	....	3500
Noma.....1D	Bea...	6-3½x5½	128	32x4½	3000	b3100	c3200	....	5500
Norwalk.....430-KS	Lyc...	4-3½x5	116	32x3½	....	1035	....	....	....
Oakland.....6-44	Own..	6-2½x4¾	115	32x4	975	995 u795	b1165n	b1445 1185k	1545
Ogren.....6 T D Luxe	Cont..	6-3⅝x5¼	134	33x5	b3750	3750	3850	4500	4800
Oldsmobile.....43 A	Own..	4-3½x5¼	115	32x4	995	975 1350	b1075n	1475	1595 1375
Oldsmobile.....46	Own..	8-2⅞x4¾	122	33x4½	b1735	c1850	1735	....	2635
Oldsmobile.....47	Own..	8-2⅞x4½	115	32x4	1 75	1495	b1675n	1875	2025
Overland.....4	Own..	4-3⅜x4	100	30x3½	525	525	425u	795	875
Packard.....Single-Six	Own..	6-3⅜x5	126	33x4½	2485	2485	u2250	3175	3275
Packard.....Single-Six	Own..	6-3⅜x5	133	33x4½	....	u2350	2685	....	3525
Packard.....Twin-Six	Own..	12-3 x5	136	35x5	3850	3850	3850	5240	5400
Paige.....6-44	Own..	6-3½x5	119	32x4	1465	1465	u1290	1995	2245
Paige.....6-60	Cont..	6-3⅜x5	131	33x4½	a2495	n2245	2195	3100	3155
Patersen.....22-6-52	Cont..	6-3⅜x4½	120	32x4½	....	1395	1425	2395	2395
Peerless.....56-S-7	Own..	8-3¼x5	128	33x5	....	b2990	2900	b3400	3900
Pierce-Arrow.....	Own..	6-4 x5½	138	33x5	5250	b5250	5250	6800	7000
Pilot.....6-50	H-S...	6-3¼x5	126	32x4½	2050	2000	2050	2950	3000
Premier.....6-D	Own..	6-3⅜x5½	126¾	33x5	3150	b3100	3250	4300	5100
Premocar.....6-40-A	Falls..	6-3⅛x4¼	117	32x4	1095	1095	....	1750	1825
R & V Knight.....R	Own..	4-3¾x5	116	32x4	....	1665	....	2385	2475
R & V Knight.....J	Own..	6-3½x4½	127	32x4½	2475	b2475	2475	3015	3105
Ree Series.....T6 & U6	Own..	6-3½x5	120	33x4	1595	n1645	1485	b2355	2435
ReVere.....C	Duca..	4-1¾x6	131	32x4½	3200	3200	3200	....	4000
Rickenbacker.....A	Own..	6-3⅛x4¾	117	32x4	....	1485	....	1885	1985
Roamer.....6-54-E	Cont..	6-3½x5¼	128	32x4½	2685	b2485 b2750	2685	a3285 3585	3585 3950
Roamer.....4-75-E	Duca..	4-4¼x6	128	32x4½	3785	b3485	b3650n	....	b4650
Rolls-Royce.....	Own..	6-4½x4¾	143½	33x5	....	10,900	....	....	....
Saxon.....125	Own..	4-3½x5	112	32x4	1195	1195	....	1795	1795
Sayers Six.....DP	Cont..	6-3¼x4½	118	33x4	1615	1615	....	2645	2645
Seneca.....L-2 & O-2	Lyc...	4-3½x5	108	30x3½	875	875	....	....	....
Seneca.....50 & 51	Lyc...	4-3½x5	112	31x4	1095	1095	....	....	....
Sperling.....A	Supr..	4-3⅜x5	114	32x4	980	980	....	1685	1685
Standard.....98	Own..	8-3¼x5	127	31x4½	2150	b2395	2395	2750	3200
Stanley.....	Own..	2-4 x5	130	32x4½	2700	2700	2700	3775	3950
Stanweed Six.....	Cont..	6-3¼x4½	118	33x4	1765	1765	....	2750	....
Star.....	Cont..	4-3⅛x4¼	102	30x3½	r319	s348	u285	580	645
Stearns-Knight....SKL4	Own..	4-3⅜x5⅝	125	34x4½	2250	2250	2450	3150	3450
Stearns-Knight.....6	Own..	6-3⅜x5	130	34x4½	2700	2700	2850	3350	3700
Stephens.....90	Own..	6-3½x4½	122	33x4½	1575	b1595	c1625	2450	2550
Stevens-Duryea.....E	Own..	6-4⅛x5½	138	35x5	7250	b6900	6800	u5600	b8900
Studebaker....Light Six	Own..	6-3⅛x4½	112	32x4	975	975	u785	1225	1550
Studebaker..Special Six	Own..	6-3½x5	119	32x4	1250	1275	b1275	1875	2050
Studebaker.....Big Six	Own..	6-3⅞x5	126	33x4½	u1300	1650	n1785	2275	2475
Stutz.....	Own..	4-4⅜x6	130	32x4½	2450 2760n	b2790	c2640	3490	4450
Templar.....A-445	Own..	4-3⅜x5½	118	32x4	2025	2125	b2175	2650	2785
Tulsa.....E-1-2-3	H-S...	4-3½x5	117	33x4	1175	1175	....	....	....
Velie.....58	Own..	6-3⅛x4¼	115	32x4	1275	1275	....	1795	1795
Westcott.....C-48	Cont..	6-3½x5¼	125	32x4½	....	....	1890	....	2890
Westcott.....A-44	Cont..	6-3¼x4½	120	32x4	....	1690	n1890	....	2690
Wills Sainte Claire. A-68	Own..	8-3¼x4	121	32x4½	2475	2475	....	3275	3475
Willys-Knight.....20	Own..	4-3⅝x4½	118	32x4	1235 1135u	1235	1435	1795	1950 2195
Winton.....40	Own..	6-3¾x5¼	132	35x5	3400	n3600	3400	b4450	4550

a 3-passenger. b 4-passenger. c—6-passenger. n—Sport. h—All Metal Type. k—Soft Top Type. u—Chassis Price. r—Price without starter and demountable rims. Price with starter and demountable rims $414. s—Price without starter and demountable rims. Price with starter and demountable rims $443. t—Model 47—34x4½ Tires. v—Tire Sizes 32x4½. c—Touring Sedan.

Engine Make: Anst—Ansted. Bea—Beaver. Cont—Continental. Curt—Curtis. D.Ly—Dort Lycoming. G-B—Grey Beal. H-S—Herschell-Spillman. Lyc—Lycoming. Nort—Northway. Roch—Rochester. Rut—Rutenberg. Supr—Supreme. Weid—Weidely. Wisc—Wisconsin.

The following price changes have been announced since the above table was compiled: Elcar 7R, coupe $1,975, sedan $2,065; Moon 6-40, roadster $1,295; Velie 58, coupe $1,785, sedan $1,785.

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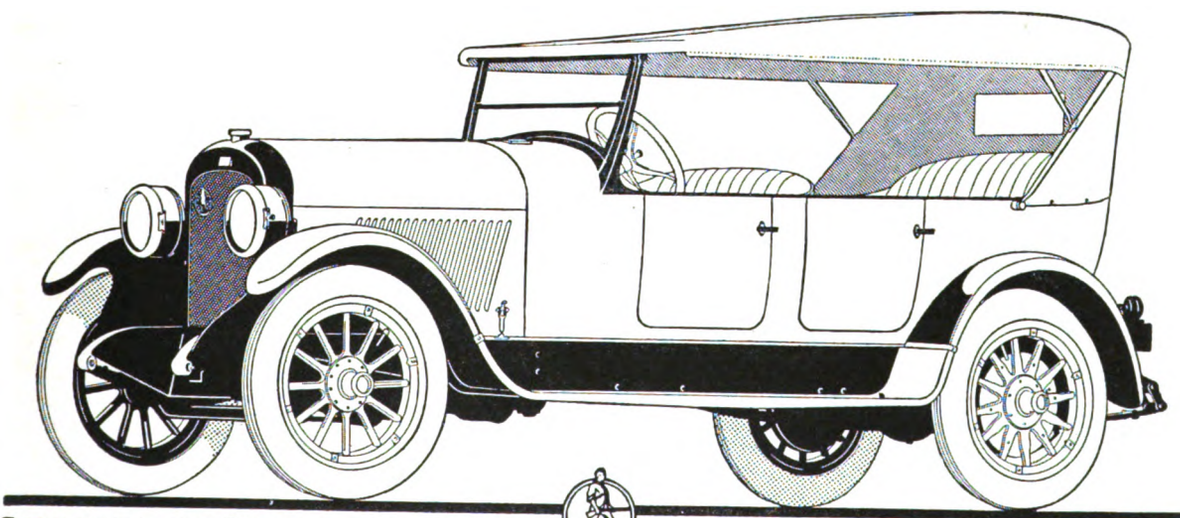
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Touring Car

$1695

[plus War Tax—f.o.b. Factory]

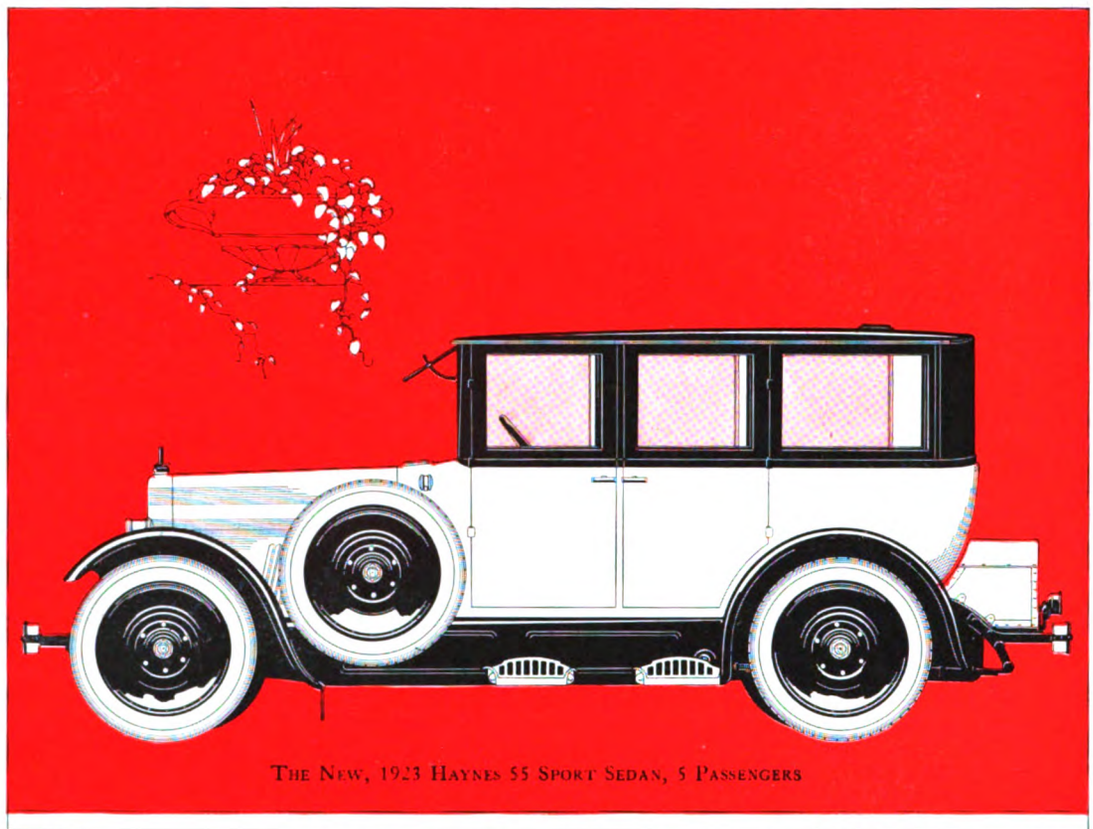


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ANNOUNCING THE 1923 HAYNES FOUR SPORT MODELS

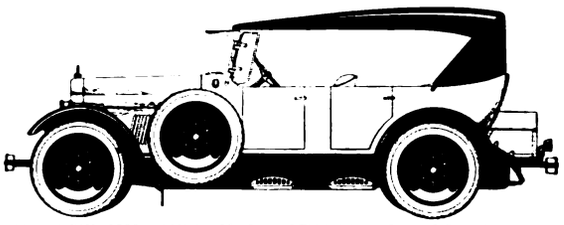
THE vogue of the sport-model car is established. Haynes has been responding to it, and now meets it completely with four new models of this type of car for 1923. They are cars for those who love the thoroughbred—who want strength with beauty and power with comfort.

THERE ARE NO EXTRAS TO BUY. Each of these cars is fully equipped. The newest accessories are standard equipment. Front and rear bumpers, a spacious trunk, six disc wheels with six 32 x 4½ cord tires, sun and vision visor, polished protection bars at the rear of the body, handsome individual steps—everything that you naturally expect as an essential feature of a sport car. The open models are equipped with new design windshield wings and are trimmed in beautiful Spanish leather. All of the new 1923 Haynes 55 sport models have a 121-inch wheel base and are finished in a pleasing shade of deep maroon.

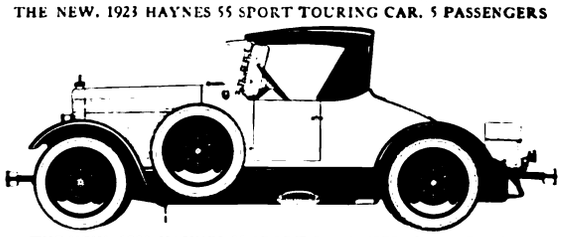
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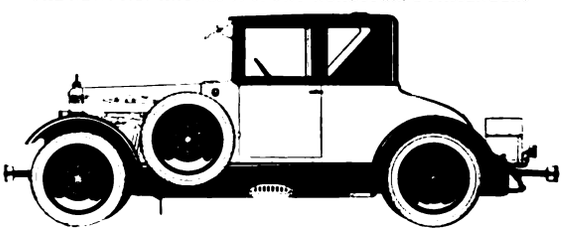
EXPORT OFFICE: 1715 Broadway, New York City, U.S.A.



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THE NEW, 1923 HAYNES 55 SPORT ROADSTER, 2 PASSENGERS



THE NEW, 1923 HAYNES 55 SPORT COUPELET, 3 PASSENGERS

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Volume LXXIII
Number 2

PUBLISHED WEEKLY AT 239 WEST 39th STREET
NEW YORK, OCTOBER 11, 1922

Thirty-five cents a copy
Three dollars a year

A dealer who sold one hundred and fifty cars of one make lost money.

But he happened to have the Jordan and sold forty of these. His profits on the Jordan saved his business.

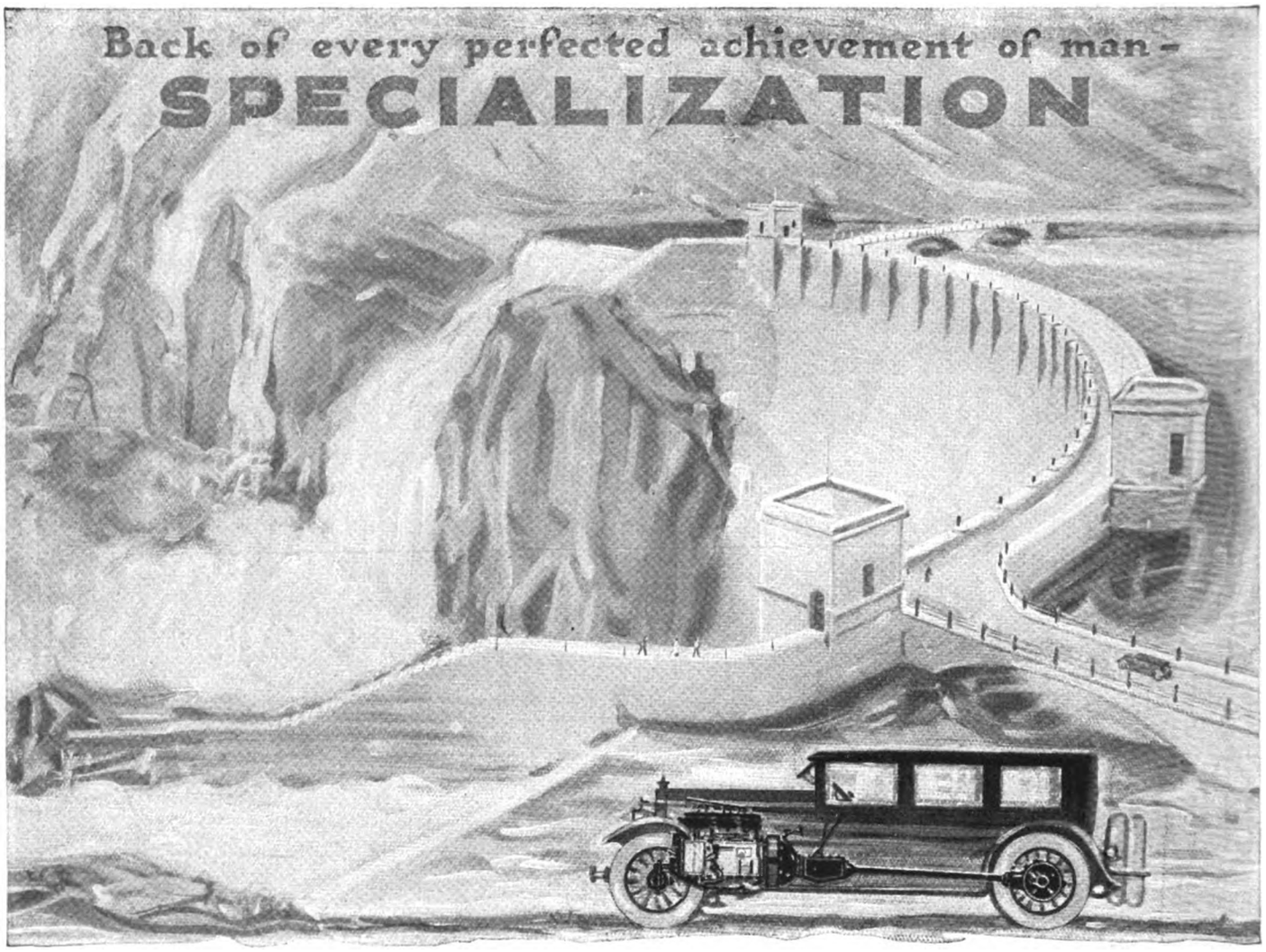
I have a letter which covers about four pages which will tell you all the reasons for this.

If you are a dealer, and you expect to continue to be a dealer, you may be progressive enough to want a copy of this letter. Just send me a postal or a telegram and you will get the letter.

Edward C. Jordan

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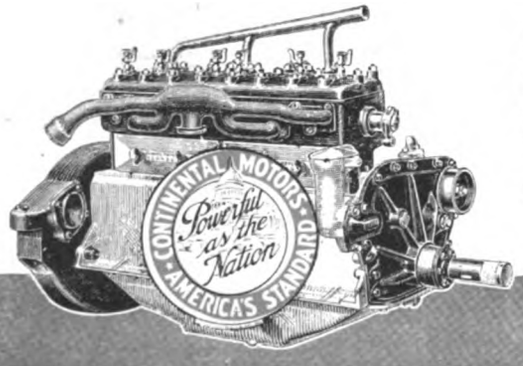
The exacting demands to be put upon the Roosevelt Dam necessitated its construction by co-ordinated efforts of many specialist organizations, each contributing an essential factor to the finished undertaking

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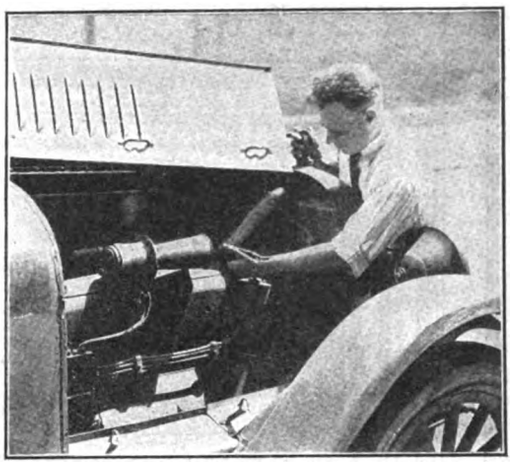
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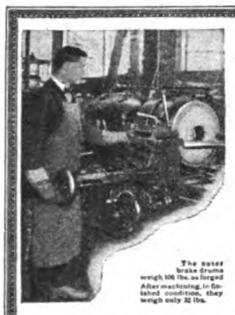
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Fan Belts

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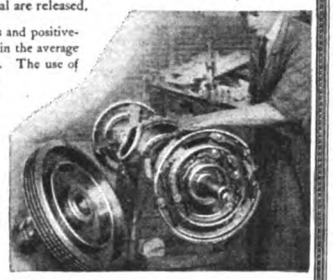
THE ESSENTIAL FEATURE of *Rolls-Royce* brakes, is their large cooling area, which is about five times as great as that of the conventional type of brake; the almost indestructible lining, and the extreme rigidity and positiveness of the operating mechanism. Rolls-Royce brakes are built, from the rough forging, entirely in the Rolls-Royce works, Springfield, Mass.

The outer brake drums weigh 106 lbs. as forged. After machining, in finished condition, they weigh only 32 lbs.

ROLLS-ROYCE

brakes are heat-proof, water-proof, oil-proof; absolutely protected from road-dust; have exceptionally long life, and are always perfectly free when the lever and pedal are released.

They have a smoothness and positiveness of action not found in the average car, even of higher price. The use of the engine, as a brake, on long grades is entirely unnecessary on Rolls-Royce cars.



Great care is taken in the erecting of the brakes. Each lining is bedded, to the drum by hand, and must bed perfectly, all around, before it is passed, thus insuring smooth and positive action.

Rolls-Royce Brakes

WE REPRODUCE our advertisement of June 8th, in Motor Age, June 12th, in Motor World, describing the essential features of Rolls-Royce Brakes — five times the cooling area of the usual, conventional type; *the indestructible Ferodo lining*; the extreme rigidity and positiveness of the operating mechanism; a combination of braking design and construction making it unnecessary to use the engine on long, steep grades.

This was a statement of fact —below, *we give you the evidence in actual performance.*

ROLLS-ROYCE

No Rolls-Royce has ever worn out

On September fifteenth, Ralph B. Jackson, drove a Rolls-Royce standard touring car down Pike's Peak

with five passengers, a distance of seventeen and three-quarters miles, *down grades as steep as 10½ %, on the foot-brakes only,* without assistance from either handbrakes, compression from the engine or artificial braking or brake-cooling devices.

At the bottom, although the heat had burned the paint completely off the brake-drums, the brakes themselves and the Ferodo linings were in perfect condition. Without any adjustments Mr. Jackson drove, in the following two days, from Denver to Kansas City, 670 miles, demonstrating the constant, uninterrupted transportation service afforded by Rolls-Royce.

This is the only instance of such braking efficiency known to history. Affadavits covering this spectacular performance are on file in the Rolls-Royce Executive Offices.

Write for "The Story of Rolls-Royce—Its Design, Workmanship and Materials"

ROLLS-ROYCE
SPRINGFIELD, MASSACHUSETTS

Visitors Are Always Welcome at the Works

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXIII New York, U. S. A., Wednesday, October 11, 1922 No. 2

Well, Why Not?



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Manufacturers and Dealers:

Let's Work to Improve Used Car Conditions

Fall and Winter Are Ahead of Us, With Plenty of Time to Think and Act—Let's Co-operate to Spread Education, the Only Cure for Used Car Losses

ONE of the country's well-informed men on used-car merchandising said, a few days ago, that no dealer can handle a used car and get away with a whole skin on less than a 20 per cent discount. He explained that the dealer's buying price on the used car must be 20 per cent less than his selling price, and if there is any reconditioning cost this must be taken from the buying price. In a word, the dealer needs the 20 per cent to cover selling cost and profit.

But that's all the margin the average retail dealer has on the new car, perhaps you are thinking. Which prompts the questions: Isn't it just as hard to sell a used car as a new one—often harder? And doesn't it cost just as much to pay the advertising charges, salesman's commission, insurance and so on?

It is quite generally agreed that a dealer with a 20 per cent discount doesn't usually make more than 3 to 4 per cent net profit on a new car. How, then, is he going to avoid a loss if his working margin is much less than 20 per cent on the used car?

And now that dealers' businesses are generally running about 50-50 on new and used cars, how are dealers going to stay in business, making profits for themselves and helping the manufacturers to make their profits, unless they look the facts in the face?

The question is giving a great many dealers and a great many dealers' financial advisers and a great many friends of the industry a great deal of concern. It is giving some factories a great deal of concern. It will have to be considered and answered by the industry as a whole—all manufacturers and all dealers—before the industry can go forward into the stable, substantial future to which the essentiality of the automobile entitles it.

To be perfectly frank, it must be said that only a minority of the dealers in the United States realize that *trading used cars at a loss MUST stop.* It is pretty hard for this minority of dealers to stop trading at a loss in the face of the competition of the majority of dealers who persist in doing it.

The industry has before it the task of educating the majority of dealers to realize that business can be done, that it must be done, without trading losses.

And this process of education cannot be carried on by dealers alone. Manufacturers must help.

Several manufacturers have undertaken during the past year or two creditable efforts to enlighten their dealers on the fundamentals of used-car merchandising. Two or three have issued campaigns of used-car advertising which their dealers have used to help move used cars. Two or three others have established clearing houses for used-car ideas, through their house organs or otherwise. One or two have issued books or folders that deal with the plain "whys" and "hows" of the subject. One or two have engaged used-car sales specialists to help their factory branches, and some of their larger distributor organizations dispose of used-car stocks.

Two manufacturers within the past week have written to Motor World asking where they could get "the best used-car man in the country" to act as used-car adviser to their dealers, prepare used-car advertising and generally assist in lightening this particular burden of their dealer organizations.

All this is encouraging. But it is only a start.

Until a majority of the manufacturers realize that their dealers' success, and so their success, in marketing new cars is inseparably tied up with their dealers' success in handling used cars we cannot expect any appreciable general improvement in the used-car situation.

If it is true that a dealer must have a 20 per cent margin profitably to deal in used cars—and it is difficult to argue against the statement—should not manufacturers be active in the know-the-facts squad spreading this information? If there are things to do and things not to do—and there are, definite things—to avoid losses and make profits on used cars, should not manufacturers be constantly on the alert to impress these things upon their dealers. If education regarding used-car values will help to cut down

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used-car losses—and it is doing that very thing in a number of cities—should not manufacturers take part in the movement to establish used-car market values and tell the world about them?

Dealers, of course, must be the prime movers in such co-operative educational efforts. They must work out the local co-operation necessary to make them effective. But manufacturers can encourage such efforts.

Motor World has held consistently to the opinion that dealers cannot expect manufacturers to solve their used-car problems for them. No manufacturer's rule or suggestion will prevent a dealer from giving away his profits in long trades. But manufacturers can take an active part in the process of enlightening the entire industry concerning the elements of profit and the causes of loss in automotive merchandising.

If manufacturers will base their new-car allotments on the market possibilities of their dealers' territories, considering the used-car market along with the new; if manufacturers will eliminate trading discounts and other practices that help to create false used-car valuations; if dealers will put sufficient trust in each other to co-operate in exchange of information leading to establishment of definite used-car values; if dealers will study their businesses to learn the damage done by unwise trading—

If the industry—manufacturer and dealer—will recognize the used car as merchandise worth only as much as the public will pay for it and as a part and parcel of the new-car business, manufacturer and dealer will go through the winter and approach the spring in a spirit that will make 1923 the most pleasant and also the most profitable year in the history of the business.

Let's think it over this fall and winter. Let's co-operate!

A Frank Letter on Used Car Co-operation

By the Manager of a Strong Automobile Dealers' Association

EDITOR Motor World: When one digs to the bottom of the used car "problem," as everybody likes to call it, he finds that the manufacturers are equally responsible with the dealers; that it is necessary for the dealer to equip himself sufficiently to warrant the manufacturer's confidence and in turn expect confidence and consideration from the manufacturer and that any policy or any plan which we pursue must be fundamentally right and fair to public, dealer and manufacturer.

Trade allowances are an absolutely vicious practice, and as detrimental in the long run to the manufacturer as to the dealer.

Larger or smaller discounts, they are good, straight, competitive practice. If the manufacturer can put sufficient quality into his product to enable him to sell it through a dealer organization or a branch house organization with lesser sales resistance, and consequently lower margin of discount, he is not to be criticised. On the contrary, he is to be complimented, while the manufacturer who, to move his goods, finds it necessary to offer a longer discount will, I am afraid, find his volume will be limited and he can cater only to a certain class of people who always think they are buying something for nothing or pulling a sharp trade.

Perhaps an ideal condition would be a uniform discount, although I am not prepared to reach an opinion on that point at this time. Until automobiles themselves become more standardized and the dollar-for-dollar value is in each respective automobile I rather question the possibility of uniform discounts, and then again the question of manufacturing efficiency, volume, etc., enters into the problem. And, again, competition is the spice of business and I am not so sure but that is the cause of the present day condition among our dealers; the competition has not been sufficiently keen *along the right lines* to cause the dealer to study the problem and make himself more proficient as a merchandiser. To be sure we have had competition, but it has not been the kind of competition that builds men or organizations. Of course the dealer does not have to take an agency if he does not want to; of course he does not have to take more cars than he can sell, but, unfortunately again, a lot of our dealers are not awake to that fact.

So it is by education that it is all to be built from the ground up and it is a great big job. It is going to take a long time and the very earnest and best co-operation of the best and biggest manufacturers and dealers. As for the manufacturers, it seems to me that if the same amount of energy and effort on the part of the branch houses, distributors and district travelers were spent in teaching the average dealer to be a merchant, teaching him how to analyze his business, teaching him how to read an ordinary, every day, intelligently gotten up financial statement, as is spent in trying to get that particular dealer to borrow money from the bank, stock automobiles and maintain a certain schedule at the expense of his own organization, we would in the long run develop and build better and stronger dealers who would in turn buy more cars in the end from the manufacturer.

I think the dealer distributor discount as a whole is too small, but there is no gainsaying the fact that to some dealers it makes no difference how much discount you give them, they would insist upon giving a certain portion of it away. The cost of merchandising to-day is too great in proportion to the amount of discount received by the average retail dealer. We understand that it costs the average retail merchant, not automobile dealer, but average retail store merchant in this city, approximately 23 per cent to merchandise his goods.

If we can get more and more cities in sympathy with co-operative educational movements in regard to used cars our problem will be well in hand.

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Find the "Boy" and Let Him Build Your Window Displays

This Is the Advice of a Kansas City Accessory Dealer Whose Windows and Store Are Always Interesting

THE Kansas City Automobile Supply Co., wholesale and retail, Kansas City, has been successful in a big way. Its big store looks interesting, with a great quantity of accessories arranged attractively. It doesn't look like a commercial institution; more like a playhouse for boys of the automotive industry. Everything is clean, and bright, and shown in such a way that a fellow can see what each item is, and what it is for.

This company secured its present location, on McGee Street, because it could get here a great big room and immense window space. It did a big business inthe former quarters, having less than half the frontage; and could have continued to build even larger volume there—but that would mean having stock stuck away in bins and boxes, on shelves in dark corners, and on various floors. The first floor of its former quarters was interesting, but things were packed in so closely that a fellow couldn't get at what he wanted to see to examine it. And there were always a lot of other fellows standing around, looking at things, who edged up too close for comfort. They always wanted to look at the thing you were looking at, too. About the time you had decided what the thing was for, and were having a dandy time thinking about it, another customer would butt in, maybe to look at something underneath what you were looking at.

BUT in this new store—O! Boy! It sure is keen. Room to wander around, any quantity of things to get close to, and a great lot of things that work, that a fellow can do things with and see the wheels go round.

And that window! Fifty feet. Panel back, built by a cabinet maker, with highly polished handwork. It is a continuous window, the entrance door being in the corner of the frontage.

Plenty of extensive window space in the automotive industry—75-ft. frontages with a cardboard picture and two tires, 100-ft. frontages with a couple of automobiles dimly visible behind, and so forth and so forth.

But these Kansas City Automobile Supply Co. windows don't make a person feel that he is going to church along a street where window shades are drawn. They are alive.

That word "alive" is good. There's always something moving in these windows, at least one space has in it a display with action. It may be some stock advertising device, like a seal balancing piston rings; or a clock-work mechanism, but something is always moving in one part of the window.

There's one piece of window display furniture that earns thousands of dollars a year because it never is idle. That's a little motor, hooked up to one of the devices in the window.

Where does the firm get the ideas for the mechanisms that provide "action" for the window displays?

HAVE you a "boy" in your accessory store?

Give him the job of decorating the windows.

(Insert here, some of the classic utterances you can call up by reflection, on the value of retaining the child outlook on life, the preciousness of the long, long thoughts of youth, the whole philosophy of "rejuvenation".)

This is not an essay, or a theory. It is a cold-blooded practical suggestion on window-decorating.

Find the "boy!" And when you find him, hold fast to him, encourage his boyishness, give him rope, give his fresh, ebullient nature a chance!

It makes no difference how many New Year's days this boy has seen. He may be 15 or 50. If he has the boy still in him, he's your one best bet as a window decorator.

From the "boys" of the organization.

George N. Lockridge, president-treasurer of the company, is one of these "boys." Talk with him a few minutes and you feel that you want to be out under a tree playing mumblety-peg with him. You are certain that he could make a dandy kite.

He's so interested.

The boy who has the window decorating job, however, is Jay Shumway. He has been decorating the firm's windows for eight years. He is floor sales manager.

He's a successful manager of floor sales, as well as a successful window decorator, because he is so much of a boy. Never having been a professional mechanic, he is, nevertheless, a good mechanic. He has made himself a motor car. He's intensely interested in motor mechanics and in accessories.

He's keenly curious about everything mechanical or automotive; he wants to know, he wants to see the thing work, he wants to make it work, himself.

Because he's so delighted with everything automotive, he exudes enthusiasm for these items. And he's eager to arouse enthusiasm in the other fellow. He wants somebody else to share his delights. His curiosity and interest have resulted in his intimate knowledge of automotive equipment, whereby he is able actually to serve the public and the dealers extremely well.

And it is the "boy" in Shumway that originates many of the ideas for window displays, the displays that cause people to stop and muse before

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the windows. He makes for the window the sort of thing that any boy, from seven to a hundred wishes he had the materials to make, and the reason for spending his time on them. The sort of thing that causes most men and women to pause a moment, with a smile, whether the object is two sticks and a wheel, or an elaborate production.

The entire organization, by the way, is of "boys," even as to years of age. The president is 31; the oldest member is only 35, and many are under 21.

Take an August, 1922, window of this company, as an example. Shumway made a rude skeleton resembling a motor car body, out of boards and inch strips. He wound brake lining around this skeleton and produced the body of a racing car—stretching the imagination. Then he took two half-axles and set them up on iron standards in the window, placing the frame on them. He pinned a pulley into each half-axle and set up the little motor midway, running belts from the pulleys to the motor. He put motor car wheels on the ends of the axles toward the window; set up a cardboard bust of a driver suitably in the car and started the motor to turn the wheels.

The window was given other decorative features, concerning the brake lining used.

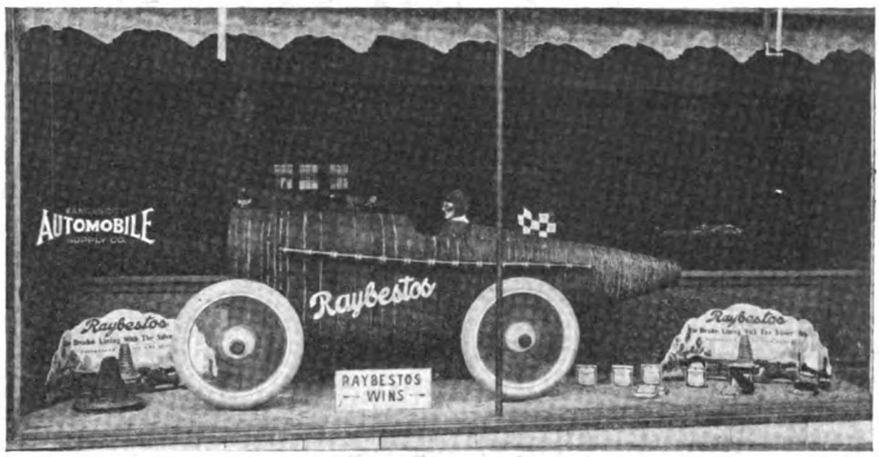
After a few days other items were added to the window, and to the car, since the background attracting attention could answer for display of almost anything. And the car itself could be adapted to display of other things than brake lining.

Shumway made this device working at nights, over a period of about three weeks. He got a lot of fun out of the materialization of his mechanical idea; and is increasing sales as a result of the adaptation of the idea to a business purpose.

The total cost of the car was $7.

Have you a boy in your establishment?

Give the boy in him a chance!



Using an Action Display in Accessory Window

This window is a particularly good example of what can de done with an item like brake lining in making an interesting, attention-attracting display. The brake lining was stretched on a form made from light wood strips. Half axles on iron standards held the wheels, which were driven by a small motor.

Some Selling Ideas for the Car Dealer

HERE'S a good stunt for graphically demonstrating how much better it is to drive a closed car in the winter than an open car. Drive around in five open cars on a cold day and take the temperature of these cars. Then drive around in five closed cars on the same day and take the temperature of these cars. Play up the average temperatures of the open and closed cars strongly in your advertising as a reason why folks ought to buy closed cars Such an ad might say: "Last Tuesday the average temperature driving in open model Sennetts was 42 deg. and in closed cars, the same day, it was 75 deg. Drive in comfort this winter in a closed Sennett."

SOME buyers have a mistaken idea that closed cars are suitable only for the use of physicians and people of similar occupations. So anything that can be done to demonstrate the universal utility of closed cars will help you sell more of them. It is, therefore, a splendid bit of advertising to run a list of the people who have bought closed cars of you and to give the occupations of these people opposite their names. With this list you will have some strong copy urging everyone who wants winter motoring comfort to buy a closed car.—Indiana Dealer.

CARDS in leather bound pouches faced with celluloid windows help salesmen of the Lawfer Automobile Co., Ford dealer in Allentown, Pa., to sell used cars. The cards are particularly useful in aiding the salesmen to give prompt and correct information to prospects, which is often of great importance in closing a used car sale.

The pouches containing the cards are hung on the steering wheel of the car. The information is put on the cards in code. For instance, if the selling price is $425, the numerals are reversed and letters placed before and after them (X524L). To the right of this selling price the former owner's name is spelled backward. This often helps the salesman to recollect certain points about the car which may help in selling. Note that the equipment and the cost of the equipment is listed.

On the reverse side of the card is listed the operations performed to put the car in running condition in the service station. The figures given are the retail cost of the operations, which helps prove to the prospect that the car is in good condition. The new parts and accessories are also listed.

TEN of the motor car dealers of Tampa co-operated recently in an unusual publicity "stunt" which was in the nature of a contest. A full page advertisement was published in the Sunday issue of the Tampa Tribune, each of the ten dealers having from eight to ten inches of advertising space thereon. At the top of the page appeared an announcement to the effect that ten new tires would be given free to the ten owners of the ten oldest automobiles in Tampa—that is, one tire free to each owner.

Owners of cars taking part in the contest were required to register with any of the ten dealers, bringing their car in for the dealer to see. At the end of the specified time all of the registrations were compiled, and the owners of the ten oldest cars received one tire each as above mentioned.

Needless to state, this contest attracted wide attention throughout Tampa, and considerable interest was manifested by automobile owners, many of whom registered their cars, and incidentally their names as prospects for new cars.

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This Jobber Is the "Big Brother" of All His Dealers

And His Active Interest and Participation in Their Selling Plans Has Been the Foundation of His Own Success

ONE who talks for any appreciable length of time with E. A. Bowman of E. A. Bowman, Inc., Detroit accessory jobber, is very likely to find himself the recipient of a neatly typed saying of the late Theodore Roosevelt, to the effect that, *"Every man owes it to himself to devote at least part of his time to the upbuilding of the industry to which he belongs."* This statement so aptly expresses Bowman's sentiments that he keeps a supply of copies conveniently placed and hands them out to all.

Bowman preaches and practices co-operation in business. He was firmly convinced that the newspapers should give some space to accessories. He belonged to a club which embraced a number of newspaper men in its membership and he undertook to convince these men that accessories are just as important as are tires, batteries, or even cars themselves. He told them of the immense capital invested in the accessories business, of the large variety of goods produced and sold, of the number of manufacturers and dealers in the industry, and of other important facts.

FOR two years or more Bowman kept after the newspapers, and at last one of the papers yielded and made him a proposition. "We have no one to conduct such a department," they said, in effect, "but if you will undertake to furnish us eight or ten inches each week for a year we will give you the space."

Details were agreed upon and Bowman set to work on a series of talks on accessories under the heading of, "Round Table Talks," with the subheading, "Of Interest to Accessory Dealers," discussing such subjects as selling, displays, turnover, and specific articles such as brake lining, visors, piston rings, fuse blocks and mirrors. To make sure that all technical details be correct, and to save himself some labor at the same time, Bowman has made a practice of calling upon different manufacturers for help when discussing their products.

While the articles are addressed primarily to dealers, the general public reads them also, as is attested by the fact that the demand for an accessory usually takes a sudden jump immediately after that accessory has been featured in one of the discussions.

He presents new things, points out the advantages of others, tells his readers what type of accessory is best for certain purposes, tells them how to attach and to adjust others to the best advantage, and in general gives his readers a vast amount of genuinely helpful information.

While Bowman is of course increasing his own business by these published talks, **the important fact is that he is helping the dealers, the jobbers, and the industry as a whole.**

Bowman believes emphatically in the dealer carrying a wide variety of stock, a small quantity of each line, and making a quick turnover of his goods. He is a convincing talker and the subject of his discourse usually is this "gospel of merchandising," as he calls it. A few months ago two young mechanics came into his store and asked him to fit them out with a complete stock of accessories. They had rented a small store over on the west side of town, they said, and they wanted him to put in just such a stock as he thought they ought to have. Further conversation developed the fact that one of these young men had sat in a restaurant and overheard Bowman talking to a friend about his "Gospel of Merchandising" one day two or three

How One Jobber Helps His Whole Industry



The pet quotation of E. A. Bowman, Detroit jobber, is: "Every man owes it to himself to devote at least a part of his time to the upbuilding of the industry to which he belongs." He has made it his creed and one of the ways he is putting this creed into practice is in weekly "talks" in one of Detroit's leading papers. The above illustration shows how they are used by the newspaper

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years before and had then and there determined that some day he would own an accessories business and that he would go to Bowman for advice when that time came.

These men were mechanics. They knew practically nothing about retailing and they admitted as much. They wanted Bowman to tell them what to stock, how to stock it, and how to sell it. He did just that. He selected their stock and sent a man out to help arrange the display. The place was thoroughly cleaned, suitable shelving was put up, stock was arranged, window dressed, and the men were given some instructions about merchandising. One of Bowman's salesmen happens to live near the place and he has made a practice of dropping in almost every evening after supper and talking things over with the men. They have now been in business several months and are making money. Had it not been for Bowman's talk, they both would no doubt still be working in a factory.

Bowman has given many accessory dealers their first lessons in retailing. His reputation for helpfulness and good sound business sense has spread, and men who have no experience whatever in the business trust him to get them started right. He gives unsparingly of his time and knowledge of the business and the men who have followed his directions have, without exception, been highly successful from the very beginning.

One day there came to Bowman a man, with a retiring manner, who informed him that he was a violin player in an orchestra, that he had saved about $300, and that he thought he might be able to invest this sum in a small accessory business in Battle Creek and make a little money during his vacation. He knew nothing whatever about merchandising and nothing about accessories. Bowman says his conscience troubled him a little over accepting the man's $300, because he felt that he would not be successful as a merchant, but the musician was sure he wanted to try it, and so Bowman selected a small stock and shipped it out to him. Three hundred dollars will not buy a very large stock of accessories, but Bowman gave him as wide a variety as possible and told him to wire or telephone for other supplies as fast as he sold out his small stocks. This the dealer did, beginning with the very first day.

This dealer, in addition to owning a large store in Battle Creek, now owns accessory stores in Muskegon, Kalamazoo, Grand Rapids, Bay City, Flint, Jackson, and Marshall; all being towns or cities in Michigan.

In Port Huron, Michigan, there is another successful dealer who knew nothing whatever about the business before going to Bowman. He had some money and believed that he could do something in the accessory business in Port Huron, but, he told Bowman, he knew nothing whatever about the business, not even what kind of shelving to put up. Bowman told him to go ahead and rent his store and hire a carpenter, then to telephone him what morning the carpenter would be ready to start to work. This he did and Bowman had a man at the store on the appointed morning before breakfast. This man took full charge, directing the carpenter, putting in the stock, dressing the window, and, in fact, presented the store to the dealer ready for business.

Other examples might be given, but they are practically all the same. Almost without exception Bowman selects the stock, puts it in, arranges the display, gives the new dealer a lot of advice about buying and selling, and then keeps in close touch with him personally or through one of his salesmen, until the man makes good.

Quick turnover is the ultimate goal of all Bowman's teaching. He insists that his dealers buy in small quantities, buy a large variety of goods, and select such goods as will sell. He, himself, keeps well posted at all times and he knows just what will sell and what will not sell.

Recently he offered to take back every dollar's worth of his goods that a large department store in the city had on hand at time of inventory, and the buyer had to admit that, although he had thousands of dollars worth of accessories on hand, many of them "dead" stock, he

Interior Views of Bowman's Jobber Salesroom

E. A. Bowman, Detroit jobber, has many definite ideas concerning merchandising. Some of them in connection with helping dealers to be better merchants are contained in the accompanying article. The pictures herewith show interior views of Bowman's salesroom. He has definite ideas on this subject too, as may be inferred from his use of display tables instead of cases





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had nothing to turn back to Bowman. On another occasion he made the same offer to a dealer who was not doing well and who was overstocked. The dealer jumped at what he thought was an opportunity to get rid of a lot of stock, but he could find only $16.75 worth of Bowman's goods in the house and this included a heater, which was unseasonable at the time.

He insists that his dealers who look to him for guidance keep in close touch with him at all times and *discuss their purchases with him before making them.* In order that he may at all times be prepared to advise them intelligently, he subscribes for a daily market service whereby he is kept informed of conditions in all lines that affect the accessories trade. The great failing of many merchants in every line, says Bowman, is their *desire to buy in too large quantities.* Even some of those whom he has trained get too prosperous and want to be big dealers and to show that they are such by buying in big lots. When they do so, Bowman warns them of the danger of overstocking.

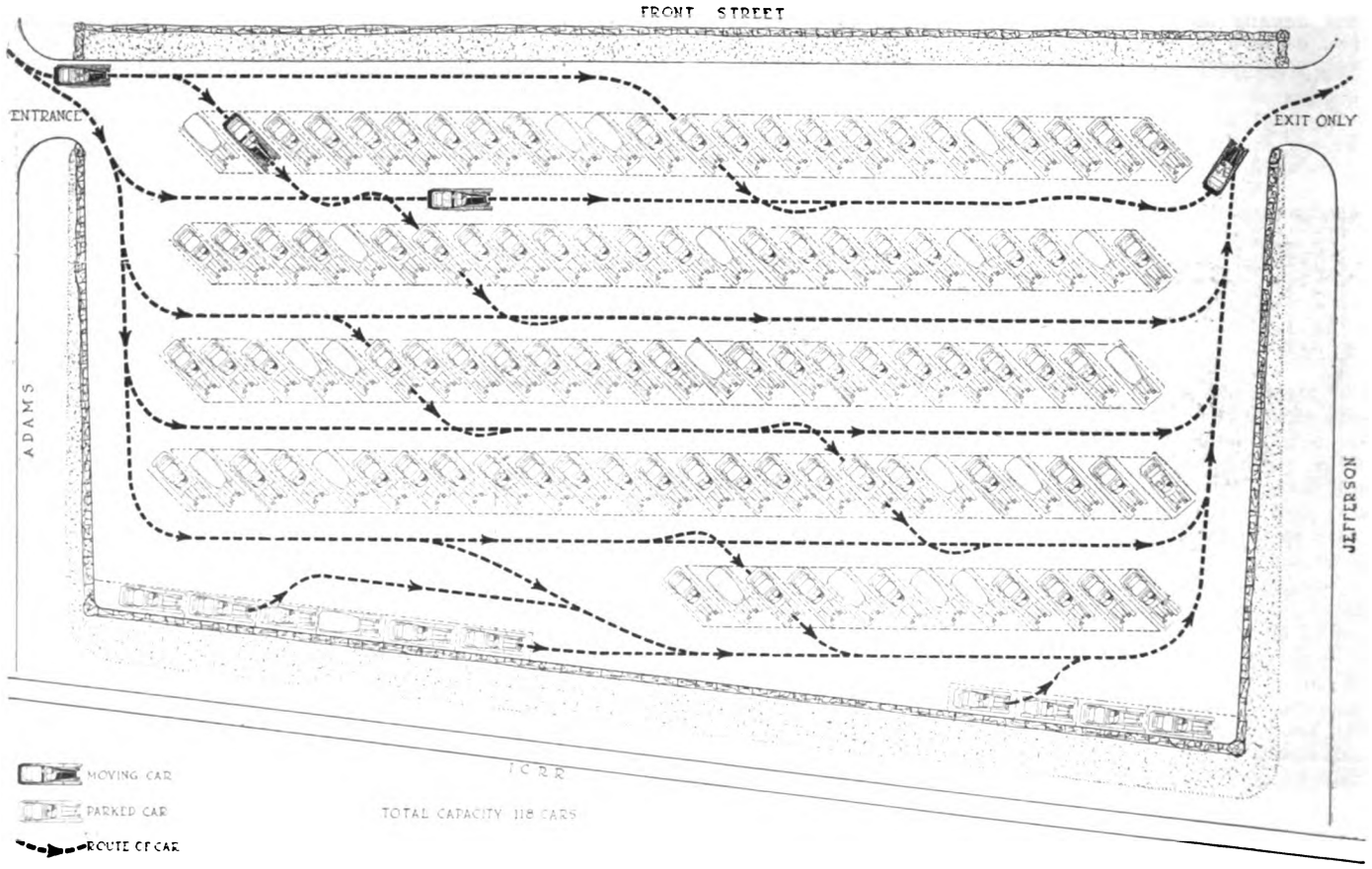
"Tell the dealers to keep in touch with their source of supply," he urged. "They need the goodwill of their jobbers and manufacturers just as much as of their customers. The jobber or manufacturer is in a position to give them help in many ways, and if they are not getting that help it is largely their own fault."

He urges his dealers to study their trade and to study their goods; to know what goods they can sell and to know the goods that they do sell. In order that they may know their goods, he provides two large racks of manufacturers' literature in which at least 300 products are described in detail. This literature is classified and conveniently arranged and all dealers are urged to avail themselves of it by helping themselves to whatever they need. To make sure that they get at least some of it, however, Bowman always includes an envelope full of the pamphlets and papers with each shipment of goods.

For the benefit of those who desire to use cuts in their advertising, he stocks several hundred manufacturers' electros which he lends to any dealer free of charge. These cuts occupy a special cabinet of 54 drawers and are kept in classified order so as to be available at any time. New cuts are secured from the manufacturers as often as desirable or necessary.

While leading so many others to success, Bowman has, of course, been making a success of his own business. He at present occupies an entire building, containing 21,000 square feet, equipped with many modern conveniences. The corporation of which he is the active head has been paying 8 per cent dividends and the business is growing rapidly.

No Backing or Squeezing in Memphis Free Parking Grounds



THERE may be a suggestion for your city in the free parking plan being developed in Memphis, Tenn. As seen in the illustration, cars will drive into the park, into their parking places and out again without backing and with none but easy turns.

Free parking space for 118 automobiles will be provided through the improvement of a large strip of ground between Front Street and the Illinois Central tracks running from Adams to Jefferson Avenues in Memphis.

Beginning of this work marks the first step in a general plan to make use of idle ground for parking purposes. It is estimated that Memphis needs space for 6000 automobiles, and the number is increasingly rapidly. The plan is to have the city provide as much space as possible for parking purposes.

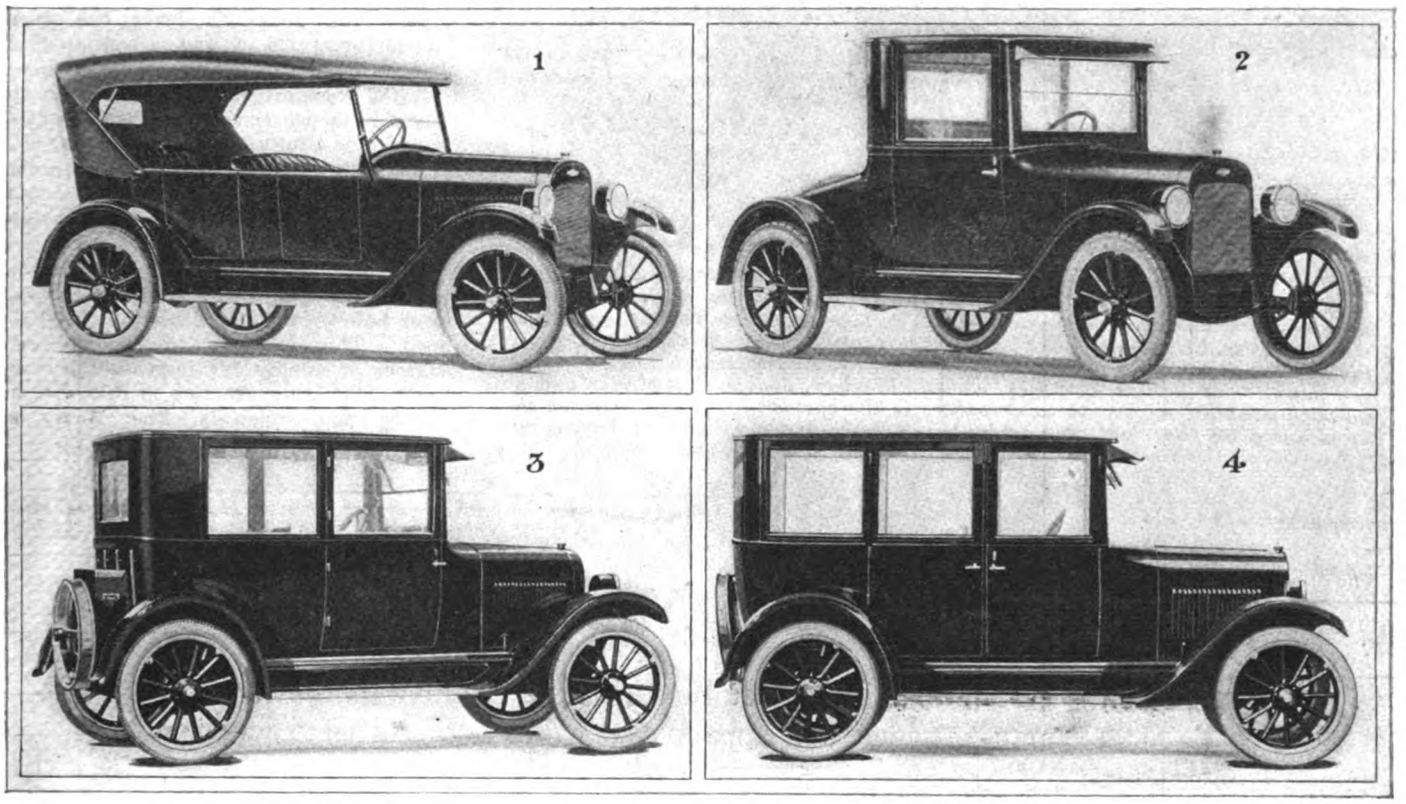
The improvement of this space will cost the city practically nothing and will afford considerable relief from present congested traffic conditions. The plot is being filled with dirt taken from excavations for new buildings and the grading and pavement will be handled by the city engineering department.

Shrubbery is to be planted around the plot, lights erected and other improvements will give it the appearance of a park.

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Many Changes in New Chevrolet Superior

Body and Chassis Redesigned—FB Model to Be Discontinued—Prices Unchanged



Four of the new Chevrolet Superior models. 1—*Phaeton*, $525. 2—*Utility coupe*, $680. 3—*Sedanette*, $850. 4—*Sedan*, $860. *The roadster (not shown) is* $510

A NEW model Chevrolet Superior made its first appearance on October 8th, and coincident with this came the announcement that the Model FB would be discontinued. While the car in general is much the same as before there are a great many refinements in design of both the body and chassis. The prices remain unchanged. The most noticeable changes are in the design of the bodies, hood and fenders. The radiator has been made very much higher and of greater capacity. It is now 4⅝ in. higher than before, but is narrowed 1¾ in. The shell has been changed so that the top corners are more square. The hood is higher and the curve has been taken out of the cowl giving practically a straight line from the radiator to the windshield. The fenders are of the crowned paneled type and the shape has been changed to conform to the new body lines.

Heavier Sheet Metal Used

The metal in both fenders and body has been made of heavier gage and the entire redesign has been carried out with the idea of elminating vibration and rattle that might result from weak parts. The new headlights are of the drum type and are now fastened directly to the fenders. The windshield has been given a greater angle. The lower glass of the windshield on the open models pivots at a point more nearly the center of the glass than in the previous models which pivoted near the top. All closed models are equipped with sun visors of black metal.

The instrument board is now finished in enamel instead of the dull finish that was previously used. The wood backing to the instrument board has been eliminated. The rear appearance of the car is considerably different. The two small oval windows used in the open models have been changed to a single oblong plate glass window. The change from the gravity to vacuum fuel feed system has placed the gasoline tank at the rear on all models. Previously only the sedan was so arranged.

The upholstery is now made of Fabrikoid of a finer texture than before.

Features of the New Chevrolet Superior

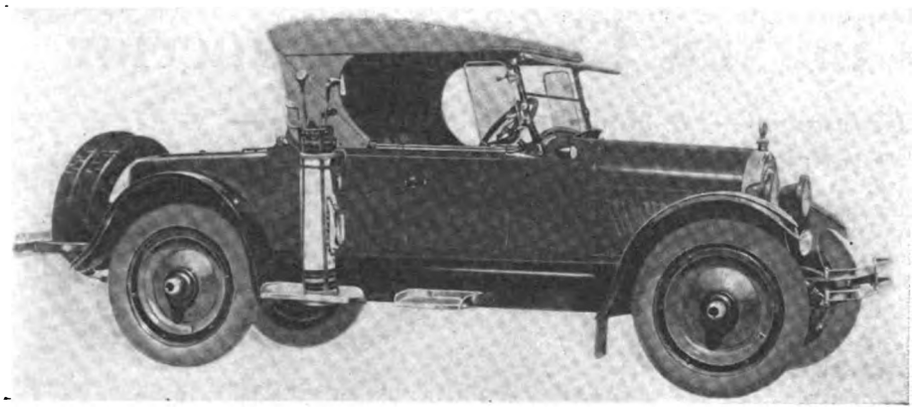
- Higher and narrower radiator
- Higher hood
- Crowned and paneled fenders
- Drum type head lamps attached to fenders
- More slant to windshield
- Enameled instrument board
- Rectangular plate glass window in open car rear curtain
- Stronger frame
- Redesigned springs
- Worm and screw steering gear
- Emergency brake lever behind gear lever
- Vacuum fuel feed on all models
- Heavier flywheel
- Holley or Zenith carbureter
- Remy or Auto Lite ignition
- Curtains open with doors

Changes in the Chassis

A number of important changes have been made throughout the chassis. The frame is made much stronger to prevent weaving. The channels are of heavier section and the cross braces are also heavier. Both front and rear springs have been entirely re-designed — the method of fastening to the chassis being by means of a pocket anchor. The angle of the springs has been changed to take road shocks more nearly in the center line of the spring. The number of leaves has been increased and the leaves themselves are larger. The springs are still quarter elliptic but are now single curved downward instead of double curved, necessitating more clearance between body and axle which has been provided for by raising the rear of the car.

The steering gear is now of the worm and screw type instead of spur gear type

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The Oldsmobile Light 8 Sport Roadster, $1625

A sport roadster, mounted on the light eight chassis has been added to the 1923 Oldsmobile models. The price is $1625. The body is finished in green with nickel trimmings and vertical nickel rails on the rear deck. The equipment includes disk wheels, cowl lights, cowl ventilator, windshield wings, spotlight mounted under the left front headlamp, aluminum steps, stop and parking lamp, cigar lighter, bumpers, windshield visor, double tire carrier and a nickel windshield wiper. A new feature is the carrier for a golf bag which is mounted on the right step. Lights set in both doors light automatically when the door is opened. The top is of Burbank

used on the older models. The gearset has been changed slightly. The position of the emergency brake lever has been changed from the side to the back of the gear-shift-over, thus giving considerably more room for the passenger in the driver's seat. The latch on the emergency brake lever is now of the spring and handle type instead of the button type. The gearshift lever has been moved forward 6 in. and is bent so that driver's hand will not touch the dash.

A CG vacuum fuel feel is used on all Superior models except the sedan, which retains the Stewart vacuum system.

The only change that is made in the engine itself is the increase in weight of the flywheel to make a smoother running engine.

A Holley carbureter will be used on part of the line and Zenith, which was used before, will be fitted to the balance. This is done to provide two sources of supply for increased production. The same practice is followed in the ignition, which is either Remy or Auto-Lite.

The Winter Business Number—Next Week

WORK of the editorial staff of Motor World on the annual Winter Business Number, which will appear next week, suggests some questions for readers:

Will there be some ideas that you can use in 16 pages of photographs showing how the automotive man's salesroom, store and shop can be made AN ACTIVE SELLING FORCE? This section will be in color, picturing exteriors, interiors and displays that have selling punch and showing readers how they can put them into their own places of business?

Will there be some ideas that you can use in seven pages of ideas that show how to keep a sales force profitably busy this winter?

Will there be some ideas that you can use in 12 pages of ideas showing how to sell automotive equipment this winter? And we might add that four pages of these ideas will be devoted exclusively to selling accessories for Christmas gifts.

Will there be some ideas that you can use in 10 pages showing how to make shop profits in winter?

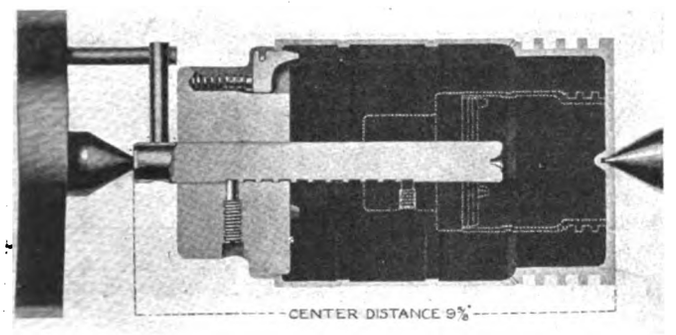
Will there be some ideas that you can use in eight pages of advertisements and eight pages of sales letters written to help dealers and repairmen in all branches of the trade get business this winter?

These questions suggest some of the business-building features in the forthcoming Winter Business Number of Motor World. Don't they suggest that you will want to reserve time to study this number and apply the ideas presented to help you get winter business?

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Spencer-Smith Piston Turning and Grinding Arbor

THE Spencer-Smith Machine Co., Howell, Mich., has developed a piston turning and grinding arbor designed to materially shorten the time required on the finishing of semi-finished pistons. The object of the machine, which is designed by J. E. Parker, factory manager of Spencer-Smith, is to shorten the time for finishing pistons by making it unnecessary to change the set-up on a lathe or grinder every time a piston of different diameter or length is to be finished. The principal factor in reducing the time to a minimum with this arbor is that the piston is held entirely on center and the arbor maintains the same center distance in the lathe or grinder for every size piston from 2 13/16 up to 5 in. in diameter. Because the arbor maintains the same center distances, a turning lathe or grinder once set-up is ready to rough turn or finish a piston of any length and



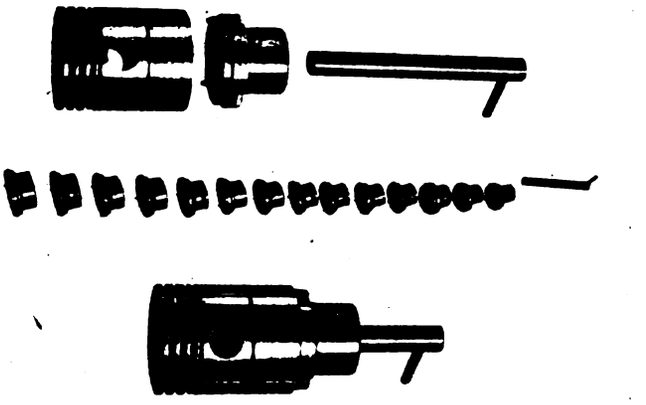
The driving arbor and the 14 adapter heads of which the Spencer-Smith universal turning and grinding arbor is comprised, and which makes possible the finishing of pistons from 2⅛ to 5 in. diameter

this operation will entirely eliminate taper.

On tests made recently on these machines, a set of six pistons was finished in less than 30 min. It is estimated that the usual time required to rough turn and grind a set of six pistons, including the change of set-up for a piston of different length and diameter averages about 1½ hr.

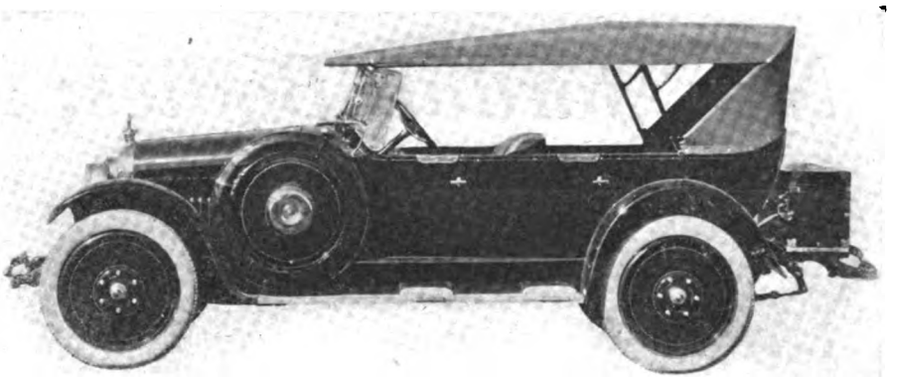
Included in the claims for this new arbor are those of accuracy. This is based on the holding of the piston on dead center. It is claimed that with this method there is an absence of chatter and that the finished piston will be nearer round than when held in any eccentric manner. Furthermore, it is claimed that strains resulting when the piston is held and driven from the bosses are eliminated, a feature which is particularly noticeable in light-weight pistons which become distorted around the bosses. Strains in the piston naturally develop high and low spots which are detrimental to the fitting of pistons in the cylinders. By eliminating outward pressure, which tends to throw the piston out of round, a result which often occurs when the piston is finished with a cone arbor and is mounted forcibly over this arbor, a gain in accuracy as far as roundness is obtained.

The Spencer-Smith universal turning and grinding arbor is furnished to finish pistons of fourteen different open end sizes ranging from 2⅝ in. to 4½ in.



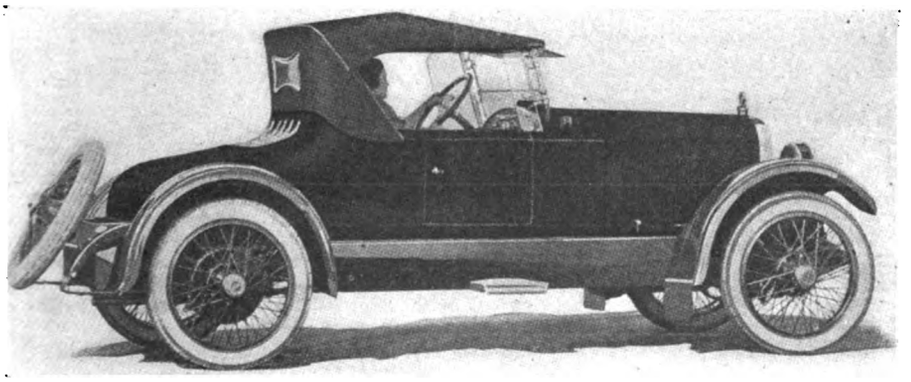
The top view is the driving arbor, adapter head and piston, previous to assembly. The lower illustration shows the driving arbor, adapter head and piston assembly, ready to be placed in the lathe or grinder

A New Nash Six Sport Phaeton, $1645



The newest body to be added to the Nash Six line is a sport phaeton at $1,645. The finish is deep maroon on the body, ecru top and nickeled trimmings. The headlamps are of the barrel type and nickeled bumpers are furnished front and rear. The upholstery is in Spanish leather. The standard equipment includes a trunk mounted at the rear, nickeled bars on the rear of the body, six disk wheeels with cord tires, windshield wings, Moto-Meter, one-piece windshield, etc.

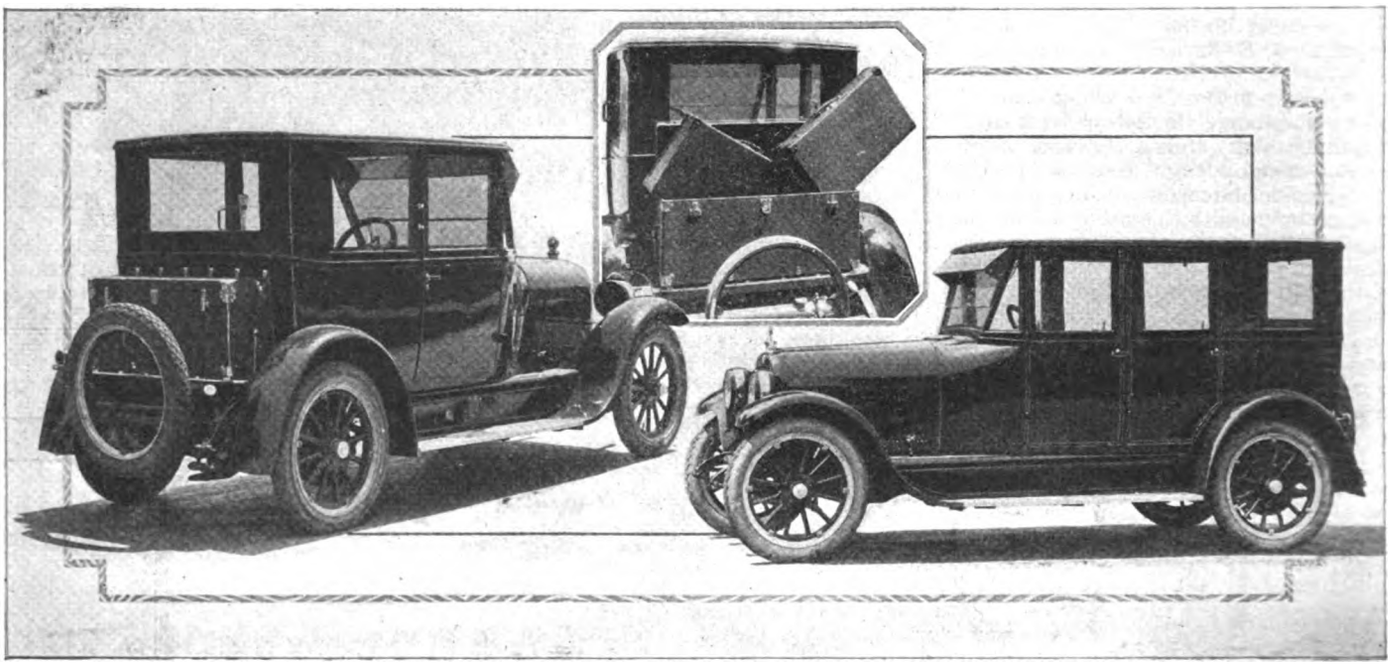
Chandler Adds a Special Roadster, $1595



The latest addition to the Chandler line is a special roadster with khaki top and what has come to be known as "sport equipment." The body is finished in maroon and five wire wheeels are regularly fitted. The top is unusual not only in material but in design and is framed by polished nickel beading around the front and rear top bows. Polished aluminum bars on the rear deck protect the body when the top is lowered. Spacious luggage capacity is provided under the rear deck and an additional compartment back of the seat holds a standard suit case. Other features are windshield wings, aluminum steps and underslung rear springs

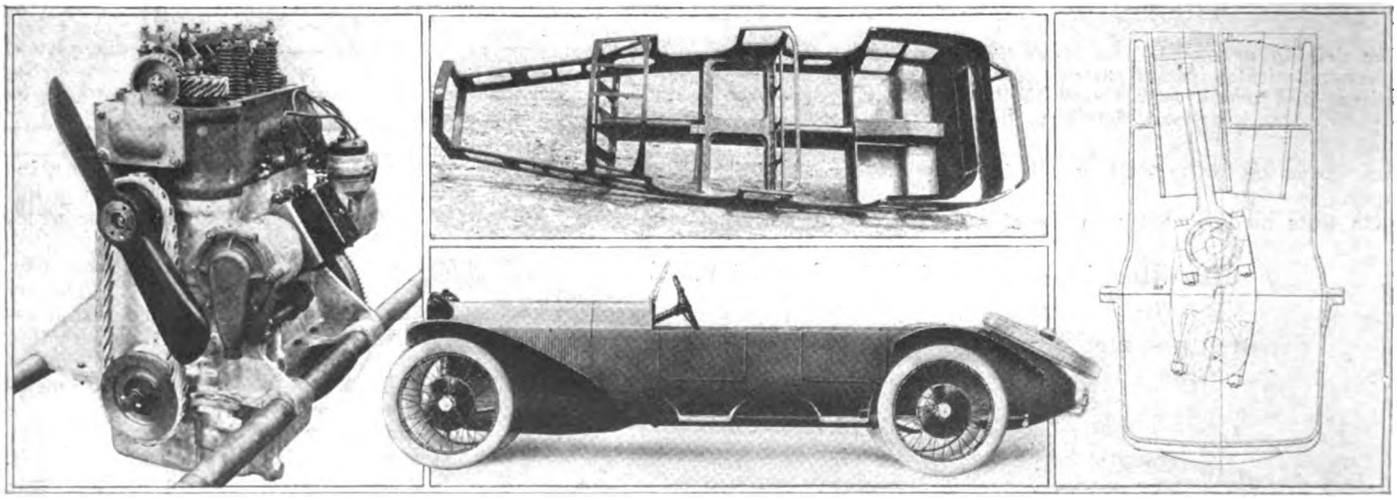
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New Jordan Bodies; New Lancia



The new Jordan brougham, $2,485, at the left. The new Jordan sedan, $2,485, at the right. Standard trunk equipment on the new Jordan brougham, in the center

New Italian Lancia Has Unique Design Features



A new Lancia four-cylinder car has just been placed on the European market and will later be made in the United States under license. There are several novelties in construction, one being the elimination of the chassis frame. The body frame is worked out to serve as a carrying unit for the chassis components. The front axle is a triangular tube arrangement supporting the front of the car on a combination of coil springs and hydraulic shock absorbers. The engine, 2.9 x 4.7 in., has the cylinders set at an angle of 10 deg. from the vertical or 20 deg. between cylinders, the cylinders being also staggered. The weight of the 4-pass. phaeton with 122 in. wheelbase is only 1650 lb.

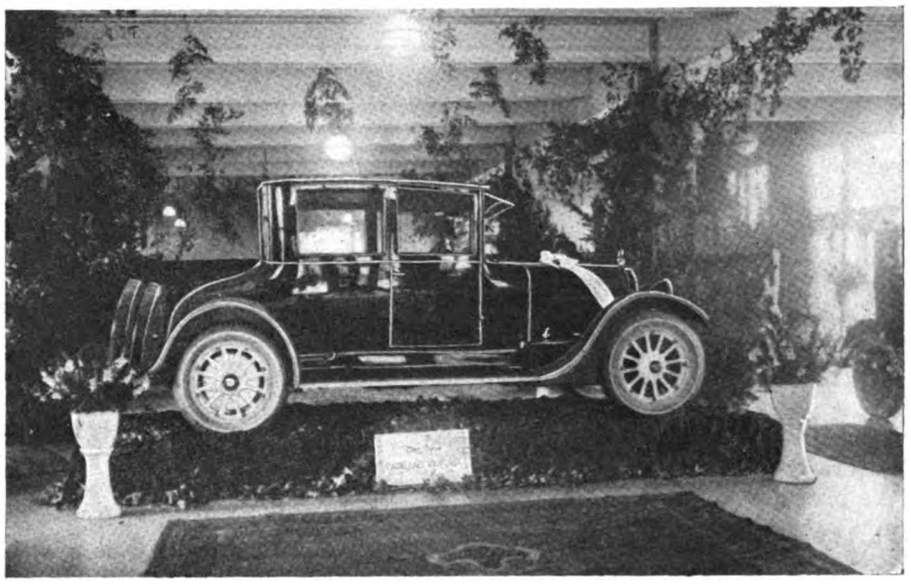
Dividing a Show Advertising Appropriation

COMMITTEES of dealers managing shows sometimes have considerable difficulty deciding upon an advertising appropriation and upon its apportionment among different forms of advertising. There is an interesting suggestion in the plan adopted by the Rochester, N. Y., Automobile Dealers Association for this year's show. Rochester has a population of 300,000 and a good representation both of distributors and retail dealers. It was decided to appropriate $4,000 for show advertising, and the money was divided as follows:

City newspapers	$1,500
Country newspapers	320
Window posters and one-sheets	650
Big Street banner	215
Advertising service	350
Publicity service	350
Incidentals	100
Lantern slides	15

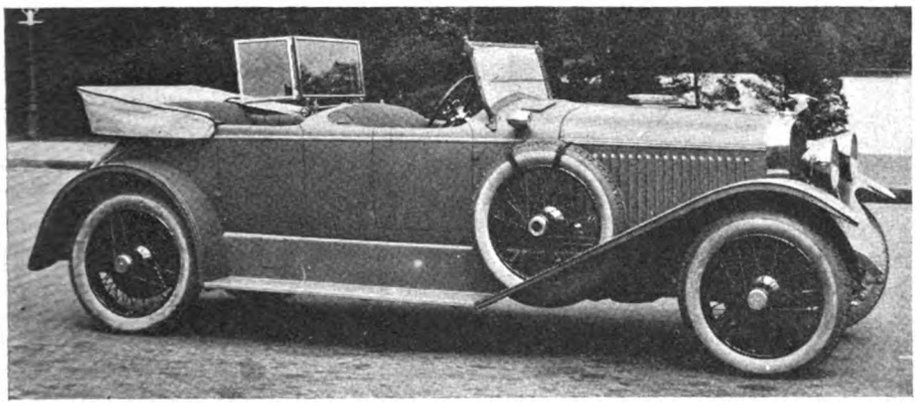
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Interesting Things Automotive



Boston Cadillac Holds Closed Car Salon

With a real autumn aspect to the salesrooms the Cadillac Automobile Co., of Boston, staged its eleventh Annual Closed Car Salon last week. It now has become one of the features of Boston's Motor Row, and each year attracts many visitors. On a raised dais was the Cadillac Victoria. The carpeting of the dais was brown velvet of the same shade found in the woodland paths in the Fall



When Edsel Ford Goes Motoring

He is very likely to be seen behind the wheel of this four-passenger phaeton on a Hispano Suiza chassis. The body was especially built for Ford by Brunn & Co., Inc., Buffalo automomobile coach builder

Tractor Used for Sheep Shearing

Sheep-shearing is the latest achievement chalked up to the credit of the light tractor. The attachment shown here, with which the wool may be clipped from eight sheep at the same time, was a part of the Fordson industrial and tractor demonstration held in Buenos Aires, early in September. More than 500 Fordsons, were reported to have been sold during the six days of the demonstration, which was visited by 69,431 persons. Many industrial and agricultural operations were shown, most of which are familiar to American dealers



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Editorial Notes

Stop Discrimination

THE support of every automotive tradesman in the United States should be given the movement inaugurated by the National Automobile Chamber of Commerce to replace the discriminatory legislation loaded upon automobiles, trucks, parts and accessories. Purchases of automotive products are still paying excise taxes which amount to 5 per cent on cars, 3 per cent on trucks and 5 per cent on parts and accessories. All this naturally adds to the purchase and maintenance cost of the products which the industry manufactures and sells and so creates an artificial sales resistance.

It is significant of the attitude of Congress toward war excise taxes that some of these already have been repealed and others reduced. In the case of the automotive industry, however, the imposts of 1918 still prevail.

Congress has enacted relief from special taxation on musical instruments, sporting goods, chewing gum, toilet waters and numerous other commodities which can hardly be said to have the essential, utility features of motor transportation.

The N. A. C. C. has addressed letters to members of the Senate and House of Representatives and more than 1000 nominees for seats in those two bodies. The letters urge the repeal of all discriminatory war excise taxes, in which the war time burden on automotive merchandise is included.

This effort of the N. A. C. C. which will be carried directly before Congressional committees, when the time comes, is bound to have an effect, but men in the trade throughout the country can contribute materially toward bringing about relief from these taxation burdens by helping to elect congressmen and senators inclined toward lifting these taxes and by impressing upon present senators and members of the house elected in November the injustice of this discriminatory taxation and the hope of the trade that it may be lifted.

Who is running for Congress in your district? How does he stand on automotive taxation? Can you talk with him or write to him, stating your views?

The automotive industry is not asking for special favors. It is just working for plain justice. You can help get it.

Automobile Thievery

A SPECIAL motor division of the Chicago police force has done creditable work in cutting almost in half the number of motor car thefts in the first nine months of this year as compared to the same period last year. On top of that, it announces that out of approximately 2800 cars reported stolen all but one have been recovered. The discovery and breaking up of a number of organized thieving rings was responsible for the improvement.

If Chicago can make a record such as this other cities can and in cities where the authorities do not show any inclination to deal vigorously with the automobile thieving problem, they should be brought into activity by the men in the automotive trade who suffer both directly and indirectly through the operations of thieves. There are a good many police forces whose executives have never given serious consideration to enforcing measures against automobile thievery. Agitation by dealers to bring about such consideration would be effective in a good many of these communities.

Defeating a Governor

CALIFORNIA has given interesting proof of the power of the automobile owning public in the recent defeat of Governor Stephens, whose administration proposed a heavy increase in the tax burden on automobiles. The motorists of the State, it is said, were the deciding factor in the election of Stephens' opponent, F. W. Richardson, who called attention to the taxes which would be imposed upon the motoring public with the continuance of the Stephens' administration and who promised to administer the highway and kindred affairs of the State at a much lesser cost to the owners of cars and trucks.

The California experience suggests that the motor car and truck owners of any community or commonwealth can prevent the imposing of unnecessary or unjust tax burdens if they will try, which suggests, too, that men in the automotive trade, whose futures are bound up in fair treatment of users of cars and trucks, can take a hand when it is necessary in helping to organize the motoring public to defend itself.

OCTOBER 27 will be Navy Day. On that day the people of the United States are going to honor past and present members of the United States Navy who have given so much in service and sacrifice to make our country one of the great powers of the world and an agent of justice and law in world affairs. Navy Day is an idea that should be patronized with public expression, in every community, of the nation's belief in the Navy as an agent not only of American security but as a promoter of peace throughout the world. Only recently a squadron of American destroyers left for the Turko-Grecian zone of trouble, not to fight but to serve as an influence for peace. The Navy is a right and proper American institution and Navy Day is an effective means of recognizing it.

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Sell Radio This Winter, Says Jobber

Millen of Montreal Tells How Garagemen Can Develop a Substitute Source of Profits

EDITOR Motor World: Some of your readers may be interested in an article which I have prepared suggesting that garagemen can make winter profits by selling radio apparatus. This will give some idea of how we are tackling the problem in Canada.—H. Fraser Millar, John Millen & Son, Ltd., Montreal.

No one could say that Nature sets herself out to help the garage business in Canada. With the exception of the larger towns, when snow comes the garageman shuts up shop and settles down to wait with as much patience as possible for the melting of the snow next spring.

During my connection with the wholesale automobile supply business over the last ten years this problem of crowding twelve months' business into the summer season has been a stumbling block, a problem which has received the most intense study from wholesalers and jobbing houses.

The coal man can sell ice in the summertime, but for the garageman in the country, beyond an occasional overhaul, there is no custom to keep his shop busy or help pay the rent. Wholesale houses for years have been looking for a balancing line which they could offer their garage trade, a line for which there is a winter market, but which in the summer will give place to the garage business.

This balancing line has been found in radio.

Radio is essentially a winter business. The wonderful music comes in clearly in the winter time, and with a good receiving set the finest concerts of the continent are as available in small towns and villages as in the large cities.

The garageman is familiar with the electric wiring of an automobile. The electric wiring of a radio set is very similar. It is a fact that the training of a good car mechanic places him on familiar ground in wiring a radio set and testing the accuracy of the electrical connections or the condition of the storage battery.

To show that radio has already been recognized as the winter line for the garageman, one may point out that many houses wholesaling automobile supplies have put in a full line of radio supplies and complete radio sets. In addition to this it is found that many manufacturers of automobile ignition have added radio equipment and, needless to say, from their years of experience with the accuracy necessary with this class of goods, the radio supplies turned out by concerns long renowned for car ignition are near perfection and altogether superior in appearance and results.

If you can wire a car, you can wire a radio set. If you can make a profit on the sale of an automobile accessory, you can make a profit on the sale of radio supplies. Most important of all, they can both be purchased from the same jobbing house; you are not dealing with an unknown firm, you are just continuing your business relations with a house which is just as anxious that the garageman should make money and do a good business in the winter as he does in the summer.

The garageman who has not yet looked into the matter should obtain a wholesale radio catalogue. He should make a list of his car owner customers and just figure what proportion of the thirty million dollars that will be spent this winter in radio is going to be spent by his customers, and then see whether it will be worth while for him to collect on this.

Radio will do for the garageman in winter what ice does for the coal man in summer. It will make an all year round business.

Write to Motor World About It

This page every week is devoted to discussions of topics of the trade by Motor World readers. Have you a suggestion to overcome a difficulty or improve some condition within the industry? Write to Motor World about it.

Dealers Need Co-operation on Gift Idea

Editor Motor World: We have read with interest your editorial in a recent number of Motor World suggesting that automobile and accessory dealers should make a special effort to sell accessories and car equipment suitable for Christmas gifts.

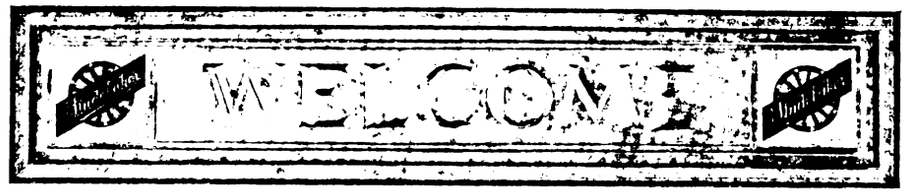
This is all very nice, but in the past the dealer has been severely handicapped by the manufacturers' lack of appreciation of certain fundamental things regarding the merchandising of their accessories during the holiday season.

We ourselves a year ago tried to pick out a number of articles that would be especially suitable for Christmas gifts and attempted to display and sell them. We were greatly handicapped, however, because we could not get proper containers for the various articles. We asked many jobber salesmen if they could supply us with appropriately decorated boxes, etc., and our only answer, in most cases, was a shrug of the shoulders and a curt dismissal of the subject.

Now, you know as well as any one that to make a Christmas display attractive and to really put over sales of necessary and timely articles of equipment, a properly designed and decorated package is necessary. In fact, a large number of articles are bought upon the appearance of the box alone; that is, providing the merchandise is at all suitable.

We believe that some few manufacturers this year have improved their containers wonderfully, and this will be a big help for the coming season. If, however, you will examine a list of really good accessory articles, and not consider some of the worthless trinkets that are on the market as accessories, you will see how few of the really good articles come packed in proper containers to enhance the display, and especially to make them appropriate as Christmas gifts.—Northland Motors Co., Menominee, Mich.

Studebaker Welcome Sign



Very often when a customer enters a salesroom the salesmen are engaged and are not always able to give immediate attention to each caller. The customer who enters a Studebaker store cannot fail to see the sign which bids him welcome and cannot help but feel that here's a concern that wants him to experience that feeling of hospitality which is too often lacking in present day merchandising. The Studebaker welcome promises to become just as famous as the Studebaker slogan, "This is a Studebaker year"

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Would This Speed Up Gasoline Sales?

A Suggestion to Avoid Delays in Figuring Cost of Odd Quantities

TABLES similar to those printed below are useful around the gasoline pump for determining quickly the cost of odd quantities of gasoline. Such tables can be pasted on the inside of the gasoline pump cover. Many gasoline dispensers have pencil written tables but these are difficult to read and the tendency is to trust to memory, which is all right for 5 or 10 gallon lots, but the dealer is liable to lose money guessing at the "in between" amounts. Tables covering a range of prices, such as these, could also be preserved for future use when prices go through another change which they are liable to do.

25 Cents		26 Cents		27 Cents		28 Cents		29 Cents		30 Cents	
2	.50	2	.52	2	.54	2	.56	2	.58	2	.60
3	.75	3	.78	3	.81	3	.84	3	.87	3	.90
4	1.00	4	1.04	4	1.08	4	1.12	4	1.16	4	1.20
5	1.25	5	1.30	5	1.35	5	1.40	5	1.45	5	1.50
6	1.50	6	1.56	6	1.62	6	1.68	6	1.74	6	1.80
7	1.75	7	1.82	7	1.89	7	1.96	7	2.03	7	2.10
8	2.00	8	2.08	8	2.16	8	2.24	8	2.32	8	2.40
9	2.25	9	2.34	9	2.43	9	2.52	9	2.61	9	2.70
10	2.50	10	2.60	10	2.70	10	2.80	10	2.90	10	3.00
11	2.75	11	2.86	11	2.97	11	3.08	11	3.19	11	3.30
12	3.00	12	3.12	12	3.24	12	3.36	12	3.48	12	3.60
13	3.25	13	3.38	13	3.51	13	3.64	13	3.77	13	3.90
14	3.50	14	3.64	14	3.78	14	3.92	14	4.06	14	4.20
15	3.75	15	3.90	15	4.05	15	4.20	15	4.35	15	4.50
16	4.00	16	4.16	16	4.32	16	4.48	16	4.64	16	4.80
17	4.25	17	4.42	17	4.59	17	4.76	17	4.93	17	5.10
18	4.50	18	4.68	18	4.86	18	5.04	18	5.22	18	5.40

31 Cents		32 Cents		33 Cents		34 Cents		35 Cents		36 Cents	
2	.62	2	.64	2	.66	2	.68	2	.70	2	.72
3	.93	3	.96	3	.99	3	1.02	3	1.05	3	1.08
4	1.24	4	1.28	4	1.32	4	1.36	4	1.40	4	1.44
5	1.55	5	1.60	5	1.65	5	1.70	5	1.75	5	1.80
6	1.86	6	1.92	6	1.98	6	2.04	6	2.10	6	2.16
7	2.17	7	2.24	7	2.31	7	2.38	7	2.45	7	2.52
8	2.48	8	2.56	8	2.64	8	2.72	8	2.80	8	2.88
9	2.79	9	2.88	9	2.97	9	3.06	9	3.15	9	3.24
10	3.10	10	3.20	10	3.30	10	3.40	10	3.50	10	3.60
11	3.41	11	3.52	11	3.63	11	3.74	11	3.85	11	3.96
12	3.72	12	3.84	12	3.96	12	4.08	12	4.20	12	4.32
13	4.03	13	4.16	13	4.29	13	4.42	13	4.55	13	4.68
14	4.34	14	4.48	14	4.62	14	4.76	14	4.90	14	5.04
15	4.65	15	4.80	15	4.95	15	5.10	15	5.25	15	5.40
16	4.96	16	5.12	16	5.28	16	5.44	16	5.60	16	5.76
17	5.27	17	5.44	17	5.61	17	5.78	17	5.95	17	6.12
18	5.58	18	5.76	18	5.94	18	6.12	18	6.30	18	6.48

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Are You Going to Make a Hallowe'en Display?

Inexpensive Decorations Can Be Used in the Windows and Salesroom with Striking Effect

HALLOWE'EN, which comes on Oct. 30, offers an opportunity to make a striking window and salesroom display at a very little cost to the dealer. These opportunities are valuable not so much because they actually bring buyers into the salesroom as because they help to indelibly imprint the salesroom and the dealer's name on the mind of the public.

The decorative properties usually employed by merchants include: black and orange crepe paper streamers, cut out pumpkins, corn stalks, dummies dressed as scare-crows, witches, etc. A striking effect often can be obtained by covering the lights in the windows and salesroom with red or orange crepe paper, or dipping electric bulbs in water colors, which may be removed with careful treatment with damp cloths after the display.

A very striking display effect can be obtained by darkening the lights of the salesroom with colored paper and placing a closed car in the salesroom near the window where a few bright lights may be trained on it. The car may be decorated by tying a streamer of bright orange ribbon over the hood with a large bow. Strewing corn stalks on the floor around and under the car, with a few stalks standing behind the car will set off the display. A few cut-out pumpkins with electric bulbs inside, the eyes, nose and mouth lined with red crepe paper, placed in the darker parts of the salesroom, will make the background harmonious.

The thing to be remembered is that it is not necessary to go to any heavy expense to make a Hallowe'en display. But it is advisable to have one if possible.

Are You a "Nice Steerer"?

"GOOD Driving Is Mostly Nice Steering" is the title of an interesting pamphlet published recently by the Timken Roller Bearing Co., Canton, Ohio. The text, which is supplemented by numerous explanatory illustrations, takes up both the driving and maintenance of the car.

The first half dozen pages of the book deal with steering. Situations which commonly arise in city and country driving are described, and the correct steering of the car under these conditions explained. One page in this section pictures the various arm signals in common use and explains their significance.

The next ten pages discuss such subjects as starting the engine, braking, lubrication, gasoline feed and carbureter, cooling system, steering gear, battery, spark plugs, lights, tire chains, tire pressure, insurance and bearings. The last page describes a "Nice Steerer."

These pamphlets are available for free distribution.

Ideas On Selling and Management

You will find them on this and the opposite page—ideas that will make dollars or save dollars for the

Car Dealer Truck Dealer
Equipment and Tire Dealer
Tractor Dealer Repairman

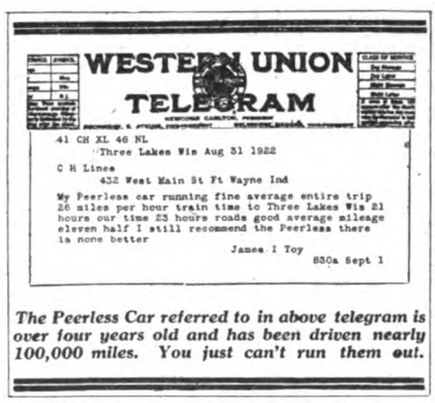
Some of our readers are contributors to this section of Motor World. Have you developed a plan that might help some other men? If you have, will you write it out and send it in?

Distributor Has "Clinic"

"THE Overland Automobile Clinic" is the name of the new department which opened October 1 in the big Willys Overland building on Brookline Avenue, for the benefit of the New England dealers. "You know in medicine the only way you really find out about anatomy or ailments is to have clinics in the hospitals where the specialist and the leading doctors do the operating, or prescribe the treatment, while the juniors and the students stand around, watch and listen, getting the benefit of the knowledge of their superiors," says Manager A. S. Fitch. "Therefore, I determined to open a clinic.

"Letters have gone out to dealers and they pick out the time they can attend. A certain number will be chosen every week. We shall take down a car and illustrate to them all the short cuts, the methods of repairs, the faults of units—for even some units have faults—and in addition to our men detailing what they have learned through years of repairs, men from the electrical factories will discuss coils, timers, etc.; oil men will tell about fuel and so on until the dealer and his service manager will know a great deal more about the cars they are handling than ever before. The time has gone by when you order a carload of cars shipped to a dealer, and then forget him until another order is due him. You must reach out to aid him solve all his problems, and keeping his customers' cars in running order at low cost is the only way to meet the present day demand for transportation."

Telegram Used as Car Advertisement


WESTERN UNION
TELEGRAM

41 CH XL 46 NL
Three Lakes Wis Aug 31 1922
C H Lines
432 West Main St Ft Wayne Ind
My Peerless car running fine average entire trip 26 miles per hour train time to Three Lakes Wis 21 hours our time 23 hours roads good average mileage eleven half I still recommend the Peerless there is none better
James I Toy
830a Sept 1

The Peerless Car referred to in above telegram is over four years old and has been driven nearly 100,000 miles. You just can't run them out.

Almost any dealer could arrange to have one of his enthusiastic owners send him a telegram like this while away on a tour. If such a telegram were reproduced in a newspaper ad, as it is done in this instance, it would carry a mighty effective selling appeal.

When the Open Car Prospect Really Needs a Sedan

HOW Cooper, a Detroit Wills-Sainte Claire salesman turned a touring car prospect, who really needed a sedan and could pay for it, into a sedan owner may help other salesmen in similar positions this fall. A demonstration had been arranged on a brisk, cool day. Cooper called for his prospect with a touring car, as previously arranged. Before leaving the salesroom, however, he had a sedan placed near the window where the sun warmed the interior. After a cold, disagreeable demonstration ride with his prospect, Cooper brought the prospect back on the pretext of showing him the sedan body lines, got him into it and rolled out for a short ride. Before attempting to close the deal, Cooper then opened all of the windows and the windshield, and when the prospect had time to appreciate the contrast, said: "Mr. ———, you now have an opportunity of deciding which car you prefer." The customer took the sedan and since then he has thanked Cooper for selling him it in preference to the open model.

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A Schedule of Flat Rates for the Cadillac

Operations Totaling Three Hundred and Twenty-Five Distributed Under Twenty-Three Headings—Operations Include a Large Majority of Jobs Brought Into Any Shop

Group L—Tire Pump

		Hours
L-1	Tire Pump ..... Includes removing, cleaning and installing; testing for proper operation.	1.6
L-2	Overhauling Tire Pump, Types 53, 55, 57, 59 ..... Includes removing of pump and installing new necessary parts, reinstalling pump.	4.8
L-2a	Overhauling Tire Pump, Type 51.. Includes same as above.	4.8
L-3	Overhauling Tire Pump Out of Car—Types 53, 55, 57, 59.....	3.2
L-3a	Overhauling Tire Pump, Type 51, Out of Car	3.2
L-4	Tire Pump, Types 53, 55, 57, 59... Includes installing one new pipe from pump to dust shield.	.6

Group M—Universal Joint

M-1	Universal—	
	One	3.2
	Two	6.4
	Includes removing and installing new parts where needed, reassembling and installing, filling with grease.	
M-2	Overhauling Universal Joints, One Includes same as operation M-1.	3.2
M-3	Filling Universal Joints with Grease, Two	.6
M-4	Installing New Felt in Universal Joint Housing—	
	One	1.0
	Two	2.0
M-5	Tightening Bolts and Nuts on Flanges of Universal Joints	.6

Group N—Rear Axle

N-1	Removing and Installing Rear Axle Includes disassembling of brake rods and torsion arm, disconnecting drive from rear axle, installing rear axle and reassembling brake rods, torsion arm; connecting up drive shaft, greasing universal joints, adjusting brakes.	4.8
N-2	Examining Rear Axle Gears and Report ..... Includes removing of cover and peep hole plug, draining oil and thorough cleaning of differential; examining gears, reassembling and refilling with new oil. No charge if axle is overhauled or new gears installed.	3.2
N-2a	Overhauling Complete Rear Axle	22.0
N-3	Installing Rear Axle Housing .... Does not include disassembling of differential gears. Includes removing all parts in rear axle, cleaning and freeing up all working parts in connection with operation of brakes, reassembling axle under car, cleaning wheel bearings, repacking with grease and adjusting both sets of brakes, swedging axle shafts if needed.	22.8
N-3a	Relining Brakes in Connection with the Above—	
	Service	2.8
	Internal	3.2
N-4	Installing Rear Axle Housing and New Gears ..... Includes swedging of axle shafts; includes same as N-3.	24.0
N-5	Installing New Differential Carrier Includes installing new gears or any new parts needed and swedging axle shafts.	16.4
N-6	Changing Gear Ratio or Installing New Gears ..... Includes removing old gears, replacing with new gears, installing any new parts needed in connection with pinion gear housing and gear mounting, including adjusting of gears and installing cover plate with new gasket and swedging axle shafts.	16.0
N-6a	Cutting Grooves in Rear Axle Hubs for Shaft Retainer	4.4
N-7	Adjusting Rear Axle Gears..... Includes removing cover plate and peep hole plug, draining and thoroughly cleaning differential, adjusting gears, installing peep hole plug and refilling with grease. (No guarantee given of silencing of gears beyond a fair trial of adjustment.)	3.6
N-8	Swedging Axle Shafts—	
	One	2.0
	Two	4.0
N-9	Stopping Grease Leak in Rear Wheels ..... Includes draining grease out of differential, cleaning rear axle housing and installing new felts on axle shafts, cleaning all grease and oil from wheels, repacking wheel bearings with grease, filling differential with new oil.	6.4
N-10	Draining and Putting New Oil in Differential	.4
N-11	Adding Oil in Differential	.2
N-12	Installing New Truss Rod ..... Includes removing rear wheels, installing new truss rod, cleaning and repacking wheel bearings, installing wheels and adjusting same, lining up and adjusting both sets of brakes. Also includes mounting of new bearings if needed. (Does not include straightening of housing.)	4.4
N-12a	Straightening Rear Axle Housing, Axle Under Car ..... This is in connection with operation N-12.	6.8
N-13	Straightening Rear Axle Housing, (Timken) ..... Includes removing from car, completely disassembling axle and reassembling all parts in service housing, using old gears. Includes swedging of axle shafts. Does not include straightening of old axle housing.	
N-14	Installing New Truss Rod Only... Includes, when done in connection with the operation requiring removal of rear wheels and adjusting brakes.	1.6
N-15	Refitting Rear Axle Spring Saddles ..... Includes removing axle from car, refitting saddles and replacing axle under car.	8.4
N-15a	Refitting Axle Spring Saddle and Rebushing Rear End of Torque Arm	10.0

Synopsis of the Cadillac Flat Rate Schedule

In Last Week's Issue

Group A	Wheels
Group B	Front Axle
Group C	Frame
Group D	Springs
Group E	Steering Gear
Group F	Engine
Group G	Cooling System
Group H	Carburetor
Group I	Electric Equipment
Group J	Clutch
Group K	Gearset

In This Issue

Group L	Tire Pump
Group M	Universal Joint
Group N	Rear Axle
Group O	Torsion Arm
Group Q	Exhaust System
Group S.	Fenders, Runningboards, Floor Boards
Group T	Windshield
Group U	Oiling and Greasing
Group V	Speedometer
Group X	Accessories

Group O—Torsion Arm

O-1	Rebushing Torque Arm, Complete. Includes any new parts needed, and putting shaft in differential carrier if necessary.	7.2
O-2	Installing Torsion Arm Shaft and Bushing in Differential Carrier.. If done in connection with any operation where axle is out from under car.	2.4
O-3	Rebushing Rear End of Torque and Differential Carrier Axle Under Car	4.4
O-4	Rebushing Front End of Torsion Arm ..... Includes replacing of any parts needed.	2.2
O-5	Tightening Front and Rear Torque Arms	.8

Group P—Brakes

P-1	Adjusting Foot Pedal ..... Same must not strike floor boards.	.2
P-2	Installing New Felt Around Clutch and Brake Pedal on Floor Board.	1.2
P-3	Adjusting Service Brakes ..... Includes testing both wheels off floor, brake bands having equal clearance at all points, anchor studs being free.	2.4
P-4	Adjusting Internal Brakes	2.4
P-5	Freeing Up and Adjusting Brakes, Internal or Service ..... Includes freeing up all anchor bolts and pins, equalizer and shaft, truing up bands and adjusting brakes, removing, cleaning and adjusting rear wheel bearings, cleaning brake drums and housing, lubricating entire brake mechanism, reassembling and adjusting. Brake must be true on drums, rods and levers working properly, includes eliminating rattles in brake bands or rods.	5.2
P-5a	Freeing Up and Adjusting Service and Internal Brakes	6.8
P-6	Relining Brakes in Connection With Above—	
	Service	2.4
	Internal	2.4
P-7	Installing New Rod for Hand Lever of Internal Brake ..... Includes removing old and installing new, correct holding of pawl and ratchet.	1.0
P-8	Taking Rattle Out of Hand Brake Lever	.6
P-9	Relining Service Brakes Only	5.2
P-10	Relining Internal Brakes ..... Same as operation P-9.	6.4
P-11	Relining Service Brakes (Out of Car)	1.6
P-11a	Relining Internal Brakes (Out of Car)	1.6

Group Q—Exhaust System

Q-1	Stopping Leak Between Exhaust Manifold and Muffler Pipe, One Side ..... Includes removing old gasket, installing new gasket and installing new bolts and nuts if necessary.	.6
Q-2	Stopping Exhaust Leak in Exhaust Manifold Between Manifold and Block ..... Includes installing new gasket if necessary.	.8

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		Hours
Q-3	Burning Carbon Out of Muffler, One	3.6
	Two	6.8
	Includes removing muffler from car, burning or cleaning dirt out of muffler and replacing on car.	

Group S—Fenders, Running Boards and Floor Boards

S-1	Removing and Installing One Front Fender	2.8
S-2	Removing and Installing One Rear Fender	2.8
S-3	Removing One Front or Rear Fender	1.4
S-4	Installing Corner Shield from Rear Fender to Body	.6
S-5	Installing One Runningboard Dust Shield	5.6
	Includes removing runningboard and front fender, removing splash shield, installing new shield on runningboard and fender.	
S-6	Installing Front End Splash Shield Between Fenders	1.4
S-7	Removing and Installing One Runningboard	2.4
	Two	4.4
	Includes new runningboard bracket if needed.	
S-8	Installing One Runningboard bracket	.6
S-9	Recovering One Floor Board	.8
	Each Additional	.8
S-10	Recovering One Runningboard	1.6
	Two	3.2
S-10a	Installing New Molding on Outer Edge of Runningboard	1.0
S-11	Installing New Molding Complete on Runningboard, Runningboard off Car, One	1.6

Group T—Operations on Hourly Basis

T-1	Removing and Installing Lower Windshield. Does not include outside charges.
T-2	Removing and Installing Upper Windshield. Does not include outside charges.
T-3	Installing Lower Half of Windshield.
T-3a	Installing Upper Half of Windshield.
T-4	Removing Old and Installing New Vision Shield.
T-5	Removing Complete Windshield.
T-5a	Installing Windshield Complete.
T-6	Tops. Rebuilding One Touring Car Top With Side Curtains, 57-59.
T-7	Rebuilding One Top Using Old Bows and Sockets. Includes plate glass in gypsy curtain.
T-8	Recovering Deck.
T-9	Recovering Side Quarter.
T-10	New Head Lining in Complete.
T-11	Furnishing and Installing New Gypsy Curtain with Plate Glass and One Set of Side Curtains.
T-12	Installing New Celluloid in One Curtain.
T-13	Repairing Side Curtains.
T-14	Tightening All Body Bolts (2.8) Includes new bolts if necessary.
T-15	Vacuum Cleaning Inside of Car and Polishing All Nickel Parts of Steering and Instrument Board (3.2)

Group U—Oiling and Greasing

U-1	Thorough Oiling and Greasing Including Wheels	4.4
	Includes changing oil in engine, turning down and refilling grease cups, refilling universal joints, checking gearset, and differential, bringing same to level, dope clutch ball race, and any other oil holes on car, oiling all parts where needed, oiling brake rods and clevis pins, springs. Also includes installing new grease cups where needed. (Does not include the freeing up of frozen bolts.)	
U-1a	Thorough Oil and Doping (Wire Wheels)	5.2
U-2	Thorough Oiling and Greasing Wheels	3.2
	Includes same as above.	
U-2a	Thorough Oiling and Doping (Less Dope Cups)	2.8
	Wire Wheels	3.6
U-3	Thorough Oiling and Greasing Alemite System Less Wheels.	2.8
U-4	Changing Oil in Engine	No Charge
U-5	Regulating Oil Pressure at Regulator	.6
U-6	Filling Universal Joints Only	.6
U-7	Turning Down and Refilling Grease Cups	1.6
U-8	Turning Down Grease Cups Only. Does not include refilling of cups.	.8
U-9	Checking Gearset and Differential for Oil, Bringing Same to Level If Necessary	.6
U-10	Installing One New Grease Cup (Drilling Out Old If Necessary)	.2
	Additional Cup	.2
U-11	Installing New Oil Gage on Dash	.4
U-12	Installing New Glass On Oil Gage On Engine	.4
U-13	Greasing Snubbers	1.0
	Each Additional	1.0
U-14	Doping Wheels (Wood) Includes examining bearings, replacing new if needed, replacing with grease and adjusting.	2.4
U-14a	Wire Wheels Same as above.	3.2

Group V—Speedometer

V-1	Repairing Speedometer Gears in spindle.	3.4
V-2	Installing New Speedometer Driveshaft in Spindle Includes removing broken parts.	2.4
V-3	Removing and Installing Speedometer Cable, Head or Both	.6
V-4	Repairing Speedometer Head, Outside Charge.	
V-5	Removing Tire Carrier	.4
V-6	Removing Old Tire Carrier and Installing New	1.1
V-7	Straightening Tire Carrier, Hourly Basis.	
V-8	Installing One New Clamping Screw in Tire Carrier—Models 51, 53, 55, 57	1.0
	Two	1.8
V-9	Straightening Tire Carrier and Installing New Ring If Necessary	4.8

Group X—Accessories

X-1	Ash Tray (With Match Box)	.4
X-2	Ash Tray (Without Match Box)	.4
X-3	Bumper (Type 61)	1.2
X-4	Installing Cigar Lighter	1.2
X-5	Installing Winter Front	.4
X-6	Installing Car Heater	3.2
X-7	Installing Special Cadillac Lamps. Includes headlights, tail light, spot light and side lights.	4.8
X-8	Installing Stop Light	1.2
X-9	Installing MotoMeter	.6
X-10	Installing MotorMeter Lock	.6
X-11	Installing Fender Mirror	1.0
X-12	Installing Rear View Mirror, Open Car	.6
X-13	Installing Rear View Mirror, Closed Car	.6
X-14	Installing Spring Oilers (New Car)	2.8
	Car In Service	4.0
X-15	Installing Runningboard Step Plate	.6
X-16	Installing Flower Vase (Large)	.6
X-17	Installing Automatic Windshield Wiper	1.0

Timely Appeal in Fall Window

GAUL, DERR & SHEARER CO., Philadelphia automotive equipment jobber, made a timely appeal in a display window the first week of September.

The window was filled with replacement parts, and the center of attraction was a letter, printed on framed cardboard, 3 ft. wide by 4½ ft. high. The letter read:

"An open letter

To

Dealers

Garagemen

Repairmen:

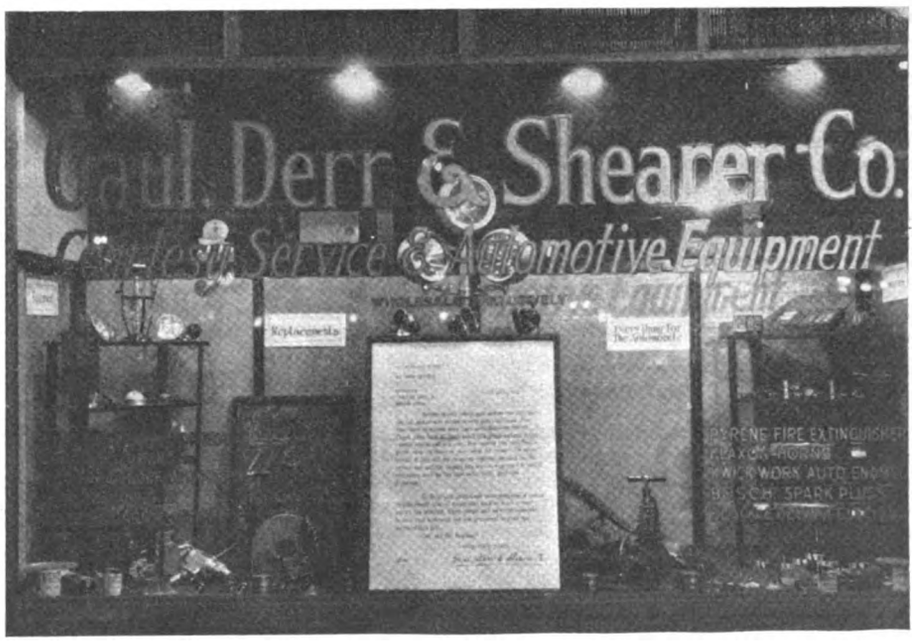
"Summer is very nearly gone and we now approach the fall and winter business with great optimism. This year there have been more cars sold than ever before. These cars have all been used to a great extent in the summer months, and in a very few weeks you will find a great many of these in your shop for repairs. The natural result of this will be an unprecedented demand on the repairman, and the repairman who is equipped to handle this work will be the man who will get the business.

"To help you do this we have prepared a special replacement line of equipment, such as will in most cases be needed. Step inside and ask our salesman to tell you how well we are prepared to give you service this fall.

"Get set for business!

"Yours very truly,

"Gaul, Derr & Shearer Co."



Letter in jobber's window makes timely suggestion concerning replacement parts

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Changing the Oil in the Engine

Importance of Using a Lighter Bodied Oil as Colder Weather Comes —Advantages and Disadvantages of the Various Methods of Changing Oil

TOWARD the middle or latter part of October the northern part of the United States usually has a touch of weather cold enough to cause some trouble in engine starting and running due to thickened oil. In the southern States and some of the western States this drop in temperature does not come till a little later. It is well, however, to prepare slightly in advance and replace the engine oil with a lighter bodied lubricant.

It is not possible to make specific recommendations as to the proper body oil to use for two reasons. In the first place, the requirements of different engines are not the same. Engines operating at a higher temperature, especially those using a thermo-syphon system or thermostatically controlled system will require a slightly heavier bodied oil than those running at lower temperatures. The Ford engine is an exception to this rule, using a very light bodied oil. In the second place, there is no uniformity in the nomenclature of oils. What is "medium" for one oil refiner may be the same body as the "light" of another manufacturer. Or they may not use these designations at all but may use A, B, C, or some descriptive name. There are two recommendations that can be safely taken and those are the recommendations of the oil refiner and of the car manufacturer. As engines become older and pistons and bearings loosen up, a slightly heavier grade of oil can be used to insure quiet operation.

Methods of Replacing Oil

It was always customary, in years gone by, to wash the crankcase out when the oil was replaced. The washing was done with kerosene or gasoline and the purpose of washing was to remove particles of dirt, carbon and minute particles of metal worn from the bearings, pistons and cylinder walls. There was also a certain amount of grit that gradually loosened from the surface of the cast iron and aluminum in the crankcase and other parts and this had to be gotten rid of.

In the past three years, however, the quality of gasoline has gone down so that it is difficult for the carbureter to properly vaporize it all and a portion gets past the piston rings and into the oil sump, diluting the oil. This is especially apt to happen when the engine is cold and the choke is used. A rather remarkable feature about this is that some engines can go great distances without apparently consuming any oil as the level stays the same. Some other engines actually "make" oil or come in with the oil level higher than when they started. Of course the explanation of this is that the kerosene is continually diluting the oil and raising the level.

Troughs Catch Kerosene

With this continual dilution going on, it is therefore very important that no more kerosene be introduced into the lubricating system. If the ordinary procedure of draining out the old oil, putting in a few quarts of kerosene, draining again and then putting in the fresh oil is followed, there will remain in the system anywhere from a few tablespoonsful to over a quart of kerosene, depending on the design of the engine. Where the engine is constructed with troughs for the connecting rods to dip in, the troughs will catch quite a little kerosene and it is impossible to get this out by draining.

Another thing that has rendered such washing with kerosene less necessary is the fact that most engine manufacturers are coating the inside of the crankcase with a sort of collodian liquid which effectually seals all dirt and grit that may not have been removed.

If it is really necessary to wash out the crankcase, the two best methods are to use a light body new oil for washing, afterward draining this out, or to use oil which has been previously drained out and allowed to stand for some time so that the solid matter will have settled to the bottom. Either of these methods will remove any ordinary settlings or dirt. If there is a great amount of muck in the crankcase due to the fact that the oil has not been drained and replenished at regular intervals, of course it is more desirable to use kerosene for the washing. If the washing is followed by another washing with good clean oil or used oil, the dilution will be much reduced.

Oil and grease are affected by temperature. Too often we do not realize the great difference changes in temperature make in their consistency. A very good visual example is a piece of butter. On a hot day in summer a piece of butter will melt into practically a liquid. On a good cold day in winter the same piece of butter would be so hard that it could not readily be cut with a knife without breaking the butter. What happens to the piece of butter between 90 deg. and zero is exactly the same thing that happens to oil in the engine or grease in the rear axle or gearset.

A heavy oil used in the engine in winter will become a viscous liquid between the pistons and cylinder walls and there will be such a drag between these surfaces that it is with the greatest difficulty that the engine can be turned over. The same condition exists in the bearings, but the surface is so much smaller that it does not have so great an effect. The thicker oil is necessarily slower running and when it is cold and thick it does not get through the oil passages quickly. It is therefore possible in racing a cold engine to run all the oil off the bearings and actually cut them before the oil gets warmed up.

Although the heavier oil in the gearset and rear axle are subjected to the same variations in temperature as the engine, the change in viscosity is not quite so marked in the heavier lubricant and it is not usual to change the grade of the non-fluid oil in these places in the winter. If the grade of lubricant is too heavy, however, it is possible for the lubricant to get so hard that the gears will cut a path through the grease and after that they will not pick up enough to lubricate the teeth properly.

Changing Oil Regularly

A thinner oil will remedy this condition and insure lubrication of all parts, no matter how cold the temperature is.

The importance of changing oil at regular mileage intervals is even more important in the winter than in the summer on account of the greater condensation of fuel in the cold weather. Under the present fuels, it is not too often to change the oil every 500 miles in winter and every 750 miles in summer. Under no circumstances should engines be allowed to go 1000 or 2000 miles as suggested in some of the older car and truck instruction books. These figures were all right for the grade of gasoline in use then, but fuels have changed.

Better Mechanics

Article No. 260

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.

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State Lighting Laws Approaching Uniformity

Observance of S. A. E. Recommended Practice in Head Lamp Adjustment Brings Motorist Within Most Laws

IN studying the laws governing lighting requirements in the various States, it will be observed that although the laws vary in certain respects still the observance of a few set rules will make driving lawful and safe practically everywhere.

The proposed "Standard Head Lamp Law" which was approved by the Society of Automotive Engineers, the Society of Illuminating Engineers, the National Traffic Officers Association and The American Automobile Association, is now in effect in a number of States, and if a car is equipped in accordance with this law it may lawfully pass through any State at the present time.

From the tabulation it will be observed that an almost uniform requirement is that there be two front lamps of approximately equal candle power showing white lights, and a tail lamp showing a red light to the rear and illuminating a rear license plate with a white light.

These lights should be lighted one-half hour after sunset and not be extinguished until one-half hour before sunrise. The license numerals, front and rear, should be visible for 100 feet—the light should be visible for 500 feet—objects should be clearly visible ahead for 200 feet, and the candle power of the bulb should be limited to 21 c.p.

In certain States like California, Connecticut, Iowa, Maine, Maryland, Massachusetts, Nebraska, New Jersey, New York, Ohio, Oklahoma and Pennsylvania, there are published lists of so-called lawful lenses. Certain of these lenses are lawful only in particular States. However, a number of them are lawful in all the States.

The drawing and summary of the S. A. E. Recommended Practice as to head lamp illumination, on this page, clearly explain this phase of the headlight regulation.

Head Lamp Illumination

S. A. E. Recommended Practice

Operating Requirements

THE head-lamps shall be arranged so that under normal conditions of vehicle loading:

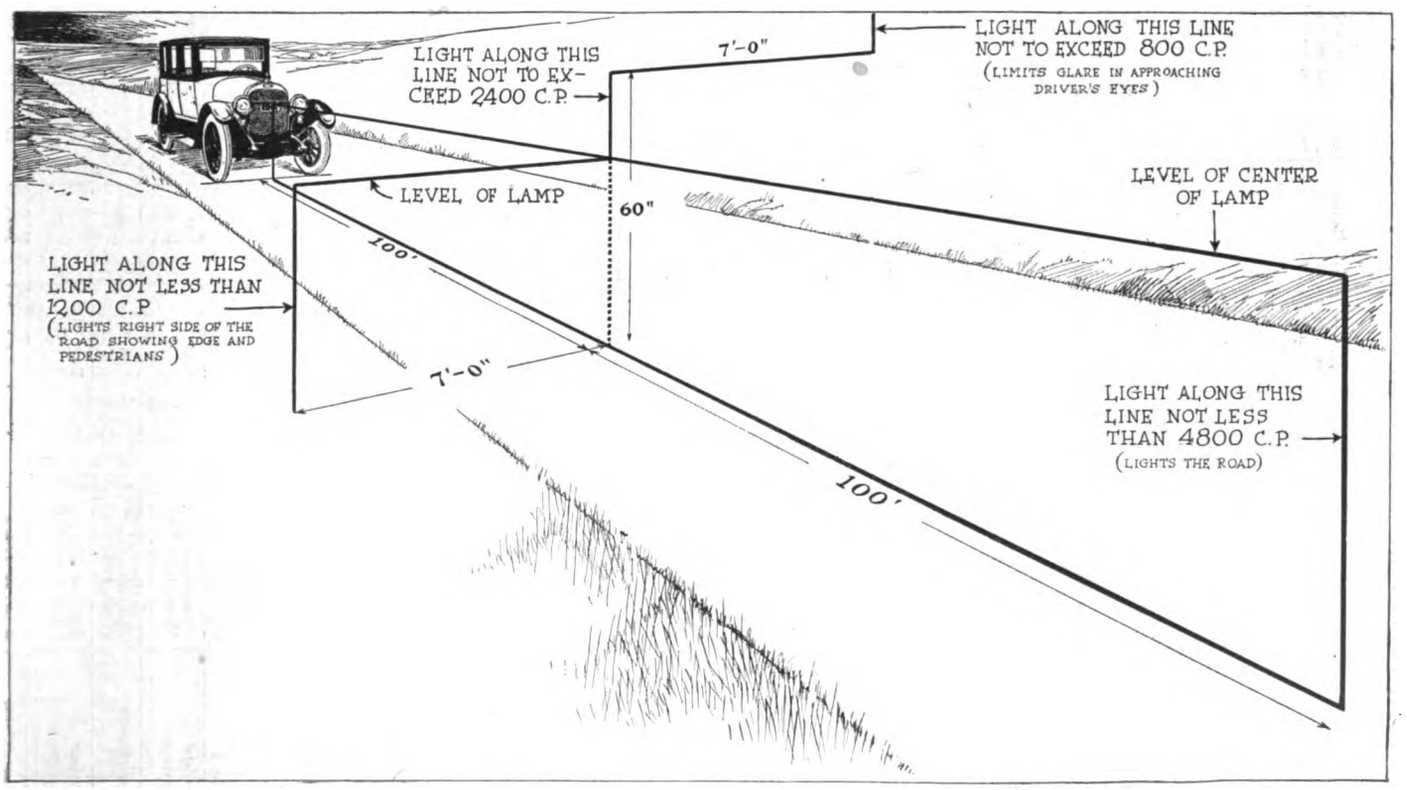
1—The light produced on the level surface on which the vehicle stands at a distance of 200 ft. directly in front of the vehicle and at some point between the level surface and a point on a level with the centers of the lamps shall be not less than 4800 apparent candlepower.

2—The light produced at a distance of 100 ft. directly ahead of the head-lamps and at height of 60 in. or more above the level surface on which the vehicle stands shall not exceed 2400 apparent candlepower.

3—The light produced 100 ft. directly ahead of the head-lamps and 7 ft. or more to the left of its axis and at a height of 60 in. or more above the level surface on which the vehicle stands shall not exceed 800 apparent candlepower.

4—The light produced 100 ft. directly ahead of the head-lamps and at some point between the level surface on which the vehicle stands and a point on a level with the centers of the lamps and 7 ft. to the right of the axis of the vehicle shall not be less than 1200 apparent candlepower.

From the report of the Lighting Division, adopted by the Society March, 1918. Revised March, 1920, and August, 1920.



This illustration visualizes the S. A. E. Recommended Practice for headlamp adjustment, which has been made the basis of several state motor vehicle lighting laws

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State	How Controlled No.	Must be Lighted —Hours Before Sunrise and After Sunset	License Numerals Must Be Visible (feet)	Front Lights Must Be Visible (feet)	Lamp Candle Power Limits	Objects Ahead Must Be Visible at — feet	Additional	Light of Over 4 c.p. to be Arranged so that at —ft. Beam	Light of Over 4 c.p. will not Rise More than—in. Above Road	Is There a Published List of Approved Lenses, etc.	Spotlights	Spotlight Must Be So Arranged that Center of Beam Does Not Strike Highway More than—ft. Ahead—	Except When Beam Is Swung—degrees to Right or Left
Alabama	State Law 2 front, 1 rear (red)	½	50				Lamps need not be lighted when vehicle standing under rays of light and can be plainly seen.	75	42				
Arizona	State law 2 front, 1 rear (red)	1		Reasonable	32				42		Beam not to be directed up a highway more than 100 ft. ahead unless swung 30° or more to right or left. Rays shall at no time extend to left of center of highway	100	30
Arkansas	Counties and Cities may regulate headlights												
California	State Law 2 front, 1 rear (red)	½		Not less than 500 ft. Tail lights must be visible 500 ft.	32	200	No lights required on standing vehicle if wheel within 12 in. of sidewalk			Yes	Beam shall be directed so that it shall not be over 42 in. in height above road 100 ft. ahead		
Colorado	State law 2 front, 1 rear (red)	½											
Connecticut	State law 2 front, 1 rear (red)	½		500 ft.	21		If standing car within 200 ft. no light required		56	Yes	Beam not to be directed more than 60 ft. ahead and to right of center of road when approaching vehicle is in sight		
Delaware	State law 2 front, 1 rear (red)	½	Rear 25	200 ft		25					Beam shall be directed so that it shall not be over 48 in. in height above road at left of center at 75 ft.		
District of Columbia	District Law 2 front, 1 rear (red)												
Florida	State Law 2 front, 1 rear (red)	½		200 ft.			If not equipped with lens dimmer must be used	200	48				
Georgia	State Law 2 front 1 rear	1	Plainly	Reasonable									
Idaho	State Law 2 front, 1 rear	1	Rear 100	200 ft.		75							
Illinois	State Law 2 front, 1 rear	1	Rear 50	200 ft.			Lights must be dimmed at 250 ft. unless equipped with lenses						
Indiana	State Law 2 front, 1 rear	½	Rear 100	200			Need not burn lights while standing in town				Beam not to be directed more than 50 ft. ahead when approaching vehicle is in sight	50	
Iowa	State Law 2 front, 1 rear	½	Rear 50	500	32		At 75 ft. or more ahead beam shall not rise over 42 in.			Yes	Beam shall not be directed to left of center of road when meeting car		
Kansas	State Law 2 front, 1 rear	1	50										
Kentucky	State Law 2 front, 1 rear			200		200		75	42				
Louisiana	Counties and Cities may regulate headlights												
Maine	State Law 2 front, 1 rear (red)				32	200		75	42	Yes	Beam must not be over 24 in. in height at 30 ft. ahead		
Maryland	State Law 2 front, 1 rear (red)		Rear 25	200	32	200		75	42	Yes	Beam not to be directed more than 30 ft. ahead and to right of center of road when approaching vehicle is in sight		
Massachusetts	State Law 2 front, 1 rear (red)				21	160				Yes	Beam must not be more than 24 in. in height at 30 ft. ahead	200	
Michigan	State Law 2 front, 1 rear (red)	1	Rear 50		32	200	May use dimmers	75	42		Beam not to be directed upon highway more than 200 ft. ahead and to right of center of road		
Minnesota	State Law 2 front, 1 rear (red)	1	Clearly	200	32	200	Lenses 32 c.p.				Beam not to be directed upon highway more than 100 ft. ahead unless swung more than 30° to the right or left	100	30

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Mississippi	State Law 2 front, 1 rear (red)	½		200									
Missouri	State Law 2 front, 1 rear (red)	½		500	36	150			12		Must not be directed in eyes of approaching driver in country. May be used in emergency in city		
Montana	State Law 2 front, 1 rear (red)	1	Rear 100	200									
Nebraska	State Law 2 front, 1 rear (red)	1		Reasonable	24			75	42	Yes	Beam not to be directed upon highway more than 30 ft. ahead		
Nevada	State Law 2 front, 1 rear (red)	1		Reasonable	24		Lenses and dimmers must be used		42				
New Hampshire	State Law							75	42		Beam not to be directed upon highway more than 30 ft. ahead		
New Jersey	State Law 2 front, 1 rear (red)	½		Front 250 Rear 500	24				53	Yes	Spotlights permitted only for reading signs		
New Mexico	State Law 2 front	1											
New York	State Law 2 front, 1 rear (red)	½	Rear 50	250	24	200		75	42	Yes	At 75 ft. ahead beam must not rise over 42 in. along road		
North Carolina	State Law	½			32	200	Lights need not be lighted when vehicle standing under light and can be plainly seen	75	42				
North Dakota	State Law							75	42	Yes	Beam not to be directed upon highway more than 30 ft. ahead	30	
Ohio	State Law 2 front, 1 rear (red)	½		200	32	200		75	42	Yes	Beam not to be directed more than 50 ft. ahead when approaching vehicle is in sight		
Oklahoma	Counties and cities may regulate headlight												
Oregon	State Law 2 front, 1 rear (red)	½	50	500		50					Beam not to be directed upon highway more than 75 ft. ahead		
Pennsylvania	State Law 2 front, 1 rear (red)	1	Clearly	200	32	200		75	42	Yes	Beam must not be over 42 in. in height at 75 ft. ahead and directed to right of road center.		
Rhode Island	State Law 2 front, 1 rear (red)	½	60	200									
South Carolina	State Law 2 front, 1 rear (red)	½		200				75	42				
South Dakota	State Law 2 front, 1 rear (red)	½	Visible				Must have lens and dimmers				Beam not to be directed upon highway more than 50 ft. ahead	50	
Tennessee	None												
Texas	2 front, 1 rear (red) Present law not upheld by court	½		500				75	42				
Utah	State Law 2 front, 1 rear (red)	½		200	32			75	42		Beam not to be directed upon highway more than 100 ft. ahead unless swung 30° to right or left		
Virginia	State Law 1 front, 1 rear (red)	1	Effectually	100				75	42				
Vermont	State Law 2 front, 1 rear (red)	¾	30	200							Beam not to be directed more than 30 ft. ahead when approaching vehicle is in sight		30
Wyoming	State Law 2 front, 1 rear (red)	1	50	500			Must have dimmers				In case of emergency or in rounding corner spotlights may be used	75	
Washington	State Law 2 front, 1 rear (red)	½		500							Beam not to be directed more than 75 ft. ahead and 6 ft. to right of center of road when approaching vehicle is in sight		
West Virginia	State Law 2 front, 1 rear (red)	At night	50	200		200		75	42		Beam must not be over 42 in. in height at 75 ft. ahead	100	30
Wisconsin	State Law 2 front, 1 rear (red)	½				200					Beam not to be directed upon highway more than 50 ft. ahead unless swung 30° or more to right or left. Max. 21 c. p.	50	30

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Equipment to Sell

New Devices for the Car and Truck

New Columbia Battery in Steel Case

National Carbon Co.,
Long Island City, N. Y.



The No. 1461, four cellpower, 6-volt battery, which, up to the present time has been made with a fibre container is now being made with a steel container. The advantages claimed for the new type covering are the ability to withstand rough usage, waterproof, thoroughly insulated to prevent internal short circuits and a woven fabric handle for convenience in carrying. The fibre container type will be discontinued.

Koster's Dash Fixture

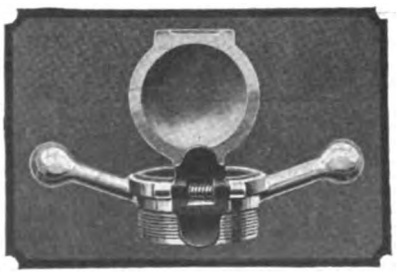


Koster, Inc., 1966 Broadway, New York City. Price, $5.

The device combines a searchlight, car light, trouble light, parking light and cigar lighter. It is finished in nickel and is installed on the dash. It has 11 ft. of cord on a self-winding spool which is out of sight behind the dash. Connection is made to the starting battery.

Snappy Radiator Cap for Fords

Bethlehem Spark Plug Co., Bethlehem, Pa.
Price $1.25.



A bar type radiator cap for Fords with hinged top. The threaded part screws into the radiator and is then left there as the filling is done through the hinged cap which springs open when the latch is touched and held closed when pushed down. Finished with glossy black top, nickel arms and body.

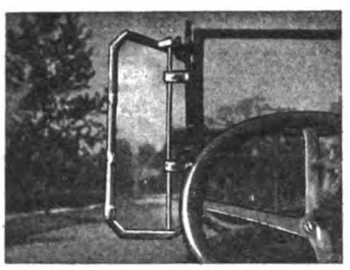
Green Link Fan Belt

Jewell Belting Co., Hartford, Conn.
Price $1 for most cars.

An endless leather belt made the correct length for all cars. The joint is made so that it becomes a part of the leather without stitches or fasteners. It is treated to make it waterproof and has considerable gripping power. Ford size 75 cents, a few longer sizes $1.50.

To-Nix Wind Deflector

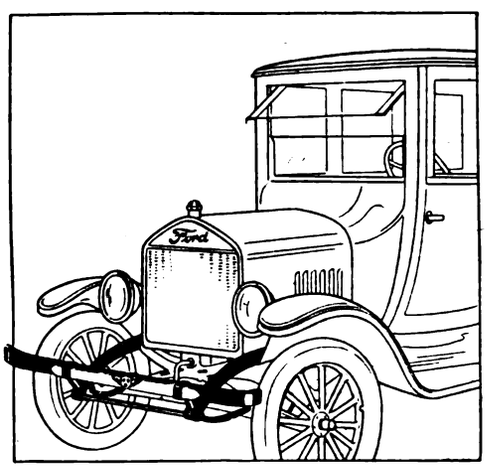
Tooker-Nixon Co., Inc., Stamford, Conn.
Price $20 per pair.



The wind deflectors are of shatter-proof material. There is no glass used. They weigh 7 lb. The frame is of aluminum and the deflector of transparent pyralin, extra white or amber.

Artstrong Bumper for Fords

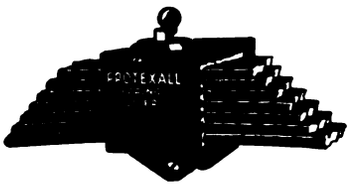
Artstrong Mfg. Co.,
616-618 Union Building, Newark, N. J.



The bumper is made on a new principle in which the bar swings back on pivoted arms when the car strikes an obstruction. The extensions to the Ford frame are unusually heavy. Attachment is made without any machine work and the design is such that if a pedestrian is struck, he falls backward into the space between the bar and the radiator but he cannot fall through.

Protexall Spring Oilers

Protexall Co., Abingdon, Ill.
Price $1.50 per pair; $2.50 for complete Ford set.



The oiler consists of a metal housing lined with a thick padding of felt which is kept saturated with oil from an oil cup and chamber on top of the housing. The cup is filled about once a week and the oil from the pad seeps between the spring leaves. The oilers are adjustable to any size springs. A special set is made for Fords. The oilers are made under the Grus patents.

Bulls Eye Spark Plug

Bulls Eye Spark Plug Co., Inc.,
200 Fifth Avenue,
New York City.
Price $1.25.



The electrode is made of one piece Monel metal. The shell and bushing are made of Bessemer steel. The closed part of the shell hanging free in the cylinder is heated sufficiently to vaporize oil and prevent it from entering the opening.

Mono-Step Aluminum Plate

Triangle Automotive Specialties Co.,
1931 Broadway, New York City.
Price $3.



A highly polished aluminum runningboard step plate, with shoe scraper to clean the mud from shoes. The raised rear guard protects the runningboard shield from damage. The plate is cast of 90 per cent aluminum and measures 12 in. x 8 in. The center diamond is separate and interchangeable and nameplates of various cars and monogramed initials are supplied. Packed in boxes, two set plates to the box, complete with nickel plated wood screws.

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Equipment for the Shop

New Machinery and Tools

Nu-Angle Expansion Reamer

Vedoe-Peterson Co.,
Norfolk Downs, Mass.

Price $4.50 to $10 each; set of 8, 15/32 to 1 1/16 in. $39.80; set of 11, 15/32 in. to 1 17/32 in. $64.80.

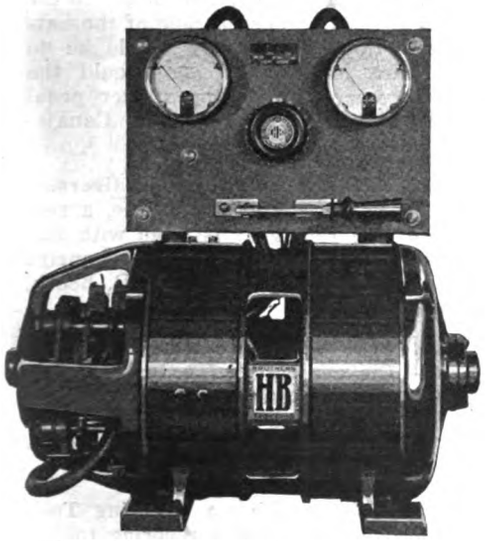


The expansion reamers are constructed with a set of blades having a varying angle from the points to the heel. The point which does the heavy work is set to shear its way in without hogging. The front rake is reduced at the center to produce a smooth cutting edge as the amount of stock removed is diminished. The heel is slightly undercut to produce a smooth round hole. The blades can be resharpened on an ordinary tool post grinder without taking the reamer apart.

HB 200 Ampere Constant Potential Charger

Hobart Bros. Co., Troy, Ohio.

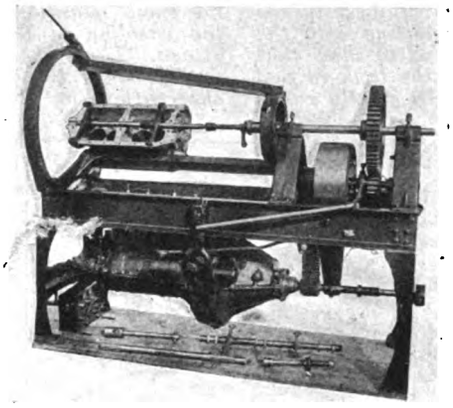
Price $365.75.



With this outfit practically any number of batteries can be charged providing the full load does not exceed the ampere capacity of the machine. The battery absorbs a large amount of current when it is nearly empty, providing the direct current is constantly maintained at 7½ volts. Most of the batteries charged under the constant potential method can take most of their charge in three hours time. The batteries regulate themselves as to the amount of current taken in under this system. The outfit consists of a ball-bearing, 5-hp. motor built in single unit construction into a 7½ volt, 200 ampere, constant potential generator. The equipment includes bus bars, terminals for leads and instruments, switchboard, and 12 ft. of connecting cable.

All-in-One Auto Machine

All in One Auto Machine Co., Maywood, N. J.

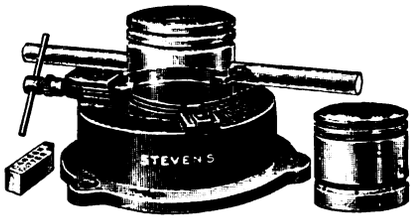


A combination machine for overhauling engines. It is a combined engine stand, power stand, burning-in and running-in machine and will handle all makes of engines. One model is built especially to handle Ford, Chevrolet Superior engines, etc. The latter type have attachments to perform all the necessary operations of a general engine overhauling job such as cylinder boring, rebabbitting, babbitt boring and crankshaft grinding, etc.

Stevens Piston Oil Groove Tool

Stevens & Co.,
375 Broadway, New York City.

Price $9.50.



The tool is for chamfering an oil groove and for use as a jig in drilling oil return holes in the piston. The tool chamfers the lower edge of any groove in the piston at exactly the correct angle. The cutter is made of tool steel and has proper clearance to obtain a clean, smooth cut. The feed screw has a stop to prevent an accidental deep cut. A bar is furnished for turning the piston and when the tool is fastened to the bench the piston is inserted disassembled as illustrated. A carbon cutter replaces the chamfering cutter and removes burnt deposits from the bottom of the ring groove. One of the steel jaws is a jig to drill the oil holes.

Vie-King Self Heating Torch and Soldering Iron

The King Co., Inc.,
50 Union Square, New York City.

Price, $2.50.



The tool is a combination blow torch and soldering iron. It burns denatured alcohol and has no asbestos or cotton wicks. It burns in any position, either when used as a torch or iron. To use as a torch, the copper is simply unscrewed.

V-P Groove Cleaner for Pistons

Vedoe-Peterson Co.,
Norfolk Downs, Mass

Price $5.

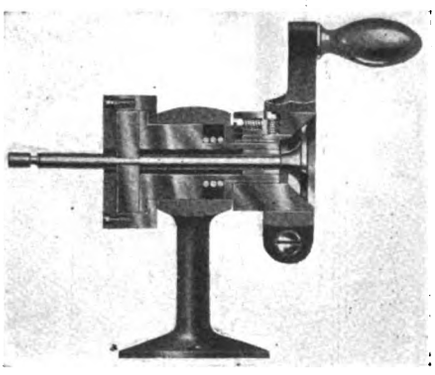


A tool for cleaning the carbon from piston ring grooves. The three cutters are adjusted to the approximate depth of the groove with adjusting screws, which are locked with small set screws. The piston is placed on an arbor in the vise and final adjustments made with a knurled screw and handle. Two or three easy turns are sufficient to remove the carbon. The cleaner will accommodate pistons from 2¾ to 4 in. in diameter. One set of three double ended cutters for 3/16 x ¼ in. piston ring grooves is furnished with each tool.

Wayne Valve Refacer

Wayne Tool Mfg. Co., Waynesboro, Pa.

Price $15.



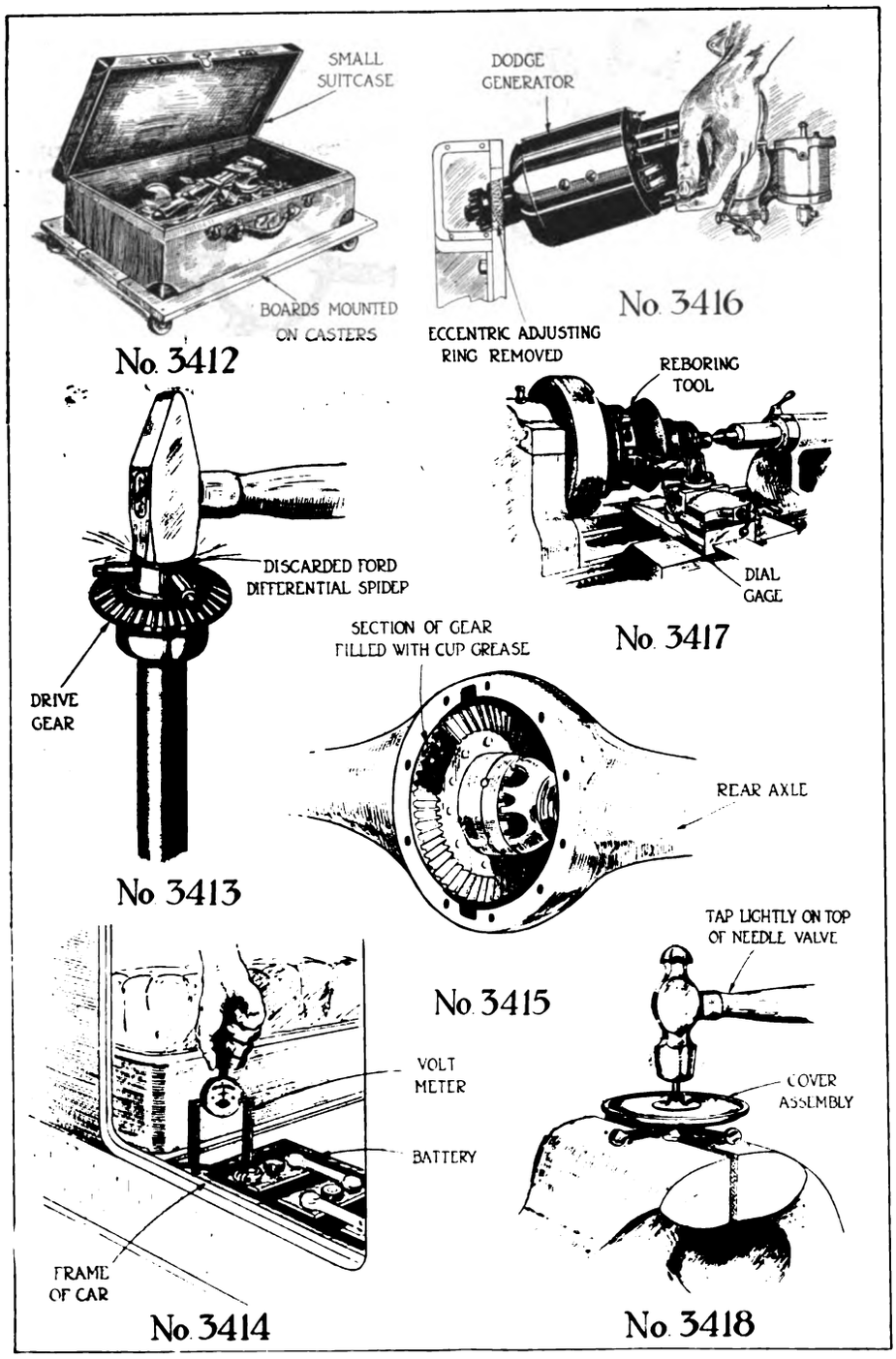
The refacer is mounted on a stand which can be attached to the bench. The valve is held stationary and the cutter revolves with the handle, pressure being applied by the coil spring. The design is intended to eliminate chatter and tool marks. During the cutting the valve head is supported all around by the hardened and ground surface of the cutter head and the valve stem is held rigidly by the chuck. The tool includes two cutters which are regrôund free.

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Repairshop Shortcuts

Where does it come from?

WE had been talking about sediment and water in the gas tank and kindred subjects such as the possibility of fire from straining gasoline through a chamois. One debater was of the opinion that if gasoline were carefully strained there would be no possibility of anything getting into the tank. Overwhelming evidence was brought out to show that water will condense from the atmosphere in the tank in cool weather, run down the sides of the tank, and finally cause trouble. Other evidence showed that gasoline will attack certain metals chemically. Galvanizing and copper are especially susceptible to this attack, which probably comes from the small quantity of sulphuric acid which is used to wash the gasoline in the refining. Tin is nearly immune from attack. These chemical actions cause powdery deposits which finally cause trouble at the needle valve. What are your observations on this?



No. 3412—A Portable Tool Chest.—A tool chest or suitcase which is used for a tool chest is fastened to a small wooden platform which is equipped with castors so that the whole equipment can be easily moved about.—Linn Jones, Athol, Mass.

No. 3413 — Driving a Ford Drive Gear.—When driving a Ford differential drive gear onto the shaft a discarded spider is placed against the gear to protect it from possible injury from the hammer.—H. V. D. Sweet, Canajoharie, N. Y.

No. 3414—Locating a Poor Starting Circuit Connection.—A poor ground or connection in the starting circuit is located by placing a voltmeter across from the ungrounded pole of the battery to the front and then from one pole of the battery to the other. There should be no difference in readings nor should the reading change when the starter pedal is depressed.—H. V. D. Sweet, Canajoharie, N. Y.

No. 3415—Adjusting Pinion Gears.—When the gears are hard to see, a section of the ring gear is filled with cup grease and revolved to give an imprint of the pinion for position.—H. D. Booth, Cortland, N. Y.

No. 3416—Removing Dodge Generator.—The generator of a Dodge is removed without taking off the carbureter by taking out the eccentric adjustment ring before removing the generator.—Frank L. Markel, Hillsboro, Ill.

No. 3417—Checking a Reboring Tool.—The performance of a reboring tool is improved by placing the head on the centers of a lathe and checking each of the cutters with a dial indicator held in the tool post. Slight variations can be corrected by loosening the screws and tapping the cutters.—A. N. Bostwick, Bostwick & Thompson, Minden City, Mich.

No. 3418—Resetting Zenith Carbureter Float Level.—In changing the float level on the Zenith carbureter the cover assembly is set loosely in a vise and the top of the valve stem struck lightly with a hammer to loosen the solder.—H. V. D. Sweet, Canajoharie, N. Y.

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Along the Automotive Newsway

By Leo Roche



13 YEAR OLD SAN DIEGO BOY WINS HIGHWAY ESSAY PRIZE FROM 400,000 COMPETITORS



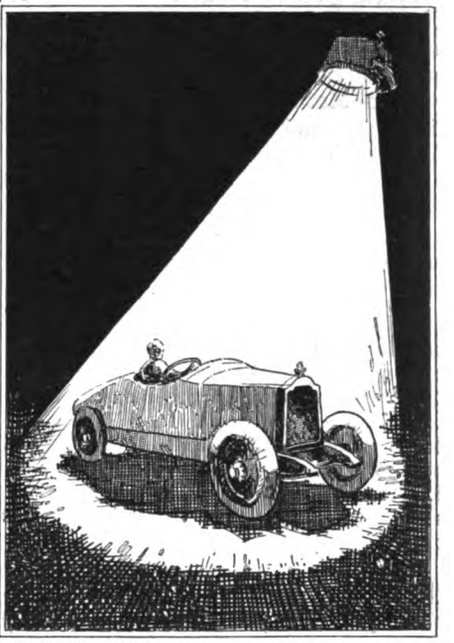
THE DRAWING FOR SHOW SPACE AT THE NATIONAL AUTOMOBILE SHOWS TOOK PLACE AT THE N.A.C.C. LAST THURSDAY



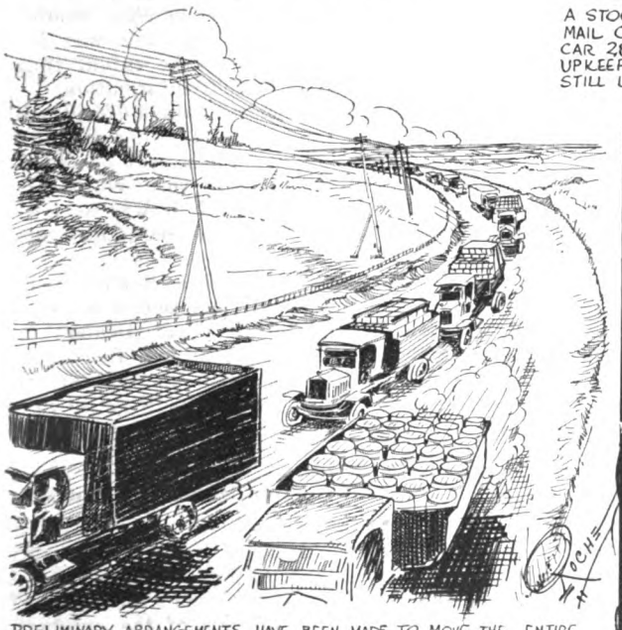
THE AUTOMOTIVE BAROMETER INDICATES AN EXCELLENT FALL AND WINTER BUSINESS



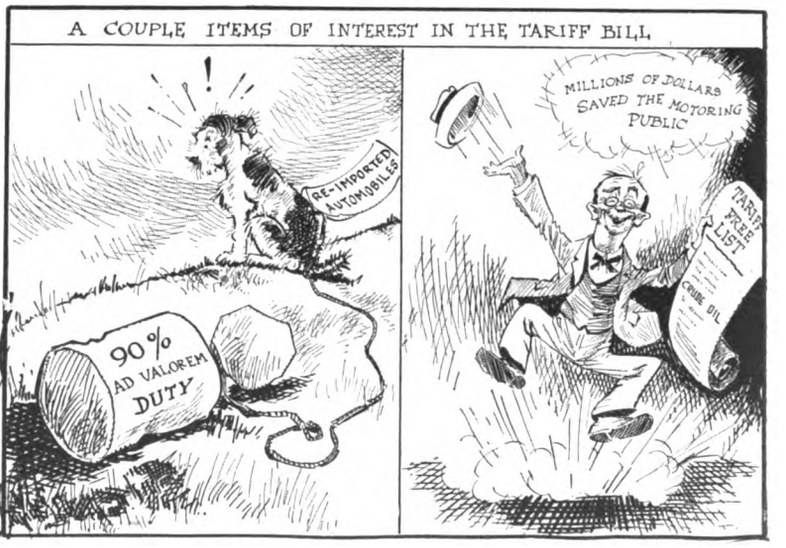
A STOCKTON, CAL., RURAL MAIL CARRIER DRIVES HIS CAR 28,000 MILES AT TOTAL UPKEEP COST OF $3. AND STILL USING ORIGINAL TIRES



PACKARD MOTOR CAR CO. WILL BREAK INTO LIME LIGHT AT INDIANAPOLIS RACE IN 192?



PRELIMINARY ARRANGEMENTS HAVE BEEN MADE TO MOVE THE ENTIRE APPLE CROP FROM HUNTERS TO SPRINGDALE, WASH., BY MOTOR TRUCK



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Plants Holding to Big Schedules

FORD AGAIN REACHES 5000 DAILY PROGRAM

Other Car Manufacturers Prepare Plans to Keep Factories at Capacity

DETROIT, Oct. 7—Though production has fallen off with the advancement of the season the larger factories, the "ten percenters" of the industry, are holding close to the schedules set earlier in the year. Cars in the high priced field have been less affected by the change in seasons, and unsettled business conditions, and are maintaining schedules of close to 100 per cent capacity.

Ford Motor Co., since its resumption, has made a quick return to its former high operating schedule and is once again approximating the 5000 daily mark. There is no indication of a slump in sales, according to Ford officials, and preparations are to continue at factory capacity.

Dodge Brothers is holding close to its schedule of 600 daily. Buick is operating at new high marks with the addition of the former Scripps-Booth plant, and established a mark exceeding 700 in the latter part of the month. Production will continue at approximately this mark in October. Studebaker is continuing to operate at capacity approximating 450 cars.

Production at Plants

Cadillac is building approximately 100 cars. Orders signed by distributors at the recent convention are reported to warrant this output to the first of the year. Packard is approximating 2000 cars monthly in all models and has placed commitments on this basis to the first of the year. Lincoln orders are several months in advance of deliveries and work is under way for a plant addition which will permit of a large extension in manufacturing facilities. Wills Sainte Claire will build more cars in October than in any previous month and reports a volume of business approximating 30 cars daily.

Hudson-Essex production is running at the rate of about 250 cars, a large percentage of which is in its closed models. Paige-Jewett production for September approximated 3000 and operations will be continued at close to this rate in November. Hupp Motors is maintaining a schedule approximating 125. Reo is building about 250 vehicles and is aiming to increase this because of demand for its speed wagons and the popularity of its new passenger models.

Oldsmobile is approximating 125 cars and is experiencing increases in sales under the stimulus of its recent price cut. Oakland is running at about the same daily rate. Chevrolet manufacturing in the past month has been limited because of manufacturing reasons, but preparations are complete for entering upon a schedule which will be increased to about 2000 by the first of the year. Columbia Motors is running at the rate of about 60.

Liberty is building about 25; Dort, about 75 and Rickenbacker continues on its schedule of 25 which represents normal capacity of its plant. Earl is building 60 to 75 cars.

Maxwell is building about 300 and Chalmers, pending the reorganization of its financing, continues on the existing schedule of about 25. Durant is building about 125 in its Lansing plant and is lining up its material sources for early production of the Star. A start on this is expected at any time now. The principal difficulty being an ample supply of bodies.

Gray Motors is now building 80 cars and will increase this to approximately 200 by the first of the year. The company is meeting with a large demand for its product both in the United States and abroad but is compelled to restrict its dealer appointments pending an increase in its production. As in a number of cases, Gray's problem is also one of bodies, but these are expected to come through in ample quantity soon.

COTTON GINS FIND USE FOR TRACTORS

SPARTANBURG, S. C., Oct. 6—Farm tractors are playing a new role in the Piedmont section of the Carolinas just now. They are being used to drive cotton gins and bale the fleecy staple.

Prolonged drought and the coal shortage have caused the power companies to curtail, and the first patrons they eliminated were the cotton gins. Necessity is said to be the mother of invention, and accordingly the gin owners backed up tractors, slipped on driving belts and put their plants going almost to normal

Since it has been found possible to operate gins with farm tractors it is possible that in a great many instances this form of power will be substituted for electric current, as the ginner can depend upon it regardless of whether Jupiter Pluvius or the coal miners are on a strike.

N. A. C. C. GETS DRAFT OF ANTI-THEFT LAW

Proposed That Every State Adopt It to Stop Possibilities of Resale

NEW YORK, Oct. 9—The annual members' meeting of the National Automobile Chamber of Commerce held last Thursday was well attended but the fact that few of the heads of the companies were present testified to the prosperous condition of the industry at present.

The meeting listened to reports on production, fall business, transportation difficulties and participated in an interesting discussion on the stolen car situation and pirate parts. The Motor Vehicle Conference Committee placed before the manufacturers a rough draft of a universal law which, it is thought, would aid in stopping thefts. In brief this is a plan by which a bill of sale would accompany each car and the sale would be duly recorded with the secretary of state. The car thus would be placed on record and could not be re-sold unless a record were made of the transfer, as is done in a real estate transaction.

Present Plan Not Effective

Michigan has something like it, as have Indiana, Pennsylvania and Maryland. In the last three states, however, this has not stopped thefts because the stolen cars are taken into states where a record of a re-sale does not have to be made. It is felt that if this law becomes universal and in force in every state the stolen car industry would be severely hit. The Chamber was interested in the idea to the extent that it has asked for further information.

Demand for closed cars is exceptionally good, it was reported. In some of the northern states 75 per cent of the cars sold in September were closed jobs, whereas in the South it was as low as 15. On the whole, however, the average was about 35 per cent.

The used car situation, it was reported, is a more serious menace now than it was earlier in the year. Dealers seem to have lost sight of the fact that in the fall, when sales are lighter, they cannot allow the prices they do in the spring. In fact they are overtrading.

Washington Hears of Exports

WASHINGTON, Oct. 8—Ways and means of discouraging the exportation of stolen automobiles were discussed today by representatives of the automotive industry and officials of the automotive

(Continued on page 40)

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September Output Totals 206,000

RECORD ESTABLISHED FIFTH TIME IN 1922

Ford Closing Proved Big Factor in Keeping Total Production Figures Down

NEW YORK, Oct. 9—For the fifth consecutive time this year, monthly production records have been broken, September coming through with an estimated output of cars and trucks slightly in excess of 206,000. This sets the month apart as the best September in the production history of the industry, with the previous high mark of 185,000 in 1919 surpassed by a substantial margin. Compared with a year ago, production increased 31 per cent.

The showing is all the more remarkable taken in conjunction with the temporary closing of the Ford plants midway of the month. Ford's final figures are not expected to be more than 90,000, or 35 per cent less than August.

As was expected there was a falling off from the August total, due not so much to a seasonal decline in sales, although that element entered somewhat, as to the halt in Ford production and the fact that September, in addition to being a short month, was marked by a holiday. All of these factors were looked upon to bring the total down from the 272,000 level established in August.

Selling Efforts Shifted

The policy of manufacturers in shifting selling efforts from a section of the country where there appears to be a decline to a center where the demand holds strong is having the effect of keeping up sales in surprising volume. There is no indication now that the larger manufacturers are curtailing their schedules. In some instances they are opening the month on programs exceeding those of September.

The industry, however, is beginning to feel more acutely the results of the recent rail strike and is experiencing greater difficulty in getting through steel shipments from producing centers. Unless this situation improves materially it will have an adverse effect on automotive production for October and subsequent months of the year. This will prove of far greater detriment to sustained output than would any decline of sales that might come between now and the closing of the year.

Regardless of what may happen in the last quarter, however, 1922 will see a production of more than 2,000,000 cars and trucks. For the first nine months of the year a total of 1,873,000 has been reached.

Truck business continues steady improvement, a larger market developing for the heavy duty vehicles.

Parts business shows no signs of a let up, car makers continuing to order far ahead. Collections, in keeping with the general good condition in this branch of the industry, remain good.

"ERSKINE PARK," GIFT TO CITY IN INDIANA

SOUTH BEND, IND., Oct. 9—A. R. Erskine, president of the Studebaker Corp., and Mrs. Erskine have presented to the city 120 acres to be used as a park. The property is valued at $240,000 and is almost opposite the Erskine home on Miami road. The acreage is sufficient to permit of a golf course, ball park, picnic grounds and a general park for the public.

At a special meeting of the city council, called by the mayor and held during a dinner given by that official at which the gift was announced, it was decided to call this public playground Erskine Park.

OPERATIONS RESUMED AFTER BRIEF CLOSING

CHICAGO, Oct. 6—Two automobile factories in the territory surrounding Chicago have been shut down for short periods recently. The R. & V. Knight plant at Moline, Ill., was closed because the acuteness of the railroad shopmen's strike interfered with obtaining materials. It has now resumed operation. The Mitchell plant at Racine, Wis., closed for inventory and cleaning up some factory details, but resumed this week.

The Ford Motor Co.'s Chicago branch has returned to its normal schedule of assembling 250 cars a day. The Diamond T truck factory is operating on a fair schedule, finding an increasing demand for trucks in Chicago and other large cities, but very little demand from the small towns and farms. This company this week inaugurated a policy of giving every truck produced a 30 mile test under full load before permitting it to leave the factory.

Black & Decker Dividend

BALTIMORE, Oct. 9—A dividend of 2 per cent on preferred stock has been declared by the Black & Decker Manufacturing Co. for the third quarter of 1922. This makes a total of four dividends on preferred this year, totaling 8 per cent with the likelihood of an additional dividend to be paid at the end of the year.

RAILWAY ASSOCIATION WELCOMES MOTOR BUS

Says Industry Has Developed Vehicle of Great Service to Electric Lines

CHICAGO, Oct. 9—The motor bus, once considered a dangerous competitor by the electric railways, has been taken into the family circle and occupies an important place in the exhibits and deliberations of this year's convention of the American Electric Railway Association.

The report of the committee on railless transportation declares that "the automotive industry has developed a vehicle suitable for passenger transportation service," and that the bus serves an important function in feeding and supplementing the service of the electric lines. The important parts of the report are summarized as follows:

The automotive industry has developed a vehicle suitable for passenger transportation. The operating cost per passenger is higher with buses than with electric cars, but, in spite of this handicap, the bus is, in some cases, more economical for handling light traffic.

The public interest requires that electric railways should be the sole passenger transportation agency in their respective communities; this makes for the cheapest transportation for the public. It also involves the duty of studying all available transportation methods.

Development of railless transportation by electric railways, if intelligently carried out, should not adversely affect the railways financially. While a demand for a more expensive service for certain parts of the larger cities may be filled by the use of buses, their principal function is, and will be, as adjuncts to electric railway service.

Use of Buses Growing

Meanwhile the use of buses to supplement the service of the electric lines is rapidly growing and six manufacturers have installed elaborate displays of buses in connection with the association's equipment show. Republic, Selden, Fageol, Ace, White and Garford buses are exhibited. The White Company shows six different models; Republic two; Selden two and Fageol two. One of the Fageols, built for the newly announced extension service of the Chicago elevated lines, is equipped with air brakes.

Garage Building Active

PHILADELPHIA, Oct. 6—Garage construction here continues active. During the month of September, 172 garages were started at a cost of $273,345.

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WILLYS MAY ASSUME DIRECT MANAGEMENT

Thought Probable He Will Take Over Duties of Charles B. Wilson, Resigned

TOLEDO, Oct. 9—The resignation of Charles B. Wilson as vice-president and general manager of the Willys-Overland Co., presumably to make way for President John N. Willys to take over those duties, was accepted by the board of directors at their meeting here.

While discontinuing his active association with the affairs of the company at a time when plans are being laid for a new fiscal year, Wilson will continue a factor in the Willys-Overland affairs, remaining a director in the Willys-Overland Co., president and director of the Willys-Morrow Co. of Elmira, N. Y., director of Willys-Overland, Inc., and president and director of the Wilson Foundry & Machine Co., Pontiac, Mich.

The following statement was obtained from Wilson:

I had insisted upon the acceptance of my resignation as vice-president and general manager of the Willys-Overland Co. for several reasons. In 1920 when I was urged by the management to assume the larger responsibility at Toledo it was with the dominating thought that I would ask to be relieved after the company had been re-established on a sound and satisfactory earning basis. I accepted, feeling that I had a great debt of gratitude to discharge to Mr. Willys personally and that the Wilson foundry had a great obligation on account of its relationship with Overland. Toledo is a fine city with wonderful possibilities, but the early return to my home in Pontiac is of extreme importance to me, as there are many things there to which my time should be devoted.

Overland has been re-established and has come through a period of gratifying earnings—$4,283,000 net for June, July and August—thanks to a good organization and a product that is eminently satisfactory. My deep interest remains with Willys-Overland. There is no reason why the company should not continue a dominant factor in the automobile industry.

Thompson Board Chairman

This is not the first time that Wilson has stepped into a breach in order to assist Willys. During the war Wilson left the Wilson Foundry & Machine Co. in order to take over the management of the Curtiss Aeroplane & Motor Corp. of Buffalo.

At the meeting at which the resignation was accepted, H. L. Thompson was elected chairman of the board and chairman of the executive committee.

Chalmers Joins Joyce

DETROIT, Oct. 7—Hugh Chalmers has identified himself with Frank H. Joyce in the formation of the Joyce Manufacturing Co. which will begin operations in November as a body paint and trim company and manufacturer of tops. Chalmers is to be chairman of the board of directors.

BIG BUSINESS DONE BY G. M. ACCEPTANCE

NEW YORK, Oct. 9—Since its inception in 1919 the General Motors Acceptance Corp. has financed under its retail plan more than 200,000 motor vehicles, reports President C. C. Cooper. Under the corporation's wholesale plan more than 140,000 have been financed.

The retail value, under both plans, totals more than $400,000,000. During its existence the corporation has negotiated more than $290,000,000 of its obligations with banking institutions throughout the United States.

OVERLAND HAS BEST QUARTER THIS YEAR

TOLEDO, Oct. 9—The greatest quarter of this year or last and close to the banner quarter of 1920 when 37,400 cars were produced is reported by the Willys-Overland Co. for July, August and September in which period the production exceeded 37,000 vehicles. Total current assets of $28,791,096 and total current liabilities of $26,843,347 show in the balance sheet, which is as follows:

CURRENT ASSETS

	June 30, 1922	Dec. 31, 1921
Cash	$8,905,212	$5,128,403
Misc. invest	101,171	133,170
Notes rec	909,191	806,221
Accts. rec	2,933,752	1,545,505
Due fr. agts., etc	.....	190,683
Inventories	15,941,770	17,696,814
Liberty bonds	.....	128,793
Total current assets.	$28,791,096	$25,629,589
Total assets	$107,478,791	$100,605,506

CURRENT LIABILITIES

	June 30, 1922	Dec. 31, 1921
Notes pay	.....	$18,479,645
Accts. pay	$6,083,316	2,770,262
Funded debt	17,357,500	.....
Trade accept. pay	1,033,995	.....
Dealers init. payment.	539,509	444,534
Salaries, etc., accd	711,970	176,671
Accd. taxes and interest	955,500	470,370
Prov. for ref. ctfs	158,440	62,535
Misc. prov	.....	200,000
Due assoc. co	3,117	.....
Total current liabs..	$26,843,347	$22,604,017
*Net wkg. cap	$1,947,749	$3,025,573

*Based upon statement of current assets and current liabilities as above.

Locomobile Schedule

BRIDGEPORT, CONN., Oct. 7—The Locomobile Co. of America has filed a schedule of assets and liabilities in bankruptcy court here. Assets are estimated at $3,129,200 and liabilities at $5,908,161. This is the beginning of final steps in the adjudication of the affairs of the company.

LAST MONTH BIGGEST IN OAKLAND OUTPUT

G. M. Truck Sees Steady Increase—Fisher Body at Work Building for Ford

PONTIAC, MICH., Oct. 6—September was the biggest month of the year in production and sales for the Oakland Motor Car Co., according to W. R. Tracey, assistant sales manager, who says that during the month the plant surpassed the mark of 150 cars daily, set as a maximum.

Prospects for October are that the sales and production will be greater than last month, with the two new closed models contributing largely. The Oakland sedan and five passenger coupé put on display in New York last week have brought an unexpectedly large response, Tracey says, and they will be rushed into production which will start about Oct. 15. Both the sport model and the two passenger coupés are over sold at present and demand is heavy for phaeton jobs.

General Motors Truck Co. foresees a steady demand with a gradual increase of business, says W. L. Day, general manager. With a total output for October scheduled to equal that of September, there is no likelihood of a shutdown.

Establish Engine Reserve

Fisher Body Co. expects to get into production of Chevrolet open bodies in quantity at the local plant, formerly Beaudette's, within a week, says manager F. E. Mills. The resumption of work on Ford bodies took place during the past week and a steady run through the winter is anticipated.

Wilson Foundry & Machine Co., making engines for Willys-Overland, has reduced its force somewhat and has placed material orders to maintain a steady run during the winter with about 2,000 employees. This will carry up to Feb. 15, says manager D. R. Wilson. The plant is establishing a reserve of Knight engines, which it has not been able to do since moving to Pontiac a year ago.

ELECTRIC VEHICLES SHOWN IN CHICAGO

CHICAGO, Oct. 6—The second annual Chicago show of electric vehicles was held in the down town show rooms of the Commonwealth Edison Co. Five makes of trucks and three makes of passenger cars were exhibited. Accessories and equipment also were displayed.

Considerable interest was shown in the electric trucks for which a wide market is said to be developing in this and other large cities. A representative of one make of truck manufactured in Chicago said that some large firms are operating fleets of as many as 200 electric trucks and buying more regularly. Among the large customers are laundries, bakeries, ice cream manufacturers and express companies.

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KELLY-SPRINGFIELD CHANGES TIRE LISTS

Reductions in Price Average 20 Per Cent on Fabrics and 10 on Cords

NEW YORK, Oct. 9—Kelly-Springfield Tire Co. announces a new net price list effective immediately, which shows average reductions of about 20 per cent on fabrics and 10 per cent on cords. In addition, the excise tax is included in the new list, whereas in the old one this tax was extra. The list that was superseded to-day was put into effect Dec. 1, 1921.

Making the change in prices brings the Kelly-Springfield company's list to the same level as the other big companies which reduced in August. The company feels that the prices now quoted are the lowest that the public can expect and that they have been reached by economies in distribution and overhead instead of taking the reductions out of the quality of the tire.

The 30 x 3½ size cord, K.S. or B.B., formerly quoted at $18.75, is now $14.65, and the same size in the fabric, K.S., previously listed at $14.90, is $11.90.

The 32 x 3½ cord, K.S. or B.B., was $25.90, and is now $23.00; the fabric K.S., in this size, formerly quoted at $21, is now listed at $16.80.

The 34 x 4½ cord, K.S. or B.B., is now $39.50, as against $44.30 under the old lists.

The 35 x 5 cord, K.S. or B.B., is $49.25; the old price was $54.40.

Similar reductions are made with the remaining sizes.

ELGIN CUTS PRICES ON ALL SIX MODELS

ARGO, ILL., Oct. 5—The Elgin Motor Car Co. announces reductions on all Elgin six models, Kl-1922 series. The new list is as follows:

	Old Price	New Price
5-pass. Phaeton.....	$1,295	$1,125
Standard Scout.....	1,345	1,125
Special Sport.....	1,425	1,165
Sedan	1,695	1,645

The peak list price of the standard phaeton was $1,785, the new price being a reduction of $660 from that figure. The peak price of the standard scout was $1,895, the new price representing a reduction of $770. The highest price yet quoted for the sedan was $2,795, the new price being a reduction of $1,150.

The special sport model has been produced only since April 1, 1922.

To Sell Premier Assets

INDIANAPOLIS, Oct. 7—Assets of Premier Motor Corp. will be offered at private sale Nov. 14 or at public auction at the Courthouse here at any date to be announced thereafter, according to a decree issued here by Judge Linn D. Hay in Superior Court. As a result of a friendly receivership suit brought in June, the Fletcher Savings and Trust Co. was appointed receiver July 1.

At the time of the suit and the appointment of the receiver there was announced to the creditors a plan for reorganization that had been drawn up by a committee. It was one purpose of this plan to have the assets of the concern offered at a judicial sale to clear the property title preparatory to reorganization and operation on a new basis.

ROTARY CLUB GIVES BUSES TO SCHOOLS

BIRMINGHAM, ALA., Oct. 10—The Rotary Club of Aberdeen, Miss., has started a movement in that section that it is believed will have a widespread effect on the school systems using motor transport systems.

This club has purchased two large school buses and donated them to the schools of Aberdeen and Monroe County, Miss. They will be used in transporting the children to and from school. This is considered as only a starter, as there are 4900 school children in the Aberdeen school district alone.

Hart-Parr Sales Force Meets

CHARLES CITY, IOWA, Oct. 7—The supervisional sales force of the Hart-Parr Co., tractor manufacturer, from all parts of the United States and Canada, has just completed its fall sales conference at the factory here. Plans were made for an extensive sales campaign. It was stated that the extensive sales and advertising campaign started last June had been successful, and that on Oct. 1 the factory was six months behind with deliveries. A number of improvements are being made at the factory.

SHOW GIVES CLOSED CARS SALES IMPETUS

Good Prospect Lists Obtained at Ten Days' Exhibit in Cleveland

CLEVELAND, Oct. 7—The closed car show which was held in the Municipal Auditorium under the auspices of the Cleveland Manufacturers' and Dealers' Association, brought results that could not have been obtained through individual effort, says Herbert Buckman, secretary of the association and general manager of the show.

Most of the sales made during the ten days were of closed models. The patronage was not limited to any particular line, the larger and more expensive makes going as well as the smaller and less expensive ones.

It is estimated that 100,000 persons visited the exhibits, the advertising of the cars thus obtained being of immense value to the dealers.

Another factor that helped make the show a success from the dealers' standpoint was the obtaining of good prospect lists composed of persons, 90 per cent of whom the dealer had never heard of.

The show has given the dealers more prospects for closed cars at the opening of the season than they have ever had.

Receiver for Erie Truck

ERIE, PA., Oct. 8—On complaint filed by an Erie bank and other creditors, W. J. Stern has been appointed temporary receiver for the Erie Motor Truck Co. The indebtedness is placed at $34,000. It is said that an effort will be made to liquidate.

Show That Exhibited Only Closed Cars



Under the direction of Herbert Buckman, local secretary, Cleveland dealers opened their season with an exhibit that aroused such interest as to insure the trade of that city a busy time throughout the winter. The show was notable in impressing upon the dealers that ninety per cent of the prospects for new cars were persons who had never been considered

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COST OF RUNNING CAR CUT IN SOUTH AFRICA

Tire Prices Lowered Although Gasoline Still Remains at High Figure

JOHANNESBURG, Sept. 6 (by mail)—Running costs have been considerably reduced lately. The tire companies have brought prices down to pre-war level, and further cuts are imminent. A tire size 30 x 3½ can be bought for about $17, and many of the well-known makes may come down still more. Gasoline still remains at a high figure, however, the retail price being about a dollar a gallon. Motor traders think that it is time the companies reduced their prices, and they say that the fuel should not cost more than 75 cents a gallon. The S. A. Motor Traders Association are keen to bring down running costs as they consider this the best way to create new motorists.

No Saturation Point

Lately there has been a good deal of talk about the "saturation point" and it is generally agreed that we are nowhere near it, and that we have no cause to doubt that many more cars will be bought by people who are not at present motorists. If motorcycles are taken into consideration the city of Johannesburg, with a population of about 150,000 whites, has about ten thousand motor vehicles actually in use, and this number is fast increasing.

It is fairly certain that the number of cars will now increase faster than motorcycles, as many motorists are drawn from the ranks of the motorcyclists. In this country the motorcycle holds a very similar position to the Ford in America—because of its low upkeep costs. It is possible that the proportion of motor vehicles in use in Johannesburg may be brought to about one in twelve within the next year or so. At present about a hundred cars a month are needed for replacements alone.

Farmers Interest Active

On a smaller scale the position in Cape Town, Durban, Pretoria, Port Elizabeth and East London is the same. In the country districts the farmers are showing a desire to buy new cars, and those who are not motorists will give up their Cape Carts soon. The South African farmer is sold on the question of motor transport, and it is only a matter of the ready cash now. Motor trucks are selling well throughout the country, although the bad condition of the roads is retarding development in this direction.

Bus lines have been started in all the larger towns, and a number of the smaller ones, and some really good vehicles are being put on the road. Up to the present the American manufacturers have supplied nearly all the buses in use. It is probable that bus lines will be started in Johannesburg to compete with the municipal electric railway. Two small companies now operate eight buses in one district and are making the Johannesburg Tramway Department think a little.

The residents in the Southern suburbs now have the best street car service in S. A., as an endeavor is being made to kill the buses by running a large number of cars.

M. EDWARD.

MODEL ROAD EXHIBIT FOR NEW YORK SHOW

NEW YORK, Oct. 9—In the cause of good roads the United States Government will make a display in the New York Automobile Show in January. This will be an art exhibit in place of last year's exhibit of different styles of roads.

There will be a landscape background, printed most artistically, while the exhibit itself will consist of miniature models of trucks and other motor transportation, road building machinery, etc. There will be a model road laid and the whole exhibit will occupy a space 21 x 17 feet. The Government may have a motion picture display of road development.

N. A. C. C. GETS DRAFT OF ANTI-THEFT LAW

(*Continued from page* 36)

division of the Department of Commerce, with treasury officials in charge of customs.

Hundreds of thousands of dollars annually are lost to automobile owners by virtue of the fact that well organized "gangs" annually export stolen automobiles, with a large margin of safety insofar as their being caught by State or federal authorities. The stolen automobiles that are exported go largely to Cuba, Mexico and Canada.

Under the plan placed before treasury officials this traffic in stolen automobiles that are exported can be largely minimized. Briefly the plan provides for a registration of all automobiles shipped out of the country. This would be accomplished by the filling out of a blank by the exporter, showing the last owner of the automobile (if it is a used car), where registered last, the engine and chassis number and the place of destination.

Wilson Tractor Absorbed

CHICAGO, Oct. 9—The Wilson Tractor Manufacturing Co., Ottumwa, Iowa, has been absorbed in its entirety by the Austin-Western Road Machinery Co. of Chicago. The plant at Ottumwa will continue without change in the personnel, though officials at Chicago will appoint one in charge of the factory.

TRACTOR PROFITABLE, INVESTIGATION SHOWS

Eighty-Six Users in South So Report to Question Submitted by Government

WASHINGTON, Oct. 5—Is the tractor more serviceable, the year around, than horse-drawn power on the farm? This question, more or less a mooted one, has been made the subject of a study by the Department of Agriculture, who to-day announced their findings, based on a survey of southern farms. In announcing the results the department makes it clear that the survey covers conditions in the South and is not to be construed as applicable to the entire farming industry of the United States.

Eighty-six per cent of the farm owners interviewed stated that their tractors were proving profitable, in comparison to horse-drawn equipment. Ninety-six per cent of them declared that they intended to use them the following season, as did also 52 per cent of those who did not believe they were profitable.

The canvass, which was made in the spring of 1921, included 684 tractor owners in Alabama, Georgia, North and South Carolina and Tennessee, all of whom had bought their tractors new between March, 1918, and September, 1920.

Farmers' Bulletin Issued

In order that farmers may take advantage of the survey, the department has issued a Farmers' Bulletin No. 1278 entitled Tractors on Southern Farms, showing in detail the department's findings. The experience of present owners is summarized with reference to the advantages and disadvantages in their use; the sizes now used on farms of varying acreage and the sizes they believe would be the most suitable for their condition; estimates of the probable life of their tractors; cost of operation; the kind, quality and quantity of work, as well as other related information. The booklet is free on request.

Most of the tractors reported on were pulling either 2 or 3 plows. The average size farm was 684 acres. A similar census of 1920 showed the average size farm, using tractors, of about 75 acres.

$5,006,521 EARNED BY FORD OF CANADA

DETROIT, Oct. 7—The annual statement of the Ford Motor Co., Ltd., of Canada shows net earnings of $5,006,521 in the fiscal year ended July 31, equal to 7½ per cent on the $7,000,000 stock outstanding. Cash on hand July 31 was $6,147,715; investments totaled $3,971,184; plant inventory, $4,560,908; goods inventory, $9,806,276. During the year dividends totaling $2,100,000 were paid.

The company produced 45,000 cars and 1192 tractors as compared with 46,832 cars and 3063 tractors the preceding year.

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40,000 DURANTS MADE IN YEAR ENDED OCT. 1

Capacity Production at All Plants Assured for Next Fifteen Months

NEW YORK, Oct 9—Formal announcement is made by the Durant Motors that capacity production for the next 15 months is assured for all Durant plants, the production schedule calling for more than 300,000 cars.

Most of the production will be Stars, Carroll Downes, president of the Star Motors, Inc., stating that orders with deposits for 231,000 Stars for delivery within 15 months have been accepted. It is stated that orders for twice this number have been received.

As for the Durant, the parent organization claims that approximately 40,000 Durants, with a wholesale value of $36,500,000, were built and marketed during the year of operation ending Oct. 1. Six of the Durant plants are now in operation and the one at Elizabeth will be in production this month.

In a notice to stockholders Durant Motors states that it "enters its second year of production with a substantial cash surplus, an exceptionally small plant investment for the volume of business contracted, and an unusually good prospect for continued profit making."

FACTORIES PRODUCE MORE CLOSED MODELS

DETROIT, Oct. 6—Rickenbacker Motor Car Co. production in September will approximate 75 per cent closed cars, according to a factory statement. Indications are that October production will run 10 per cent higher in closed vehicles.

DETROIT, Oct. 6—Dodge Brothers will devote approximately 35 per cent of its production in the latter months of this year to closed car production. This compares with a closed car proportion last year of 13 per cent.

SYRACUSE, N. Y., Oct. 2—"Shipments of Franklin closed cars are now running 40 per cent ahead of open," says H. H. Franklin, president of the H. H. Franklin Manufacturing Co., "and on some closed types we are sold into December. Fifty-three per cent of our production for the year ending Sept. 1 was closed cars—the sedan taking the lead."

25 CARS, 150 TRUCKS WILL BE RE-IMPORTED

WASHINGTON, Oct. 5—As a result of a decision of the War Department the 2600 automobiles and trucks, used by the forces in Germany and later sold there, will not be re-imported to the United States, it was announced to-day.

This decision will settle definitely the differences between the War Department and the Department of Agriculture over the possession of the vehicles, formerly promised the Agricutural Department for use by the State Highway Commissions in connection with the Bureau of Public roads highway building program.

It was announced, however, that 150 trucks and 23 cars, unsold, would be turned over to the Department of Agriculture. Also the department will receive 1,000,000 pounds of motor vehicle replacement parts, 2,000,000 pounds of shop and machine tools, 7 tractors, 4 concrete mixers and 4 steam rollers—all of this equipment to be allocated to the State highway commissions through the Bureau of Public Roads.

MILWAUKEE DEALERS SEE FILMS OF A.E.A.

MILWAUKEE, Oct. 5—More than 300 automotive dealers from southern Wisconsin gathered at the Auditorium here to see the "Ask 'Em to Buy" and "Shop Profits" films of the Automotive Equipment Association and to hear the talks accompanying the showing of them. The meeting was actively promoted by Sam Fulton of the Fulton company, F. H. Suter of Shadbolt & Boyd Iron Co. and H. P. Mueller of Phillip Gross Hardware Co.

Suter welcomed the dealers on behalf of the jobbing members and Fulton made brief reference to the origin of the merchandising campaign.

B. W. Ruark, field secretary, presented the A. E. A. story as consisting of two phases, first, the turnover on merchandise, and second, the turnover on service. The meeting altogether was an enthusiastic rally which testifies to the growing interest of the merchandising work.

MICHIGAN PLANNING ROAD TOUR IN 1923

Pikes Association Lays Plans—Gilbreath Chosen President at Annual Meeting

DETROIT, Oct. 6—Michigan Pikes Association will hold its 1923 tour over a route having its eastern terminus at Ottawa, its northern point at Sault Ste. Marie, and includes on its Ontario leg London, Hamilton, Toronto, Peterboro, Prescott, Pembroke, North Bay, Sudbury, Blind River and Thessalen. In Michigan the cities touched will be Lansing, Ionia, Cadillac, Traverse City, Petoskey, Mackinaw City and St. Ignace.

In the trip the association will cover 1600 miles in a period of fourteen to sixteen days. The tour will be in July.

Officers elected at the annual meeting were Capt. W. S. Gilbreath, president; Willard K. Bush, secretary; Fred E. Shearer, treasurer, and Herman Lunden, John X. Ryan and G. T. Murphy, vice-presidents. W. D. Edenburn and D. C. Richardson were elected tour-manager and assistant tour-manager. John Ryan was named sergeant-at-arms, and William B. Mitchell and Alex L. Scott, pacemakers.

Directors for the ensuing year are W. S. Gilbreath, William E. Metzger, Willard K. Bush, D. C. Richardson, Horatio S. Earle, Harry H. Jackson, Fred E. Shearer, Fred S. Case and Elmer W. West. H. H. Jackson, the new director, is police inspector in charge of the traffic division of the Detroit department.

KETTERING PICTURES HIS IDEA OF WHAT AUTOMOBILE WILL BE FIVE YEARS HENCE

DAYTON, OHIO, Oct. 9—C. F. Kettering, president of the General Motors Research Corp., discussed before members of the Dayton section of the Society of Automotive Engineers at their meeting here the automobile as he sees it five years from now. He declared that it would be no more than one ton in weight, with better spring suspension, better adapted to fuel of varying qualities and adapted to changing traffic conditions.

"The car of the future," he said, "will bear tools plainly marked for their intended use. It will have an improved top that may or may not be lowered. It can be given a finish as good as new in an hour. It will have springs that will make it ride as well as the two ton car of to-day and it will handle even poorer fuel than is being sold now. This is all coming in the next five years."

The psychological element must enter largely into its construction, he added, as the public will not accept changes when they are in too marked departure from what is the custom.

Comparing an automobile of 14 years ago and the present model, he showed that they had the same fundamental parts and that the only improvement was through refinement of parts. This refinement will be carried much farther in the next five years, he predicted.

The question of lubrication, he said, is one of the most important of the unsolved mysteries of the engineering profession and one about which the least is known.

With the public demanding pre-war prices, he added, and with labor and materials still far above that scale, the economic problem of the present situation rests upon the engineer. Better training along economic lines must be given in engineering schools in order to meet the exigencies of the situation. He analyzed labor and material costs together with overhead to prove that the slice must come in a reduction of overhead. He declared that only through the engineer's understanding of the economic side of production can progress be made.

Kettering predicted the passing of the small town in a very few years and the rapid growth of the small city, with the great growth of improved highways throughout the country.

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MAKERS DRAW SPACE FOR NATIONAL SHOWS

Seventy-Six Members of N. A. C. C. Get Assignments—Seven Others to Exhibit

NEW YORK, Oct. 9—Seventy six members of the National Automobile Chamber of Commerce were assigned space in the New York and Chicago national shows at the meeting of the manufacturers last Thursday. In addition seven other car concerns not members of the chamber were given the remaining spaces. These non-members consisted of Courier, Stanley, Noma, Hatfield, Rotary Six, Crawford and Climber.

As the space has been awarded, there are 80 car makers in each of the shows. Detroit electric, Sayers and Climber will not show at New York, while Noma, Hatfield and Rotary Six will not be at Chicago. For the first time no foreign cars are booked for display.

The New York show will as usual be held in Grand Central Palace Jan. 6 to 13 while the Chicago show Jan. 27 to Feb. 3, will be held in the Coliseum and First Regiment Armory.

The following assignments of space were made:

New York Space	Car Name	Chicago Space
A-19	Buick	C-5
A-15	Studebaker	B-2
A-11	Dodge	D-1
A-20	Chevrolet	A-6
A-14	Willys-Overland	C-3
A-16	Cadillac	D-5
A-12	Nash	C-6
A-17	Hudson	D-3
A-13	Maxwell	D-2
A-26	Hupp	C-1
A-4	Packard	A-2
A-5	Durant	A-4
A-3	Paige	B-6
A-27	Olds	D-6
A-31	Franklin	B-4
A-22	Essex	D-4
A-30	Oakland	A-1
A-23	Reo	B-5
A-21	Chandler	C-2
A-32	Lincoln	B-3
A-7	Nordyke & Marmon	F-4
A-25	Haynes	C-4
A-10	Peerless	A-3
A-8	Jordan	K-1
A-6	Wills-Sainte Clair	E-2
A-2	Dort	A-5
A-24	Cleveland	F-3
A-9	Pierce-Arrow	F-1
A-1	Velie	F-5
A-29	Chalmers	E-4
A-18	Lexington	G-1
A-28	Gardner	H-1
B-27	Moon	B-1
B-26	Earl	G-2
B-28	Cole	H-2
B-29	Stephens	E-1
B-12	Auburn	J-1
B-25	Columbia	O-2
B-24	Stearns	P-1
B-8	Mitchell	O-1
B-30	Liberty	E-3
B-23	Kissel	F-2
B-2	Lafayette	B-1-Y
B-16	Westcott	Q-1
B-17	R & V	M-1
B-1	Locomobile	B-2-Y
B-3	Rickenbacker	B-8-Y
B-4	Stutz	M-2-Y
B-18	Case	B-2-Y
B-15	Apperson	K-4-Y
B-31	Elkhart	Q-2-Y
B-11	Elgin	N-1
B-14	Templar	B-3-Y
B-7	Davis	Q-3
B-10	National	A-1-Y
B-6	King	A-3-Y
B-9	Barley	B-4-Y
B-13	Handley	B-7-Y
B-22	Mercer	A-8-Y
B-21	H.C.S.	B-6-Y
B-20	McFarlan	A-6-Y
B-19	Standard Steel	D-5-Y
C-3	Anderson	A-5-Y
C-15	Saxon	E-1-Y
....	Detroit Elec.	E-5-Y
C-19	Dorris	C-1-Y
C-5	Paterson	C-4-Y
C-4	Pilot	A-7
C-6	Milburn	E-6
C-12	Rauch & Lang	E-4-Y
C-18	Premier	C-2-Y
....	Sayers	C-3-Y
C-16	Yellow Cab	C-6-Y
C-20	Kline	E-2-Y
C-21	Gray Motors	D-2
D-1 to 15	Star	D-1
C-14	Courier	E-3-Y
C-13	Stanley	E-2-Y
C-7	Noma	.....
C-22	Hatfield	.....
C-8	Rotary Six	.....
C-11	Crawford	C-5-Y
....	Climber	Q-4

Note: In Chicago letter X after space means Coliseum or Annex; letter Y means Armory. In New York Show the A spaces are on first floor, B spaces on second, C on third and D on fourth.

NEW SPORT MODELS PRODUCED BY DORT

DETROIT, Oct. 9—The Dort Motor Car Co. has added two new sport models, a phaeton and a roadster on its standard chassis. Each of these new cars lists at $1,105 f.o.b. factory. Bodies are finished in maroon with aluminum stripe. The cars are trimmed in genuine leather and the top and side curtains are of khaki.

The special equipment includes nickel plated drum type head lamps, cowl light, spot light and combination stop and tail light, and front bumpers. A MotoMeter with a key locking device is also standard. The windshield is fitted with side wings and wiper.

WESTCOTT DELIVERS NEW CLOSED MODEL

SPRINGFIELD, OHIO, Oct. 6—First deliveries were made during the past week from the plant of the Westcott Motor Car Co. of a new type of closed car, the four-passenger brougham.

The week brought a doubling in production at the plant, based on unusually large orders for fall delivery. The present outlook is that October will be the best month in the point of shipments that the company has experienced.

Driveaways are increasing, brought about both by the uncertainty of freight shipments and by good weather.

PARIS OPENS SHOW; LARGEST YET HELD

Four Cylinder Engines Dominate Exhibit—Four Wheel Brakes More in Use

PARIS, FRANCE, Oct. 6 (*by cable*)—The Seventeenth Paris Automobile Show opened here yesterday in the Grand Palais. It is the largest automobile show ever held in France, there being 1050 exhibitors. There are about a half dozen American exhibitors and three British companies are represented.

The pronounced tendencies in design are a decrease in engine size, higher rotative speeds and lighter reciprocating parts. The use of aluminum is quite general. Four-cylinder engines dominate the show. The Fiat is the only 12-cylinder model shown, and there are no new 8-cylinder jobs. Some gains have been made by 6-cylinder engines, but this is confined largely to engines of 122 cu. in. or less displacement. Four wheel brakes are being used more extensively than ever before. In most cases these brakes are regular equipment, but some manufacturers offer them as an option.

Character of Engines

Poppet valve engines dominate the field, although Pannard has continued the sleeve valve engine and has dropped all poppet valve models. Peugeot is preparing to market the special two stroke cycle, semi-Diesel engine for passenger car work. Up to the present this engine has been used only in trucks and for stationary work. Bignan has an engine with a valve gear which positively opens and closes the valves. The demand for fuel economy has resulted in considerable work on high speed engines of the overhead valve type with small piston displacement. Speeds of 3000 r.p.m. are quite common.

Only a few firms have abandoned American makes of battery ignition. However, Bosch, Marelli and other battery and generator systems show increased popularity. There is considerable use of the new Scintilla generator and magneto combined in one unit.

There is an interesting display of small two seated cars. These cars carry engines not exceeding 67 cu. in. displacement. Practically all of them are 4-cylinder water-cooled jobs.

New Rolls Royce Announced

Coincident with the opening of the show came the announcement of a new Rolls Royce, 20 H.P., 6-cylinder model. The cylinder dimensions are approximately 3 x 4½ in. The chassis is not on exhibition at the show. It is stated that the engine will be an overhead valve type with camshaft in the crankcase. Engine and gearset will be of the unit type. Battery ignition will be employed. semi-elliptic springs will be used front and rear. The chassis price in London will be about $5,500 at normal exchange.

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FLAT RATE SPREADS IN SAN FRANCISCO

Marmon and Buick Distributors Two Leaders in Movement—Changes in Business

SAN FRANCISCO, Oct. 7—Motor car dealers in San Francisco are adopting as rapidly as possible the flat rate system for repairs in co-operation with their factories. Butler-Veitch Co., Marmon distributor, and the Howard Automobile Co., Buick distributor, are two of the leaders in the movement to the flat rate. Nearly 300 operations are figured on their flat rate schedule.

Several business changes have been made among the dealers in this city during the past week or ten days. A retail truck department, with showrooms and repair station, has been opened by R. Jackson Jones, Western representative of the Traffic Motor Truck Co. of St. Louis. W. L. Wheeler has been named manager of the retail department.

James E. Power, tire and battery distributor and, incidentally, postmaster of San Francisco, is in the East combining business with pleasure, calling on Uncle Sam in Washington with respect to post-official business, and stopping at the Racine Rubber Co.'s offices in New York; the Cooper Battery Corp. in Cincinnati, and the Racine Tire factory, Racine, Wis. The Power Rubber Co. of this city recently was appointed distributor for the Cooper battery in this territory.

Roy C. McDowell, service manager of the Stephens Motor Co., was a San Francisco visitor late in September, making his headquarters with the W. J. Benson Co., northern California distributor of the Stephens. He is visiting every Stephens distributor in the country.

The Anderson-Smith Co., distributor of the Chevrolet, has just opened its fifth branch salesroom and service station in San Francisco.

TARIFF LAW PERMITS SEARCH FOR LIQUOR

NEW YORK, Oct. 7—Right to search without warrant and confiscate the vehicle if liquor is found is given in Part 5, Section 581 of the new tariff law, it is contended by those who have read the paragraph in question. This is in direct conflict with other laws which do not permit search and seizure of automobiles without warrant, and it is declared that this portion of the tariff law is unconstitutional; that a custom law cannot be enforced when it thus conflicts with the Volstead Act.

The tariff clause is intended to give officers of the customs or the coast guard the right to board vessels in search of liquor. It says that a duly authorized person can "at any time go on board of any vessel or vehicle and every part thereof, to examine the manifest and to inspect, search and examine the vessel or vehicle, and every part thereof, and any person, trunk, or package on board, and to this end to hail and stop such vessel or vehicle, if under way, and use all necessary force to compel compliance."

TRADE WARNED OIL SALESMAN IS FAKE

NEW YORK, Oct. 9—The Vacuum Oil Co. sounds a warning against the operations of a man calling on garage and automobile supply stores in various parts of the country offering special inducements in connection with the purchase of Gargoyle Mobiloil.

The man's plan is to state that he is a special representative from the New York office of the concern, or its advertising department, and to offer the product far below the lowest net price, and, in addition, he offers without charge a large electric sign or some other advertising scheme.

In each case a check for ten per cent advance of the amount of the purchase is demanded. This check, it is stated, is generally cashed in the town before he leaves it.

The descriptions so far furnished indicate that this fake representative is dark complexioned, weighs about 140 pounds, is rather short and probably of foreign extraction. He goes by the names of Bentz, Rentz, Berman and other aliases.

FORD IS TURNING OUT NEW FOUR-DOOR SEDAN

DETROIT, Oct. 9—The Ford Motor Co. is now in limited production of a four-door sedan which will sell at $725 f.o.b. factory. The model is more commodious than the two-door sedan and is designed to meet a particular demand that Ford dealers have been experiencing. The two-door sedan will be continued as the large production vehicle of this type.

Republic Tire Operates

YOUNGSTOWN, OHIO, Oct. 9—The tire department of the Republic Rubber Co., idle for two years, has begun production again on a part time basis. The company is in the hands of a receiver. The mechanical goods and inner tube departments here are working at capacity, while the tire department of the Canton plant is operating full time.

Receiver for Templar

CLEVELAND, OHIO, Oct. 9—The Templar Motors Co. is now being operated under a receiver appointed by Federal Judge D. C. Westenhaver on Saturday. E. L. Hausman of this city, formerly an assistant of M. F. Bramley, president of the Templar company, is the receiver under a $50,000 bond.

RADIO TO BROADCAST TALK ON CAR BUYING

N. A. D. A. Plans to Reach All Fans Through Converted Move on Oct. 12

ST. LOUIS, Oct. 7—A radio broadcast from more than 100 stations throughout the United States on the night of Oct. 12 will be used by the National Automobile Dealers Association to tell radio fans who are also motorists or prospective motorists "How to Buy an Automobile." As this is a subject that engages the attention of 2,000,000 or so persons in this country every year, it is expected that considerable popular interest will be created in the radio world that night.

This will be the first time in the history of radio that practically every broadcasting station of any importance will carry to its listeners the same message at the same time. The public will be told in this talk just what the automobile industry is doing to make the ownership and operation of a motor car more pleasant and profitable, and what the factors are that should be borne most strongly in mind in determining the purchase of a new automobile.

Particular stress is laid in the address upon the importance of buying the right kind of car from the right kind of dealer. Especial attention is called to the intimate relation between dealer and owner in the matter of the proper maintenance of a vehicle and advising the public to consider carefully the time in which the dealer has been in business, his financial strength and his reputation for honesty and fair dealing with his customers and fellow dealers.

The address, which will be given by the broadcasting stations, was prepared by W. J. Brace of Kansas City, president of the N. A. D. A. and one of the oldest and most successful automobile distributors in the United States. Copies of this address were sent to more than 100 leading dealers in 100 cities after they had obtained permission from the broadcasting station for its use.

It is estimated that several hundred thousand persons, perhaps more than a million, will be reached by this method with the message at the same time.

CANADIAN CUSTOMS DISCRIMINATION OFF

WASHINGTON, Oct. 9—Because a touring motorist is connected with the automobile industry is no reason why he should be denied the privileges granted persons not so affiliated, is the decision of the Canadian customs officials as reported to the Department of Commerce by Consul General Foster at Ottawa. Foster writes the department that the provision of the Canadian regulations that persons connected with the automobile business shall be denied the privilege of temporary free importation of automobiles has been repealed.

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CHANGES IN THE TRADE

G. M. Anderson is now sales manager of the **McMillan Motor Car Co.**, Cincinnati.

Chesley C. Noland Co. of Guilford, Mo., have signed a contract to handle the Dort line in that city.

Eugene E. Shepard has been appointed sales manager for the **Western Massachusetts Cadillac Co.**, Springfield, Mass.

Clucker & Hickson have taken the Eastern distribution for Perfection silent timing gears made by the Perfection Gear Co., Chicago.

W. L. McCutcheon has been appointed retail sales manager for Chandler and Cleveland, distributed by **Herbert Bros.**, Philadelphia.

E. L. Bernard is new service manager of Willys-Overland, Inc., Toledo, succeeding **T. W. Skelding**, who has joined the retail sales force.

Harry Holden has succeeded **Roland P. Prickett** as accessory dealer in Holyoke, Mass. Prickett has opened an accessories store in Springfield.

C. S. Bash has been appointed Pittsburgh district supervisor of **Maxwell Motor Corp.**, and **A. N. Abend** has been named a factory representative there.

Nash-Newark, Inc., has taken over the business of the Nash-Newark Co., Nash dealer at Newark, N. J. W. G. Toland is head of the new company.

Gardner Motor Co. has appointed the **Gale Sales Co.**, Columbus, as central Ohio representative for the Gardner. **Gard Gale** is president of the new concern.

Wallis Baird, Galesburg, Ill., has been named distributor in Knox and Warren counties for the new Star. He also handles the Chandler and Cleveland lines, too.

William Schroeder has bought an interest in **Hailey Bros.'** garage in Springfield, Mass., and the concern has been incorporated under the name of the Oak Grove Garage.

J. H. Falk has been appointed district supervisor of the Maxwell Motor Corp. in Cleveland, succeeding **J. L. Justice**, who was transferred recently to San Francisco.

M. J. Dwyer, formerly with the Evans & Snyder Motor Sales, Wellsboro, Pa., and the Willys-Overland plant, Toledo, has joined the **S. Y. Brigham Motor Sales Co.**, Toledo.

Samuel Vance, Jr., has been appointed sales manager for both the wholesale and the retail departments of the **S. R. Blocksom Co.**, distributor of Stutz cars, Philadelphia.

Russell R. Cooper, formerly a real estate dealer, has purchased control of the Lovine-Haynes Motor Sales Co., Columbus, and will take over the sale of Haynes cars in central Ohio.

Aragona Auto Exchange of West New York, N. J., and **Thomas B. Golden** of Pottsville, Pa., have been appointed distributors for Traffic truck in their respective territories.

Kanouse Automobile Co. has been appointed Indiana distributor for the H. C. S., which for several years was handled by the Charles Stutz Sales Co., which is now the Indiana distributor for the Jordan.

White Co., manufacturer of motor trucks, will open a factory branch in Chattanooga in the near future. **Howard O. Goss**, formerly with this company at Nashville, Tenn., will have charge of the new branch.

Edward Berger, formerly of the Hampden Garage, Holyoke, Mass., has organized the Holyoke Velie Co. at the old Cabot Garage in that city, where a sales and service establishment for the Velie will be maintained.

Frederick G. Benn, former branch manager for the Willys-Overland Co., in Springfield, Mass., has been appointed manager of the wholesale division of **John S. Harrington, Inc.**, Hudson and Essex dealer, that city.

Rickenbacker-Philadelphia Co. will take over the sales representation of Winton cars in the Philadelphia territory. This move is in line with the policy of the Winton management in replacing its factory branches with dealerships.

Jirah D. Cole, recently field secretary of the Automotive Equipment Association and previously division manager of the Pyrene Manufacturing Co., has been engaged by the **General Automotive Corp.** as supervisor of merchandising.

T. E. Larsen has been appointed sales manager for both Paige and Jewett cars for the **Guy A. Willey Motor Co.**, Philadelphia. He was previously connected with the **Maxwell-Chalmers Sales Corp.** and was manager of the used car department for **Herbert Bros.**

John L. Brown, who has been associated with the Traffic Motor Truck Corp. for the past two and a half years, in the eastern wholesale territory, has been appointed retail sales manager of the **Traffic Truck Sales Co.** of Philadelphia, the local branch of the factory.

Western Automobile Co., Omaha, has changed its name to **Storz-Western Auto Supply Co.** to avoid confusion due to the similarity of names of other concerns doing business in the same territory. There has been no change in the personnel of the company.

E. L. Armstrong, until recently with the Lincoln agency in Columbus, has been appointed service manager of the **Jordan-Columbus Co.**, central Ohio distributor for the Jordan. Prior to coming to Columbus he was connected with the Cadillac factory at Detroit for 12 years.

Hustis & Hagar will handle the Hupmobile in New Rochelle, Pelham, Mamaroneck and Rye, N. Y. **Edward H. Corts**, former manager of the Hudson branch in New Rochelle and recentlyy identified with the Hupmobile company in New York, will manage the business in New Rochelle.

Lee H. Smith, formerly in charge of appointing of service stations and the sale of equipment to the regular trade in the Cleveland district for the **Briggs & Stratton Co.**, has been made assistant to H. V. Rohm, sales manager. From now on Smith will make his headquarters at the Milwaukee office.

W. W. Surrell, who has been the assistant sales manager of the **Jordan Motor Car Co.** for five years, has left the company to take charge of the wholesale department of **Peterson Motors, Inc.**, Philadelphia, and **Peterson Motors, Inc.**, Baltimore, distributor of Jordan motor cars. His headquarters will be in Philadelphia.

Lifesey Smith Hill Co., Atlanta; **Miller Motor Car Co.**, Dallas; **Colorado Motor Sales Co.**, Denver; **A. P. Sullivan & Co.**, Houston; **Robbinson Motor Co.**, Jacksonville, Fla.; **Harold Johnson**, Louisville; **Greenville Peerless Co.**, Greenville, S. C., and **Ledoux Jannings, Ltd.**, Montreal, Can., are among new distributors added since the new line of Peerless models was placed on the market.

Teetor Manufacturing Co., Indianapolis, manufacturer of piston rings, has changed its name to the **General Piston Ring Co.** Its product will be known as the General piston ring. The change is in name only, the ownership, management and business policy remaining as heretofore. Action was taken for the reason that there is another Teetor ring on the market, manufactured by the Indiana Piston Ring Co., Hagerstown, Ind., a company constituted of members of the same family but a few years longer in the field.

Dort Motor Car Co. has appointed the following new distributors: **Christenson-Davis Motor Car Co.**, San Francisco; **Charleston Rickenbacker Co.**, Charleston, W. Va.; **Chattanooga Auto Co.**, Chattanooga, Tenn.; **Logan Auto Co.**, Fresno, Cal., for the San Joaquin Valley; **Charles A. Day Motor Co.**, Mobile, Ala., for southern Alabama. Other recent additions to the Dort organization include **Perkins Sales Co.**, Utica, N. Y.; **C. R. Miller**, Jackson, Mich.; **Dort Sales & Service Co.**, Lansing, Mich.; **J. Wendell Green**, Pontiac, Mich.; **Waddles Garage**, Kalamazoo, Mich.; **Charles F. Henning**, Mount Vernon, N. Y., and **M. L. Shue**, Peterstown, W. Va.

J. G. Roberts, president of the Philadelphia Nash Motor Co., distributor of Nash cars and trucks and La Fayette cars in Philadelphia, and his associates, have purchased the minority interests of the company from **W. V. Faunce**, with Roberts in control. The company now is owned by **H. F. Stevens**, vice-president; **Clark D. Moody**, secretary and treasurer, and himself. The company is breaking ground for a new sales and office building at Broad and Thompson streets, which will give the building 75 feet on Broad Street and 160 feet on Thompson Street, running through to the next street in the rear. The building will be five stories high and devoted to offices and sales rooms.

COMMERCIAL CREDIT SEEKS CONTINENTAL

NEW YORK, Oct. 6—Stockholders of the Continental Guaranty Corp. of New York have been asked to vote favorably on the offer of the Commercial Credit Co. of Baltimore, which seeks to purchase the entire capital stock of the New York concern, or failing in this, to take over not less than two-thirds of it.

Both these corporations have been prominent in the handling of automobile credits, the New York company numbering John N. Willys and J. D. Dort among its directors. If the deal goes through the Commercial Credit Co. and its affiliations will have aggregate resources of about $55,000,000 and the combined annual volume of business will total in the neighborhood of $135,000,000. The cash capital will be $9,000,000.

The Continental Guaranty has financed sales of motor vehicles to the aggregate value of $265,000,000. Organized in 1916, of late it has branched into other fields than automobile finance.

Daniels Joins Buick

FLINT, Oct. 9—H. S. Daniels has resigned as advertising manager of the Dort Motor Car Co. to become a member of the advertising staff of the Buick Motor Co. He will do special publicity work.

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ASSOCIATION ACTIVITIES

Stage Used Car Show

CINCINNATI, Oct. 9—The Bureau of Sales Managers of the Cincinnati Automobile Dealers' Association is staging its first annual used-car show, that is in reality a sale, in a tent on a local playground. The sale is backed by twenty automobile dealers, members of the association, each of whom is allowed to have not more than five cars at a time on exhibit and sale. An average of about 15 sales a day has been maintained since the opening of the show a week ago. The association members say that the purpose of the exhibit, besides being to help them move used cars before the arrival of winter, is to prove to the public what worthy merchandise in the way of used cars may be obtained when offered by a representative organization.

Cleveland To Close Sunday

CLEVELAND, Oct. 5—Commencing Oct. 8, Sunday closing will be observed by dealers affiliated with the Cleveland Automobile Manufacturers and Dealers Association, which is responsible for the policy. Twenty concerns have agreed to observe the rule and others are expected to follow the lead.

Akron's First Closed Car Show

AKRON, Oct. 7—Akron's first closed car show will be held the week of Oct. 16 at the Akron Armory, under the auspices of the Akron Motor Vehicle Association. It will also be the Rubber City's first fall automobile style exhibit, but will not conflict with the city's annual automobile show usually given each January.

Closed cars exclusively will be exhibited, over twenty Akron dealers having secured floor space for the exhibit of more than forty of the newest models of closed cars of all makes.

Dealers are staging the show to emphasize, they say, their conviction that the open car is being replaced gradually by the closed car. Sales of cars have been heavier in Akron this year than ever before in the city's history, the trend being very distinct in favor of the closed car, both new and used.

Battle Creek Joins State Body

DETROIT, Oct. 5—Battle Creek Automobile Dealers Association has voted to join the Michigan Automotive Trade Association in a body, inasmuch as only members of the latter association can participate in the winter show to be held under the auspices of the State body.

The Battle Creek association will hold a closed car exhibit in the individual show rooms of members Oct. 23 to 28. It was first planned to hold a collective show, but lack of a suitable sized building caused this to be abandoned in favor of the individual plan. President H. E. Loomis has arranged for a parade of decorated closed cars on the night of Oct. 25, at which the best decorated car will receive a prize donated by the dealer organization.

Truck Men Organize

FORT WORTH, Oct. 10—Truck owners, operators and dealers operating in the Texas oil fields want the laws as affecting the motor trucks interpreted uniformly.

Looking to that end, a temporary organization has already been effected here and another meeting set for the near future to make the organization permanent.

Under present conditions, so the truck men claim, so many varying constructions are placed on the same law that the operators are in a quandary all the time. A campaign seeking revision of conflicting or ambiguous statutes will be conducted by the organization.

Springfield To Hold Show

SPRINGFIELD, MASS., Oct. 6—At the annual meeting of the Springfield Automotive Dealers Association it was voted to have the annual show Feb. 26 to March 3, probably at a building of the Eastern States Exposition. Final decision respecting a closed car show was deferred until the question of a suitable show place could be investigated. Tentative plans call for a three-days' exhibition the last of this month. New officers of the association are: President, John S. Harrington; vice-president, J. Walter Norcross; secretary, Harry W. Stacy; treasurer, A. E. Reopell. Committee on the annual show consists of George G. Byrnes, chairman; R. M. Sauers and Charles W. Culver. It was decided to engage quarters for a permanent office of the association, with full-time secretary.

Prize for Slogan

NEW YORK CITY, Oct. 9—The Electric Motor Truck Association is offering a prize of $1,000 for advertising slogans which will describe electric truck service in city hauling. No slogan may be more than ten words and the applicability of each slogan to the electric must be shown. Prize money is to be distributed in 43 different prizes.

The New Car and Truck Description Index

Giving the date and page number on which they appeared

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Calendar of Trade Events

CONVENTIONS

Santa Barbara.....Oct. 16-17
Annual Convention of the California Automobile Trade Association.

Atlantic City.....Oct. 16-17
Motor Accessory Convention and Show incident to the Annual Meeting of the Hardware Association, Ambassador Hotel.

Chicago .....Oct. 18-19-20
National Association of Farm Equipment Manufacturers.

Washington .....Oct. 26-28
Second Annual Conference for the Study of Highway Transportation and Highway Engineering Problems under the auspices of the Highway Education Board.

Chicago .....Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

Toledo.....Dec. 6-8
Annual Convention of the Ohio Automotive Trades Association.

SHOWS

Dallas.....Oct. 6-16
Texas State Fair.

New York City.....Oct. 7-14
Annual Electrical and Industrial Exposition, Grand Central Palace.

St. Paul .....Oct. 11-14
Annual Closed Car Show, Municipal Auditorium, under the auspices of the Automobile Dealers Association.

Pittsburgh .....Oct. 14-21
Twenty-fifth Annual Automobile Show, Motor Square Garden, under the auspices of the Automotive Association, Inc., John J. Bell, manager.

Akron.....Oct. 16-21
First Closed Car Show, Armory, under the auspices of the Akron Motor Vehicle Association.

Detroit .....Oct. 17-21
Closed Car Salon, General Motors Building, Detroit Automobile Dealers Association, H. H. Shuart, Manager.

Washington, D. C.....Oct. 21-28
Annual Closed Car Salon held under auspices of the Washington Automobile Trade Association, Convention Hall.

Houston.....Nov. 8-18
South Texas Fair.

Jersey City.....Nov. 11-18
Third Annual Show, Fourth Regiment armory, under the auspices of the Hudson County Automobile Trade Association.

Chicago .....Nov. 13-18
Annual Show of Automotive Equipment Association.

Los Angeles.....Nov. 11-19
Automobile Show, Motor Car Dealers Association, Burt Roberts, manager.

Cincinnati .....Nov. 22-29
Second Annual Automobile Accessory and Radio Exposition, Music Hall, under the auspices of the Cincinnati Automotive Trade Association.

New York.....Dec. 3-9
Eighteenth Annual Automobile Salon, Commodore Hotel.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, auspices of the Automobile Body Builders Association.

Cleveland.....Jan. 20-27
Annual Automobile Show, New Public Auditorium, under the Auspices of the Cleveland Automobile Manufacturers and Dealers Association, Herbert Buckman, Manager.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Chicago .....Jan. 27-Feb. 3
Annual Automobile Salon, Drake Hotel.

Ann Arbor, Mich.....Jan. 29-Feb. 3

Minneapolis .....Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Lansing, Mich.....Feb. 5-10

Kalamazoo and Flint, Mich.....Feb. 12-17

Grand Rapids and Mt. Clemens, Mich. Feb. 19-24

Brooklyn, N. Y.....Feb. 24-Mar. 3
Annual Automobile Show under auspices of the Brooklyn Motor Vehicle Dealers Association, 23rd Regiment Armory.

Muskegon, Mich.....Feb. 26-March 3

Syracuse.....Feb. 26-Mar. 3
Annual Automobile Show under auspices of the Syracuse Automobile Dealers Association.

Springfield, Mass.....Feb. 26-March 3
Annual Automobile Show under the auspices of the Springfield Automotive Dealers Association.

Bay City, Mich.....March 5-10

Newark, N. J.....Mar. 10-17
Annual Automobile Show under the auspices of the New Jersey Automobile Exhibition Co., Claude E. Holgate, manager.

Port Huron, Mich.....March 12-17

Battle Creek, Mich.....March 19-24

Alpena, Mich.....April 2-7

CLOSED CAR WEEK

Chicago.....Oct. 14-22

Battle Creek, Mich.....Oct. 23-28

RACES

Los Angeles.....Nov. 30

San Diego.....January

GERMANY INSTRUCTED BY N. A. C. C. BOOKLET

NEW YORK, Oct. 10—"If one had been more concerned about the United States and known more about its gigantic power, it is possible that things would have been different from what they are now," says Dr. R. Allmers of the Hansa-Lloyd Werke, Bremen, Germany, in his preface to the translation which he has made of "Facts and Figures of the Automobile Industry—1921," the statistical review of the year, published annually by the National Automobile Chamber of Commerce.

Dr. Allmers points out that the development of motor transportation has had a significant part in America's development and suggests that a stimulation of the industry there would help his country to economic recovery.

Gardner's Foreign Offices

ST. LOUIS, Oct. 9—Gardner Motors Co. announces the rounding out of its export organization by the following appointments: Consolidated Motors, Ltd., Winnipeg, Canada; National Auto Import Co., Mexico City, Mexico; Robertson & Malcolm, Ltd., London, Eng.; Sociedad Hispano American Gastonoyge, Madrid, Spain; Rudolph Schmidt, Copenhagen, Denmark; W. H. Carpenter, Sydney, Australia; John Burns, Ltd., Christ Church, New Zealand.

GILL BATTERY FORMS COMPANY IN OAKLAND

SAN FRANCISCO, Oct. 7—The Gill Storage Battery Co., with factory and general offices at San Bernardino, Cal., has awarded the rights to manufacture and distribute the battery in the Pacific Coast territory to a newly formed corporation, the Gill Battery Co. of California.

The new company, which is capitalized at $1,000,000, will erect a new modern factory at Oakland, Cal., the plant to be in operation probably in the early part of 1923. The original company will continue to operate from San Bernardino and handle its business in states outside of the limits outlined for the coast corporation, which include California, Oregon, Washington, Nevada, Utah, Idaho, Arizona, Hawaiian Islands and Mexico.

WANTS STATE TO RULE ALL MOTOR TRANSPORT

CHICAGO, Oct. 7—A plea for state regulations of automobile freight and passenger transportation in order to prevent encroachment upon the business of the railroads was made by John N. Glenn, manager of the Illinois Manufacturers Association, in an address recently at Aurora, Ill. He said:

So much business has been diverted from the railroads to automobiles, coupled with the inability of the public highways to meet the demands, that it is imperative that this control be assumed. Railroads, even with gasoline propelled engines, can not meet truck competition, because they pay enormous prices for original purchase and maintenance of right of ways while the commonwealths maintain the truck highways.

Illinois is spending $60,000,000 for new highways, which are being destroyed as fast as they are built by the heavy traffic.

Begin Work on Flint Motors

DETROIT, Oct. 6—The first unit of the new Flint Motor Car Co., organized by W. C. Durant is now under way and should be enclosed according to contract by July 1, 1923.

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾-1	$1650a	3¾x5	34x5n	34x5n	W
Acason RB	1½	1950	3¾x5½	36x3½	36x6	W
Acason H	2½	2750	4½x5¾	36x4k	36x8k	W
Acason L	3½	3450	4¾x5¾	36x5k	36x10k	W
Acason M	5	4350	5 x6¼	36x6	40x12	W
Ace C	1½	2295	3¾x5½	34x3½k	34x5k	W
Ace A	2½	2795	4¼x5½	36x4k	36x7	W
Acme 20	1	....	3¾x5	35x5n	35x5n	W
Acme 30	1½	....	3¾x5	34x3½	34x5	W
Acme 40	2	....	3¾x5	34x3½	34x5	W
Acme 60	3	....	4½x5½	36x4	36x7	W
Acme 60L	3	....	4½x5½	36x4	36x7k	W
Acme 90	4½	....	4½x5½	36x5	40x10	W
Acme 125	6½	....	4¾x6	36x6	40x12	W
American 25	2½	3350	4 x6	36x4k	36x4dk	W
American 40	4	4275	4½x6	36x5k	36x5dk	W
American 50	5	4500	4½x6	36x5	36x12	W
Armleder 20	1	....	3¾x5¼	34x3½k	34x6k	W
Armleder 21	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder 40-B	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder 40-C	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder HW-B	2½	....	4¼x5½	36x4k	38x7k	W
Armleder HW-C	2½	....	4½x5¼	36x4k	36x7k	W
Armleder KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder KW-C	3½	....	4½x5½	36x5k	36x5dk	W
*Atlas 22	1	1495	3¾x5½	34x4½n	34x4½n	W
Atlas 44	1½-2	....	3¾ 5½	36x6n	36x6n	W
*Atlas 44	1½-2	1950	3¾x5⅛	36x6n	36x6n	W
Atterbury 22R	1½	2475	3¾x5	34x3½	34x5	W
Atterbury 22C	2½	3375	4½x5¼	36x4	36x4d	W
Atterbury 22C	2½	3375	4½x5¼	36x4	36x4d	W
Atterbury 22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury 22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury 8E	5	4975	4¾x6	36x5	40x6d	W
Atterbury 8E	5	5125	4¾x6	36x5	40x6	W
Autocar 21UF	1½-2	1950	4¾x4½t	34x4k	34x5k	D
Autocar 21UG	1½-2	2050	4¾x4½t	34x4k	34x5k	D
Autocar 27H	2	2950	4 x5½	34x5	36x7	D
Autocar 27K2	2	3075	4 x5½	34x5	36x7k	D
Autocar 26Y	5	3950	4¼x5½	34x6	36x12	D
Autocar 26-B	5	4100	4¼x5½	34x6	36x12	D
Available H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available H2	2	2775	4 x5	36x3½k	36x6k	W
Available H2½	2½	3160	4 x5	36x4k	36x8k	W
Available H3½	3½	4175	4½x5½	36x5	40x5d	W
Available H5	5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x4a	34x5n	34x5n	I
Beck A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	I
Beck B-30	1½	1350	3¾x5	34x5	36x6	
Beck C-40	2	1550	3¾x5	36x6	36x6	
Beck D-50	2½	1950	4¼x5¼	38x7	40x8	
Bell M (Iowa)	1	1495	3½x5½	35x5	35x5n	W
Bell E (Iowa)	1½	2100	3¾x5¼	34x3½	34x5	I
Bell O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Besseemer G	1	....	3½x5	35x5n	35x5n	I
Besseemer H-2	1½	....	3¾x5	36x3½	36x5	I
Besseemer J-2	2½	....	4½x5¼	36x4	36x4d	I
Besseemer K-2	4	....	4½x5¼	36x5	36x10	I
Bethlehem KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem GN	2	1795	4 x5¼	34x4½k	34x6k	I
Bethlehem HN	3	2495	4 x5¼	36x4k	36x8k	I
Bridgeport A	1½	....	3¾x5½	34x3½	34x6	W
Bridgeport B	2½	....	4½x5½	36x4	36x4d	W
Bridgeport C	3½	....	4½x6	36x5	36x10	W
Brinton C	2	2500	3¾x5	34x4	34x5	W
Brinton D	3	2975	4½x5¼	36x4	36x7	W
Brockway E	1	....	4 x5	33x5n	33x5n	B
Brockway S-S	1½	....	4 x5	36x4	36x6	W
Brockway SK	1½	....	4½x5¼	36x4	36x6	W
Brockway KR	2½	....	4½x5½	36x4	36x8	W
Brockway K-S	2½	....	4½x5¼	36x4	36x8	W
Brockway RT	3½	....	4¾x6	36x5	36x10	W
Brockway R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway T-4	5	....	4¾x6	36x6	40x6d	W
*Buick	½	945b	3⅝x4¾	31x4n	31x4n	B
Case	2	....	4¼x5¾	36x6	38x7	I
*Chevrolet	¼	510b	3 x4	30x3½n	30x3½n	B
*Chevrolet G	¾	650	3 x4	34x4n	34x4½n	B
*Chevrolet T	1	1095	3 x5½	33x4n	35x5n	W
Chicago C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago C3½	3½	....	4½x5½	36x5	36x10	W
Chicago D5	5	....	4½x5½	36x6	40x12	W
Clydesdale 10	¾-1½	1485	3¾x5	34x5n	34x5n	B
Clydesdale 18	¾-1½	1890	3¾x5	34x5	34x5	W
Clydesdale 20	1-1½	2385	3¾x5	34x5	34x5k	W
Clydesdale 42	1½-2	2475	3¾x5	36x3½	36x6	W
Clydesdale 65X	2½-3	3250	4½x5¼	36x4	36x8	W
Clydesdale 65EX	2½-3	3450	4½x5½	36x4	36x8	W
Clydesdale 90	3½-4½	4100	4½x5½	36x5	36x10	W
Clydesdale 120	5-6	4500	4¾x6	36x6	40x12	W
Comet T	1½	1950	3¾x5	34x4	34x4	W
Commerce 9	¾-1½	1150	3¾x5	32x4½n	32x4½n	B
Commerce T	¾-1½	1450	3¾x5	34x4½n	34x4½n	B
Commerce 12	1½	1695	3¾x5	34x3½	34x4	I
Commerce 12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce 16	2	1995	3¾x5	34x4	34x6	I
Commerce 16	2	2150	3¾x5	35x5n	36x6n	I
Commerce 18	2½	2150	4½x5¼	36x4	36x7	I
Commerce 18	2½	2495	4½x5¼	36x4	36x7	W
Commerce 25	2½	2425	4½x5¼	36x4	36x7	W
Commerce 25	2½	2770	4½x5¼	36x6	40x8n	W
Cook 361	2½	3600	4 x5⅛	36x6n	40x8n	W
Corbitt E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt D-22	1½	2200	3¾x5	34x3½	34x5	W
Corbitt C-22	2	2800	4½x5¼	36x3½	36x7	W
Corbitt B-22	2½	3000	4½x5¼	36x4	36x7	W
Corbitt R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt A-22	3½-4	3800	4½x5½	36x5	36x10	W
Corbitt AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn E	1	1600	3¾x5½	35x5n	35x5n	W
Dearborn FX	1½	2300	3¾x5⅛	34x4	34x5	W
Dearborn F	1½	2180	3¾x5⅛	34x4	34x5	W
Dearborn 48	2	2590	3¾x5½	34x4½n	34x7	W
Defiance G	1	1525a	3¾x5	35x5n	35x5n	B
Defiance D	1½	1845a	3¾x5	35x5n	36x6n	I
Defiance E	2	2075a	3¾x5	35x5n	38x7n	I
Denby 31	1¼	1485	3¾x5	35x5n	35x5n	B
Denby 33	1½	2145	3¾x5	35x5n	38x7n	I
Denby 35	2½-3	2795	4¼x5¼	36x4	36x7	I
Denby 27	4	3895	4½x5½	36x5	36x5d	I
Denby 210	5	4295	4½x5½	36x6	40x6d	I
Dependable A	¾-1	1650	3⅝x5⅛	34x5n	36x6n	W
Dependable C	2	2350	3¼x5¼	34x3½	34x5	W
Dependable D	2½	2650	4 x5½	34x5	36x6	W
Dependable E	3	2950	4½x5½	36x4	36x7	W
Diamond T O-3	1-1¼	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T U	2-2½	2650	4 x5¼	36x4	36x7	W
Diamond T K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T S	5	4500	4¾x6	36x6	40x6d	W
*Dodge Brothers	¾	730	3½x4¼	32x4n	32x4n	B
Derris K-2	1	2490	4 x5½	33x5n	33x5n	B
Derris K-4	2-2½	3400	4¼x5½	36x4	36x7	W
Derris K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort 103	½	685a	3½x5	34x4n	34x4n	B
Double Drive B	3	4000	4¼x5½	6	6	W
Duplex A	2	2775	4 x5¼	35x5n	38x7n	W
Duplex E	3½	3500	4¼x5½	36x8	36x8	I
Duty 22	2	1590	3½x5	34x3½	34x5	I
Eagle 101	1½	1875	3⅝x5½	34x5	34x5	I
Eagle 100-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D. B	3	4200	4¾x5½	36x6	36x6	B
Fageol 1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol 2½	2½	3900	4¼x5¾	34x4	36x7	W
Fageol 3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol 5	5	5700	4½x6¼	36x6	40x6d	W
Fargo R	2	1700	3¾x5	36x4	36x6	I
*Federal 1½	1½	1375	3¾x5	—x5n	—x5n	
Federal SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal TE	1½	2175	4¼x5¼	36x3½	36x5	W
Federal UE	2-2½	2425	4¼x5¼	36x4	36x7	W
Federal WE	3½-4	3150	4½x5½	36x5	36x5d	W
Federal X2	5-6	4500	4¾x6	36x6	40x6d	W
*Ford TT	1	430	3¾x4	30x3½n	32x4½n	W
Front Drive C	1½	2800	3¾x5½	5	4	W
G & J** 28	1	2275	3⅝x5½	34x5n	34x5n	W
G & J** A	2-2½	3375	4 x5¼	36x4	36x7	W
G & J** B	3½-4	4475	4½x5½	36x5	36x10	W
G.M.C. K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C. K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K-41T	5†	2450	4 x5½	36x4	36x8	W
G.M.C. K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C. K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C. K-71T	10†	3700	4½x6	36x5	40x12	W
G.M.C. K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C. K-101T	15†	4050	4½x6	26x5	40x14	W
G.M.C. K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W.	1½	1850	3¾x5½	35x5	35x5	I
*Garford 15	1	1590	3⅝x5½	34x5n	34x5n	W
Garford 25-B	1½	1990	3¾x5½	36x3½	36x5	W
Garford 70-H	2½	2750	4¼x5½	36x4	36x8	W
Garford 77-D	4	3750	4½x6	36x5	36x5d	W
Garford 68-D	5	$4500	5 x6½	36x6	40x6d	W
Garford 150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary F	1-1½	1775	3¾x5	36x3½	36x5	W
Gary I	2	2450	4 x5½	36x3½	36x6	W
Gary J	2½	2850	4¼x5½	36x4	36x8	W
Gary K	3½	3790	4½x6	36x5	40x5d	W
Gary M	5	4450	5 x6½	36x6	40x6d	W
Gersix M	1½	3100	4 x5½	36x3½	36x7	W
Gersix K	2½	3500	4½x5½	36x4	36x8	W
Gersix	3½	4500	4½x6	36x5	40x12	W
Graham Bros.	1	1265	37⅝x4½	33x4½n	34x5n	B
Graham Bros.	1½	1325	37⅝x4½	33x4½n	36x6n	B
1Gramm-Pion. 10	1	1245	3½x5	33x5n	33x5n	B
1Gramm-Pion. 15	1½	1750a	3¾x5	36x3½k	36x5k	I
1Gramm-Pion. 65	1½	2250a	3¾x5	36x3½k	36x5	W
1Gramm-Pion. 20	2	2475a	4½x5¼	36x4k	36x7k	W
1Gramm-Pion. 30	3	3300a	4¼x5½	36x4k	36x4dk	W
1Gramm-Pion. 75P	3½	4225a	4½x5½	36x6n	42x9n	W
1Gramm-Pion. 40	4	3850a	4½x5½	36x5	36x5dk	W
1Gramm-Pion. 50	5-6	4450a	4¾x6	36x6	40x6dk	W
Hall 1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall 2½	2½	3275	4½x5¼	36x4	36x6	W
Hall 3½	3½	4100	4½x5½	36x5	36x5d	W
Hall 5	5	5100	4½x5½	36x5	40x6d	W
Hall 7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey W OA	2	2650	4¼x5½	34x4	34x7	W
Harvey WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey W HA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye O	1	1375	3⅝x5¼	34x5n	34x5n	
Hawkeye K	1½	1645	3¾x5½	34x3½k	34x5k	I
Hawkeye M	2	2145	4¼x5	36x4k	36x6k	I
Hawkeye N	3½	3700	4½x6¾	36x5k	36x10k	I
Hendrickson O	1½	2200	3⅝x5⅛	36x4n	36x5n	W
Hendrickson N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson M	3½	3000	4¼x5	36x5k	36x5dk	W
Hendrickson K	5	4000	5 x6¼	36x6	40x6	W
Huffman B	1½-2	1795	3¾x5	34x3½	34x6	W
Huffman C	1½-2	1695	3¾x5½	36x3½	36x6	I
Huffman D	2-3	2895	4¼x5½	36x4	36x7	
Hurlburt A-A	1-1½	1950	3¾x5	34x5n	34x5n	W
Hurlburt B-B	2-2½	2800	4¼x5½	36x4	36x4d	W
Hurlburt C-C	3-3½	3475	4¼x5½	36x5	36x5d	W
Hurlburt D-D	4-4½	4150	4½x6	3ux5	36x6d	W
Hurlburt E-E	6-6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa) B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa) G	1½	2040	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.) HI	2½	2940	4½x5¼	36x4	36x7	I
Indiana 12	1½-2	....	3¾x5¼	34x3½k	34x5k	W
Indiana 20	2	....	4½x5½	36x4k	36x7k	W
Indiana 25	2½-3	....	4½x5½	36x4k	36x8k	W
Indiana 35	3½-4	....	4¾x5½	36x5k	36x5dk	W
Indiana 51	5-7	....	5 x6¼	36x5k	40x6dk	W
*International S	1	1250	3½x5	34x5n	34x5n	I
International 21	1	1550	3½x5¼	36x3½	36x3½	I
International 31	1½	1650	3½x5¼	36x3½	36x4	I
International 41	2	2100	3½x5¼	36x3½	36x5	I
International 61	3	2400	4¼x5	36x4	36x6	I
International 101	5	3600	4¼x5	36x5	40x10	I
Jackson 4WD	3½	3850	4½x5½	36x7	36x7	B
K-Z 1	1	1750	3½x5	34x3½	34x5	W
K-Z 1½	1½	2075	3¾x5	36x4	36x6	W
K-Z 2½	2½	2550	4½x5¾	36x4	36x8	W
K-Z 3½	3½	3350	4½x5½	36x5	40x10	W
K-Z 5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo LG	2	2615	4 x5	36x4	36x7	W
Kalamazoo NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo SK	4	3845	4¼x6	36x5	36x12	W
Kalamazoo OK	5	4350	4½x6	36x6	40x6d	W
2Kelly-S. K-31	1½	2700	3¾x5¼	36x3½	36x6	C
2Kelly-S. K-34	1½	2700	3¾x5¼	36x3½	36x6	W
2Kelly-S. K-38	2½	2900	3¾x5¼	36x4	36x4d	W
2Kelly-S. K-35	2½	2900	3¾x5¼	36x4	36x4d	C
2Kelly-S. K-40	3½	3900	4½x6½	36x5	40x5d	C
2Kelly-S. K-41	3½	3900	4½x6½	36x5	36x10	I
2Kelly-S. K-42	3½	3900	4½x6½	36x5	40x5d	W
2Kelly-S. K-50	5	4400	4½x6½	36x6	40x6d	C
2Kelly-S. K-60	6	4600	4½x6½	36x6	40x7d	C
2Kelly-S. K-61	5-7	4800	4½x6½	36x6	36x7d	I
Kimball AB	2	3675	4 x6	36x4	36x7	W
Kimball AC	2½	3975	4¼x6	36x4	36x8	W
Kimball AK	3	4500	4½x6	36x4	36x10	W
Kimball AE	4	5000	4¾x6	36x5	40x12	W
Kimball AF	5	5500	5 x6	36x6	40x7d	W
*Kissel Express	1	1585	37⅝x5½	34x5n	34x5n	W
Kissel Utility	1½	1975	37⅝x5½	36x3½	36x6	W
Kissel Freighter	2½	2875	4¼x5½	36x4	36x8	W
Kissel H. D.	4	5675	4¼x5½	36x5	36x12	W
Kleiber AA	1	2200	4½x5¾	34x3½k	34x5k	W
Kleiber A	1½	3100	4½x5¾	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. •—express truck or delivery wagon. **—Canadian Make. trac.—tractor. †Capacity with semi-trailer.

1—Gramm-Pioneer. 2—Kelly-Springfield.

Passenger Car Specifications on page 50

The following price changes have been announced since the above tables were compiled: Commerce Speed Truck, $1,250; *Gary, 1-1½-ton* $1,775, *2-ton* $2,450, *2½-ton* $2,850, *3½-ton* $3,790, *5-ton* $4,450.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5½	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....	1½	2150	3½x5	34x3½	31x5	W
Koehler.....M	2½	3175	4 x5½	36x4	36x7	W
Koehler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Koehler.....F	3½	4170	4½x5½	36x5	36x10	W
Koehler,MT. Trac	5	3275	4 x5½	36x4	36x7	W
Krebs.....	¾	1260	3¾x5	34x4½	34x4½	B
Krebs.....24	1	1585	3¾x5	34x5	34x5	W
Krebs.....	1½	2125	4½x5½	36x4	36x7	W
Krebs.....75	2½	2375	4½x5½	36x4	36x8	W
Krebs..... 110	3½	2975	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1925	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2100	3½x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3½x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½-3½	3150	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	30x5.1	W
Larrabee.....W	5-7	4800	4½x6	30x6	40x6d	W
Maccar.....L	1½	....	4½x5½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	30x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4½x6	36x5	40x6d	W
MacDonald.....A	7½	5750	5½x6	40x7	40x14	]
Mack...AB D.R.	1½	3450	4 x5	36x4	36x3½d	D
Mack...AB Chain	1½	3000	4 x5	36x4	36x3½d	C
Mack...AB Chain	2	3300	4 x5	36x4	36x4d	C
Mack....AB D.R.	2	3750	4 x5	36x4	36x4d	D
Mack....AB D.R	2½	3850	4 x5	36x4	36x4d	D
Mack...AB Chain	2½	3100	4 x5	36x4	36x4d	C
Mack...AC Chain	3½	4950	5 x6	36x5	40x5d	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4 x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	30x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Maplesleaf.....**	1½	3000	3¾x5½	34x5n	36x6n	W
Maplesleaf.....AA**	2	3600	4 x5½	36x4	36x7	W
Maplesleaf.....BB**	3	4050	4½x5½	30x4	36x4d	W
Maplesleaf.....CC**	4	4800	4½x5½	30x5	36x5d	W
Maplesleaf.....DD**	5	5625	4½x5½	30x6	40x6d	W
Master.....JW	1½	2290	4½x5½	34x3½	31x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x5	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4½x5½	34x4	36x7	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	30x5	40x5d	W
Master.....E	3½	4290	4½x6	30x6	40x5d	D
Master.....Y	4	4190	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	30x6	40x6d	W
Master.....F	5	5090	4¾x6½	30x6	40x6d	D
MasterTrac.,DDT	6	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3½x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1½	2000	3¾x5	34x3½	30x5	W
Menominee....H	1½	2475	4 x5	36x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	30x5	36x10	W
Menominee....J-3	5	4250	4¾x6	36x6	40x12	W
Meline.....10	1½	1985	3½x5	34x5n	36x6n	]
*Mereland...R. R.	1	1595	4 x5	34x5n	34x5n	B
Mereland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Mereland.....EX	2	2800	4½x5½	36x4	36x7k	W
Mereland.....AX	3	3500	4½x5½	36x5	36x10k	W
Mereland.....RX	4½-5	4600	4¾x6	30x6	40x6	W
Nash.....2018	1-1½	1595	3½x5½	34x3k	34x4k	]
Nash.....3018	2-2½	2150	3½x5½	34x4k	34x7k	]
Nash.....Quad.	2-2½	2750	4½x5½	36x5k	36x5k	]
Nash. 3018, LWB	2-2½	2200	3½x5½	34x4k	34x7k	]
Nash.Quad. LWB	2-2½	2800	4½x5½	36x5k	36x5k	]
Nash.....5018	2½	2250	3½x5½	34x4k	34x7k	]
*Nelson.....G2	1½	....	4½x5½	30x3½	36x6	W
*Nelson.....G3	2½	....	4½x5½	30x4	36x7	W
*Nelson.....G4	3½	....	4½x5½	30x5	30x5.1	W
*Nelson.....G5	5	....	4¾x6	30x6	40x6d	W
Netco.....DK	2	3100	4½x5½	36x4k	30x7k	W
Netco.....HL	2	3500	4½x5½	36x4k	30x8k	W
Niles.....E	2	3000	4½x5½	36x4k	36x7k	W
Noble.....A21	1½	1840	3½x5½	34x5	34x5	W
Noble.....B31	1½-2	2480	3½x5½	36x4	36x7	W
Noble.....DS1	2½-3	2950	4½x5½	36x4	36x8	W
Noble.....E71	3½-5	3800	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3½x5½	36x3½	30x5	W
Noble.....C40	2	....	4 x5½	36x4	30x7	W
Noble.....D50	2½	....	4½x5½	36x4	30x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4½x5½	34x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....2SE	1	1595	3½x5	34x3½	34x4	W
Norwalk.....3SE	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,3SE-Spec	1½	2285	3¾x5½	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	36x3½	36x5	W
Ogden.....E	2½	....	4½x5½	36x4	36x8	W
Old Hickory...W	1	$1775	3¾x5	36x3½k	30x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	30x6	W
Old Reliable....B	2½	3500	4½x6	34x4	36x4d	W
Old Reliable....C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6½	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5½	35x5n	35x5n	]
Olympic.....A	2½	3200	4½x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5½	36x3½	36x7	
Oneida.....C9	2½	3200	4 x5½	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	2485	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	2585	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3485	4 x5½	36x4	38x7n	B
Oshkosh.....BB	2½	3585	4 x5½	38x7n	38x7n	B
*Overland.....4	½	450	3½x4	30x3½n	30x3½n	B
Packard.....EC	2-3	3100	4⅞x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4⅞x5½	36x6n	40x8n	W
Packard.....ED	3½-4½	4100	4½x5½	30x5	36x5d	W
Packard.....EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5½	34x3½	34x5	W
Paige.....54-20	2½	2420	4½x5½	34x4	34x8	W
Paige.....51-18	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5½	34x5n	34x5n	W
Parker.....G-22	2½	3200	4½x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot....Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot....Lincoln	2	2050	4 x5½	34x3½	31x5	W
Patriot .Washgt'n	3	2900	4½x5½	30x4	30x7	W
Pierce-Arrow.....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow.....	3½	4350	4½x6½	36x5	36x5d	W
Pierce-Arrow.....	5	4850	4½x6½	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3¾x5	36x4	36x6	..
Pittsburgher.....	3	3900	4½x5½	36x5k	30x8	W
Power.....F	2	3150	4 x5½	36x5	30x7	W
Power.....C	3½	....	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier.....R-21	¾	....	4½x5	15x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	31x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	31x3½	31x5	W
Rainier.....R-28	2	....	4½x5½	34x4	34x6	W
Rainier.....R-20	2½-3	....	4½x5½	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	30x6	40x6d	W
Ranger...TK-20-2	1½	2450	3½x5	36x6n	38x7n	W
*Reo.....F	¾-1½	1245	4½x4½	31x4½n	31x4½n	B
Reliance.....10A	1½	2400	4 x5½	30x3½	30x5	]
Reliance.....20B	2½	3100	4½x5½	36x4	36x4d	]
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	]
Republic...10 Exp	1	1695	3¾x5	34x5n	34x5n	]
Republic.....11X	1½	1795	3¾x5	31x4	31x6	]
Republic.....19	2½	2195	4½x5½	36x4	36x7	]
Republic.....20	3½	3095	4½x5½	36x5	36x10	]
Rowe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rowe....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rowe....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rowe....G.P.W.	3	5250	4½x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4½x6	36x5	36x6d	W
Rowe.....F. W.	5	5500	4½x6	30x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4-3¼x4	32x4n	32x4n	B
Samson.....25	1½	....	4-3¼x5½	35x5n	35x5n	B
Sanford....W-15	1½-2	2150b	3¾x5	36x3½k	36x5k	..
Sanford.....25	2½-3½	....	4½x5½	36x4	36x4d	W
Sanford.....35	3½-5	....	4½x5½	36x5	36x5.1	W
Sanford.....50	5-7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4½x5½	36x4	36x7	W
Schacht....3-Ton	3	3800	4½x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4100	4½x6	30x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5½	34x3½	34x7	W
Schwartz.....L	3	3600	4½x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½-2½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½-2½	3350	4½x5½	34x5n	38x7n	W
Selden.....50	2½-3½	3250	4½x5½	30x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4¾x6	36x6	40x12	W
Seneca.....M	1½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3½x4½n	32x4½n	32x4½n	B
*Service.....15	1¼	....	3¾x5	34x4½n	35x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4½x5½	34x4	36x7n	W
Service.....52	3	....	4½x5½	36x4	36x8	W
Service.....72	3½	....	4½x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	$1450	3½x5	34x5n	34x5n	W
Signal.....H	1½	1950	4½x5½	34x4	36x6	W
Signal.....J	2½	2375	4½x5½	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x5d	W
Signal.....R	5	3900	4¾x6	36x6	40x6d	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	31x5k	W
Standard.....76	2½-3	2400	4½x5½	36x4k	36x7k	W
Standard.....66	3½-5	3150	4½x5½	30x5	36x10	W
Standard.....S-K	5-7	4400	4¾x6	36x6	40x12	W
*Star.....	½	610b	3½x4½	30x3½n	30x3½n	B
Sterling.....1½	1½	2885	4 x5½	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5½	36x4k	36x6k	W
Sterling.....2½	2½	3290	4¾x5½	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6½	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6½	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6½	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6½	36x6	40x7d	C
*Stewart...Utility	¼-1½	1245	3¾x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3¾x5⅛	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3¾x5	34x3½	34x5	I
Stewart.....7	2-2½	2190	4⅛x5½	34x4	34x6	I
Stewart.....7-X	2½-3	2390	4½x5½	31x4	34x8	I
Stewart.....10	3½-4	3190	4½x5½	36x5	36x5d	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x5d	I
*Stewart.....	1¼	1245	4-3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1240	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3¾x5½	34x5n	34x5n	W
Stoughton.....B	1½	2150	3¾x5½	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	30x4	36x7	W
Stoughton.....F	3	3150	4½x5½	36x5d	36x5d	W
Sullivan.....F	2	2800	4½x5½	30x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	30x5	36x5d	W
*Thomart.....	1¼	1795	4 x5¼	34x5	34x5	(
Tiffin.....GW	1½	2100	4½x5½	30x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5½	30x4	30x3½d	W
Tiffin.....PW	3½	3600a	4½x5½	30x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	30x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	40x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4½x5½	30x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....	1½	2000	4½x5½	35x5n	38x7n	W
Tower.....H	2½	2475	4½x5½	36x4	36x7	W
Tower.....G	3½	3175	4½x5½	36x5	36x5d	W
Traffic.....	1½	1505a	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1505a	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3¾x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5½	34x3½k	34x4k	I
Transport.....35	2	1835a	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5½	36x4k	36x8k	I
Transport.....60	3½	2585	4½x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Trayler.....	1½	2390	3¾x5½	34x3½	34x5	W
Trayler.....C	2-2½	2850	4 x5½	36x4	36x7	W
Trayler.....D	3-3½	3300	4½x5½	30x4	36x8k	W
Trayler.....F	5-6	4700	4½x6	30x6	40x6d	W
*Triangle.....AA	1	1285	3¼x5	34x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3¾x5½	31x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5½	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5½	36x4k	36x7k	I
Twin City...B.W.	2	2750	4 x5½	36x6	40x8	I
Twin City...AW.	3½	3950	4½x6	36x5	40x5d	W
*Twin City.....B	3½	....	5½x6	36x6	36x6	I
*Twin City.....A	5	....	5½x6	36x7	36x7	I
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Veteran.....M**	1½	2699	3¾x5½	35x5n	35x5n	W
Veteran.....P**	2	3699	4½x5½	36x4	36x7	W
Veteran.....R**	3	4200	4½x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	1½	1050	3½x4½	31x4n	31x4n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson La Moon. 5—Twin City Four Wheel Drive.

The following price changes have been announced since the above tables were compiled: Krebs, ¾-ton $1,360, 1-ton, $1,675, 1½-ton $2,275, 2½-ton $2,550, 3½-ton $3,175.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Vim	30	$1175	3⅛x4½	32x4½	32x4½	W
*Vim	50	995	4 x5	32x4n	32x4n	B
Vim	31	1975	3¾x5⅛	35x5n	35x5n	W
Vim	22	3150	3¾x5⅛	36x4	36x6	W
Vim	23	3950	4¼x5½	36x5	36x5d	W
Walker-JohnsonA	2	2500	3¾x5	34x3½	34x6	W
Walker-JohnsonB	3	3000	4¼x5½	36x4	36x8	W
Walter	M	2½	3850	4½x5¾	36x4	36x8
Walter	S	5	4850	4½x6¼	36x6	40x6d
*Watson	C	1	1465a	3⅝x5⅛	35x5n	35x5n
Watson	N	3½	4250	4½x5½	36x5	36x10
Western	W1½	1½	2550	4½x5¼	36x3½k	36x5k
Western	L1½	1½	2550	3¾x5	36x3½k	36x5k
Western	W2½	2½	3250	4½x5¼	36x4	36x7
Western	L2½	2½	3250	4¼x6	36x4	36x7
Western	W3½	3½	4250	4½x6	36x5	40x5d
*White	15	¾	2400	3¾x5½	34x5n	34x5n
White	20	2	$3250	3¾x5⅛	36x4k	36x7k
White	40	3½	4200	3¾x5¾	36x5	40x5d
White	45	5	4500	4¼x5¾	36x6	40x6d
White Hick	E	1	1225	3¾x5	34x5n	34x5n
White Hick	H	1½	1375	3¾x5	36x3½	36x5
White Hick	K	2½	1675	4⅛x5¼	36x4	36x5
Wichita	K	2	1875	3¾x5¼	36x3½	36x4k
Wichita	M	1	2400	3¾x5¼	36x3½k	36x6k
Wichita	RX	3	3200	4⅜x5¾	36x4k	36x8k
Wichita	O	4	$3500	4½x6¼	36x5k	36x5k
Wilcox	AA	1	1900	3¾x5½	36x4k	36x4k
Wilcox	BB	1½	2550	4¼x5¾	36x6	40x6d
Wilcox	D	2½	3000	4¼x5	36x4k	36x3½dk
Wilcox	E	3½	3950	4½x6	36x5k	36x5dk
Wilcox	F	5	4350	4¾x6½	36x5	40x6d
Wilson	F	1½	2270	3¾x5	36x3½	36x5
Wilson	EA	2½	2825	4⅛x5¼	36x4	36x7
Wilson	G	3½	3685	4½x5½	36x5	36x5
Wilson	H	5	4520	4¾x6	36x6	40x6
*Wisconsin	A	1	1750	3¾x5	34x5n	34x5n
Wisconsin	B	1½	2100	3¾x5	35x5	36x6
Wisconsin	C	2½	2700	4 x5¾	36x6n	36x7
Wisconsin	D	3½	3000	4¾x5¾	36x6n	40x8
Wisconsin	E	5	3500	4½x6¼	36x6	36x10
Wisconsin	F	7	4000	5 x6¼	36x6	36x12
Witt-Will	N	1½	2450	3¾x5	36x3½k	36x6k
Witt-Will	P	2½	2900	4½x5¼	36x4k	36x8k

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Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm.	15-25	1185	4	Midw.	4-4½x5¼	Gas.	3
Allis-Chalm.	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm.	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork ..2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T.	15-30	1900	4	Clim.	4-5 x6½	G,K	4
Aultman-T.	22-45	2800	4	Own	4-5½x8	G,K	6
Aultman-T.	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Automot. B-3	12-24	1250	4	Herc.	4-4 x5½	Gas.	2-3
Avery,SR.Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery ..Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-10	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4½x6	G,K,D	3-4
‡Avery.....	....	....	*	Own	4-4x5½	G,K,D	3
Avery.....	12-25	....	4	Own	2-6½x7	G,K,D	3-4
Avery.....	14-28	....	4	Own	4-4⅝	G,K,D	3-4
Avery.....	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7¾x8	G,K,D	8-10
Bates Mule..H	15-25	....	4	Midw	4-4½x5¼	Gas.	3
Bates Mule..F	18-25	....	*2	Midw	4-4½x5¼	Gas.	3
‡Bates MuleG	25-35	....	*2	Midw	4-4½x6	Gas.	..
Bear.....	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman...G	2-4	240	4	Own	1-3½x4½	Gas.	....
Best.....	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best.....	60	....	*2	Own	4-6½x8½	G,K,D	8-9
¶Belens	....	....	4	B & S.	1-2½x2½	G.	..
Bering.....	5-10	395	4	LeR.	4-3½x4½	G	..
Bering...1321	.....	1850	3	Wauk	4-4¾x5¼	GorK	2
**Bryan.....	15-30	....	4	Own	2-4 x5	K.	3
Capital.....	15-30	1000	2	Own	4-4¾x6	Gas.	3
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	3
Case.....	12-20	.....	.....	.....	4-4½x5	.....	2
Case.....	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case.....	22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case.....	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T35	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar .5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur	5-2½	315	2	N Way	2-4½x4½	GorK	1
Cletrac.....F	9-16	595	*2	Own	4-3½x4½	G,K,D	2
Cletrac.....W	12-20	1315	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Dill.....D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dill.....R.W.	20	2980	4	Midw.	4-4½x6	Gas.	3
Do-It-All....A	3-6	495	..	Own	1-4½x5	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B.....AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol.....D	9-18	1525	4	Lyc.	4-3½x5	Gas.	2
Farm Horse.B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Farquhar....	15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar.....	18-25	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar.....	25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch..4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	$ 395	4	Own	4-4x5	G.K	2
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt,..A	18-36	2150	4	Wauk.	4-4¾x6¾	G or K	4
Gray.....	20-36	1975	3	Wauk.	4-4½x8¼	Gas.	4
Gray.....	22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. Western St	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr..20	20	815	4	Own	2-5¼x6½	K,D.	2
Hart-Parr..30	30	1065	4	Own	2-6½x7	K,D.	3
‡Hart-Parr....	....	1695	4	Own	6½x7	K.D.	..
Heider.....D	9-16	870	4	Wauk	4-4¼x5½	G,K	2
Heider.....C	12-20	628	4	Wauk	4-4½x6¾	G,K	3
Heider...Cult	5-10	725	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4.	12-25	985	4	Wauk	4-4½x5¼	G or K	3
Huber Super 4	15-30	1885	4	Midw	4-4½x6	Gas	3
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International .	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5¼x8	G,K,D	4
¶Kinkade....	1½	190	1	Own	1-3 x3	Gas.	....
La Crosse.....	12-24	985	2	Own	2-6 x7	G,K	3
Lauson..... 5	12-25	1295	4	Midw.	4-4½x5¼	Gas.	3
Lauson.....21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lauson Road	15-30	2000	4	Beav.	4-4¾x6	K	..
Leader.....B	12-18	685	4	Own	2-6 x6½	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn.....H4J	40-	4500	*	Cont.	4-4½x5½	Gas	4
Linn.....W	60	5000	*	Wauk	4-5 x6½	Gas	6
Little Giant, B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant, A	26-35	3300	4	Own	1-5½x6	K	6
Lombard.1922	35-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2⅝x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Med.D	22-44	2650	4	Own	4-6 x7	G or K	5-6
MinnelleavyD	35-70	3850	4	Own	4-7½x9	G or K	8-9
Mohawk .1922	8-16	650	2	Light	4-3½x4½	K or G	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch..	9-18	....	2	Own	4-3½x5	Gas.	2-3
‡Menarch....	20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Motor Macult,	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	375	4	Own	2-3¾x4	Gas.	1
Nichols-Shep.	20-42	2650	4	Own	8 x10	G or K	3-6
Nichols Shep.	25-50	3000	4	Own	9 x12	G or K	4-7
Nichols-Shep.	35-70	3650	4	Own	-10½x14	G or K	8-10
Nilson Senior..	20-40	1975	5	Wauk	4-5 x6¼	G,K	4
Oil Pull.....K	12-20	....	4	Own	2-6 x8	K,D	3
Oil Pull.....H	16-30	....	4	Own	2-7 x8½	K,D	4
Oil Pull.....G	20-40	....	4	Own	2-8 x10	K,D	5-6
Oil Pull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar ..K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Pioneer.....G	18-36	1750	4	Own	4-5½x6	G,K,D	4
Pioneer.....C	40-75	3550	4	Own	4-7 x8	Gas.	10
Plowman....A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable.....	10-20	390	4	Own	2-6 x7	Ker.	2
Russell.....	12-21	1500	4	Own	4-4¼x5¾	G or K	2-3
Russell.....	15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson....M	.....	445	4	Own	4-4 x5½	G,K	2
Sandusky,...J	10-20	1250	4	Own	4-4½x5½	G,K,D	2
Sandusky...E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
¶Shelby.....	1	150	3	B & S	1-2½x2½	G	..
Shelby.....D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby.....C	9-18	....	4	Wauk	4-3¾x5¼	G or K	2
Toro Cultivator	6	750	3	LeR	4-3½x4½	Gas.	2
Toro Tractor'22	6-10	495	3	LeR	4-3½x4½	Gas.	2
Townsend....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend....	25-50	2500	2	Own	4-8½x10	Ker.	4-8
Traction Motor	40-50	....	4	....	8-3½x5	Gas.	4-5
Trayler....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trendaar....10	25-40	3750	*2	Wauk	4-5 x6¼	G or K	4
Twin City....	12-20	1200	4	Own	4-4½x6	G,K	3
Twin City....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City....	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle Sam C20	12-20	1195	4	Weid.	4-4 x5½	G	2-3
Uncle Sam B19	20-30	1985	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam D21	20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utiliter....501	2½-4	295	4	Own	1-3½x4½	G	1
Utiliter...501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	....	4	Own	4-4½x5¾	G,K	3
Waterloo....N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore21-22	12-25	1185	4	Wauk	4-4 x5¾	G,K	3
Whitney....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin...E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin...F	20-40	2050	4	Wauk	4-5 x6½	G or K	4
Wisconsin...H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba....12-20	12-20	2400	*2	Wisc.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4¼x6	G,K,D	..
Yuba....20-35	20-35	3900	*2	Wisc.	4-5¼x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba.....	25-40	4750	*2	Yuba	4-5¼x7	D	..

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont.—Continental. Dom.—Domas Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor. ¶Garden Tractor. **Steam Tractor

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5½	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....D	1½	2150	3½x5	34x3½	34x5	W
Koehler.....M	2½	3175	4 x5⅛	36x4	36x7	W
Koehler.....MCS	2½	3275	4 x5⅛	36x4	36x7	W
Koehler.....F	3½	4170	4½x5½	36x5	36x10	W
Koehler,MT. Trac	5	3275	4 x5⅛	36x4	36x7	W
Krebs.....	¾	1260	3¼x5	34x4½	34x4½	B
Krebs.....	1	1565	3½x5	34x5	34x5	W
Krebs.....	1½	2125	4½x5½	36x4	36x7	W
Krebs.....	2½	2375	4½x5½	36x4	36x8	W
Krebs.....	3½	2975	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1925	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2100	3¾x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½-3½	3150	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	36x5.1	W
Larrabee.....W	5-7	4800	4½x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5.1	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	11x6	10x7	40x14	I
Mack...AB D.R.	1½	3450	4 x5	36x4	36x3½	D
Mack...AB Chain	1½	3000	4 x5	36x4	36x3½	C
Mack...AB Chain	2	3300	4 x5	36x4	36x4d	C
Mack.....AB D.R.	2	3750	4 x5	36x4	36x4d	D
Mack.....AB D.R	2½	3850	4 x5	36x4	36x4d	D
Mack...AB Chain	2½	3100	4 x5	36x4	36x4d	C
Mack...AC Chain	3½	4950	5 x6	36x5	40x5d	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4 x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Maplelaef.....**	1½	3000	3¾x5½	34x5n	36x6n	W
Maplelaef...AA**	2	3600	4 x5½	36x4	36x7	W
Maplelaef...BB**	3	4050	4½x5½	36x4	36x4d	W
Maplelaef...CC**	4	4800	4½x5½	36x5	36x5d	W
Maplelaef...DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x5	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4½x5½	34x4	36x7	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x5d	W
Master.....E	3½	4200	4½x6	36x5	40x5d	D
Master.....Y	4	4190	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5000	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3¾x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1½	2000	3½x5	31x3½	36x5	W
Menominee....H	1½	2475	4 x5	30x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3400	4½x6	36x5	36x10	W
Menominee....J-3	5	4250	4¾x6	36x6	40x12	W
Moline.....10	1½	1985	3½x5	34x5n	36x6n	I
*Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	30x3½	36x6k	W
Moreland.....EX	2	2800	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-5	4600	4¾x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3¾x5½	34x3k	34x4k	I
Nash.....3018	2-2½	2150	3¾x5½	34x4k	34x7k	I
Nash.....Quad.	2-2½	2750	4½x5½	36x5k	36x5k	I
Nash..3018, LWB	2-2½	2200	3¾x5¾	34x4k	34x7k	I
Nash Quad. LWB	2-2½	2800	4½x5½	36x5k	36x5k	I
Nash.....5018	2½	2250	3¾x5½	34x4k	34x7k	I
*Nelson.....G2	1½	....	4½x5½	36x3½	36x6	W
*Nelson.....G3	2½	....	4½x5½	36x4	36x7	W
*Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
*Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5½	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5½	36x4k	36x7k	W
Noble.....A21	1½	1840	3½x5½	34x5	34x5	W
Noble.....B31	1½-2	2480	3½x5½	36x4	36x7	W
Noble.....D51	2½-3	2950	4½x5½	36x4	36x8	W
Noble.....E71	3½-5	3800	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3¾x5½	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4½x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern...W	1½	2700	4½x5½	34x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....2SE	1	1595	3½x5	34x3½	34x4	W
Norwalk.....3SE	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,3SE Spec	1½	2285	3¾x5½	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¼x5	36x3½	36x5	W
Ogden.....E	2½	....	4½x5½	36x4	36x8	W
Old Hickory...W	1	$1775	3¾x5	36x3½k	30x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4½x6	34x4	36x4d	W
Old Reliable....C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6½	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5½	35x5n	35x5n	I
Olympic.....A	2½	3200	4½x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5½	36x3½	36x7	
Oneida.....C9	2½	3200	4 x5½	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	2485	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	2585	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3485	4 x5⅛	38x7n	38x7n	B
Oshkosh.....BB	2½	3585	4 x5⅛	38x7n	38x7n	B
*Overland.....4	½	450	3¾x4	30x3½n	30x3½n	B
Packard.....EC	2-3	3100	4¼x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4¼x5½	36x6n	40x8n	W
Packard.....ED	3½-4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5½	34x3½	34x5	W
Paige.....54-20	2½	2420	4½x5½	34x4	34x8	W
Paige.....51-18	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot...Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot...Lincoln	2	2050	4 x5½	34x3½	31x5	W
Patriot .Washgt'n	3	2900	4½x5½	36x4	36x7	W
Pierce-Arrow....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow....	3½	4350	4½x6½	36x5	36x5d	W
Pierce-Arrow....	5	4850	4½x6½	36x5	40x6d	W
Pittsburgher.....F	1½-2	3000	3¾x5	36x4	36x6	
Pittsburgher.....	3	3800	4½x5½	36x5k	30x8	W
Power.....F	2	3150	4 x5½	36x5	30x7	W
Power.....C	3½	....	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier.....R-21	¾	....	4½x5	15x5n	35x5n	W
Rainier.....R-29	1	....	4¼x5	31x3½	34x4	W
Rainier.....R-26	1½	....	4¼x5	31x3½	31x5	W
Rainier.....R-28	2	....	4½x5½	34x4	31x6	W
Rainier.....R-20	2½-3	....	4½x5½	34x4	31x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	36x6	40x6d	W
Ranger...TK-28-2	1½	2450	3¾x5	36x6n	33x7n	W
*Ree.....F	3/4-1	1245	4¼x4½	31x4½n	31x4½n	B
Reliance.....10A	1½	2100	4 x5½	30x3½	36x5	I
Reliance.....28B	2½	3100	4½x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic...10 Exp	1	1695	3¾x5	34x5n	34x5n	I
Republic.....11X	1½	1795	3¾x5	31x4	31x6	I
Republic.....19	2½	2195	4½x5½	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rowe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rowe....C.D.W.	2	3300	4 x5	31x4	36x3½	W
Rowe....G.S.W.	3	4150	4 x6	34x5d	36x5d	W
Rowe....G.P.W.	3	5250	4½x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4¼x6	36x5	36x6d	W
Rowe.....F. W.	5	5500	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	31x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4-3½x4	32x4n	32x4n	B
Samson.....25	1¼	....	4-3½x5½	35x5n	35x5n	B
Sanford.....W-15	1½-2	2150b	3¾x5	36x3½k	36x5k	
Sanford.....25	2½-3½	....	4½x5½	36x4	36x4d	W
Sanford.....35	3½-5	....	4½x5½	36x5	36x5.1	W
Sanford.....50	5-7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4½x5½	36x4	36x7	W
Schacht....3-Ton	3	3800	4½x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4100	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5½	34x3½	34x7	W
Schwartz.....L	3	3600	4½x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½-2½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½-2½	3350	4¼x5½	34x5n	38x7n	W
Selden.....50	2½-3½	3250	4½x5½	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4¾x6	36x6	40x12	W
Seneca.....M	1½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3½x4½	32x4½n	32x4½n	B
*Service.....15	1¼	....	3¾x5	34x4½n	35x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4½x5½	36x4	36x7	W
Service.....52	3	....	4½x5½	36x4	36x8	W
Service.....72	3½	....	4½x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	$1450	3¾x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5½	34x4	36x6	W
Signal.....J	2½	2375	4½x5½	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x8d	W
Signal.....R	5	3900	4¾x6	36x6	40x6d	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5½	36x4k	36x7k	W
Standard.....66	3½-5	3150	4½x5½	30x5	36x10	W
Standard.....5-K	5-7	4400	4¾x6	36x6	40x12	W
*Star.....	½	610b	3½x3½	30x3½n	30x3½n	B
Sterling.....1½	1½	2885	4 x5½	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5½	36x4k	36x6k	W
Sterling.....2½	2½	3290	4⅜x5½	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6½	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6½	36x6	40x6d	W
Sterling.....7½	7½	6000	5 x6½	36x6	40x7d	C
*Stewart...Utility	¼-1½	1245	3¾x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3½x5⅛	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3¾x5	34x3½	34x5	I
Stewart.....7	2-2½	2190	4½x5½	34x4	34x6	I
Stewart.....7-X	2½-3	2390	4½x5½	31x4	34x8	I
Stewart.....10	3½-4	3190	4½x5½	36x5	36x5d	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x5d	I
*Stewart.....	1¼	1245	4-3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1240	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3¾x5½	34x5n	34x5n	W
Stoughton.....B	1½	2150	3¾x5½	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5⅛	36x4	36x7	W
Stoughton.....F	3	3150	4½x5½	36x5k	36x5d	W
Sullivan.....F	2	2800	4½x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Thomart.....	1¼	1795	4 x5¼	34x5	34x5	(
Tiffin.....GW	1½	2100	4½x5½	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5½	36x4	36x3½d	W
Tiffin.....PW	3½	3000a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	40x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4¼x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4½x5½	34x5n	38x7n	W
Tower.....H	2½	2175	4½x5½	30x4	36x7	W
Tower.....G	3½	3175	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595a	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595a	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3¾x5	34x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5½	34x3½k	34x4k	I
Transport.....35	2	1835a	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5¼	36x4k	36x8k	I
Transport.....60	3½	2585	4½x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Trayler.....B	1½	2390	3¾x5½	31x3½	34x5	W
Trayler.....C	2-2½	2850	4 x5½	36x4	36x7	W
Trayler.....D	3-3½	3300	4½x5½	36x4	36x8k	W
Traylor.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1295	3¾x5	34x4½n	34x4½n	B
Triangle.....A	1½-2	1985	3¾x5½	31x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5½	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5½	36x4k	36x7k	I
Twin City...B.W.	2	2750	4 x5½	36x6	40x8	I
Twin City...AW.	3½	3950	4½x6	36x5	40x5d	W
*Twin City.....B	3½	....	5½x6	36x6	36x6	I
*Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4¼x6½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4¼x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4¼x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4¼x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
United.....A	1½	2145	3¾x5½	30x3½k	34x5k	W
United.....B	2½	3150	4¼x5½	36x4k	36x7k	W
United.....C	3½	3975	4¼x5½	36x5	36x5d	W
United.....V	5	4500	4¼x6	36x6	40x6d	W
*United States..U	1¼	1800	3½x5½	34x5n	34x5n	B
UnitedStates,NW	1½-2	2375	3¾x5	36x5	36x3½	W
United States...N	1½-2	2175	3¾x5	36x3½k	36x5k	I
United States...R	3	3300	4 x5½	36x4	36x4d	W
United States...S	4	4075	4½x5½	36x5	36x5d	W
United States...T	5-7	4975	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	32x3½k	36x5k	I
Veteran.....M**	1½	2690	3¾x5½	35x5n	35x5n	W
Veteran.....P**	2	3690	4½x5½	36x4	36x7	W
Veteran.....R**	3	4200	4½x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	1½	1050	3½x4½	31x4n	31x4n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

8—Moreland Road Runner. 4—Nelson La Moon. 5—Twin City Four Wheel Drive.

The following price changes have been announced since the above tables were compiled: Krebs, ¾-ton $1,360, 1-ton, $1,675, 1½-ton $2,275, 2½-ton $2,550, 3½-ton $3,175.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Vim	30	1½	$1175	3½x4½	32x4½	32x4½	W
*Vim	50	1½-3¼	995	4 x5	32x4n	32x4n	B
Vim	31	1	1975	3¾x5½	35x5n	35x5n	W
Vim	22	2	3150	3¾x5½	36x4	36x6	W
Vim	23	3	3950	4¼x5½	30x5	36x5d	W
Walker-JohnsonA	2		2500	3¾x5	34x3½	34x6	W
Walker-JohnsonB	3		3000	4¼x5½	36x4	36x8	W
Walter	M	2½	3850	4½x5¾	36x4	36x8	D
Walter	S	5	4850	11½x6¼	36x6	40x6d	W
*Watson	C	1	1465a	3½x5½	35x5n	35x5n	W
Watson	N	3½	4250	11½x5½	36x5	36x10	W
Western	W1½	1½	2550	4½x5¼	36x3½k	36x5k	W
Western	L1½	1½	2550	3¾x5	36x3½k	36x5k	W
Western	W2½	2½	3250	4½x5¼	36x4	36x7	W
Western	L2½	2½	3250	4¼x6	36x4	36x7	W
Western	W3½	3½	4250	4½x6	36x5	40x5d	W
*White	15	¾	2400	3¾x5½	34x5n	34x5n	B
White	20	2	$3250	3¾x5½	36x4k	36x7k	D
White	40	3½	4200	3¾x5¾	36x5	40x5d	D
White	45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick	E	1	1225	3¾x5	34x5n	34x5n	W
White Hick	H	1½	1375	3¾x5	36x3½	36x5	W
White Hick	K	2½	1675	4½x5¼	30x4	36x5	W
Wichita	K	2	1875	4½x5¼	36x3½	36x4k	W
Wichita	M	1	2400	3¾x5¼	36x3½k	36x6k	W
Wichita	RX	3	3200	4½x5¾	36x4k	36x8k	W
Wichita	O	4	$3500	4½x6¼	36x5k	36x5k	W
Wilcox	AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox	BB	1½	2550	4¼x5	30x4	36x5	W
Wilcox	D	2½	3000	4¼x5	36x4k	36x3½dk	W
Wilcox	E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox	F	5	4350	4¾x6½	36x5	40x6d	W
Wilson	F	1½	2270	3¾x5	36x3½	36x5	W
Wilson	EA	2½	2825	4½x5¼	36x4	36x7	W
Wilson	G	3½	3685	4½x5½	30x5	36x5	W
Wilson	H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin	A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin	B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin	C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin	D	3½	3000	4¾x5¾	36x6n	40x8	W
Wisconsin	E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin	F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will	N	1½	2450	3¾x5	36x3½k	36x6k	W
Witt-Will	P	2½	2900	4½x5¼	36x4k	36x8k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm.	15-25	1185	4	Midw.	4-4½x5¼	Gas.	3
Allis-Chalm.	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
†Allis-Chalm.	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork	2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork	C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T.	15-30	1900	4	Clim.	4-5 x6½	G,K	4
Aultman-T.	22-45	2890	4	Own	4-5½x8	G,K	6
Aultman-T.	30-60	4090	4	Own	4-7 x9	G,K,D	8-10
Automot. B-3	12-24	1250	4	Here.	4-4 x5½	Gas.	2-3
Avery,SR.Cul	5-10	....	4	Own	4-3 x4	G,K	..
Avery Cult-C		....	3	Own	6-3 x4	G,K	..
Avery B	5-10	....	4	Own	4-3 x4	G,K	2
Avery C		....	4	Own	6-3 x4	G,K	..
Avery	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery	12-20	....	4	Own	4-4½x6	G,K,D	3-4
§Avery		....	*	Own	4-4x5½	G,K,D	3
Avery	12-25	....	4	Own	2-6½x7	G,K,D	3-4
Avery	14-28	....	4	Own	4-4½	G,K,D	3-4
Avery	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery	45-65	....	4	Own	4-7¼x8	G,K,D	8-10
Bates Mule.H	15-25	....	4	Midw	4-4½x5¼	Gas.	3
Bates Mule..F	18-25	....	*2	Midw	4-4½x5¼	Gas.	3
†Bates MuleG	25-35	....	*2	Midw	4-4½x6	Gas.	..
Bear	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman...G	2-4	240	4	Own	1-3½x4½	Gas.	....
Best	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best	60	....	*2	Own	4-6½x8½	G,K,D	8-9
¶Belens		....	4	B & S.	1-2½x2½	G.	..
Boring	5-10	395	4	LeR.	4-3½x4½	G	..
Boring ..1321		....	3	Wauk	4-4¾x5¼	GorK	2
**Bryan	15-30	....	4	Own	2-4 x5	K.	3
Capital	15-30	1000	2	Own	4-4½x6	Gas.	3
Case	12-20	1050	4	Own	4-4½x5	G,K,D	3
Case	12-20	....	....	....	4-4½x5	....	2
Case	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case	22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T35	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar 5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 15T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur	5-21½	315	2	N Way	2-4½x4½	GorK	1
Cletrac	F	9-16	595	*2	Own	4-3½x4½	G,K,D	2
Cletrac	W	12-20	1315	*2	Own	4-4 x5½	G,K,D	2-3
Dakota	4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Dill	D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dill	R.W.	20	2980	4	Midw.	4-4½x6	Gas.	3
Do-it-All	A	3-6	495	..	Own	1-4½x5	Gas.	1
Eagle	F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle	H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B	AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol	D	9-18	1525	4	Lyc.	4-3½x5	Gas.	2
Farm Horse.B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Farquhar		15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar		18-25	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar		25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch..4 Drive		20-35	1350	4	Clim.	4-5 x6½	GorK	3-4
Fordson		-18	$ 395	4	Own	4-4x5	G.K	2
Frick	A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick	C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt,..A		18-36	2150	4	Wauk.	4-4¾x6¾	G or K	4
Gray		20-36	1975	3	Wauk.	4-4½x6¼	Gas.	4
Gray		22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. Western St		20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr..20		20	845	4	Own	2-5½x6½	K.D.	2
Hart-Parr..30		30	1065	4	Own	2-6½x7	K.D.	3
†Hart-Parr		....	1695	4	Own	6½x7	K.D.	..
Heider	D	9-16	870	4	Wauk	4-4¼x5¾	G,K	2
Heider	C	12-20	628	4	Wauk	4-4½x6¾	G,K	3
Heider	Cult	5-10	725	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4		12-25	985	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4		15-30	1885	4	Midw.	4-4½x6	Gas	3
Indiana	F	5-10	685	2	LeR.	4-3½x4½	Gas.	1-2
International		8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan		10-20	†700	4	Own	2-6½x8	G,K,D	3
International		15-30	1750	4	Own	4-5¼x8	G,K,D	4
¶Kinkade		1½	190	1	Own	1-3 x3	Gas.	....
Lauson Read		15-30	2000	4	Beav.	4-4¾x6	K	..
†Lauson Read		15-30	2000	4	Beav.	4-4¾x6	G or K	3-4
Leader	B	12-18	685	4	Own	2-6 x6¼	G,K,D	2-3
Leader	N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
†Leader	GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn	H4J	40-	4500	*	Cont.	4-4½x5½	Gas	4
Linn	W	60	5000	*	Wauk	4-5 x6¼	Gas	6
Little Giant, B		16-22	2200	4	Own	4-4½x5	K	4
Little Giant, A		26-35	3300	4	Own	4-5½x6	K	6
Lombard.1922		15-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922		50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922		2	210	2	Evin	1-2⅝x2½	Gas.	..
Minne...All-P		12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P		17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Med.D		22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD		35-70	3850	4	Own	4-7¼x9	G or K	8-9
Mohawk .1922		8-16	650	2	Light	4-3½x4½	K or G	1-2
Moline Univ D		9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch.		9-18	....	2	Own	4-3½x5	Gas.	2-3
†Monarch		20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Motor Macult,		1½	195	2	Own	1-2¾x3½	Gas.	..
NB	1	3-6	375	4	Own	2-3¾x4	Gas.	1
Nichols-Shep.		20-42	2650	4	Own	8 x10	G or K	3-6
Nichols Shep.		25-50	3000	4	Own	9 x12	G or K	4-7
Nichols-Shep.		35-70	3650	4	Own	-10½x14	G or K	8-10
Nilson Senior..		20-40	1975	5	Wauk	4-5 x6¼	G,K	4
Oil Pull	K	12-20	....	4	Own	2-6 x8	K,D	3
Oil Pull	H	16-30	....	4	Own	2-7 x8½	K,D	4
Oil Pull	G	20-40	....	4	Own	2-8 x10	K,D	5-6
Oil Pull	E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar	K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Pioneer	G	18-36	1750	4	Own	4-5½x6	G,K,D	4
Pioneer	C	40-75	3550	4	Own	4-7 x8	Gas.	10
Plowman	A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable		10-20	390	4	Own	2-6 x7	Ker.	2
Russell		12-21	1500	4	Own	4-4¼x5¾	G or K	2-3
Russell		15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell		20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell		30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson	M		445	4	Own	4-4 x5½	G,K	2
Sandusky	J	10-20	1250	4	Own	4-4¼x5½	G,K,D	2
Sandusky	E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
¶Shelby		1	150	3	B & S	1-2½x2½	G	..
Shelby	D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby	C	9-18	....	4	Wauk	4-3¾x5¼	G or K	2
Tero Cultivator		6	750	3	LeR	4-3½x4½	Gas.	2
TeroTractor'22		6-10	495	3	LeR	4-3½x4½	Gas.	2
Townsend		10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend		15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend		25-50	2500	2	Own	4-8½x10	Ker.	4-8
Traction Meter		40-50	....	4	....	8-3½x5	Gas.	4-5
Trayler	TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trendaar	10	25-40	3750	*2	Wauk	4-5 x6½	G or K	4
Twin City		12-20	1200	4	Own	4-4¼x6	G,K	3
Twin City		20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City		40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle Sam C20		12-20	1195	4	Weid.	4-4 x5½	G	2-3
Uncle Sam B19		20-30	1985	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam D21		20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utilitor	501	2½-4	295	4	Own	1-3½x4½	G	1
Utilitor	501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis	K	15-25	....	4	Own	4-4½x5¾	G,K	3
Waterloo	N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore21-22		12-25	1185	4	Wauk	4-4 x5½	G,K	3
Whitney	D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita	T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin	E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin	F	20-40	2050	4	Wauk	4-5 x6¼	G or K	4
Wisconsin	H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba	12-20	12-20	2400	*2	Wisc.	4-4½x6¾	G,K,D	3
Yuba	15-25	15-25	2750	*2	Wisc.	4-4¼x6	G,K,D	..
Yuba	20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba	25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
†Yuba		25-40	4750	*2	Yuba	4-5¼x7	D	..

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav. —Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont. —Continental. Dom.—Domas Evin.—Evinrude. Here.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor. ¶Garden Tractor. **Steam Tractor

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5½	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....D	1½	2150	3½x5	34x3½	34x5	W
Koehler.....M	2½	3175	4 x5⅝	36x4	36x7	W
Koehlor.....MCS	2½	3275	4 x5⅝	36x4	36x7	W
Koehler.....F	3½	4170	4½x5½	36x5	36x10	W
Koehler,MT. Trac	5	3275	4 x5⅝	36x4	36x7	W
Krebs.....23	¾	1200	3¾x5	34x4½	34x4½	B
Krebs.....24	1	1585	3¾x5	31x5	34x5	W
Krebs.....45	1½	2125	4⅛x5¼	30x4	36x7	W
Krebs.....75	2½	2375	4½x5½	36x4	36x8	W
Krebs.....110	3½	2975	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1925	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2100	3½x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4¼x5½	36x4	36x7	W
Larrabee.....K-5	2½-3½	3150	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	36x5.1	W
Larrabee.....W	5-7	4800	4½x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack...AB D.R.	1½	3450	4 x5	36x4	36x3½d	D
Mack...AB Chain	1½	3000	4 x5	36x4	36x3½d	C
Mack...AB Chain	2	3300	4 x5	36x4	36x4d	C
Mack....AB D.R.	2	3750	4 x5	36x4	36x4d	D
Mack....AB D.R	2½	3850	4 x5	36x4	36x4d	D
Mack...AB Chain	2½	3100	4 x5	36x4	36x4d	C
Mack...AC Chain	3½	4950	5 x6	36x5	40x5d	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	30x7	40x7d	C
Mack Trac....AB	5	3400	4 x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	30x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Maplelaaf.....**	1½	3000	3¾x5¼	34x5n	36x6n	W
Maplelaaf...AA**	2	3600	4 x5½	36x4	36x7	W
Maplelaaf...BB**	3	4050	4½x5½	36x4	36x4d	W
Maplelaaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Maplelaaf...DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x5	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4¼x5½	34x4	36x7	W
Master.....DD	2½	3190	4¼x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x5d	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4190	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4¼x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3½x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1½	2000	3½x5	31x3½	30x5	W
Menominee....H	1½	2175	4 x5	36x3½	30x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3900	4½x6	36x5	36x10	W
Menominee....J-3	5	4250	4¾x6	36x6	40x12	W
Meline.....10	1½	1985	3½x5	34x5n	36x6n	I
*Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	30x3½	30x6k	W
Moreland.....EX	2	2800	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	1½-5	4600	4¾x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3¾x5¼	34x3k	34x1k	I
Nash.....3018	2-2½	2150	3¾x5¼	34x4k	34x7k	I
Nash.....Quad.	2-2½	2750	4¼x5½	36x5k	36x5k	I
Nash..3018, LWB	2-2½	2200	3¾x5¼	34x4k	34x7k	I
Nash Quad. LWB	2-2½	2800	4¼x5½	36x5k	36x5k	I
Nash.....5018	2½	2250	3¾x5¼	34x4k	34x7k	I
*Nelson.....G2	1½	....	4½x5¼	36x3½	30x6	W
*Nelson.....G3	2½	....	4½x5¼	36x4	36x7	W
*Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
*Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5½	36x4k	36x7k	W
Netco.....HL	2	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5¼	36x4k	36x7k	W
Noble.....A2I	1¼	1840	3½x5½	34x5	34x5	W
Noble.....B3I	1½-2	2480	3¾x5½	36x4	36x7	W
Noble.....D5I	2½-3	2950	4¼x5½	36x4	36x8	W
Noble.....F7I	3½-5	3800	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3¾x5½	36x3½	30x5	W
Noble.....C40	2	....	4 x5½	36x4	30x7	W
Noble.....D50	2½	....	4¼x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4¼x5½	34x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....2SE	1	1595	3½x5	34x3½	34x4	W
Norwalk.....3SE	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,3SE-Spec	1½	2285	3¾x5¼	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	31x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	36x3½	36x5	W
Ogden.....E	2½	....	4¼x5¼	36x4	36x8	W

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Old Hickory...W	1	$1775	3¾x5	36x3½k	30x4k	W
Old Reliable....A	1½	2350	4 x5	31x4	30x6	W
Old Reliable....B	2½	3500	4¼x6	31x4	30x4d	W
Old Reliable....C	3½	4250	4½x6	36x5	30x5d	W
Old Reliable....D	5	5000	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6¼	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5¼	35x5n	35x5n	I
Olympic.....A	2½	3200	4¼x5½	36x4	30x8	W
Oneida.....B9	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	2½	3200	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	2485	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	2585	3½x6	36x6n	36x6n	B
Oshkosh.....B	2½	3485	4 x5½	38x7n	38x7n	B
Oshkosh.....BB	2½	3585	4 x5½	38x7n	38x7n	B
*Overland.....4	1½	450	3¾x4	30x3½n	30x3½n	B
Packard.....EC	2-3	3100	4⅞x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4⅞x5½	36x6n	40x8n	W
Packard.....ED	3½-4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige.....54-20	2½	2420	4¼x5½	34x4	34x8	W
Paige.....51-18	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	30x6	40x6d	W
Patriot....Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot....Lincoln	2	2050	4 x5¼	34x3½	31x5	W
Patriot .Washgt'n	3	2900	4½x5½	36x4	30x7	W
Pierce-Arrow....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3¾x5	36x4	36x6	
Pittsburgher.....	3	3900	4½x5½	36x5k	30x8	W
Power.....F	2	3150	4 x5½	36x5	36x7	W
Power.....C	3½	....	4¾x5½	36x5	40x10	W
Premocar...B-143	1½	2175	3½x5	36x6n	36x6n	W
*Rainier.....R-21	¾	....	3½x5	15x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	31x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	31x3½	31x5	W
Rainier.....R-28	2	....	4½x5½	34x4	34x6	W
Rainier.....R-20	2½-3	....	4½x5½	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	36x6	40x6d	W
Ranger...TK-20-2	1½	2450	3¾x5	36x6n	38x7n	W
*Reo.....F	¾-1	1245	4¼x4½	31x4½n	31x4½n	B
Reliance.....10A	1½	2100	4 x5¼	30x3½	30x5	I
Reliance.....20B	2½	3100	4¼x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1305	3¾x5	34x3	34x4	I
Republic..10 Exp	1	1695	3¾x5	34x5n	34x5n	I
Republic.....11X	1½	1795	3¾x5	34x4	34x6	I
Republic.....19	2½	2195	4¼x5½	36x4	30x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rewo.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rewo....C.D.W.	2	3300	4 x5	11x1	36x3½d	W
Rewo....G.S.W.	3	4150	4 x6	11x5	36x5d	W
Rewo....G.P.W.	3	5250	3½x5r	38x7n	42x9n	W
Rewo.....HW	4	4500	4¼x6	30x5	30x6d	W
Rewo.....F. W.	5	5500	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4-3½x4	32x4n	32x4n	B
Samson.....25	1¼	....	4-3½x5½	35x5n	35x5n	B
Sanford....W-15	1½-2	2150b	3¾x5	36x3½k	36x5k	
Sanford.....25	2½-3½	....	4½x5¼	36x4	36x4d	W
Sanford.....35	3½-5	....	4½x5½	36x5	36x5.1	W
Sanford.....50	5-7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4¼x5½	36x4	30x7	W
Schacht....3-Ton	3	3800	4½x5½	36x5	30x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4100	4½x6	30x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	30x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5¼	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½-2½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½-2½	3350	4½x5¼	34x5n	38x7n	W
Selden.....50	2½-3½	3250	4½x5½	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	3750	4½x5½	36x5	30x10	W
Selden.....90	5-7	4950	4¾x6	30x6	40x12	W
Seneca.....M	1½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3½x4½	32x4½n	32x4½n	B
*Service.....15	1¼	....	3¾x5	34x4½n	35x5n	B

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. •—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4½x5½	35x5n	38x7n	W
Service.....52	3	....	4½x5½	36x4	36x8	W
Service.....72	3½	....	4½x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	$1450	3¾x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5½	34x4	36x6	W
Signal.....J	2½	2375	4½x5½	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x8d	W
Signal.....R	5	3990	4½x6	36x6	40x6d	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x6n	
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5½	36x4k	36x7k	W
Standard.....66	3½-5	3150	4½x5½	30x5	36x10	W
Standard.....5-K	5-7	4400	4¾x6	36x6	40x12	W
*Star.....	½	610b	3½x1¾	30x3½n	30x3½n	B
Sterling.....1½	1½	2885	4 x5¼	36x3½k	30x5k	W
Sterling.....2	2	3085	4 x5½	36x4k	36x6k	W
Sterling.....2½	2½	3290	4⅜x5½	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6½	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6½	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6½	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6½	36x6	40x7d	C
*Stewart...Utility	¼-1½	1245	3¾x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3¾x5½	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3¾x5	31x3½	34x5	I
Stewart.....7	2-2½	2190	4¼x5½	31x4	34x6	I
Stewart.....7-X	2½-3	2390	4¼x5½	31x4	34x8	I
Stewart.....10	3½-4	3190	4½x5½	36x5	36x5d	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x5d	I
*Stewart.....	1¼	1245	4-3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1240	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3¾x5¼	34x5n	34x5n	W
Stoughton.....B	1½	2150	3¾x5¼	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....F	3	3150	4¼x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4¼x5½	36x4k	36x7k	W
Sullivan.....II	3½	3750	4½x6	30x5	36x5d	W
*Thomart.....	1¼	1795	4 x5¼	34x5	34x5	
Tiffin.....GW	1½	2100	4½x5½	36x3½	36:5	W
Tiffin.....MW	2½	2700	4½x5½	36x4	36x3½d	W
Tiffin.....PW	3½	3600a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4¼x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4½x5½	35x5n	38x7n	W
Tower.....II	2½	2175	4½x5½	36x4	36x7	W
Tower.....G	3½	3175	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595a	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595a	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3¾x5	36x4	36x7	I
*Transport....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5½	34x3½k	34x4k	I
Transport.....35	2	1835a	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5¼	36x4k	36x8k	I
Transport.....69	3½	2585	4¼x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	30x5k	36x12k	I
Trayler.....B	1½	2390	3¾x5½	31x3½	34x5	W
Trayler.....C	2-2½	2850	4 x5½	36x4	36x7	W
Trayler.....D	3-3½	3300	4¼x5½	36x4	36x8k	W
Trayler.....F	5-6	4700	4½x6	30x6	40x6d	W
*Triangle.....AA	1	1285	3½x5	31x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3¾x5½	31x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5½	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5½	30x4k	36x7k	I
Twin City...B.W.	2	2750	4 x5½	36x6	40x8	I
Twin City...AW.	3½	3950	4¼x6	36x5	40x5.1	W
*Twin City.....B	3½	....	5½x6	36x6	36x6	I
*Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4½x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4½x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4½x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4¼x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
United.....A	1½	2145	3¾x5¼	36x3½k	34x5k	W
United.....B	2½	3150	4¼x5½	36x4k	36x7k	W
United.....C	3½	3975	4¼x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	30x6	40x6d	W
*United States..U	1¼	1800	3½x5½	34x5n	34x5n	B
UnitedStates,NW	1½-2	2375	3¾x5	36x5	36x3½	W
United States...N	1½-2	2175	3¾x5	36x3½k	36x5k	I
United States...R	3	3300	4 x5½	36x4	36x4d	W
United States...S	4	4075	4½x5½	30x5	36x5d	W
United States...T	5-7	4975	4½x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	30x3½k	36x5k	I
Veteran.....M**	1½	2699	3¾x5½	35x5n	35x5n	W
Veteran.....P**	2	3699	4½x5½	30x4	36x7	W
Veteran.....R**	3	4200	4½x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	1½	1050	3½x4½	31x4n	31x4n	W

8—Moreland Road Runner. 4—Nelson La Moon. 5—Twin City Four Wheel Drive.

The following price changes have been announced since the above tables were compiled: Krebs, ¾-ton $1,360, 1-ton, $1,675, 1½-ton $2,275, 2½-ton $2,550, 3½-ton $3,175.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Vim	30	1½	$1175	3½x4½	32x4½	32x4½	W
*Vim	50	1½-3¼	995	4 x5	32x4n	32x4n	B
Vim	31	1	1975	3¾x5⅛	35x5n	35x5n	W
Vim	22	2	3150	3¾x5⅛	36x4	36x6	W
Vim	23	3	3950	4½x5½	36x5	36x5d	W
Walker-JohnsonA	2		2500	3¾x5	34x3½	34x6	W
Walker-JohnsonB	3		3000	4½x5½	36x4	36x8	W
Walter	M	2½	3850	4½x5¾	36x4	36x8	D
Walter	S	5	4850	4½x6¼	36x6	40x6d	W
*Watson	C	1	1465a	3⅝x5⅛	35x5n	35x5n	W
Watson	N	3½	4250	4½x5½	36x5	36x10	W
Western	W1½	1½	2550	4½x5¼	36x3½k	36x5k	W
Western	L1½	1½	2550	3¼x5	36x3½k	36x5k	W
Western	W2½	2½	3250	4½x5¼	36x4	36x7	W
Western	L2½	2½	3250	4½x6	36x4	36x7	W
Western	W3½	3½	4250	4½x6	36x5	40x5d	W
*White	15	¾	2400	3¾x5½	34x5n	34x5n	B
White	20	2	$3250	3¾x5½	36x4k	36x7k	D
White	40	3½	4200	3¾x5¾	36x5	40x5d	D
White	45	5	4500	4½x5¾	36x6	40x6d	D
White Hick	E	1	1225	3¾x5	34x5n	34x5n	W
White Hick	H	1½	1375	3¾x5	36x3½	36x5	W
White Hick	K	2½	1675	4⅛x5¼	36x4	36x5	W
Wichita	K	2	1875	3¾x5¼	36x3½	36x4k	W
Wichita	M	1	2400	3¾x5¼	36x3½k	36x6k	W
Wichita	RX	3	3200	4⅜x5¾	36x4k	36x8k	W
Wichita	O	4	$3500	4½x6¼	36x5k	36x5k	W
Wilcox	AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox	BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox	D	2½	3090	4¼x5	36x4k	36x3½dk	W
Wilcox	E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox	F	5	4350	4¾x6½	36x5	40x6d	W
Wilson	F	1½	2270	3¾x5	36x3½	36x5	W
Wilson	EA	2½	2825	4⅛x5¼	36x4	36x7	W
Wilson	G	3½	3685	4½x5½	36x5	36x5	W
Wilson	H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin	A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin	B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin	C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin	D	3½	3000	4⅜x5¾	36x6n	40x8	W
Wisconsin	E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin	F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will	N	1½	2450	3¾x5	36x3½k	36x6k	W
Witt-Will	P	2½	2900	4½x5¼	36x4k	36x8k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm	15-25	1185	4	Midw.	4-4½x5½	Gas.	3
Allis-Chalm	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork	2-G	1595	4	Own	4-4¾x6	GorK	3
Allwork	C	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T	15-30	1900	4	Clim.	4-5 x6½	G,K	4
Aultman-T	22-45	2800	4	Own	4-5½x8	G,K	6
Aultman-T	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Autonet. B-3	12-24	1250	4	Here.	4-4 x5½	Gas.	2-3
Avery,SR.Cul	5-10	....	4	Own	4-3 x4	G,K	..
Avery Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery	B	5-10	....	4	Own	4-3 x4	G,K	2
Avery	C	....	....	4	Own	6-3 x4	G,K	..
Avery	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery	12-20	....	4	Own	4-4½x6	G,K,D	3-4
‡Avery	....	....	*	Own	4-4x5½	G,K,D	3
Avery	12-25	....	4	Own	2-6½x7	G,K,D	3-4
Avery	14-28	....	4	Own	4-4⅝	G,K,D	3-4
Avery	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery	45-65	....	4	Own	4-7¾x8	G,K,D	8-10
Bates Mule.H	15-25	....	4	Mdlw	4-4½x5¼	Gas.	3
Bates Mule..F	18-25	....	*2	Mdlw	4-4½x5¼	Gas.	3
‡Bates MuleG	25-35	....	*2	Midw	4-4½x6	Gas.	..
Bear	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman...G	2-4	240	4	Own	1-3½x4½	Gas.	....
Best	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best	60	....	*2	Own	4-6½x8½	G,K,D	8-9
¶Belens	....	....	4	B & S.	1-2½x2½	G.	..
Bering	5-10	395	4	LeR.	4-3½x4½	G	..
Bering	1921	....	1850	3	Wauk	4-4¾x5¼	GorK	2
**Bryan	15-30	....	4	Own	2-4 x5	K.	3
Capital	15-30	1000	2	Own	4-4¼x6	Gas.	3
Case	12-20	1050	4	Own	4-4½x5	G,K,D	3
Case	12-20	....	....	....	4-4½x5	....	2
Case	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case	22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T35	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar .5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 15T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur	5-2½	315	2	N Way	2-4½x4½	GorK	1
Cletrac	F	9-16	595	*2	Own	4-3¼x4½	G,K,D	2
Cletrac	W	12-20	1315	*2	Own	4-4 x5½	G,K,D	2-3
Dakota	4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Dill	D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dill	R.W.	20	2980	4	Midw.	4-4½x6	Gas.	3
Do-It-All	A	3-6	495	..	Own	1-4½x5	Gas.	1
Eagle	F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle	H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B	AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol	D	9-18	1525	4	Lyc.	4-3½x5	Gas.	2
Farm Horse.B	18-30	1835	4	Clim.	4-5 x6½	G,K	4
Farquhar	15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar	18-25	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar	25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch..4 Drive	20-35	1950	4	Clim.	4-5 x6½	GorK	3-4
Fordson	-18	$ 395	4	Own	4-4x5	G,K	2
Frick	A	12-20	....	4	Beav.	4-4 x6	G,K	2-3
Frick	C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt,..A	18-36	2150	4	Wauk	4-4¾x6¾	G or K	4
Gray	20-36	1975	3	Wauk	4-4½x6¼	Gas.	4
Gray	22-44	2165	3	Wauk	4-5 x6¼	Gas.	4-5
Gt. Western St	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr..20	20	845	4	Own	2-5½x6½	K,D.	2
Hart-Parr..30	30	1065	4	Own	2-6½x7	K,D.	3
‡Hart-Parr	....	1695	4	Own	6½x7	K.D.	..
Heider	D	9-16	870	4	Wauk	4-4¼x5¾	G,K	2
Heider	C	12-20	628	4	Wauk	4-4½x6¾	G,K	3
Heider	Cult	5-10	725	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4	12-25	985	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4	15-30	1885	4	Midw	4-4½x6	Gas	3
Indiana	F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International	15-30	1750	4	Own	4-5¼x8	G,K,D	4
¶Kinkade	1½	190	1	Own	1-3 x3	Gas.	....
La Crosse	12-24	985	2	Own	2-6 x7	G,K	3
Lauson	5	12-25	1205	4	Midw.	4-4½x5½	Gas.	3
Lauson	21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lauson Read	15-30	2000	4	Beav.	4-4¾x6	K	....
Leader	B	12-18	685	4	Own	2-6 x6¼	G,K,D	2-3
Leader	N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader	GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn	H4J	40-	4500	*	Cont.	4-4½x5½	Gas	4
Linn	W	60	5000	*	Wauk	4-5 x6¼	Gas	6
Little Giant,.B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant,.A	26-35	3300	4	Own	1-5½x6	K	6
Lombard.1922	15-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2½x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Med.D	22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD	35-70	3850	4	Own	4-7½x9	G or K	8-9
Mohawk .1922	8-16	650	2	Light	4-3½x4½	K or G	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch	9-18	....	2	Own	4-3½x5	Gas.	2-3
‡Monarch	20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Motor Macult,	1½	195	2	Own	1-2¾x3½	Gas.	..
NB	1	3-6	375	4	Own	2-3¾x4	Gas.	1
Nichols-Shep.	20-42	2650	4	Own	8 x10	G or K	3-6
Nichols Shep.	25-50	3000	4	Own	9 x12	G or K	4-7
Nichols-Shep.	35-70	3650	4	Own	10½x14	G or K	8-10
Nilson Senior	20-40	1975	5	Wauk	4-5 x6¼	G,K	4
Oil Pull	K	12-20	....	4	Own	2-6 x8	K,D	3
Oil Pull	H	16-30	....	4	Own	2-7 x8½	K,D	4
Oil Pull	G	20-40	....	4	Own	2-8 x10	K,D	5-6
Oil Pull	E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar	K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Pioneer	G	18-36	1750	4	Own	4-5½x6	G,K,D	4
Pioneer	C	40-75	3550	4	Own	4-7 x8	Gas.	10
Plowman	A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable	10-20	390	4	Own	2-6 x7	Ker.	2
Russell	12-24	1500	4	Own	4-4¼x5¾	G or K	2-3
Russell	15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell	20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell	30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson	M	....	445	4	Own	4-4 x5½	G,K	2
Sandusky	J	10-20	1250	4	Own	4-4¼x5¼	G,K,D	2
Sandusky	E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
¶Shelby	....	1	150	3	B & S	1-2½x2½	G	..
Shelby	D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby	C	9-18	....	4	Wauk	4-3¾x5½	G or K	2
Toro Cultivator	6	750	3	LeR	4-3½x4½	Gas.	2
ToroTractor'22	6-10	495	3	LeR	4-3½x4½	Gas.	2
Townsend	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend	25-50	2500	2	Own	4-8½x10	Ker.	4-8
Traction Motor	40-50	....	4	....	8-3½x5	Gas.	4-5
Traylor	TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar	10	25-40	3750	*2	Wauk	4-5 x6¼	G or K	4
Twin City	12-20	1200	4	Own	4-4½x6	G,K	3
Twin City	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle Sam C20	12-20	1195	4	Weid.	4-4 x5½	G	2-3
Uncle Sam B19	20-30	1985	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam D21	20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utiliter	501	2½-4	295	4	Own	1-3½x4½	G	1
Utiliter	501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis	K	15-25	....	4	Own	4-4¼x5¾	G,K	3
Waterloo	N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore21-22	12-25	1185	4	Wauk	4-4 x5½	G,K	3
Whitney	D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita	T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin	E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin	F	20-40	2050	4	Wauk	4-5 x6¼	G or K	4
Wisconsin	H	22-40	2550	4	Clim.	4-6½x7	G or K	4-6
Yuba	12-20	12-20	2400	*2	Wisc.	4-4½x6¾	G,K,D	3
Yuba	15-25	15-25	2750	*2	Wisc.	4-4¼x6	G,K,D	..
Yuba	20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba	25-40	25-40	4250	*2	Wisc.	4-6¾x7	G,K,D	..
‡Yuba	....	25-40	4750	*2	Yuba	4-5½x7	D	..

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont.—Continental. Dom.—Domas Evin.—Evinrude. Here.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor. ¶Garden Tractor. **Steam Tractor

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Specifications of Current Passenger Car Models

NAME AND MODEL	Engine Make	Cylinders Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Ambassador.....R	Cont..	6-3⅝x5¼	136	33x5	....	b4500	$4500	....	$6500
American.....D-66	H-S...	6-3½x5	127	33x4½	b1885	1785	1850	....	2485
						b1850n			
Anderson...Aluminum 6	Cont..	6-3⅛x4¼	114	32x4	....	1195	....	....	....
Anderson.....Series 49	Cont..	6-3⅛x4½	120	33x4	1495	1495	1595	$1995	1995
						b1595n			
Appersen.....8-21-S	Own..	8-3¼x5	130	34x4½	....	2620	2645	3625	3695
Auburn.....6-51	Cont..	6-3⅜x4½	121	32x4	1575	1475	....	2275	2345
Auburn.....6-51	Cont..	6-3⅜x4½	121	32x4½	....	n1995	1545	....	....
Marmon.....34	Own..	6-3¼x5½	136	32x4½	3385	b3185	3185	3985	4385
Maxwell.....	Own..	4-3⅝x4½	109	31x4	885	885	....	1235	1335
McFarlan.....1922	Own..	6-4½x6	140	33x5	6300	b6300	6300	7500	7500
Mercer.....	Own..	6-3⅜x5	132	32x4½	3750	3750	....	5000	5000
Mercer.....Series 5	Own..	4-3¾x6¾	132	32x4½	3950	b3950	c3950	4850	5250
Merit.....	Cont.	6-3¼x4½	119	32x4	1895	1895	....	....	....
Mitchell.....F-50	Own..	6-3½x5	120	32x4	a1490	1590	b1850	b2050	2275
Mitchell.....F-50	Own..	6-3½x5	127	32x4½	....	....	1690	....	....
Monroe.....1922-S-9	Own..	4-3¼x4½	115	32x3½	950	950	....	....	....
Moon.....6-40	Cont..	6-3½x3¼	115	31x4	1295	1295	....	....	1695
Moon.....6-58	Cont..	6-3⅜x4½	128	33x4½	1785	1785	1785	2785	2785
						1885n			
Nash.....691-96-97	Own..	6-3¼x5	121	33x4	1210	1240	b1395n	....	2040
Nash.....692-94-95	Own..	6-3¼x5	127	34x4½	....	....	1390	b1890	2190
Nash Four.....41-4	Own..	4-3⅝x5	112	33x4	915	935	....	a1385	1545
								1195k	1275k
National.....BB	Own..	6-3½x5¼	130	32x4½	a2475	b2475	2375	b3725	3825
Noma.....3C	Cont..	6-3¼x4½	128	32x4½	2500	b2500	c2600	....	3500
Noma.....1D	Bea...	6-3½x5¼	128	32x4½	3000	b3100	c3200	....	5500
Norwalk.....430-KS	Lyc...	4-3½x5	116	32x3½	....	1035	....	....	....
Oakland.....6-44	Own..	6-2⅞x4¾	115	32x4	975	995	b1165n	b1445	1545
						u795		1185k	
Ogren.....6 T D Luxe	Cont..	6-3⅝x5¼	134	33x5	b3750	3750	3850	4500	4800
Oldsmobile.....43 A	Own..	4-3⅛x5¼	115	32x4	955	975	b1075n	1475	1595
						1350			1275
Oldsmobile.....46	Own..	8-2⅞x4¾	122	33x4½	b1735	c1850	1735	....	2685
Oldsmobile.....47	Own..	8-2⅞x4½	115	32x4	1625	1375	b1675n	1875	2025
Overland.....4	Own..	4-3⅛x4	100	30x3½	525	525	425u	795	875
Packard.....Single-Six	Own..	6-3⅜x5	126	33x4½	2485	2485	u2250	3175	3275
Packard.....Single-Six	Own..	6-3⅜x5	133	33x4½	....	u2350	2685	....	3525
Packard.....Twin-Six	Own..	12-3 x5	136	35x5	3850	3850	3850	5240	5490
Paige.....6-44	Own..	6-3¼x5	119	32x4	1465	1465	u1290	1995	2245
Paige.....6-66	Cont..	6-3⅜x5	131	33x4½	a2495	n2245	2195	3100	3185
Paterson.....22-6-52	Cont..	6-3⅜x4½	120	32x4½	....	1390	1425	2395	2395
Peerless.....56-S-7	Own..	8-3¼x5	128	33x5	....	b2990	2900	b3400	3900
Pierce-Arrow.....	Own..	6-4 x5½	138	33x5	5250	b5250	5250	6800	7000
Pilot.....6-50	H-S...	6-3¼x5	126	32x4½	2050	2000	2050	2950	3000
Premier.....6-D	Own..	6-3⅜x5½	126¾	32x4½	3150	b3100	3250	4300	5100
Premecar.....6-40-A	Falls..	6-3⅛x4¼	117	32x4	1095	1095	....	1750	1825
R & V Knight.....R	Own..	4-3¾x5	116	32x4	....	1665	....	2385	2475
R & V Knight.....J	Own..	6-3½x4½	127	32x4½	2475	b2475	2475	3015	3105
Roo.....T6 & U6	Own..	6-3½x5	120	33x4	1595	n1645	1485	b2355	2435
ReVere.....C	Dues.	4-4¼x6	131	32x4½	3200	3200	3200	....	4000
Rickenbacker.....A	Own..	6-3⅛x4¾	117	32x4	....	1485	....	1885	1985
Reamer.....6-54-E	Cont..	6-3½x5¼	128	32x4½	2685	b2485	2685	a3285	3585
						b2750		3585	3950
Reamer.....4-75-E	Dues.	4-4¼x6	128	32x4½	3785	b3485	b3650n	....	b4650
Rolls-Royce.....	Own..	6-4½x4¾	143½	33x5	....	10,900	....	....	....
Saxon.....12S	Own..	4-3⅛x5	112	32x4	1195	1195	....	1795	1795
Sayers Six.....DP	Cont..	6-3¼x4½	118	33x4	1645	1645	....	2645	2645
Seneca.....L-2 & O-2	Lyc...	4-3½x5	108	30x3½	875	875	....	....	....
Seneca.....50 & 51	Lyc...	4-3½x5	112	31x4	1095	1095	....	....	....
Sperling.....A	Supr..	4-3⅜x5	114	32x4	980	980	....	1685	1685
Standard.....98	Own..	8-3¼x5	127	34x4½	2150	b2395n	2395	2750	2200
Stanley.....740	Own..	2-4 x5	130	32x4½	2700	2700	2700	3775	3900
Stanweed Six.....	Cont.	6-3¼x4½	118	33x4	1765	1765	....	2750	....
Star.....	Cont.	4-3¼x4¼	102	30x3½	r319	s348	u285	580	645
Stearns-Knight....SKL4	Own..	4-3⅞x5⅝	125	34x4½	2250	2250	2450	3150	3400
Stearns-Knight.....6	Own..	6-3⅜x5	130	34x4½	2700	2700	2850	3350	3700
Stephens.....90	Own..	6-3¼x4½	122	33x4½	1575	b1595	c1625	2450	2530
Stevens-Duryea.....E	Own..	6-4¼x5½	138	35x5	7250	b6900	6800	8600	b8900
Studebaker....Light Six	Own..	6-3¼x4½	112	32x4	975	975	u785	1225	1350
Studebaker..Special Six	Own..	6-3½x5	119	32x4	1250	1275	b1275	1875	2000
Studebaker.....Big Six	Own..	6-3⅞x5	126	33x4½	u1300	1650	n1785	2275	2475
Stutz.....	Own..	4-4⅜x6	130	32x4½	2450	b2790	c2640	3490	4490
					2760n				
Templar.....A-445	Own..	4-3⅜x5½	118	32x4	2025	2125	b2175	2650	2795
Tulsa.....E-1-2-3	H-S...	4-3½x5	117	33x4	1175	1175	....	....	1295
Velie.....58	Own..	6-3⅛x4¼	115	32x4	1275	1275	1305n	1785	1795
Westcott.....D-48	Cont..	6-3½x5¼	125	32x4½	....	....	1890	....	2395
Westcott.....B-44	Cont..	6-3¼x4½	120	32x4	....	1690	n1890	....	2495
Wills Sainte Claire. A-68	Own..	8-3¼x4	121	32x4½	2475	2475	....	3275	3475
Willys-Knight.....29	Own..	4-3⅝x4½	118	32x4	1235	1235	1435	1795	1860
					1135u				2195
Winton.....40	Own..	6-3¾x5¼	132	35x5	3400	n3600	3400	4000	4300

NAME AND MODEL	Engine Make	Cylinders Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Lincoln.....	Own..	8-3⅜x5	136	33x5	$3800	b3800	$3800	$4400	$4700
Locomobile.....48	Own..	6-4½x5½	142	35x5	....	b7600	7600	10500	11000

NAME AND MODEL	Engine Make	Cylinders Bore and Stroke	WB	Tires	2-Pass.	5-Pass.	7-Pass.	Coupe	Sedan
Nash.....691-96-97	Own..	6-3¼x5	121	33x4	1210	1240	b1395n	....	2040
Nash.....692-94-95	Own..	6-3¼x5	127	34x4½	....	....	1390	b1890	2190
Nash Four.....41-4	Own..	4-3⅝x5	112	33x4	915	935	....	a1385	1545
								1195k	1275k
National.....BB	Own..	6-3½x5¼	130	32x4½	a2475	b2475	2375	b3725	3825
Noma.....3C	Cont..	6-3¼x4½	128	32x4½	2500	b2500	c2600	....	3500
Noma.....1D	Bea...	6-3½x5¼	128	32x4½	3000	b3100	c3200	....	5500
Norwalk.....430-KS	Lyc...	4-3½x5	116	32x3½	....	1035	....	....	....
Oakland.....6-44	Own..	6-2⅞x4¾	115	32x4	975	995	b1165n	b1445	1545
						u795		1185k	
Ogren.....6 T D Luxe	Cont..	6-3⅝x5¼	134	33x5	b3750	3750	3850	4500	4800
Oldsmobile.....43 A	Own..	4-3⅛x5¼	115	32x4	955	975	b1075n	1475	1595
						1350			1275
Oldsmobile.....46	Own..	8-2⅞x4¾	122	33x4½	b1735	c1850	1735	....	2685
Oldsmobile.....47	Own..	8-2⅞x4½	115	32x4	1625	1375	b1675n	1875	2025
Overland.....4	Own..	4-3⅛x4	100	30x3½	525	525	425u	795	875
Packard.....Single-Six	Own..	6-3⅜x5	126	33x4½	2485	2485	u2250	3175	3275
Packard.....Single-Six	Own..	6-3⅜x5	133	33x4½	....	u2350	2685	....	3525
Packard.....Twin-Six	Own..	12-3 x5	136	35x5	3850	3850	3850	5240	5490
Paige.....6-44	Own..	6-3¼x5	119	32x4	1465	1465	u1290	1995	2245
Paige.....6-66	Cont..	6-3⅜x5	131	33x4½	a2495	n2245	2195	3100	3185
Paterson.....22-6-52	Cont..	6-3⅜x4½	120	32x4½	....	1390	1425	2395	2395
Peerless.....56-S-7	Own..	8-3¼x5	128	33x5	....	b2990	2900	b3400	3900
Pierce-Arrow.....	Own..	6-4 x5½	138	33x5	5250	b5250	5250	6800	7000
Pilot.....6-50	H-S...	6-3¼x5	126	32x4½	2050	2000	2050	2950	3000
Premier.....6-D	Own..	6-3⅜x5½	126¾	32x4½	3150	b3100	3250	4300	5100
Premecar.....6-40-A	Falls..	6-3⅛x4¼	117	32x4	1095	1095	....	1750	1825
R & V Knight.....R	Own..	4-3¾x5	116	32x4	....	1665	....	2385	2475
R & V Knight.....J	Own..	6-3½x4½	127	32x4½	2475	b2475	2475	3015	3105
Roo.....T6 & U6	Own..	6-3½x5	120	33x4	1595	n1645	1485	b2355	2435
ReVere.....C	Dues.	4-4¼x6	131	32x4½	3200	3200	3200	....	4000
Rickenbacker.....A	Own..	6-3⅛x4¾	117	32x4	....	1485	....	1885	1985
Reamer.....6-54-E	Cont..	6-3½x5¼	128	32x4½	2685	b2485	2685	a3285	3585
						b2750		3585	3950
Reamer.....4-75-E	Dues.	4-4¼x6	128	32x4½	3785	b3485	b3650n	....	b4650
Rolls-Royce.....	Own..	6-4½x4¾	143½	33x5	....	10,900	....	....	....
Saxon.....12S	Own..	4-3⅛x5	112	32x4	1195	1195	....	1795	1795
Sayers Six.....DP	Cont..	6-3¼x4½	118	33x4	1645	1645	....	2645	2645
Seneca.....L-2 & O-2	Lyc...	4-3½x5	108	30x3½	875	875	....	....	....
Seneca.....50 & 51	Lyc...	4-3½x5	112	31x4	1095	1095	....	....	....
Sperling.....A	Supr..	4-3⅜x5	114	32x4	980	980	....	1685	1685
Standard.....98	Own..	8-3¼x5	127	34x4½	2150	b2395n	2395	2750	2200
Stanley.....740	Own..	2-4 x5	130	32x4½	2700	2700	2700	3775	3900
Stanweed Six.....	Cont.	6-3¼x4½	118	33x4	1765	1765	....	2750	....
Star.....	Cont.	4-3¼x4¼	102	30x3½	r319	s348	u285	580	645
Stearns-Knight....SKL4	Own..	4-3⅞x5⅝	125	34x4½	2250	2250	2450	3150	3400
Stearns-Knight.....6	Own..	6-3⅜x5	130	34x4½	2700	2700	2850	3350	3700
Stephens.....90	Own..	6-3¼x4½	122	33x4½	1575	b1595	c1625	2450	2530
Stevens-Duryea.....E	Own..	6-4¼x5½	138	35x5	7250	b6900	6800	8600	b8900
Studebaker....Light Six	Own..	6-3¼x4½	112	32x4	975	975	u785	1225	1350
Studebaker..Special Six	Own..	6-3½x5	119	32x4	1250	1275	b1275	1875	2000
Studebaker.....Big Six	Own..	6-3⅞x5	126	33x4½	u1300	1650	n1785	2275	2475
Stutz.....	Own..	4-4⅜x6	130	32x4½	2450	b2790	c2640	3490	4490
					2760n				
Templar.....A-445	Own..	4-3⅜x5½	118	32x4	2025	2125	b2175	2650	2795
Tulsa.....E-1-2-3	H-S...	4-3½x5	117	33x4	1175	1175	....	....	1295
Velie.....58	Own..	6-3⅛x4¼	115	32x4	1275	1275	1305n	1785	1795
Westcott.....D-48	Cont..	6-3½x5¼	125	32x4½	....	....	1890	....	2395
Westcott.....B-44	Cont..	6-3¼x4½	120	32x4	....	1690	n1890	....	2495
Wills Sainte Claire. A-68	Own..	8-3¼x4	121	32x4½	2475	2475	....	3275	3475
Willys-Knight.....29	Own..	4-3⅝x4½	118	32x4	1235	1235	1435	1795	1860
					1135u				2195
Winton.....40	Own..	6-3¾x5¼	132	35x5	3400	n3600	3400	4000	4300

a—3-passenger. b—4-passenger. c—6-passenger. n—Sport. h—All Metal Type. k—Soft Top Type. u—Chassis Price. r—Price without starter and demountable rims. Price with starter and demountable rims $414. s—Price without starter and demountable rims. Price with starter and demonntable rims $443. t—Model 47—34x4½ Tires. v—Tire Sizes 32x4½. c—Touring Sedan.

Engine Maker: Anst—Ansted. Bea—Beaver. Cont—Continental. Curt—Curtis. D.Ly—Dort Lycoming. G-R—Grey Real. H-S—Herschell-Spillman. Lyc—Lycoming. Nort—Northway. Roch—Rochester. Rut—Rutenberg. Supr—Supreme. Weld—Weldely. Wisc—Wisconsin.

The following new models have been announced since the above tables were compiled: Anderson Aluminum 6, 4 Passenger Coach, $1,450; Maxwell Club Coupe, $985; Nash Sport Phaeton, $1,645.

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MOSSBERG

ALL STEEL WRENCHES AND TOOLS



No. 612 Speed Brace

Speed Brace Socket Wrenches

No wrench can handle that out-of-the-way nut or bolt like a Speed Brace Socket Wrench. And the Mossberg line contains a complete assortment of these efficient wrenches in all sizes and shapes for all kinds of work.

These are supplied the dealer, together with sales boards—Silent Salesmen—in assortments that correspond with the demand. All live ones. Mossberg all-steel construction, finished in burnished nickel. Rugged, practical wrenches, made for hard work. Popular among your customers.

No. 2400 Salesman

This well balanced display board assortment contains 70 Speed Braces in quantities ranging from four to nine of each wrench. Each number is made of ½ inch steel bar, is 19¼ inches in length, and is finished in burnished nickel. The board itself is made of chestnut with nickeled steel hook. Size, 20 inches by 60 inches. Free with complete assortment.

"L" Salesman

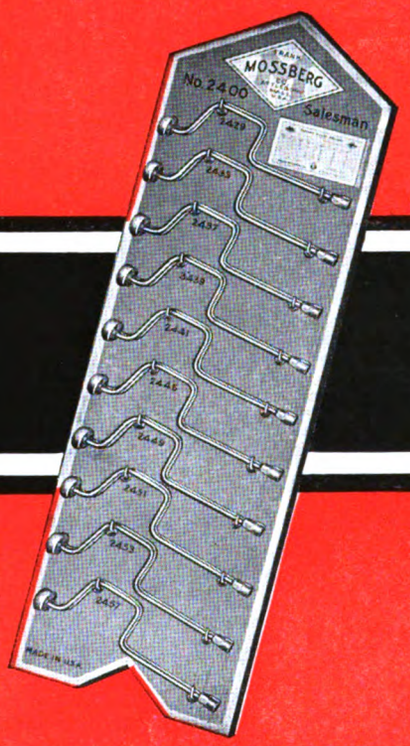
Assortment contains 140 Solid Socket Wrenches—47 6-inch "T" Wrenches—57 12-inch "T" Wrenches, and 36 10-inch Offset Wrenches. All fast sellers. Constructed of ½ inch steel bar, finished in burnished nickel. Board 20 inches by 60 inches—same high quality as "2400" board. Furnished free with complete assortment.

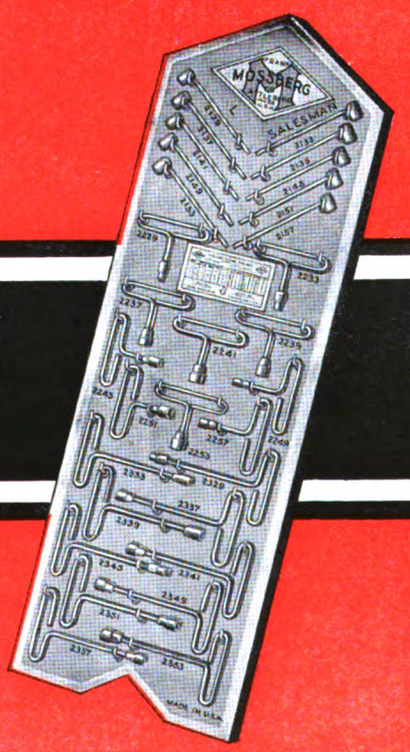
Write for 1922 *catalog and prices*

FRANK MOSSBERG COMPANY
WRENCHSMITHS FOR 20 YEARS
LAMB STREET
ATTLEBORO MASSACHUSETTS

Branch Offices

CHICAGO, ILL. ..... 180 No. Market Street
SAN FRANCISCO, CAL. ..... 626 Underwood Building
LOS ANGELES, CAL. ..... 503 Equitable Building
SEATTLE, WASH. ..... 214 Maritime Building
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MONTREAL, QUE. ..... 332 Bleury Street
FOREIGN SALES OFFICE ..... 161-475 Eighth Avenue, New York City



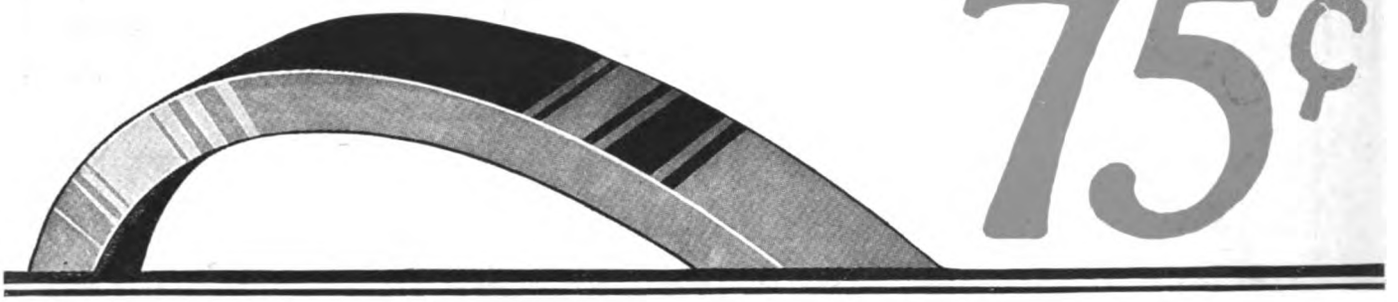


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Gill One-piece Piston Rings

Price Reduced to

75¢



reduce fuel consumption

BECAUSE: they are ***individually*** cast from a special gray iron that retains its tension, elasticity, and vitality under all the intense heat and terrific stress and strain of piston ring service. Gill Piston Rings, under all conditions and for thousands of miles, exert an all-around, uniform, leakless contact with the cylinder walls. They hold ***all*** of the fuel in the combustion chamber where ***all*** of it can be compressed into power. Where there are Gill Rings there is no waste.

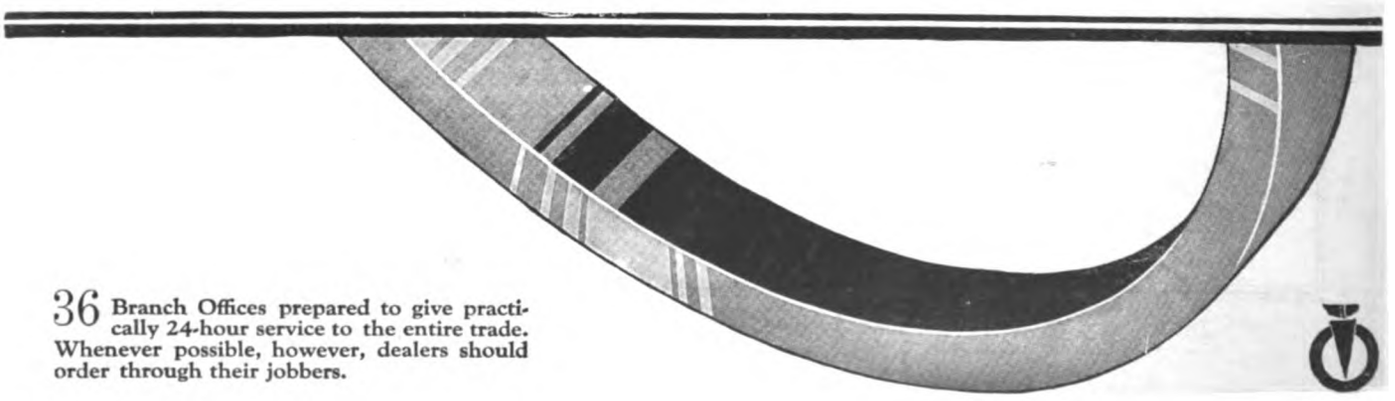


Identify the Gill One-piece Piston Ring by the joint, but do not measure its merit by the joint ***alone***.

THE GILL MANUFACTURING COMPANY,
8300 South Chicago Avenue, Chicago, Illinois

Canadian Manufacturer:
BROWN ENGINEERING CORPORATION, Limited
Toronto, Ontario

Sole Export Agents:
AMERICAN STEEL EXPORT COMPANY, Inc.
Woolworth Building, New York, N. Y.



36 Branch Offices prepared to give practically 24-hour service to the entire trade. Whenever possible, however, dealers should order through their jobbers.

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WINTER BUSINESS NUMBER

MOTOR WORLD

for

DEALERS, JOBBERS AND GARAGEMEN

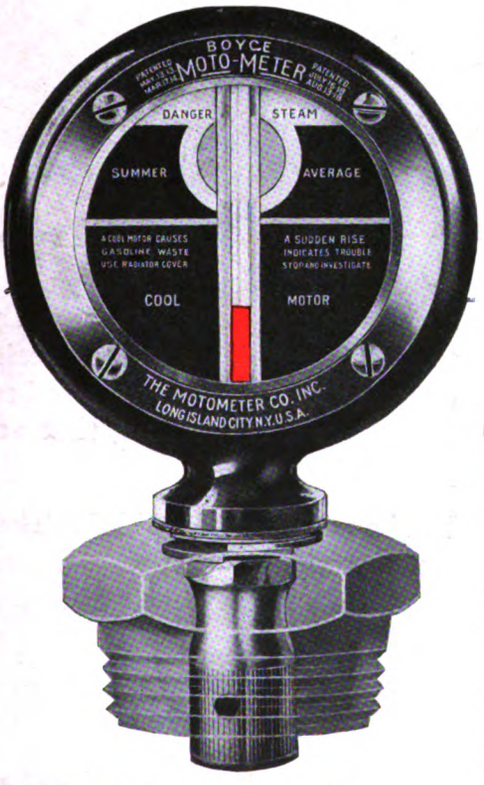
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Number 3

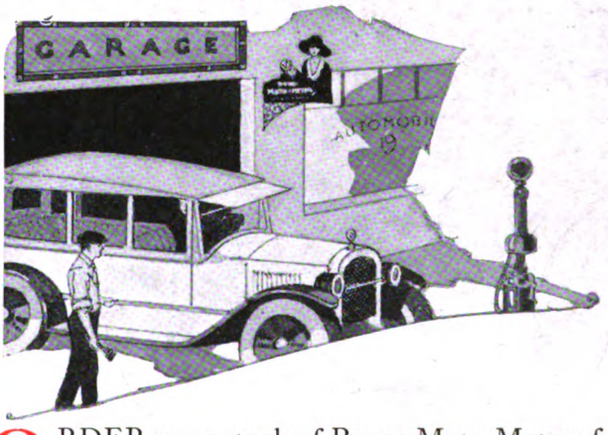
PUBLISHED WEEKLY AT 239 WEST 39th STREET
NEW YORK, OCTOBER 18, 1922

Thirty-five cents a copy
Three dollars a year

BOYCE MOTOMETER

"Your car deserves one"





ORDER your stock of Boyce Moto-Meters for the Fall and Winter *now*, if you haven't already. Don't wait until an emergency arises—and you lose sales and good-will.

Boyce Moto-Meter dealers made new sales records during the summer months. Fall and Winter sales should keep close to this level.

The demand for the Boyce Moto-Meter is not seasonal—it is an all year round seller. Reports from automobile and accessory manufacturers indicate continued prosperity in the industry.

And note this—the proved utility of the Boyce Moto-Meter has made it *the fastest selling accessory on the market today.*

Moreover, aside from its merit as profitable merchandise, the Boyce Moto-Meter and the Service behind it create more *good-will* for the dealer than any other accessory.

"Ask 'em to buy"—

DEALERS

Write us immediately for details of the new Boyce Moto-Meter Service Station Agreement.

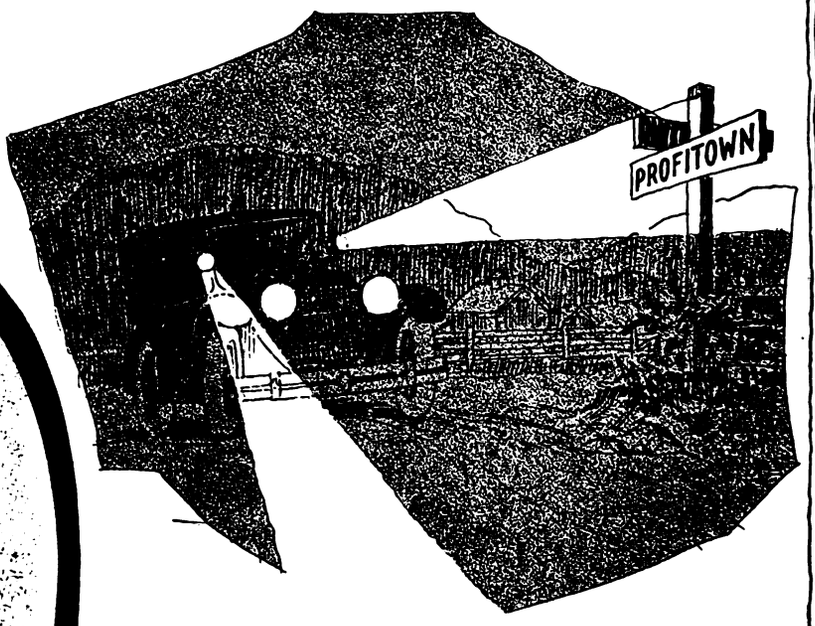
THE MOTO-METER COMPANY, Inc.
LONG ISLAND CITY, NEW YORK

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Shows the Road to Bigger Profits



Model 176

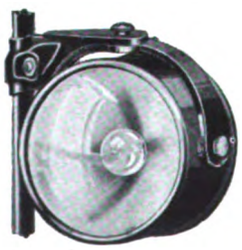


BRIGHTEN up your sales—dispel overhead gloom. The only accessories you can make money on are those that sell. The only accessories that sell are those that are advertised, that have a reputation, that are popular.

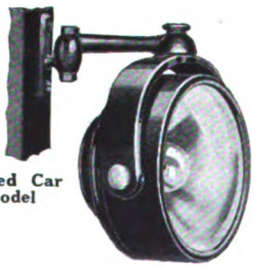
You know Stewart Searchlights. They are on cars everywhere. Build up your profits by handling them.

Model 176 . . . . . $ 7.50
Model 179 . . . . . $ 5.00
Model 182, De Luxe Miniature, $12.00

Stewart-Warner Speedometer Corporation
CHICAGO, U. S. A.



Open Car Model



Closed Car Model

Stewart

PRODUCTS
USED ON 7 MILLION CARS

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MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

Reg. U. S. Pat. Off.

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RIGHT to the thousandth of an inch

No matter what make or model of passenger car or truck drives up to your door for radiator hose you can supply instantly the right size and length if you sell GOODRICH.

GOODRICH furnishes all garage dealers and accessory stores featuring its radiator hose with an elaborate though easily followed chart showing just the width and length to apply. You can not go wrong. You do not waste your time fussing and measuring. You do not waste hose in cutting and recutting. Look at the chart—the job done right.

And more—

You sell hose that will do the job better and last longer—AND BRING A SATISFIED CUSTOMER BACK TO YOU!

THE B. F. GOODRICH RUBBER COMPANY
Akron, Ohio

Goodrich
RADIATOR HOSE
"BEST IN THE LONG RUN"

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No "Cocked" Pistons

Because the pin holes are absolutely square with the outside walls, Spencer-Smith Pistons cannot become "cocked" in the cylinders — thereby preventing scored cylinders, excessive bearing wear, over-heating and loss of compression and power.

SPENCER-SMITH MACHINE COMPANY
HOWELL, MICHIGAN

Largest Manufacturers of Pistons Exclusively

17

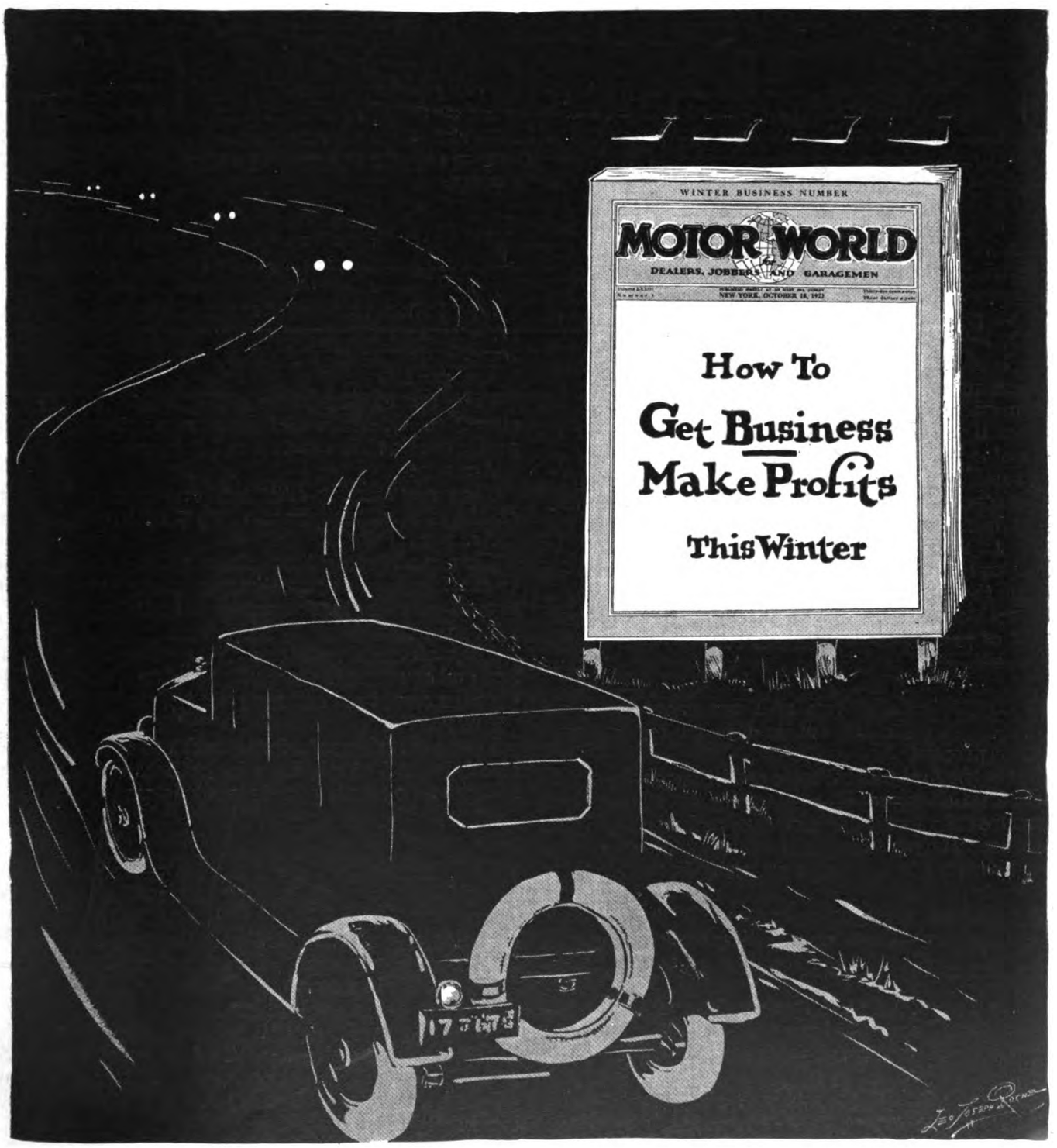


SPENCER-SMITH PISTONS

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXIII New York, U. S. A., Wednesday, October 18, 1922 No. 3



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Make This Winter Work for You

You Can Turn Cold Weather Conditions into Opportunities

1—To Get Winter Business 2—To Prepare for Spring Business
3—To Fit Your Organization for the 1923 Grade

UNTIL six or seven years ago men in the automotive trade thought of winter as a dull season. They didn't think of trying to make it anything else.

Then began the first efforts to build the automobile business into a year round business. They were feeble efforts, as a child's first steps are groping and uncertain. There were some selling efforts, some advertising efforts, but they lacked the punch that convinces. Because the men in the trade were skeptical of getting any sizable volume of business in winter, because their selling and advertising efforts were hesitant, doubtful, they failed to get winter business in any sizable volume.

This was six or seven years ago.

Since then, keeping pace with the development of the motor car and truck as transportation units of year round utility, the trade has made its winter business message stronger and stronger year after year. It has taken a leading part in the education of the public to year round motor transportation. It has fitted itself to serve this year round transportation and in the process has built up a winter business that, each year, rises like an incoming tide to a new height of profit for the trade and satisfaction for its customers.

WITHIN the past two or three years two new facts have stood out in this winter business building process.

This is the first fact: Winter conditions make motor transportation more of a necessity in winter than in summer for many users of cars and trucks. With these users many items of maintenance and equipment likewise are more of a necessity in winter than in summer.

Men in the trade who have realized this—and there are many—have been selling cars and trucks and service and equipment for them as winter necessities.

This is the second fact: Distributors, jobbers, dealers and garagemen who have gone out after business in winter have uncovered prospects for spring business.

And back of all this—getting winter business and listing spring prospects—distributors, jobbers, dealers and garagemen who have kept their organizations, large or small, at work through the winter months, have kept them fit, active, *going* organizations, ready to step off with a business getting stride when spring arrives.

TO do business all winter is no longer a hope of the automotive trade. *Doing business all winter is a fact.*

Men in the trade who are making winter profits are making their places of business an active selling force.

Are you?

They are making clean shops, bright salesrooms, attractive windows and neat store interiors ask people to buy their services and their merchandise.

Are you?

They are keeping salesmen on the go all winter, digging for winter buyers, cultivating spring buyers.

Are you?

They are keeping themselves and the merchandise or services they sell continually before the public in newspaper and other forms of advertising.

Are you?

They are writing letters and mailing cards, catalogs and circulars to prospects all winter, when people have the most time and are most inclined to read.

Are you?

They are making the last month of the year a good month instead of a bad one by getting a share of the millions that people spend for Christmas gifts.

Are you?

EVERY man in the automotive trade can do the things these winter business getting men are doing

In this seventh annual Winter Business Number of Motor World you will find stories that tell how to—

Get winter business.

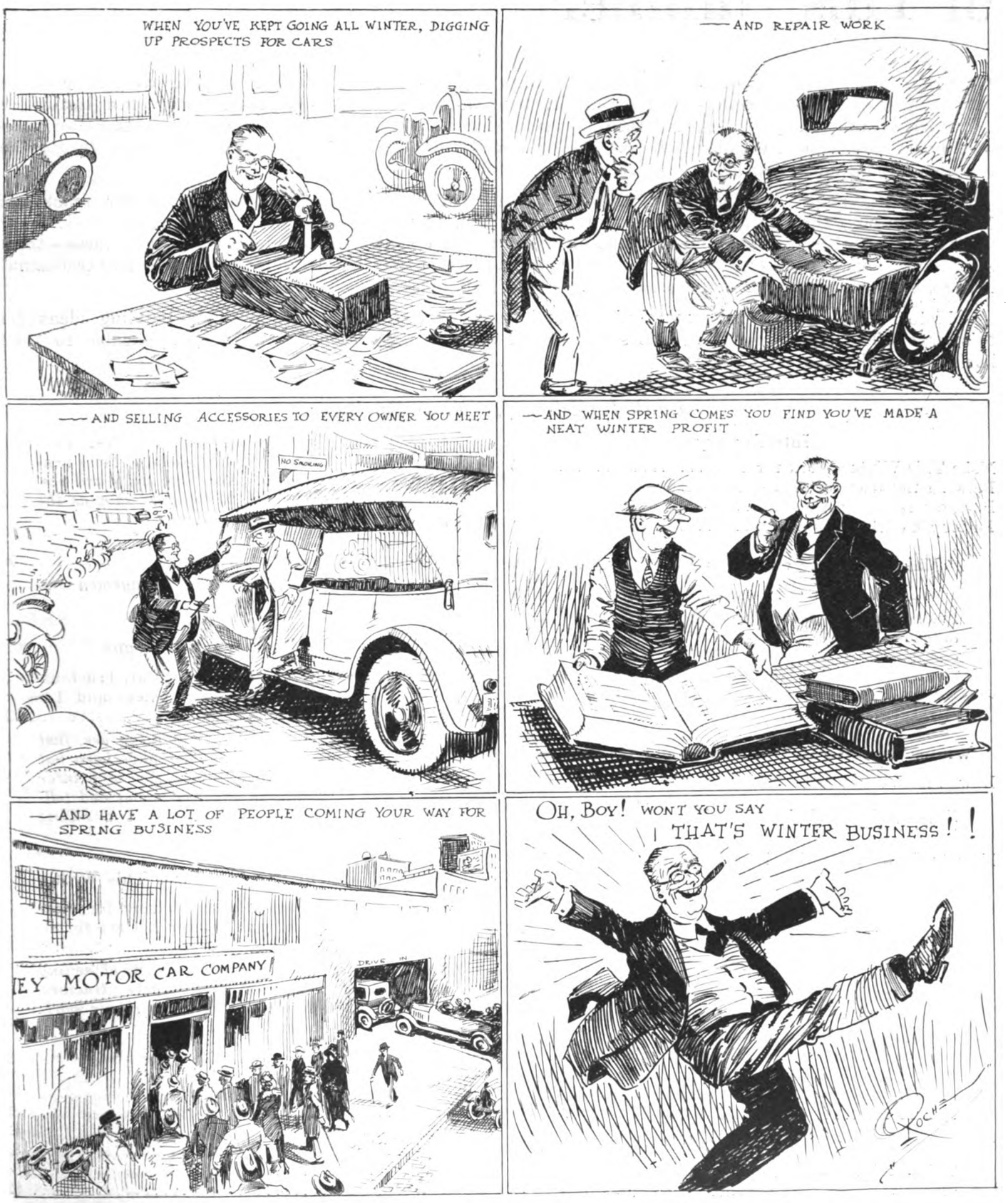
Prepare for spring business.

Fit your organization for the 1923 grade.

They are stories based on *the best practices of successful men* in the trade. They are stories that point the way to profits. Motor World invites you to read them—and use them.

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THAT'S Winter Business!



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The Contents of This Number

This Page Presents an Index of the Winter Business Number Arranged for the Convenience of Motor World Readers

THIS special number of Motor World contains eighty-eight editorial pages filled with suggestions which the editors believe will be of practical value to readers. Experience with past issues has shown that many readers use them for reference purposes. For this reason the editors are presenting on this page a detailed index of the editorial contents, which is intended to assist readers in locating articles and ideas likely to prove of special interest to them.

Prominent among the features of this number are plans for keeping salesmen in the car, truck and tractor field busy through the winter—profitably busy going after both winter and spring business. For these and the other divisions of the trade—automotive equipment and tires and the repair business—there is presented page after page of displays, advertisements and sales letters which the automotive tradesman can use to make his winter activities continuous and profitable.

Motor World editors have searched far and near for practical winter business building ideas for this issue. They hope that the readers will search out the suggestions particularly applicable to their businesses and make use of them.

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Make the Store and Shop Help You Sell

Make Your Place of Business an Active Selling Force 17
Sixteen pages of photographs which show how the automotive trade can use attractiveness, neatness and display as means of selling merchandise and service. Part of this photographic section is devoted to showing the uses of good lighting in merchandising.

Winter Business for the Dealer and Garageman

How to Keep the Sales Staff Profitably Busy this Winter 33
Winter Canvassing Ideas for the Car, Truck and Tractor Dealer.

How to Sell Automotive Equipment and Tires this Winter..... 40
In this section are canvassing ideas, display ideas, advertising ideas and plans for approaching all classes of prospects to sell accessories and tires as winter necessities.

Selling Automotive Equipment for Christmas Gifts.. 47
This section shows in detail how the dealer and garageman can get a share of the millions of dollars spent every year for Christmas gifts. It contains a wealth of holiday gift selling ideas which can be put into use just as they are presented by men in the trade selling accessories and tires.

How to Keep the Shop Profitably Busy this Winter.. 52
This section states in detail, in a new way, the classes of repair work that dealers and garagemen can make a special effort to get in winter. Perhaps you have been overlooking some of these winter repair possibilities. Read the story and see. Then the story tells how to sell your shop as the place to have this work done.

How I Make Shop Profits in Winter..... 56
Experience stories of dealers and garagemen who make winter profits in the shop.

Winter Advertising Campaigns

Practical Advertising Suggestions for Car, Truck and Tractor Dealers, Automotive Equipment and Tire Dealers and Repairmen..... 62
In this section ads which the trade can use, just as they are, are presented. They have been put into type which your newspaper office or printer can follow, obtaining an effective layout and telling the story of your business with a selling punch.

Letters That Will Build Business This Winter

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There are 40 of these letters, practical selling messages on cars, used cars, trucks, tractors, automotive equipment and tires and repair work. How many of them can you use?

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Plowing the Way for Winter Business

Will the Highways Be Cleared in Your Town?—It Reduces Transportation Costs and Increases Profits for Men in the Trade

THREE years ago a snowstorm cost the City of New York sixty million dollars. That was the loss to business as a result of traffic paralysis. When that storm hit New York available snow removal apparatus was inadequate to the terrific task placed upon it. The storm taught New York a lesson, two or three million dollars was invested in trucks, tractors, ploughs and scrapers and the Metropolis now is ready for any kind of a storm that may come along.

New York's bill sounds large, but it is estimated that during a winter of heavy snow the business of the nation loses half a billion dollars through traffic tie-ups.

How much does business in your town lose because its main streets, and the truck highways leading to other towns, are impossible or difficult for traffic, a part of every winter?

How much do you lose, in sales of merchandise and service, because snow blockades keep cars and trucks in temporary or permanent storage?

THE questions are pertinent to every man in the automotive trade.

Dealers and garagemen get some business, in winter overhaul work and dead storage, when cars and trucks are laid up all winter. They get more when road conditions permit limited employment of motor transportation throughout the cold months. They get far more when cleared highways not only make it possible for cars and trucks to run all winter but encourage the practice of winter motoring.

In any community where there is no such thing as systematic snow removal work someone must agitate it. Public officials in many cases have to be prodded into action. They have to be shown that failure to keep key transportation routes open is not economy; it is adding tremendously to the costs of transporting persons and commodities and maintaining roads and in addition is causing abnormally rapid wear of vehicles which use the clogged thoroughfares—and in the end the public pays.

In some territories it is a State job to clear the highways of snow. In others a county, city or town is responsible. Whatever the circumstances, it is possible by obtaining and presenting facts in a constructive manner to convince public authorities that *in the interest of the public they represent highway traffic routes should be kept open through the winter.*

THE past few years have seen big forward strides in the year round use of motor vehicles. Eventually, except in far northern and remote sections, we shall see the car and the truck serving as an all year utility like the railroad and trolley line, with no thought on the part of owners of sending their vehicles to winter storage. That day will be a bright day for the automotive trade. Every additional mile of thoroughfare opened to year round traffic brings the day so much nearer. Are you going to help bring it nearer in your community?

Ask your legislators, your county, city and town officials, to work for snow removal this winter. Ask your newspaper editor to advocate the cause; he is always on the lookout for progressive issues to champion.

Get behind the snowplow this winter.

AND PUSH!

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BUSINESS of a dealer or garageman in the remotest town in the country is affected by general business conditions throughout the country. If the country is prospering, so will his town and so will he. It will be decidedly encouraging to men in the automotive trade, who in many communities are not closely in touch with nationwide business and financial developments, to know that the outlook for the rest of 1922 and 1923 is decidedly bright. With the railroad and coal strikes settled, American business has taken a new hold of its task and virtually all lines of business are going ahead. This story tells about this winter's and next spring's prospects. It will be of interest and value to every reader of Motor World.

Business Is Going Ahead

Fall and Winter Prospects Are Bright and 1923 Promises to Be a Splendid Year for the Automotive Trade

By JAMES DALTON

PREDICTIONS about business for the coming year are easier to make than they were six months ago. The outlook is distinctly encouraging so far as volume of sales is concerned. This applies to passenger cars, trucks, tractors, replacement parts, accessories and garage equipment.

Unless something happens which does not now appear in the cards, 1923 will be a splendid year for the automotive industry. The fourth quarter of 1922 promises to establish a record for the last three months unless all calculations are upset by the unprecedented traffic jam which is impending on the railroads and which probably will continue the rest of this year and perhaps until the approach of spring.

Notwithstanding the complications which may result from rail congestion and a severe shortage of freight cars over an extended period, *there is every indication that a real business revival is under way and that the prosperity it will bring will continue for a long time.* The only adverse factor at the present time is the comparatively low price prevailing for some farm products, but it is probable this condition will be improved when the inevitable foreign demand gets under way. Farmers are in better position to hold their crops than they were a year ago, and the bumper grain harvest assures a profitable crop even at present prices.

WITH a production of 206,000 passenger cars and trucks in September, the industry established a record for the month. It was an increase of almost 50,000 over the same month in 1921, although it showed a falling off of about 25 per cent from August. It was, however, the sixth consecutive month showing a production of more than 200,000. The total for the first nine months of this year exceeds the total for the full year of 1921 and with three months more to go it is certain that 1922 will be another two million car year, although it will fall somewhat short of the 1920 record.

The automotive industry as a whole is operating on a basis of at least 80 per cent of capacity. Many plants are turning out goods as fast as they can make them and there are few which are not above 70 per cent of capacity. In some lines all the facilities available are far short of the demand. This is true particularly in relation to closed bodies.

Parts makers are greatly pleased with the amount of business they are getting at a period when they usually feel a sharp let-up in sales. Nearly all of them have commitments running into 1923 and there is a disposition on the part of vehicle manufacturers to place their commitments for a longer period ahead, which is in itself the best indication of renewed confidence in the future.

BUSINESS in replacement parts, accessories and garage equipment is better than it has been since 1920.

So far as passenger cars are concerned, sales have fallen off considerably in some sections of the country, but they have increased in other districts, in spite of the approach of fall. Demand in the southeast, especially, is stronger. The farm market generally is better than it has been for a long time but it is not so strong in the grain growing districts as it promised to be a few weeks ago. This is because of the lower price for grains.

Closed car demand, taking the country as a whole, is averaging around 35 per cent of the total sales. In some sections the proportion is much higher and in some it is lower.

While there has been no great increase in truck sales, the market is firm and it will grow steadily stronger as rail congestion becomes more serious. In anticipation of the necessity for keeping motor transport moving as an auxiliary to the hard pressed railroads, the Federal Bureau of Roads is already making plans for more vigorous effort the coming winter in the removal of snow.

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It should not be forgotten that motor transport did not reach important proportions until it became apparent in 1917 that the railroads would be unable to move the volume of traffic offered them. They did not have a surplus of cars until late in 1920 and by that time highway transport was so firmly established that only a comparatively small part of it went back to the rail carriers. It had demonstrated its efficiency and economy in time of need. The conditions which now prevail, or will prevail in the near future, will parallel precisely those which inaugurated general use of the truck, and motor transport will be given another push forward. It is inevitable that it will increase the demand for trucks for the remainder of this year. This will include both light and heavy duty vehicles.

SO far as 1923 is concerned, there is no doubt that it will be a splendid year for all branches of the automotive industry. The volume of passenger car business is not likely to be more than 10 per cent larger than it has been this year, but that has been a mighty good business. Truck demand will shoot upward, however, and in this field the percentage of gain over 1922 is likely to be comparable to the gain in passenger car sales this year over 1921. Truck makers and dealers would do well to get ready for a heavy volume of business. This does not mean, nevertheless, that they should accumulate large inventories or expand their facilities. There is plenty of truck manufacturing and sales space for some time to come.

The automobile market should be built on a sane and solid foundation. The constant strife to sell more cars, regardless of whether they are well sold, is not good business. It is one of the main reasons for the used car problem, which retains serious proportions. The handling of used cars is largely a dealer problem, but it is aggravated by those manufacturers who insist upon their dealers straining every nerve to sell more cars, regardless of the actual needs of their territories.

WHILE it would be unwise to accumulate inventories of raw materials at the factories or of vehicles on dealers' floors or in warehouses, beyond the expected needs for a comparatively short period, some consideration should be given to the effects of the rail situation and the difficulty of getting shipments through in anything like the usual length of time. The time will soon be here when it may take a month to get a shipment that usually would require only a week. For that reason dealers and manufacturers will be entirely justified in giving themselves more latitude than they have for many months past.

Fundamental indications are that the present industrial revival is not a flash in the pan, resulting from an attempt to fill empty shelves, but rather that it is a sound movement which will continue. Car loadings are rapidly approaching the high record set in October, 1920. This is not entirely the result of the feverish effort to move fuel dammed up by the long continued coal strike, for miscellaneous freight car loadings are nearly at the peak of two years ago. There can be no better barometer of business than car loadings.

Reports from all sections of the country show that business and industry went ahead with renewed confidence as soon as the coal and rail strikes were settled. They were not uncertain at any time about the improvement in demand, but the day by day problems caused them to hesitate and they did not move with as much confidence as they would had there been no strikes. This hesitation has practically disappeared.

Practically all lines of trade and industry are going ahead, with no serious obstacles in the way. Farmers, to a certain extent, are marking time but their prospects are good. In general they have good crops, at least materially larger than last year, and while prices at the moment are rather disappointing there is every reason to believe they will go up rather than down. There has been a shortage of European crops this year and practically all the countries of Europe will have to come into the American market for foodstuffs before the winter is over. Automotive dealers in rural districts will have a gratifying market for the next fifteen months.

THE cotton crop is nearly a million bales short of expectations early in the year because of weather and weevil damage, but the latest government estimate is for 10,135,000 bales as compared with a harvest of 8,039,673 in 1921. There will be a market for at least 13,000,000 bales of American cotton, so it is evident that the new crop and whatever carry over there may be from last year, will be marketed at a good price. This assures comparative prosperity for all the cotton growing states, with good markets for motor vehicles.

The farmer's situation all over the country, while it is not such as to send him rushing into the market to buy everything he wants, is far from discouraging. Farmers who got into debt in the crash of produce prices in 1920 paid off some of their obligations last fall. They will still further clear them up this fall and in some cases will be able to liquidate entirely. Other farmers, through the entire reconstruction period, have had money in the bank and have held it until prices of the things they buy approached nearer to the level of values of the things they sell. This level is not here, but the farmer's situation is better than it was and many of these farmers with money will buy equipment for the farm this fall, winter and spring. With the average farmer an automobile is just as much equipment for the farm as a reaper or binder, and trucks and tractors are included in many cases, also in the equipment the farmer must have.

All this promises good business in most localities, certainly better than fair business in all sections for automotive tradesmen who will actively canvass their territories for farmers' business.

In country districts, in city and town territories, there is plenty of justification in the months ahead for dealers to put active effort into canvasses leading to fall, winter and spring business.

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Better Men

Reilly Tells How He Is Going to Get Up Speed for the 1923 Grade

By NEAL G. ADAIR

THE sunshine of a bright October morning was no brighter than the smile of Henry Bennett as he walked briskly into the office of C. J. Reilly.

"Cornelius," said Bennett the moment he crossed the threshold, "do you know we've just finished the biggest six months in the history of the Bennett Motor Co?"

"Not surprised," Reilly replied as they shook hands. "We've just made the same kind of record ourselves."

There was another handshake by way of mutual congratulation, after which the dealers lighted cigars to encourage the swapping of experiences that had to do with Bennett's scattering of Redman cars and Reilly's distribution of Sennetts throughout the Callawassa territory.

"Yes sir," Bennett exclaimed. "We sure made a clean-up. Guess maybe I'm entitled to disappear into the woods after some deer or something. What?"

"Feel like resting on your laurels?" Reilly suggested.

"Earned 'em, haven't I?" Bennett retorted.

"I was thinking about laurels," Reilly said, musing. "Sometimes I think the luckiest man in business is the fellow who has no laurels to rest on. He isn't tempted to do anything but just keep plugging ahead."

"I haven't said anything about not plugging, have I?" Bennett asked.

"Not exactly, except that you seem to be set on jumping away from your business just at the time when—"

"—just at the time when things are slowing up and I can get away without gumming up the works," Bennett finished.

"Things are slowing up, of course," Reilly conceded, "but does that mean you should be, too?"

"But winter's coming, isn't it?" Bennett retorted.

"And so is—" Reilly interrupted himself. "I was reading a book the other day, Henry, and a little quotation in it set me thinking, harder, I guess, than I ever thought before about this seasonal side of the automobile business. The quotation said, 'If winter comes, can spring be far behind?' then the book went on and told how Nature uses winter time to get ready for the coming spring. And I couldn't help thinking that you and I and some of the other men in the automobile business aren't quite so wise as Nature. We say, 'Winter's coming, consarn the luck,' then we puddle around for a month or so waiting for it to come and two or three months more wishing it would go and suddenly come to with a start at show time and run



around in circles trying to get ready for spring with spring right on top of us."

"What's that got to do with my going off to shoot some wild animals in October?" Bennett demanded.

"It's like this," Reilly answered. "You've got a good organization and so have I. But I'm not so sure that this year's good organization is going to be good enough to meet next year's competition. And this year's organization won't be likely to be as good next spring as it is now unless we do something to keep it up to snuff through the winter, when business is bound to fall off a little.

"So, Henry, I'm not going hunting or anywhere else until I work out a program and get it going—a program that will help my salesmen to become better salesmen, my service men better service men and my office folks better office folks before next spring rolls around. Every man in the place is going to be busy this winter learning some things that he never knew before about the Sennett car and how it is made and how it can be sold, and the house of Reilly and how it is run. We're going to have weekly meetings for salesmen, weekly meetings for service men, weekly meetings for the people in the office and monthly meetings for everybody."

"But this meeting stuff, don't you think it's overdone?" Bennett asked.

"It all depends on the kind of meetings you hold," Reilly answered, "and whether you lead your people into them, or drive them in. We sent individual letters to everybody in the place the other day, asking, 'Are you going to make the 1923 grade?' We called our meetings a course in self-improvement and asked for volunteer enrollments. The whole place signed up in a day. Now we're going ahead with a program that will get some real meat into these meetings, keep them interesting and hold the crowd right through the season."

"Sounds first rate," Bennett commented," but you know my organization isn't as big as yours and—"

"What has size got to do with it?" Reilly broke in. "Is there any reason why three people, for instance, can't get together once in so often and talk about the work they are all trying to do, just as well as twenty people? I have dealers out in the territory, fellows with only two or three salesmen and half a dozen men in the shop, who hold staff meetings as regularly as clockwork and get a lot of good out of them. In these regular meetings the ideas of the whole organization can be brought out and made available for everybody."

"Sounds better yet," Bennett said. Then, regretfully shaking his head: "I sure did want to get out and shoot me a deer, BUT—"

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Make Your Place of Business an Active Selling Force



THERE are thousands of dealers throughout the country with businesses just about as big as the business of W. A. La Motte, who runs a general automobile establishment with sales and service in Elizabeth, N. J. But how many dealers have A PLACE OF BUSINESS THAT SELLS like this North End Garage? A little salesroom, but inviting; signs that sell without offending good appearance; a neat, clean entrance to the garage and service station —these are things that make La Motte's place of business an active selling force.

"SO this is Bill Smith's place!" says the man you dearly want to sell to—the man you want to make a regular customer in your place of business.

And then, as he stands before your store or your garage, or just inside the door, he proceeds to look YOU over. He judges you, your organization, your ability to satisfactorily s e r v e him by APPEARANCES. Doesn't he?

You can just bet he does! It is a human trait to judge people and things by appearances—and to form likes and dislikes from first impressions.

Bill Smith may be a corking good salesman—he may be the best mechanic in town. He may have the best organization, the best tools, the best personality—when you know him—but if his place of business doesn't create favorable impressions there are a lot of people that are never going to know him.

Bill Smith, dealer or garageman, has to MAKE HIS PLACE OF BUSINESS AN ACTIVE SELLING FORCE. He has to make it neat, clean, attractive. He has to plan the appearance of his salesroom, store or shop to attract customers.

Other trades learned the lesson long ago and most of them are doing it in a fine way. Many men in the automotive business have done it, too—and the rest of the trade is going to do it.

This winter is going to afford you time to think and plan. Why not direct some thinking and planning toward making your establishment an active selling force? There's a tendency of business to slacken in winter. Why not direct your energies toward straightening out this winter's drooping sales curve by putting your place of business to work attracting customers?

Most people buy where parting with their money is made easier by interesting and pleasing displays of things that create desire to buy. Most people like to do business with establishments that look prosperous, dependable and well managed. Great financial and insurance companies have invested millions in home office buildings that are towering monuments of strength and stability. And they don't neglect the opportunity of impressing people with their strength and stability by printing pictures of their great buildings on their literature. They know the human trait of judging things by appearances, and cash in on the public confidence that their great business monuments inspire. *They make their places of business an active selling force.* And in many a small city or town one of the finest business buildings is an automobile establishment. *The owner has made his store and shop an active selling force.*

As you turn the next fifteen pages study them. The pictures have been selected from hundreds of similar ones from all parts of the country. Every one shows how a dealer, a garageman or a service station manager has put selling force into the appearance of his establishment. These pages show how some dealers have made the fronts of their buildings pleasing to the eye and interesting to prospective purchasers of automotive products. Some show how dealers have arranged the fixtures and stock in their stores to display the products they sell to the best advantage and make this display a selling force. Some show windows that carry a merchandising message and create the desire for ownership. Some show how dealers utilize the Christmas appeal to put forward the things they sell as Christmas gift suggestions. And some show samples of effective store lighting and its merchandising power.

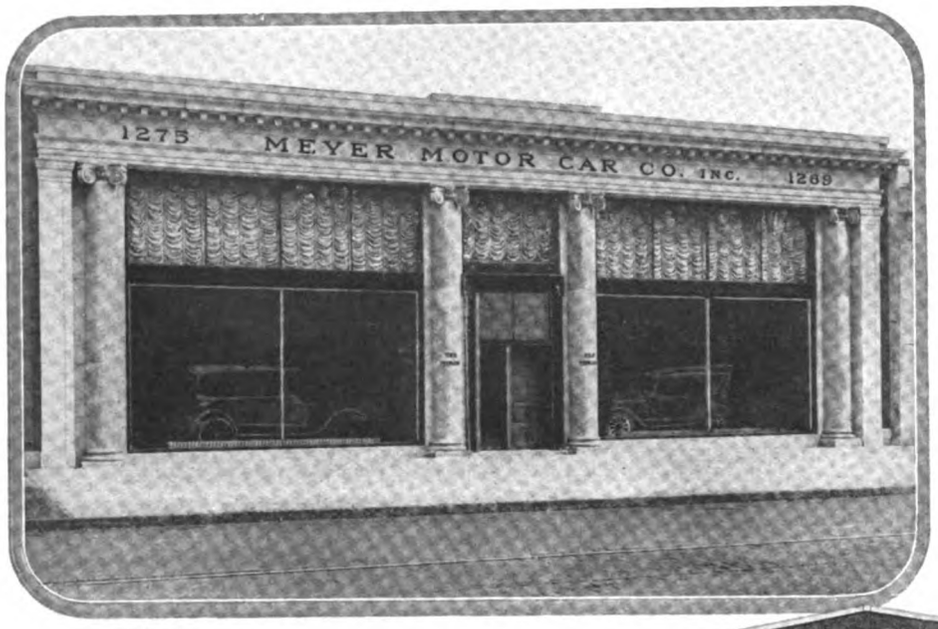
With each of the pictures there is a paragraph that will help you to single out for special study some phase of selling by appearance. Study these paragraphs. Think what you can get in the way of suggestion from these pictures that will help you make your place of business an active selling force this winter.

Plan now to make your investment in brick and mortar, in plate glass and fixtures, in merchandise and equipment, a silent, forceful salesman.

Make it sell this winter!

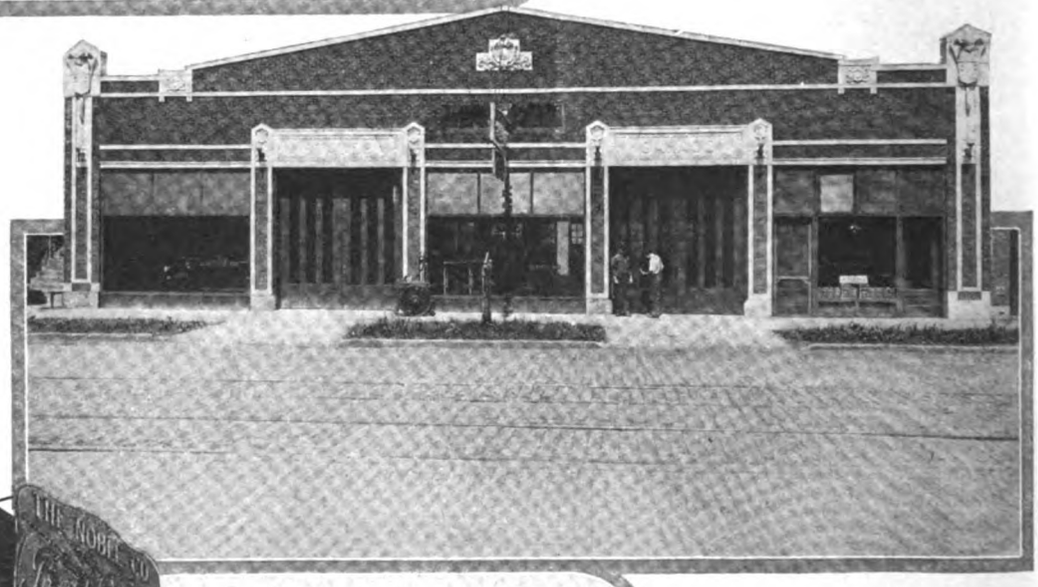
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Three Fronts That Sell—Study Them



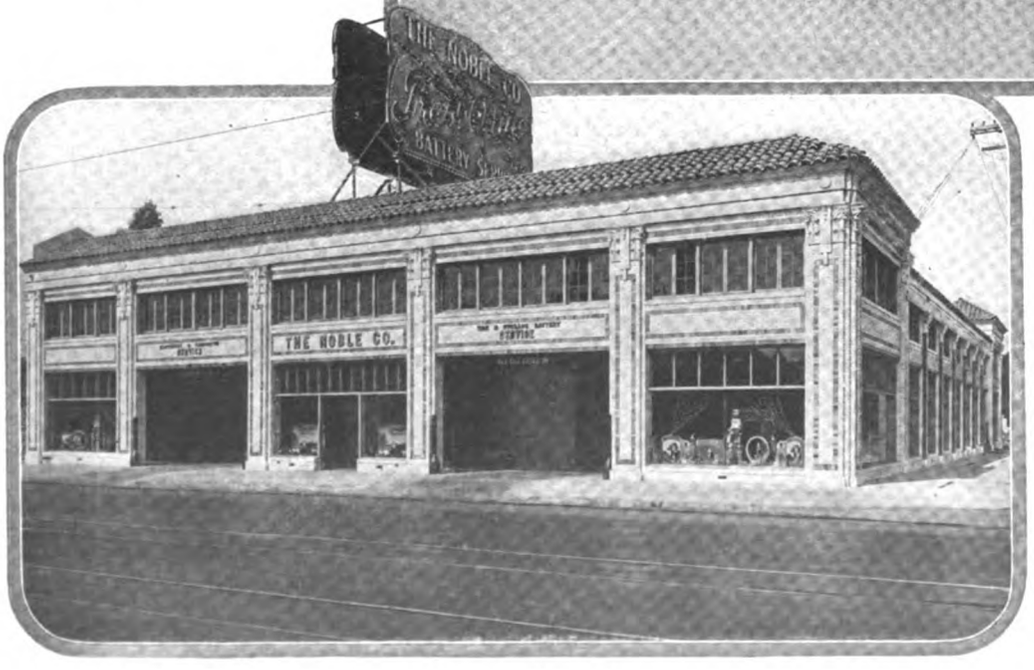
THE CAR SALESROOM

THIS front, in the most appealing language, says, "Come in." It isn't one of those great, expensive dealer buildings of the great cities, but its dignity and beauty fit the dignity and beauty of the merchandise it contains — motor cars. Notice that chief prominence is given to the dealer's name; his building is helping to establish him as one of the community's merchants. Names of the cars he sells are lettered on the entrance pillars. —Meyer Motor Car Co., Inc., Peerless and Reo, Buffalo, N. Y.



THE GARAGE

THIS front, of the States Garage, in a section of Chicago far from the downtown metropolitan section, gives every indication that there is progressive management of the service and selling facilities housed behind it. Neat, clean and with an electric sign showing up and down the street, it says "Drive in."



THE SERVICE STATION

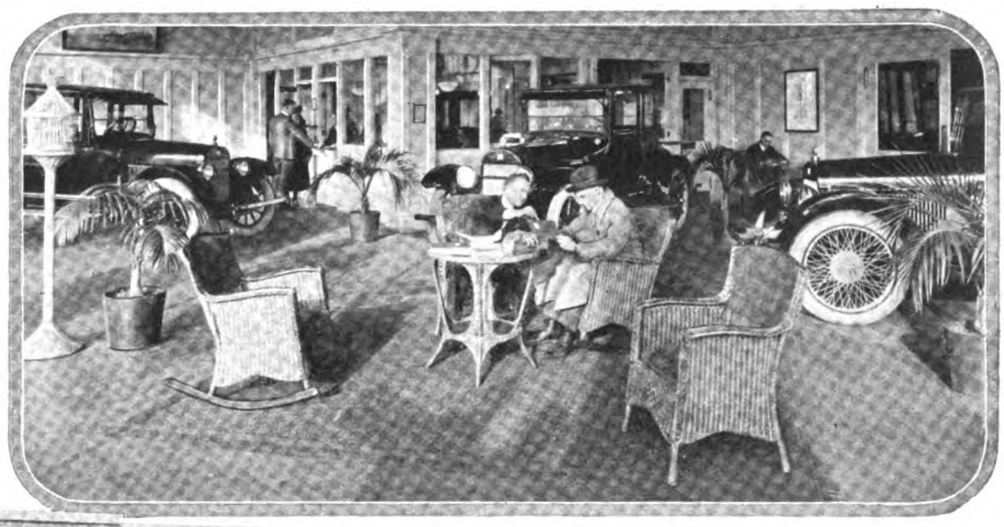
THE street front of this battery service station in Los Angeles is an effective advertisement, bidding night and day for business. The fine, wide driveways make it easy for customers to get in and out and the electric sign on the roof can be seen for many blocks. The windows sell the company's service and merchandise.

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Meeting the Prospect With Salesmanship

IN THE SALESROOM

AN ideal place to sell a car, isn't it? Homelike atmosphere, comfortable chairs for the salesman and prospect, a table to hold catalogs and other reference literature, cars all around—cars clean and bright with polish, appealing to the prospect's natural desire to have one. And, at the rear, a convenient place to introduce the customer to the head of the house and the service manager. This is the salesroom of Eldridge-Buick, Seattle, Wash.



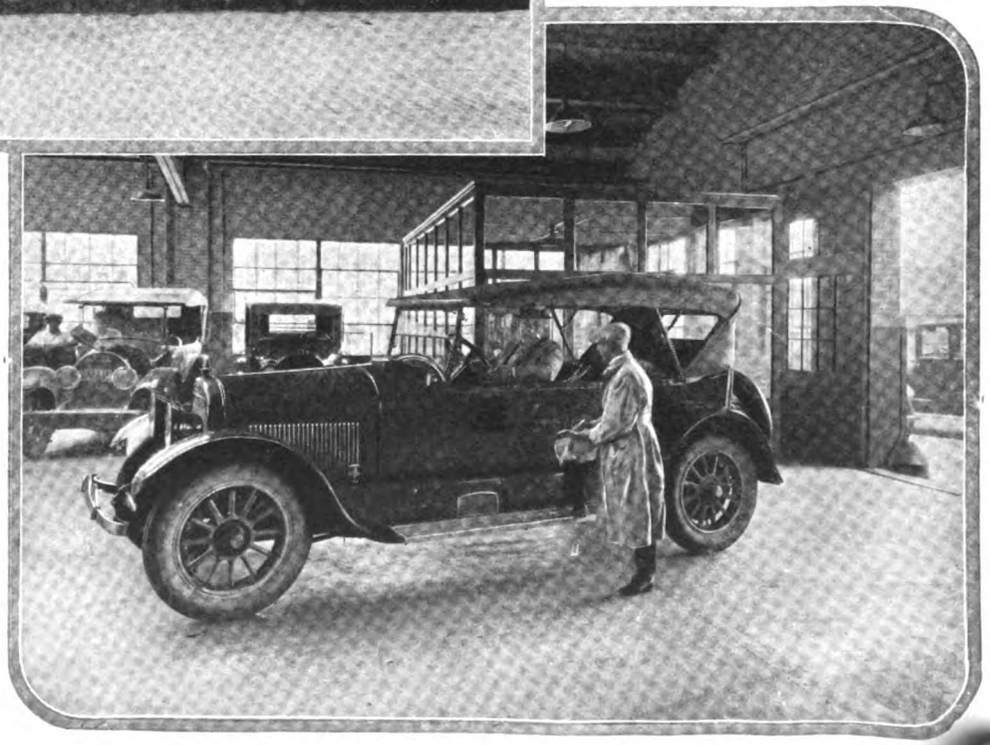


AT THE SUPPLY STORE

CAN'T you picture the smile of satisfaction that lights the motorist's features as he draws up to the curb here? Everything is provided to render instant service—gasoline pumps, air pump, water lines and grease server. And as the motorist receives service attractive windows ask him to buy equipment and tires. This is the equipment and tire store of Amedeo Scala, Perth Amboy, N. J.

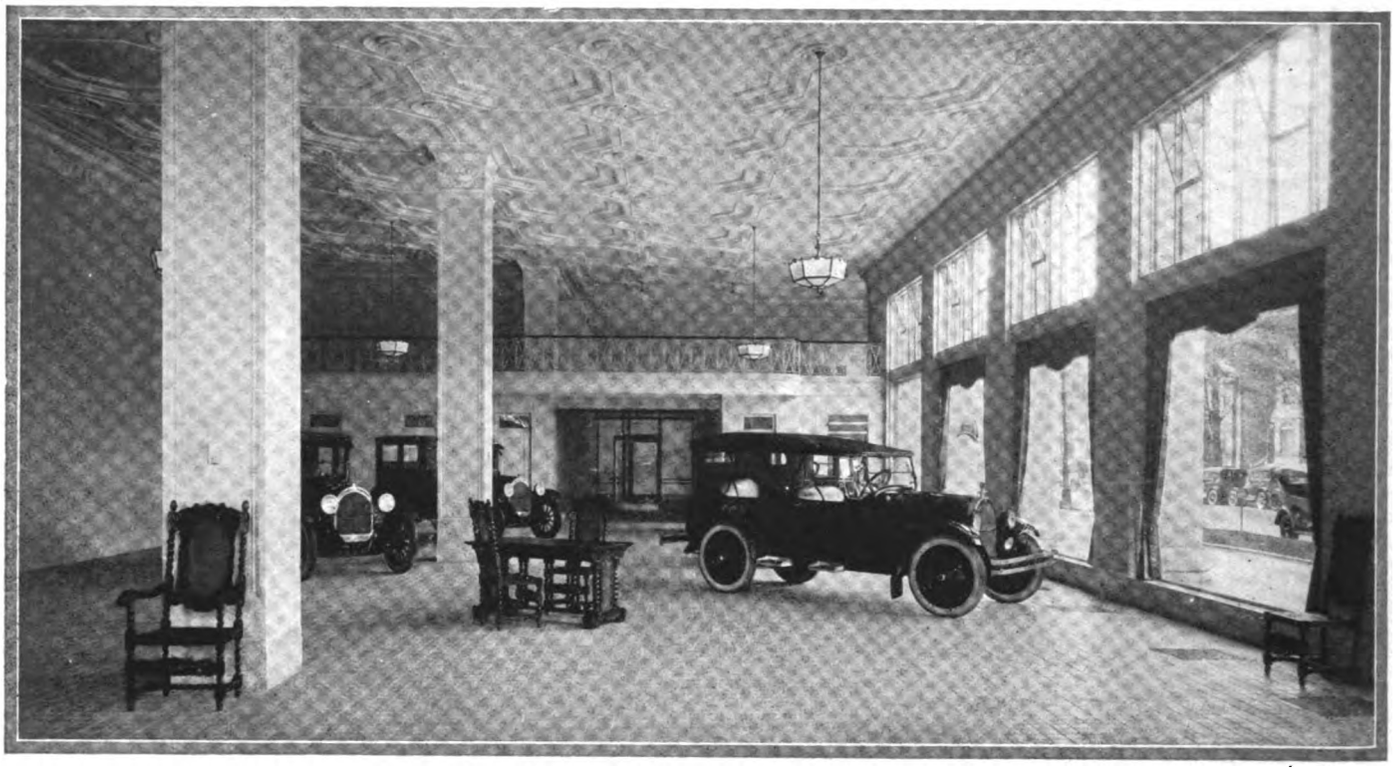
IN THE SHOP

WHEN the repair work prospect drives in he finds everything neat and clean—floors, walls and ceiling. There's no grease spilled around to suggest what might happen to his car, no loose tools and parts scattered about. The service manager's office is right by the doorway and a service salesman meets the car owner immediately. Substituting a foreman for a service salesman, the smaller repairshop can do the same thing. You can make your repairshop invite business like this service station entrance of Cadillac in Detroit.



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Salesrooms That Invite People to Buy



IN THE BIG CITY

THIS salesroom can hold its own with the stores of the city's highest class mercantile establishments. It suggests financial strength and stability in the organization behind the car. It is typical of many salesrooms in the larger cities that have put the presentation of the automobile on the high plane that it deserves as the costliest unit of merchandise that the average citizen ever buys.—Retail salesroom, Oldsmobile, General Motors Building, Detroit.



IN THE SMALL TOWN

THIS Ford dealer's salesroom in the Northwest fairly bristles with selling atmosphere. The camera could take in only part of the floor and it excluded the space near the windows, devoted to the showing of cars and trucks. Here we have the tractor and, breaking up an otherwise empty-looking space in the center of the floor, an attractive set-up of wire wheels. But look at the showcases and shelving! Everything is in perfect order, yet item after item stands out so as to suggest itself to the possible purchaser. The showcase in the center background, it will be noted, has a staggered rack for containing and displaying small items. Any dealer with a spare corner in his salesroom or service waiting room or any garageman with available space in his office can make a display like this. Shelving, showcases and all equipment can be purchased ready to set up.

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Neatness and Display as Sales Helps



JOBBER'S MODEL STORE

EFFECTIVE display for a small, widely selected stock is made in this branch store of the Pruden Hardware Co. in Newark, N. J. The store's immaculate appearance and the wide range of accessories and equipment displayed combine in it a strong wholesale selling establishment and an inspiration for the dealer customer. Although the store is less than twenty-five feet wide and about sixty feet deep it displays the entire Pruden line, including heavy garage equipment. Only enough stock to make the display on the shelves and in the cases is carried in the store. All large wholesale orders and most of the small ones are filled from the reserve stock on the second floor. The floor is light and well oiled and a wide strip of rubber floor covering running the length of the store protects it.

DISPLAYING LARGE STOCK IN A WIDE, SHALLOW STORE

ALTHOUGH this store carries a large stock of tires and parts the arrangement is neat and pleasing. The clean, oiled floor and the neatly kept cases and shelves are inviting. This is an interior view of the accessory and tire store of Amedeo Scala, Perth Amboy, N. J., the remarkably good front of which is shown on a previous page. Scala's tire business alone reaches $100,000 a year.



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Display Cabinets and Boards Attract Customers



A SMALL, NEAT TOOL DISPLAY

BUYING is made easy for the customer at every turn in the John & Arthur accessory store in Boston. This picture shows a particularly effective placing of a display cabinet in which is shown a few staple tools. The entire interior arrangement is pleasing and interesting. Among the things that make it so are the attractively trimmed cases, the inclined display counter at the rear (shown at the extreme left of the picture) on which polishes and greases are shown. In front of this display is the wrapping counter. Displays and motoring pictures under the wrapping counter attract the customer's attention to the rear of the store. Selling messages are printed on the beams of the ceiling, the last syllables of the word "satisfaction" showing in the upper left corner. Large drawers, plainly labeled, carry much of the small stock.

A SILENT SALESMAN

THESE novel display and stock cabinets are effective selling agencies in the store of John T. Geran, Keyport, N. J. Below is shown two views of one of several cabinets that spot the floor of Geran's store. Items are mounted on white plaster board behind the glass of the doors.

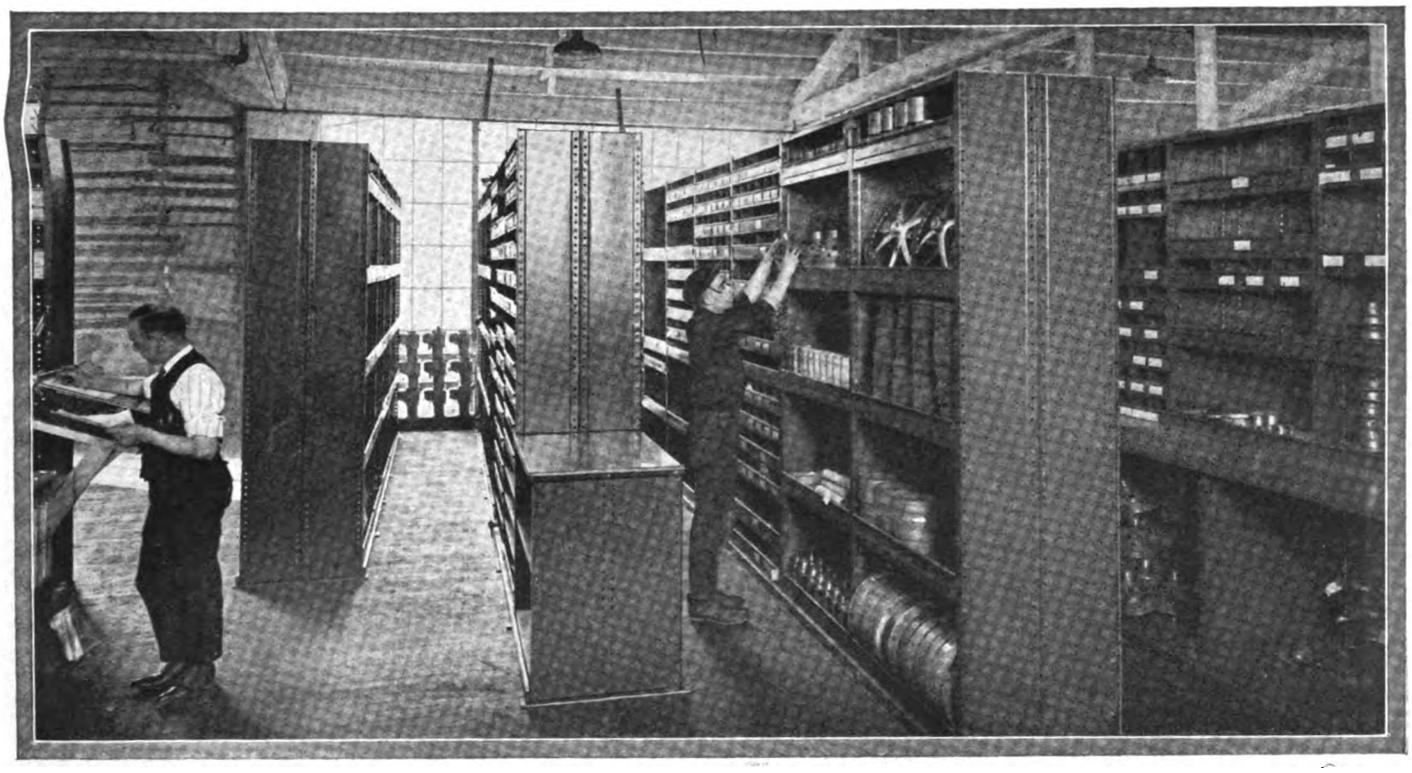
REVOLVING DISPLAY BOARDS

A POSTCARD display rack furnished the idea for this display board. It was designed and used by Metcalfe & James, equipment dealers, New York. The racks may be made in size desired.



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When Your Customer Looks Across Your Parts Counter



EVERYTHING WHERE IT OUGHT TO BE

YOU won't be running out of essential parts or keeping your customers or shopmen waiting while you look for mislaid parts if you have an orderly, attractive bin system like this in the Reo Motor Car Co., San Francisco, with an inventory system to tell you when to re-order. Customers looking into a well-kept stock department can't help having a feeling of confidence in your ability to help them keep their cars in order. Bins like this can be purchased in units to meet your needs.

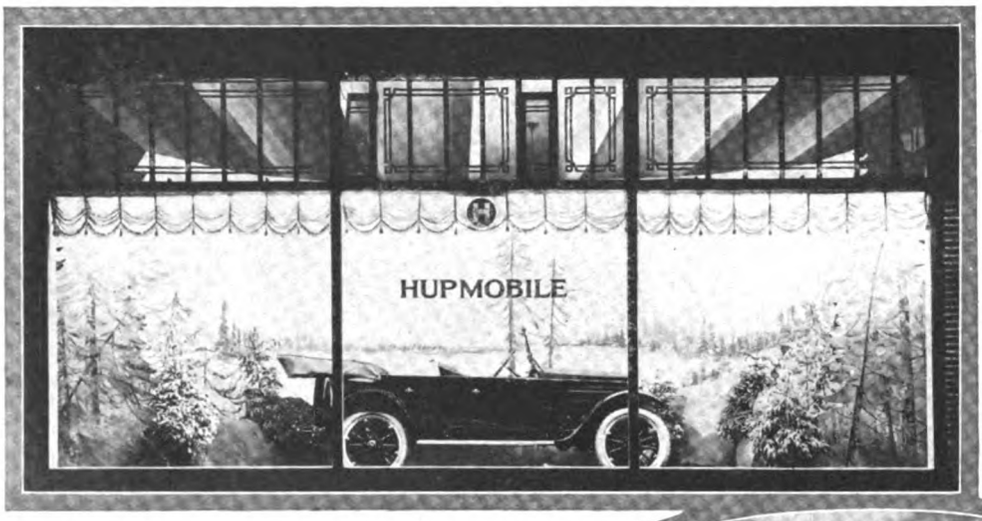
ACCESSORIES DISPLAYED

THIS Ford dealer's parts counter in Yonkers, N. Y., has a system that rapidly fills the orders of customers and men from the shop and in addition plays an active part in the sale of accessories. Notice how various utility items of equipment for the car are attractively displayed where the parts customer must see them. The parts clerk, while filling an order, has a fine opportunity to sell the customer an accessory or two, and if there is a commission for the parts man for these extra sales, an arrangement prevailing in many dealer establishments, he will be alert to make them as big as he can. Are you exposing accessories for sale at every logical point in your sales and service quarters?



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Putting Winter Atmosphere into Car Displays

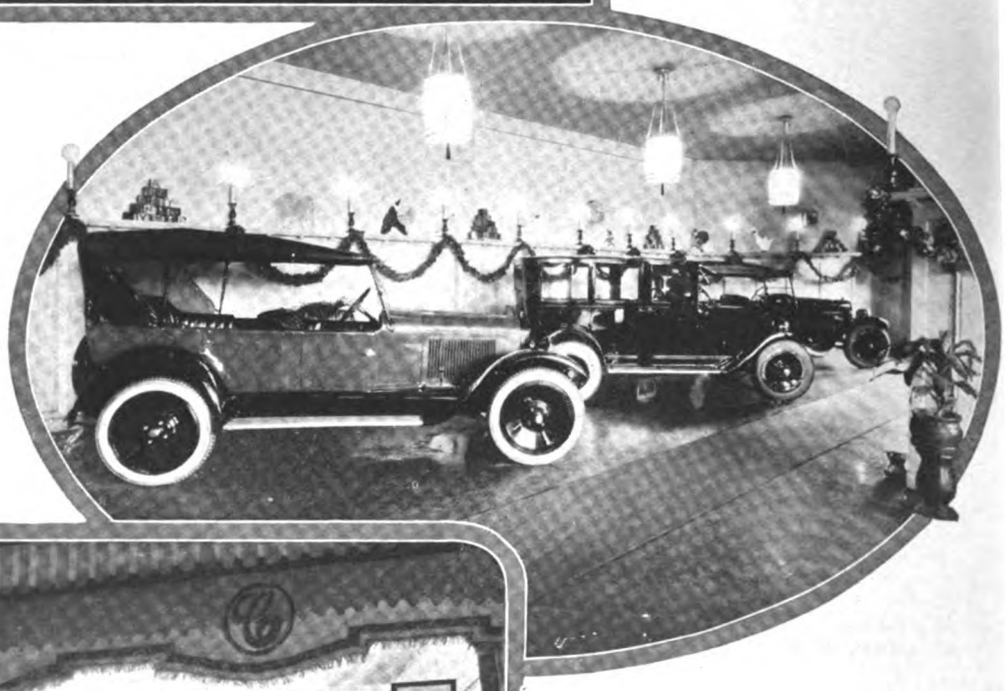


WINTER LANDSCAPE WINDOW

THIS effect in a window may be secured by employing a landscape drop similar to the ones used in the theatre. Evergreens are covered with cotton and placed on the floor at the sides of the scene. About three weeks was required to make the set illustrated. It was used by the A. L. Englander Motor Co., Cleveland.

A TOUCH OF CHRISTMAS

THIS remarkably effective interior treatment was used last Christmas by Harry J. De Bear, then manager of the Maxwell - Chalmers branch in New York. Alphabet blocks and small toys on the top of the wainscoting rail and draped holly rope carried the Christmas appeal. Lights were enclosed in appropriate hangings.





WINTER SCENE IN CORNER WINDOW

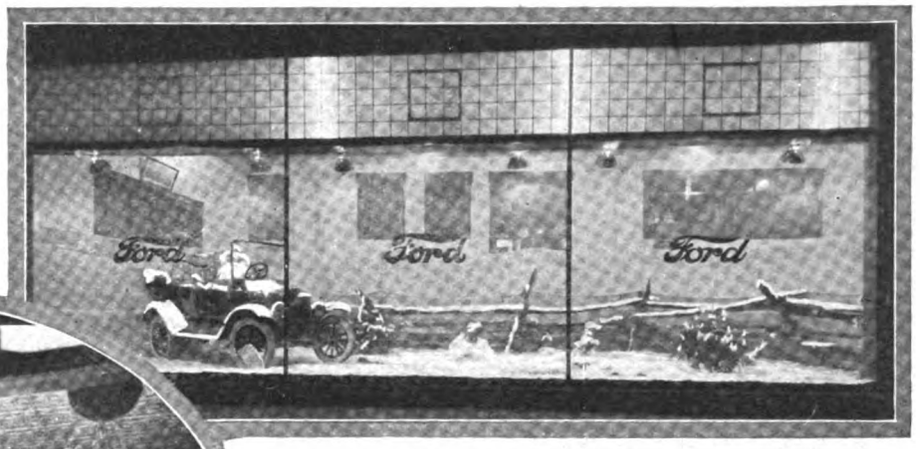
THIS shows a pleasing display made by Chevrolet in Detroit, using a scenic back curtain and a few evergreens. The drop was hung at the edge of the side window and the trees arranged to space off the floor in the corner. An appropriately dressed dummy from the cloak department of a dry goods store occupied the rear seat. Artificial snow made by sprinkling Epsom Salts lightly on cotton completes the winter effect. Blue-white lighting at night enhanced the beauty of the display.

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Windows and Interiors with a Seasonal Appeal

SANTA CLAUS

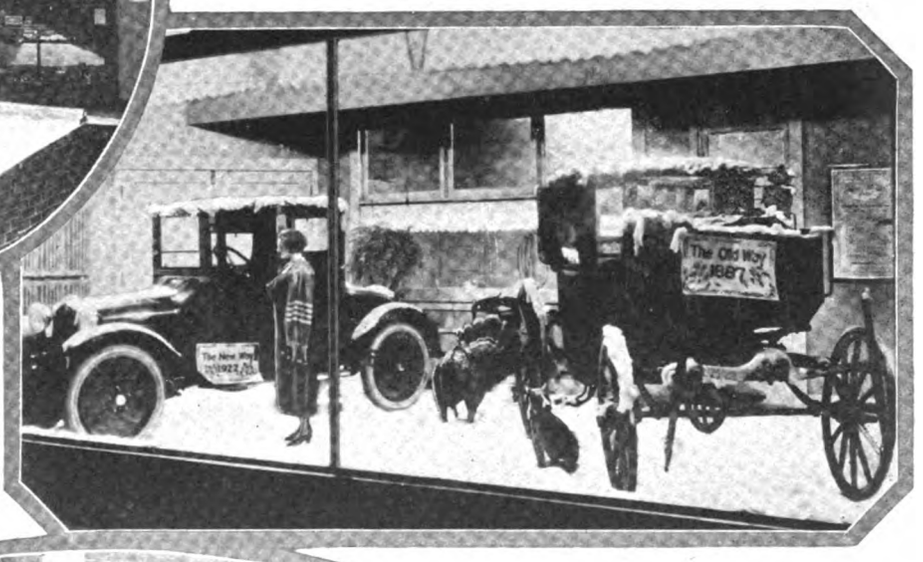
A SECTION of an old rail fence, a few yards of white cotton cloth and some cotton were used here. A Santa Claus dummy at the wheel and a bag in the rear of the car completed the picture. — West Detroit Auto Sales Co.





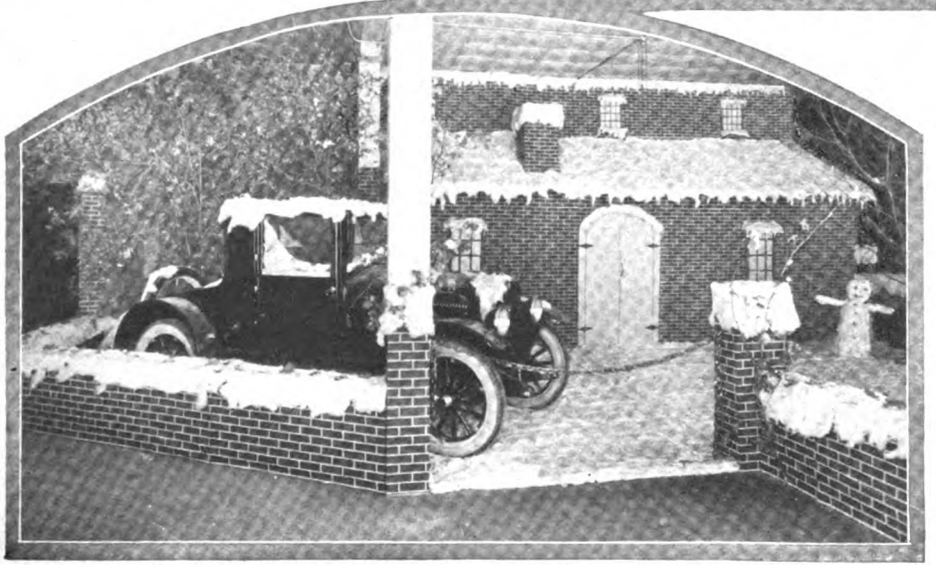
GOING DOWN THE CHIMNEY

THIS roof was built in the window. The car stood just behind it on the salesroom floor. The sign said: Santa Knows Ford Will Get Him There and Get Him Back.—Beaverhead Motor Co., Dillon, Mont.



THANKSGIVING WINDOW

CONTRASTING early and modern transportation used in getting back to the farm for Thanksgiving dinner, this window by Kimball & Delay, Parsons, Kan., made a timely appeal.

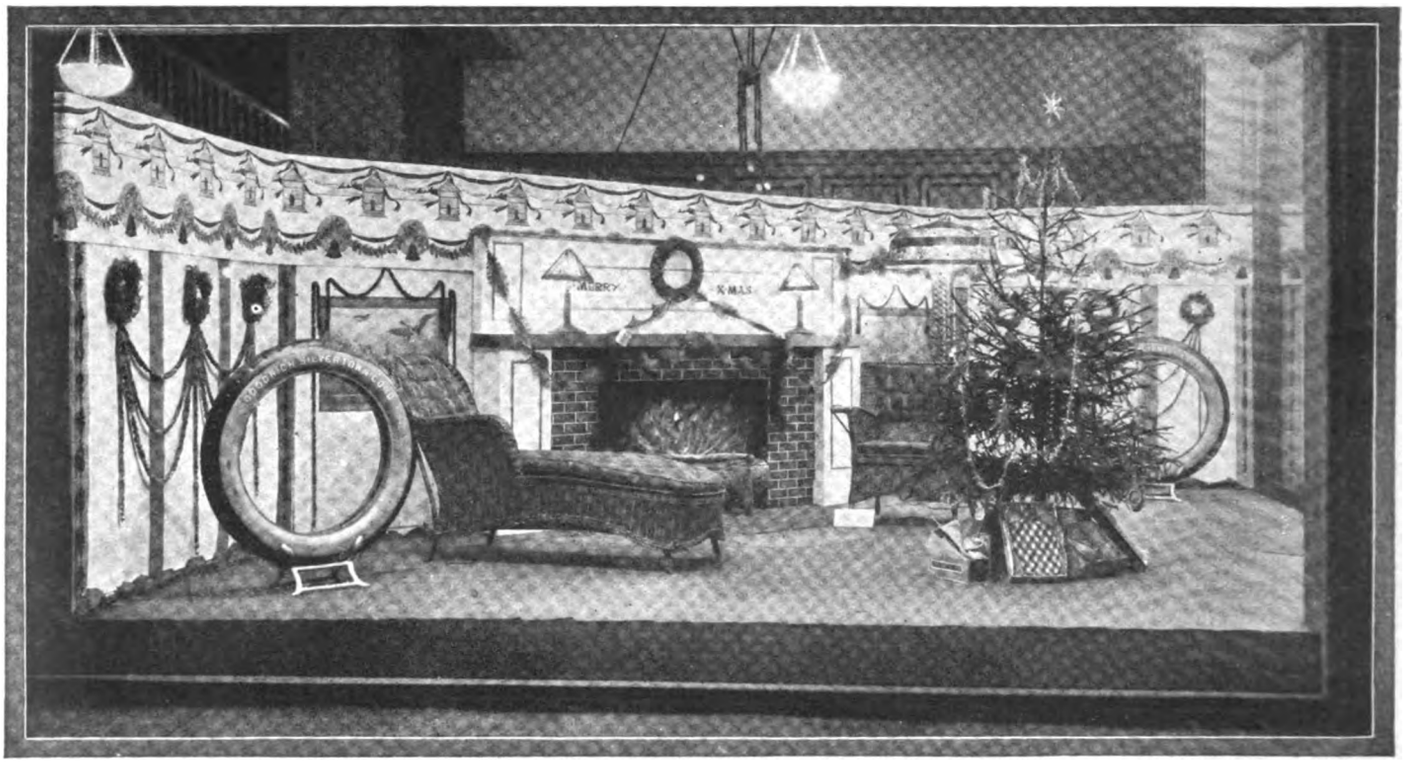


A CHRISTMAS CORNER

A CORNER of the salesroom was used for this Christmas scene by the Fain - Bender Motor Co., Fort Worth, Texas. Oak limbs formed the foliage background. Plaster board on a light frame might be used for the building and walls. The snowman of cotton puts a smile into the display.

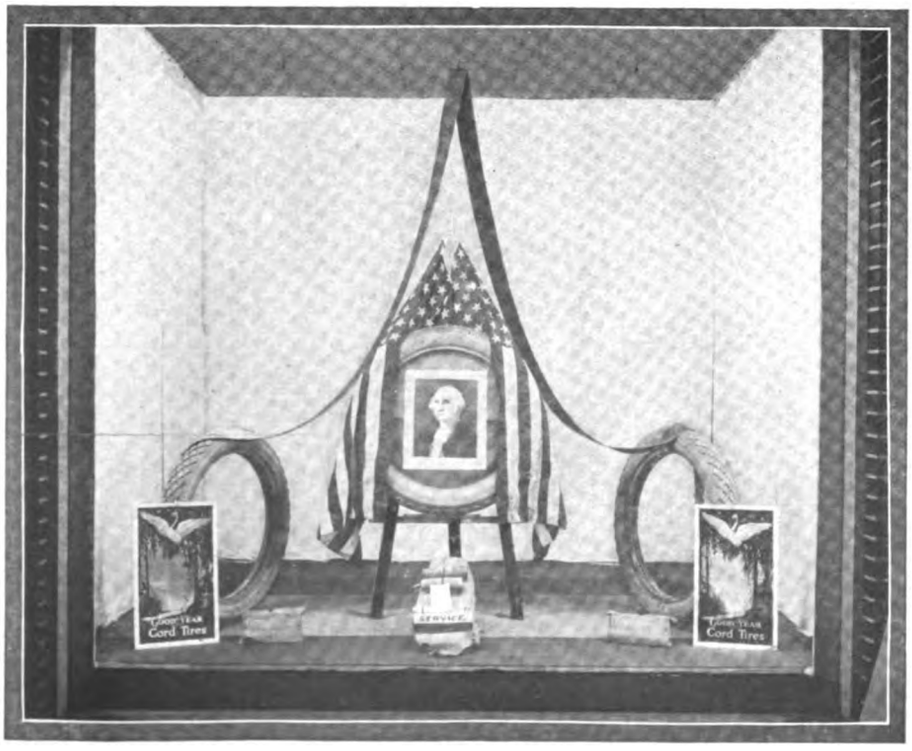
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Making the Holiday Tire Display Window



CHRISTMAS MORNING SCENE IN TIRE WINDOW

THIS handsome window by Goodrich in Detroit drives home the idea of tires as Christmas gifts. Screens covered with crepe paper might be used as a background. Furniture and a trimmed Christmas tree are the only "properties." Gifts grouped under the Christmas tree include boxes of inner tubes. Holly wreaths and ropes and twisted paper ribbons are used as wall decorations.



WASHINGTON'S BIRTHDAY TIRE WINDOW

THIS Washington's Birthday window is particularly practicable and effective because it may be made in a comparatively small window. The sides and back are covered with a light cloth to form a background against which the tires and picture stand out prominently. The center figure is obtained by placing a tire on an easel and draping flags over it. The picture is centered by pasting it to a piece of dark cardboard in the tire. Tubes and patches under the center figure carry the service idea, while display cards dress the front corners, leaning against the tires.

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The Christmas Display in Truck and Tire Windows

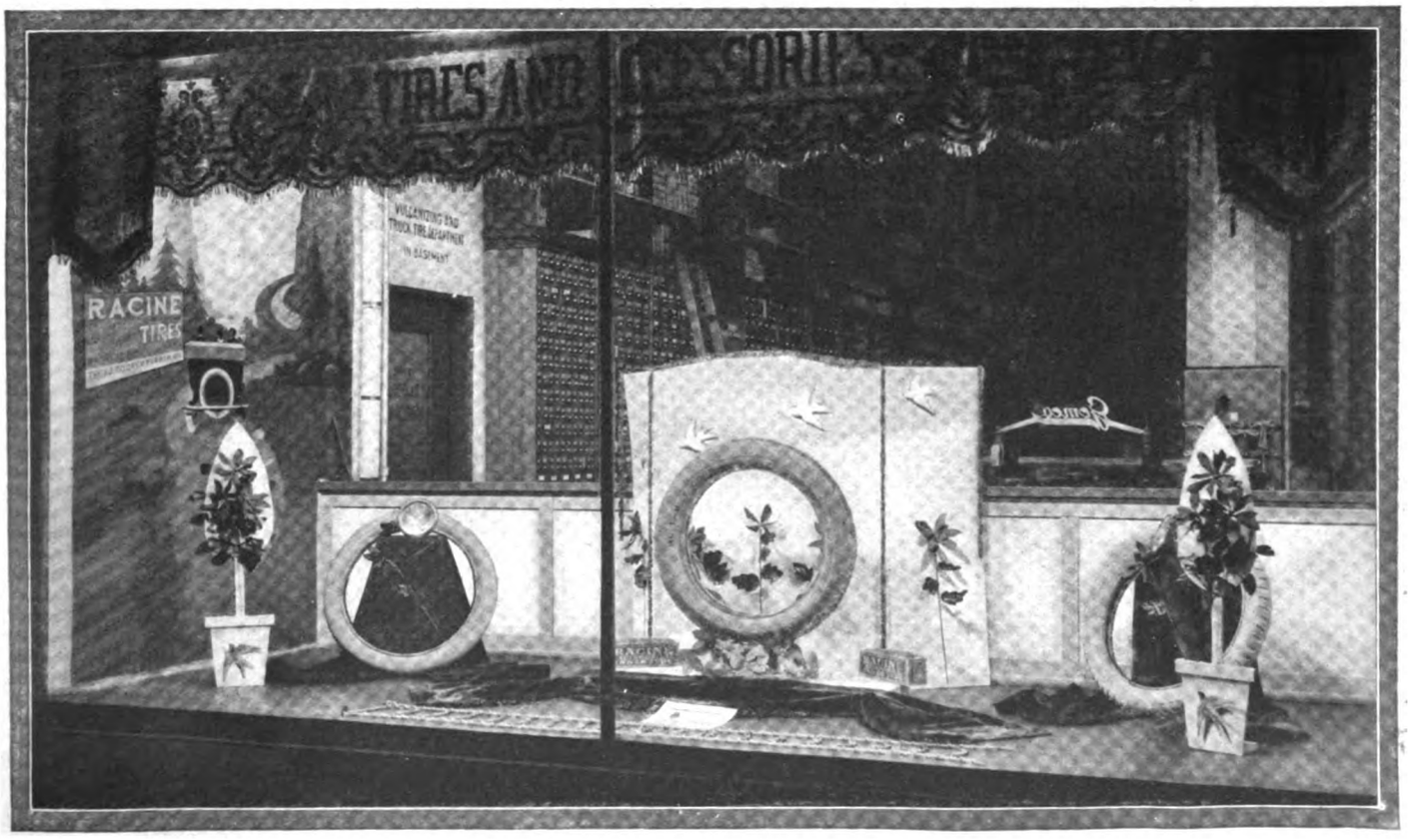
CHRISTMAS TRUCK WINDOW

HERE is a window display idea for the truck dealer. It directs attention to the power plant of the truck sold by the dealer and the general tone of the window blends with the Christmas atmosphere. The background is made by draping heavy black hangings. The floor of the window is covered with the same material. An engine, white enameled, hangs from the ceiling by white chains with a huge holly wreath around it. Framed cross section views of the engine on easels at the sides complete the picture. This display was made by Eldridge-Buick, G. M. C. dealer in Seattle.



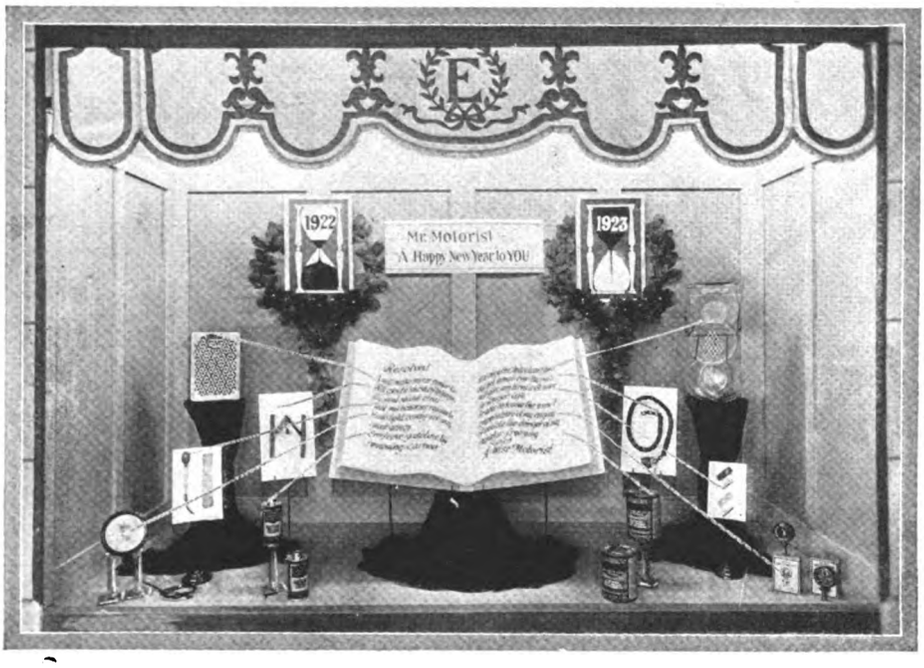
SIMPLICITY AND BEAUTY IN CHRISTMAS ACCESSORY WINDOW

THIS is a good example of how a few items, tastefully arranged, can be made into a striking window. Three tires, two tube boxes, a tire chain and a couple of spotlights are the only items used. The properties consist of a screen and artificial flowers in pots and a few lengths of black plush cloth. Artificial poinsetta are used in the decorative scheme. A painted sign on the side of the window carries the tire advertisement.



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New Year's Accessory Window—Battery Window



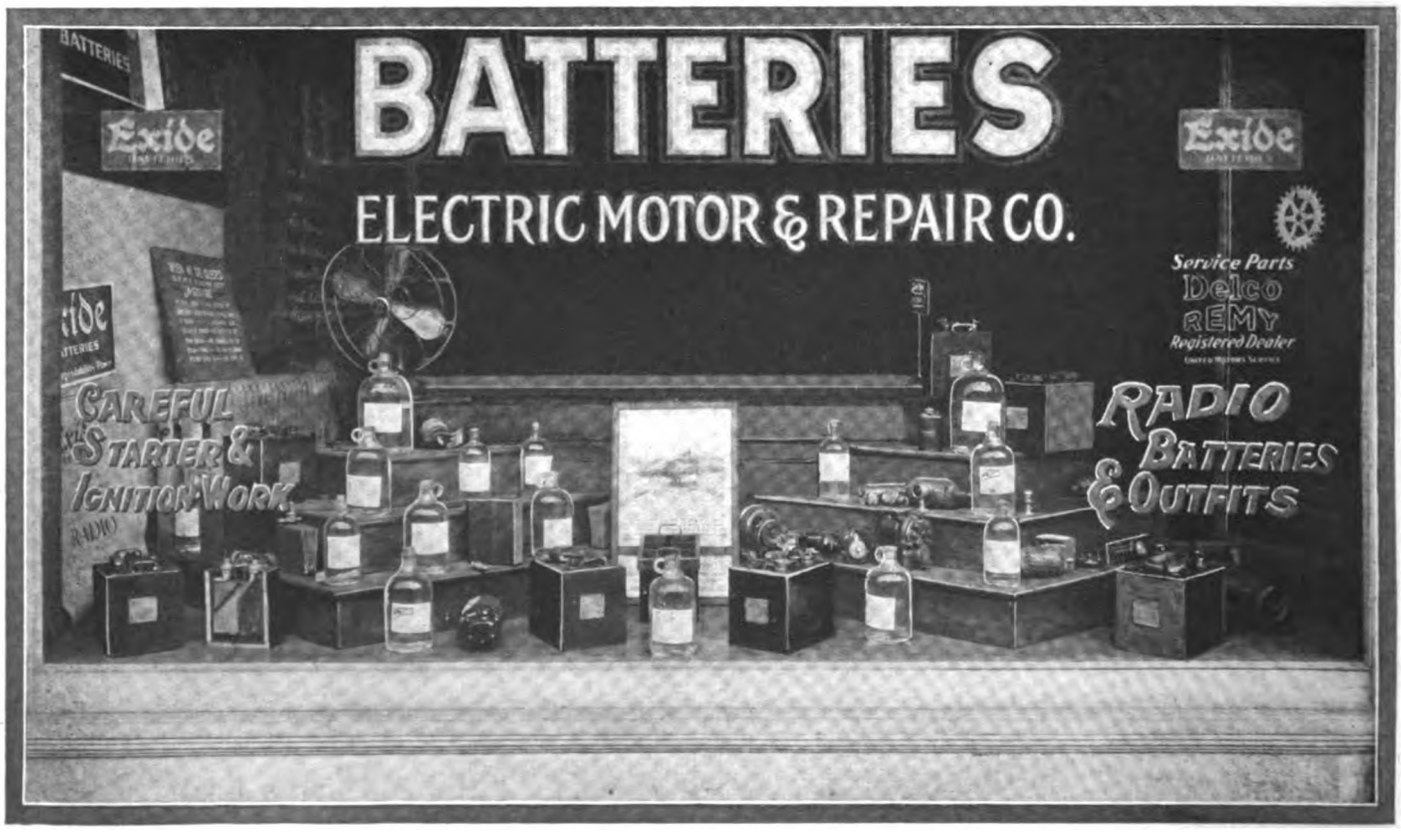
NEW YEAR RESOLUTION WINDOW

THE safety idea, one of the big winter accessory selling opportunities, is strikingly presented in this window. The book shows a set of safety resolutions signed by "A Wise Motorist." From each resolution a ribbon leads to an appropriate accessory.

The text in the book reads: Resolved: I will make my car comfortable—Will avoid a smashup by keeping my windshield clear—Test my batteries regularly—Have light ready for any emergency—Conserve gasoline by removing carbon—Will obey the anti-glare laws—Will not tempt car thieves—Will give my tires a chance for longer life—Will know the temperature of my engine—Eliminate the danger of my radiator freezing.

A BATTERY WINDOW DISPLAY

IT is not easy to make a battery window that will attract attention. The "mysterious black box" doesn't lend itself very readily to display. In this window, the Electric Motor & Repair Co., Newark, N. J., makes an interesting display by showing batteries, bottles of distilled water, battery parts, and other kindred articles on steps built in the window. The framed picture in the center is an illustrated news feature. Just inside the window, and readable from outside, is a blackboard on which is written seasonable battery advice. Another sign in the window lists the names of garages and stations where emergency repair service may be had when this store is closed.



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Accessory Window Ideas for This Winter

FEATURING A WINTER ACCESSORY

HERE is a simple and effective presentation of a single winter accessory. A white sheet spotted with cotton to represent snow is draped over boxes or other objects to give the impression of drifted snow. On this are groups of the accessory in a pleasing display. The background is formed by a series of screens. The accessory shown in this window is steer warms. The cut-out in the center of the window, supplied by the maker, carries the merchandising message.





CHRISTMAS TREE IN SALESROOM

THERE is a spot in every accessory store where a Christmas tree may be set up and used to drive home the idea of giving automotive equipment as Christmas gifts. The tree need not be a large one. The idea is to select from stock a number of items that may be recommended to the Christmas shopper for presentation to motorist friends. Such a display may be made particularly striking by placing it in the center of the store floor where the width permits. Colored lights on the tree, or a spotlight or two trained on it at night when in this position will extend the merchandising value of the display. This idea also may be used in the display window. It is a good idea to put such a display in the window for a week or two early in December and then move it back onto the store floor when the window is changed.

MOVING OLD STOCK

WHEN certain items of stock linger on the shelves they can be given a helping push by grouping them in piles in the window occasionally this winter and presenting them as special offerings. Such a window will get the clean-out idea over stronger if there is little or no attempt to make the display orderly. This window by the Plainfield Auto Tire Co., Plainfield, N. J., carries out the idea effectively.



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Make Light Sell For You This Winter

ADVERTISE your business and your merchandise with light.

Good light will add to the advertising value and increase the selling power of your salesroom, store and display windows. Use it during the long winter nights.

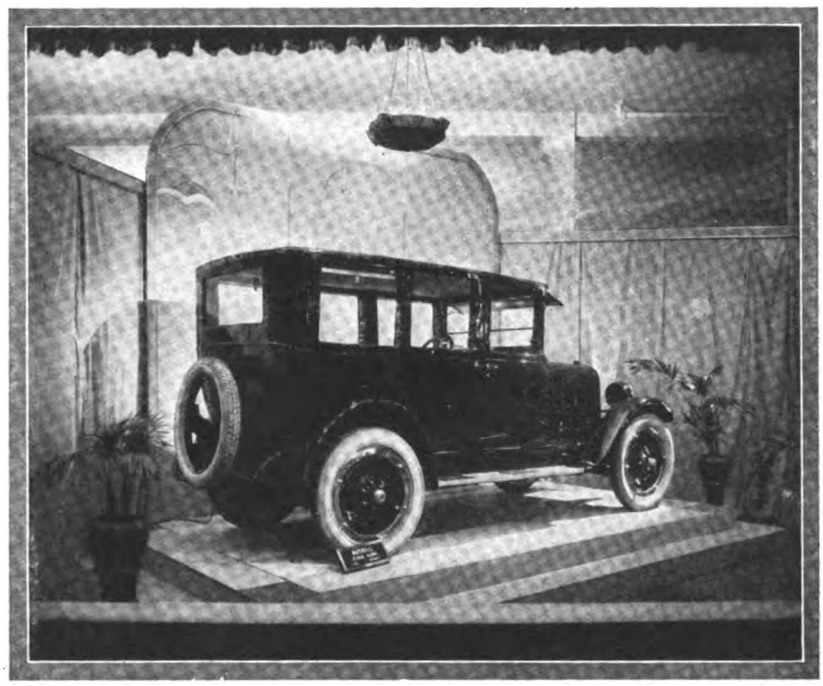
A walk down the main street of your town or city after dark will convince you of the merchandising power of good light. Watch to see which stores and displays attract the attention of the people on the street. You will find it an almost invariable rule that people hesitate or stop before the well-lighted stores and windows. You notice also that very fine displays that are poorly or insufficiently lighted command practically no attention.

Compare the lighting in your building with that of other automotive merchants. Does yours suffer by comparison? Are they getting business that you might get if your lighting were better?

After dark, the pulling power of an attractive salesroom or an interesting display window is largely determined by the effectiveness with which it is lighted. If your lighting system provides comfortable vision, people will look at your displays and your merchandise. Customers, who come into your store or salesroom, will be easier to sell if the lighting conditions are right. A good lighting system is essential in the late afternoon and evening during the winter months.

Actual tests have proven that a mediocre display, well lighted, attracts more attention and interest than a good display, poorly lighted. Make your salesroom and display windows attractive and realize on this attractiveness after dark by providing good light—light that will advertise and sell your merchandise.

Light your salesroom, store and display windows a little more brightly than the ones on either side. The stronger light will give them greater prominence. Their advertising value will be increased proportionately. *Bright light attracts the eye. Use it to attract eyes to your business.*



THIS beautiful display in the New York Maxwell salesroom is more striking at night than it is in the day time. Good light makes it stand out. The details are brought out clearly and there is an entire absence of glare. General lighting is supplied by the indirect unit suspended from the ceiling. Additional light is provided by lamps concealed along the upper edges of the window.

Direct the light you pay for to the merchandise you want to sell. There are reflectors for every condition. Proper reflecting equipment will enable you to get the maximum results from the light you buy at the minimum expense.

Avoid glare. A bright light in the field of vision interferes with a comfortable view of the merchandise you want the light to sell. All lamps should be shielded from direct view. Use your light so that attention is attracted to your merchandise and not the lighting units. Glare distracts attention from the merchandise to the light source. For similar reasons, avoid direct reflections. Deep shadows also interfere with comfortable vision.

Keep the bulbs and reflectors clean. Wash them at least once a month. Replace blackened bulbs. Dirt will reduce the efficiency of your lights and reflectors. You won't get the light you pay for unless you keep the lighting equipment clean. Maintenance is just as important to a lighting system as it is to an automobile. Neither operate efficiently if neglected.

You can have good light in your salesroom. Frequently inexpensive changes can be made that work wonders in increasing the effectiveness of the lighting.

Your local electric power company will be glad to help you and tell you how to improve the illumination of your building. Practically all such companies have illuminating engineers for this purpose. If your power company happens to be one that does not provide this service for its customers, ask Motor World to tell you where you can get the information you require.

On this and the two following pages are some pictures of salesrooms and displays on Broadway, New York City. Everyone of these merchants is using light as an active selling force. Even on New York's brightly lighted Gay White Way these salesrooms and displays stand out from their neighbors.

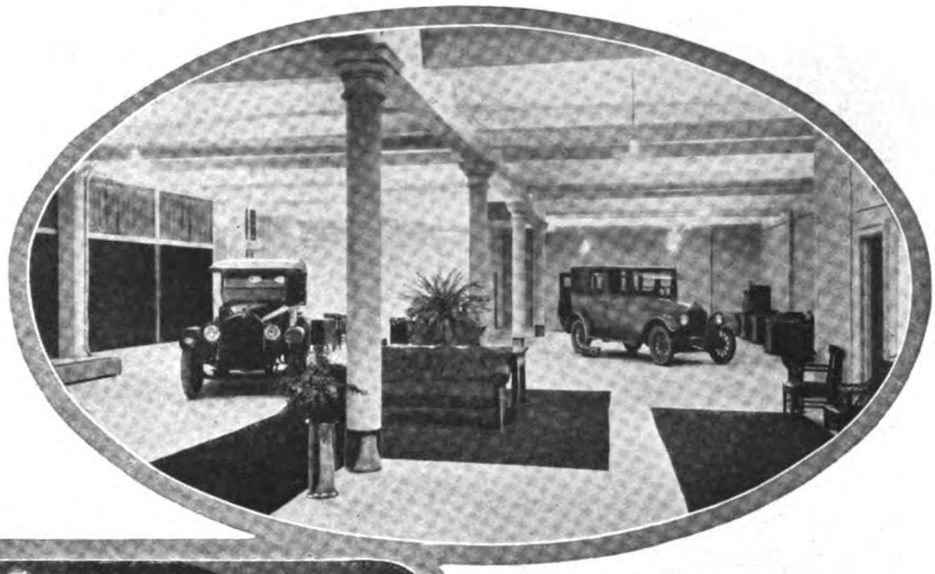
Good light will do the same for yours.

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Good Light Makes These Salesrooms Stand Out

COMFORTABLE VISION HELPS SELLING

GOOD light brings out every detail of the cars on display, yet there are no glare nor heavy shadows to interfere with comfortable vision. The fixtures direct most of the light upward, where it strikes the white ceiling and is diffused downward. The light colored floor is also an aid in distributing the light evenly. The picture was taken in the New York salesroom of Studebaker. In this salesroom the visual selling points of the car are as easily demonstrated after dark as during the daylight hours.





LOOKING THROUGH THE WINDOW

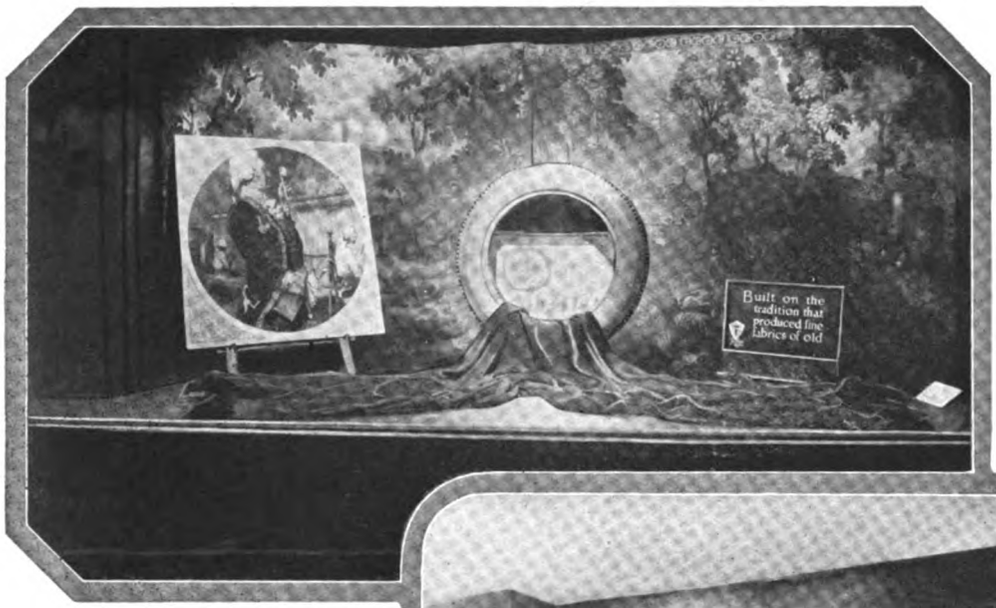
THE picture at the left shows how the effect in the picture below is obtained. The general illumination of the interior of the salesroom is provided for by the direct units on the ceiling. Enclosing glassware shields the bulbs in these fixtures from direct view. The rows of light concealed along the upper edge of the window and in back of one of the ceiling beams throw a strong light on the car surfaces that are visible from Broadway.

THE picture on the right is a view into the Lexington salesroom from Broadway. The details of the cars on display stand out clearly because of the lights concealed along the upper edges of the window. These lights are necessary if the surfaces facing the street are to be visible. If no special provision is made for lighting these surfaces the cars near the windows are in their own shadow when viewed from the street.



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Light Draws Buyers to These Displays



LIGHTING A FEATURE WINDOW

THE Firestone tire window at the left is illuminated by a single light. It is located at the center of the upper edge of the window. The reflector throws a high intensity of light on the tire so that it stands out from the background. There is sufficient light on the tapestry background so that the details can be seen easily, but the illumination here is much less intense than on the tire.



A LIGHTED SHOWCASE

THE glass display case at the right is located at the rear of the Essex salesroom in New York. The attractive display is lighted by special showcase lamps and reflectors located along the upper front inside edge. There are some strong reflections from the reflectors of the spotlights on display, but they are an advantage, as they bring out the quality of this equipment.



SELLING WITH LIGHT

THE fire extinguisher display at the left illustrates how much good light adds to night time attractiveness of an accessory display window. This window is in the store of Ryan & Hughes, automotive equipment and tire dealer in New York. The lighting is furnished by powerful units concealed along the upper inside edge of the window.

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How to

Keep Your Salesmen Profitably Busy This Winter

This Story Tells How the Car Dealer, Truck Dealer and Tractor Dealer Can Work His Territory to

1—Make Winter Sales
2—Develop Spring Prospects

By DONALD D. BLANCHARD

ANY dealer who will work his territory intensively this winter will make sales. And, when spring rolls around, he will have a prospect file that is full of worth-while names and information for his sales force to work on.

Whether a sales organization runs in high gear or in low gear during the winter months, the expenses of the business go right on. If the sales department operates in high gear during this period, it will produce sales both for immediate and spring delivery and it will pave the way for a larger and more profitable spring business. If the sales department runs in low gear during the cold weather, winter expenses must be paid from the profits of other seasons of the year.

There are no holiday periods in the business of selling cars, trucks and tractors. It is an all-year round business and one that requires twelve months of hard plugging if maximum results are to be obtained. Dealers who have been conspicuously successful do not consider the approach of winter as a signal for slackening their sales efforts. Rather they see in the increased sales resistance of this season a reason for greater sales effort. They see an opportunity for cultivating their territories in an intensive manner that is impossible during the other seasons of the year.

There are three big things any automotive sales organization can do profitably this winter:

1—Find the people who will buy for immediate delivery.
2—Find the people who will buy for spring delivery.
3—Find the people who will buy in the spring.

The thorough accomplishment of these things is a whole winter's work for any sales organization. This story will point out some of the ways of attaining these three ends.

A canvass of the people in a territory is a most prolific source of prospects for passenger cars. What form the canvass should take depends on the price class of the car sold. The house-to-house canvass has been used successfully to sell cars in the lower price ranges. In the higher price classes, it is better to use carefully selected lists of names as the basis of the canvass. A farm-to-farm canvass is a practical means of locating tractor prospects. The vocational canvass has been used successfully to sell trucks.

Many automotive dealers depend almost entirely on their owners as a source of prospects. Satisfied owners help to sell their friends on the make of car or truck they own and, in most cases, are glad to give a dealer the names of people who are probable buyers. Salesmen should not make these canvass calls with a "Say, Mr. Jones, where can I sell a car to-day?" attitude. Such an attitude is not likely to make Mr. Jones do any thinking, and he will probably rattle off two or three names that happen to come into his mind without any consideration of the possibility of their buying cars.

These calls should be made of definite service value to the owner. The salesman should first find out whether the owner is satisfied with his car. If there are any difficulties to be adjusted they should be straightened out. During the progress of the call, the salesman will be of real service to the owner if he sells him on the advantage of having his service work done during the slack winter

This Is a Story of SELLING SUGGESTIONS—Read It

IT'S a poor rule that won't work both ways. Here is one that will:

A salesman who is canvassing prospects in an attempt to make winter time sales is bound to find spring prospects.

A salesman who is canvassing in winter for spring prospects is bound to make winter sales.

The rule applies to the business of the car dealer, truck dealer and tractor dealer.

The story, beginning on this page, which is one of intensive canvassing in winter, applies equally in some respects to the business of the car dealer, truck dealer and tractor dealer. In other features separate treatment is given the car, truck and tractor businesses.

This is a story of SELLING SUGGESTIONS for the dealer—any dealer who employs a salesman or a staff of them. It is a story of suggestions to make the winter time a busy time—a profitably busy time. Read it for suggestions to KEEP YOUR SALESMEN PROFITABLY BUSY THIS WINTER.

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period. Many dealers pay their owners a small commission on all names turned in which result in sales.

The usual method of conducting a house-to-house or a farm-to-farm canvass is to district the territory, giving each salesman a district. The salesman is expected to call on each person in his district. Some dealers provide their salesmen with assistants or junior salesmen who do the actual canvassing of the district, the salesmen's efforts being reserved for the live prospects the assistants turn up.

School boys are being used successfully for house-to-house canvass work. It is worth while to spend some time in educating these boys in a general way on the product, the policies of the dealer and the manufacturer. A good demonstration will add to their enthusiasm, as every youngster enjoys a good ride in a car. These boys are paid a percentage on the list price of the car for all sales made to prospects they turn up. These boys are, of course, not expected to sell cars, but only to discover prospects for the sales force to work on.

The more expensive a car is the narrower is the market for it. Consequently the house-to-house idea is not so well adapted to the sale of cars in the higher price classes, as the percentage of non-productive calls would be prohibitively large. A canvass for this class of product must be based on selected lists of names. These names are selected by reason of information that the dealer has been able to get regarding them which indicates that they are likely to have the means to buy his car. Of course, any of the sources of selected lists for canvass purposes may also be used by dealers selling cars in the lower price ranges.

The list of car and truck registrants in the territory gives the names and addresses of all owners and the make and age of vehicle owned. The car dealer can select the names of the owners of cars in his price range from this list. The truck dealer can classify the truck owners by vocation by reference to trade, telephone and other directories. He can also classify the owners by sizes of trucks. This information will help him to determine what sizes are best adapted to different businesses and also in mapping out his mail advertising.

Tax lists, which are public property, show the real and personal wealth of people in a territory. Post offices receive lists of all people who paid Federal income taxes. Membership in clubs and lodges shows a certain social standing and, in many cases, such membership gives an indication of the wealth of an individual. Doctors, lawyers and other professional men are usually financially able to own automobiles.

Service station records will provide much useful information for canvass work. They will show what people drive their cars through the winter. They will show what classes of businesses require transportation during winter, which information is of value for vocational canvass work both for cars and trucks. Service records also show what cars are about worn out. Owners of cars or trucks on which the repair expense is heavy are likely buyers.

Many cars and trucks are sold as the result of tips. The dealer should open channels through which he will receive tips. Garagemen in his territory can tip him off on people that are going to buy. One dealer wrote all the barbers in his territory asking them to tip him off on sales possibilities and offering them $25 for each sale made as a result of these tips. He sold several cars as a result. News items often contain hints where sales might be made. Bankers, secretaries of local trade associations, freight agents, etc., know a great deal about the finances of people and businesses in a territory.

Branch salesrooms are helping some dealers sell more cars. One dealer is opening eight in his territory this fall. He is placing a resident sales manager in each one. This man will have two assistants. He will receive a 10 per cent commission on all cars sold by his organization. His assistants will receive 5 per cent from him on sales they make. In other words, the resident sales manager will make 10 per cent on the cars he personally sells and 5 per cent on those his assistants sell. From his commissions he will pay the rent, light, heat and telephone expenses of his salesrooms. The dealer will furnish the cars for display in the branch salesrooms, will handle time payments and will operate the prospect file and do the advertising. A dealer in a city of 150,000 or more, or in a large territory, could use this method of cultivating his territory intensively.

National and local business conditions affect the buying power of the people and businesses in a territory. Some local industry may be booming because its product is enjoying a nationwide prosperity. Some local businesses may be prosperous because of strictly local conditions. The dealer should know about these conditions so that he can canvass the people affected. He can find out about these conditions from bankers, the financial pages of newspapers, commercial surveys prepared by governmental and other agencies, and from trade associations.

Cars and trucks on the streets are another source of prospects. Owners of vehicles parked on the street can be interviewed by salesmen. The license numbers of shabby looking cars and trucks and worn out machines can be taken, and their owners traced through the registration lists.

Every year passenger cars are being used more and more for business purposes. This market can be expanded if the dealer will analyze the transportation needs of the businesses in his territory. Take, for example, a company having a number of traveling salesmen. At present these

Six Things You Can Do This Winter to Keep Your Salesmen Profitably Busy

1 Have your salesmen call on owners to eliminate any dissatisfaction they may feel, to sell them on the idea of having their cars put in first class shape in winter while the shop is slack, and to get prospects for immediate and spring sales.

2 Have your salesmen canvass your territory. If you handle a low-priced car, you may be able to use the house-to-house canvass profitably. If you sell a medium or high priced car, use selected lists of people with the means to buy your car as the basis of the canvass. If you are a truck dealer, find out what businesses use trucks through the winter and then have your sales force canvass these businesses. If you are a tractor dealer, make a farm-to-farm canvass.

3 Sell passenger cars to business. Analyze the transportation requirements of companies having travelling representatives. Prepare facts and figures to show that your car will reduce the transportation expense of these representatives. Your salesmen can sell cars for this purpose if they're armed with information that shows the profitableness of automobile transportation.

4 Advertise the car and truck as an all year round utility. Use newspapers and mail advertising to keep your product before the public. Advertising will find both winter and spring buyers, and it will introduce your salesmen who are making canvass calls.

5 Use the telephone to discover new prospects and to follow up old ones. Conserve the time and energy of your salesmen by arranging appointments for them by telephone.

6 Display the models your sales force is trying to sell. Make your salesroom look like "Business as Usual" during the winter months.

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salesmen are using the trains and the interurban electric lines. The territory they can cover and the number of calls they can make are limited by train schedules.

A dealer can show the sales manager of such a company how automobiles will increase sales and reduce expenses. The sales manager should be asked for the routes and territories covered by his salesmen. The dealer can take this data, and with the aid of railroad time tables show how much time the salesman loses waiting for trains and how many calls he should make but doesn't because of the inconvenience of the railroad schedules. With an automobile, the salesman can reach all the prospects in his territory more frequently and with less waste time. Furthermore, the automobile enables the salesman to carry a more extensive line of samples. When a man buys a car for use in his business, it is a strictly business proposition. The dealer must be prepared to show figures on cost of operation and to prove that a car will be a profitable investment. The arguments that sell a car for private use will not work on this class of prospect.

The telephone is a quick, convenient and inexpensive means of reaching persons in a territory. Some dealers have their salesmen on their floor days spend their spare time calling prospects. Others have a telephone man who spends all his time calling people to ask them whether they are in the market for a car. Either plan will produce live prospects at a comparatively small expense.



SELLING A BUSINESS CAR

Here the automobile salesman is shown in the office of the sales manager of a company having several traveling salesmen. He is using railroad time tables, road maps, catalogs and a carefully prepared analysis of relative costs to prove that motor car transportation will mean more sales at less cost. Will your salesmen be doing this, this winter?

Buyers of used cars and trucks one or two years back should be followed up. They are likely to be in the market for a new car or another used one. Their old vehicles may be worn out or may require expensive repairs.

In order to make a canvass really effective, the dealer or his sales manager must provide a means of following up the work of the salesmen closely. The tendency to slow up in winter when business is hard to get is perfectly natural. When salesmen are not engaged in following active prospects they should be expected to be at work digging up new names for the prospect file. The management should have some means of knowing that they are.

The prospect file used by an Eastern dealer provides such a check up. Each salesman has a desk file which contains the names of his prospects. This file is divided into five sections numbered from one to five. Active prospects are filed in the first section. These are followed closely by the salesman. The second section contains inactive prospects and the salesman receives three weeks' protection on these. However, if another salesman sells a prospect in this class during the protection period, he receives half the commission. If a salesman fails to report on a prospect in this section within a three weeks' period he loses his protection, and if another salesman sells him, the salesman making the sale gets the entire commission.

The third section contains the names of deferred prospects—people who are likely to buy within three months. During the winter months, spring buyers are filed in this section. The fourth section contains remote prospects who may buy in the next six months. The fifth section contains the names of owners. A salesman must call on an owner within 30 days of the delivery of the car and at least once every six months to receive any protection on him.

The names in the fourth section are obtained by canvass. As the prospects in the higher number sections approach the buying point they are moved into a lower numbered section. Of course, if a canvass call produces a live prospect, the name is put in the first section at once. Suppose that a salesman found that John Jones would buy in May as a result of the canvass. He would put John Jones' card in the fourth section. In the latter part of February he would be followed, and if still a prospect would be placed in the third section. Early in April he would go in the second section and, if he developed further into the first section.

The salesmen's desk files are always accessible to the sales manager. They are arranged so that he can follow the work easily. If a salesman loafs, he losses his protection and is likely to find that other salesmen have sold his inactive prospects or perhaps his active ones. The rules are simple and they avoid disputes between salesmen.

Every year, the all-year use of automobiles is becoming more common. Except in sections of the country where snow makes the roads impassable, people are using their cars right through the winter to a large extent. Owners of open cars are good prospects for closed cars. Owners of open cars selling for about the same price as the closed cars of the line the dealer handles should be canvassed. Some people will buy open cars in winter, which also opens up the possibility of selling the winter top.

Many dealers in the snow belt have had much success in selling cars for spring delivery. Dealers in other sections of the country have also done this successfully. The main reason why a person should place an order in winter for a car for spring delivery is, of course, the fact that thereby he insures himself against inconvenience through delayed delivery. And the deposit that goes with his order often

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helps to finance the dealer's business during the winter months.

There have been many springs in the past when salesmen have secured orders more rapidly than the dealers could get cars from the factory. Many of these orders have not been converted into sales because the buyer has become disgusted waiting for his car and cancelled his order, buying instead a car on which he could get better delivery. The dealer who is able to line up spring business definitely in the winter helps himself and his factory because he can place his orders for cars far enough in advance to insure delivery.

Where these sales for spring delivery involve a trade-in, many dealers have made a practice of getting the used car in at once. This gives their shops an opportunity to recondition the used car while the shop is slack and have it all ready for sale in the spring. If the used car does not come in until spring, the shop is so rushed with other work that it cannot handle its overhaul as easily.

How the Prepayment Plan Works

A prepayment plan has also been used successfully to get orders for spring delivery. A dealer intending to employ the plan should make sure that it is legal in his State. The prospect when signing the order agrees to pay the dealer so much every week until the car is delivered. The dealer credits the buyer with the savings bank rate of interest on this money. Of course, the buyer could lay aside this money himself, but most people are so constituted that they save more easily when they have stipulated periodical payments to make.

For example, suppose a man buys a $1,000 car on Dec. 1 for delivery April 1, and is able to pay one-third down and the balance in ten months. Leaving out the finance company charges, here is what the prepayment plan would do for him, assuming that he makes prepayments at the rate of $10 a week. There are 17 weeks between Dec. 1 and April 1. Consequently on the delivery date he would have accumulated $170 plus interest of a little more than a dollar. He has $333 to pay down, and this, added to the $170 he has saved, enables him to make a 50 per cent down payment. This reduces his monthly payments by $17 each and incidentally reduces the financing charges. This reduction in the monthly payments is an advantage to him because after the delivery of the car he also has the operating expenses.

Of course, the agreement should provide that if the buyer changes his mind before delivery of the car he can have his money back with interest.

A few cars may possibly be sold as Christmas gifts. An automobile is an expensive Christmas present. Few men can afford to buy a car for this purpose. But there are some men who intend to buy cars in the near future and their intentions can be crystallized in actual buying by impressing them with the desirability of buying the car at the Christmas season and presenting it to the family as a Christmas gift.

Advertising Will Help Your Salesmen

The assistance that advertising gives a sales force is needed in winter when selling is most difficult. Dealers should plan to carry their advertising right through the winter months. Where a dealer can write or can get someone to write good newspaper advertising copy for him, it is a good idea to use this type of copy, as it has a local appeal, in addition to that furnished by the factory.

Mail advertising should also be continued through the winter months. It will help the salesmen in their canvass work if the people they call on have been receiving mail advertising and reading newspaper advertising concerning the car sold. When using a selected list as the basis of a canvass, it is a good plan to send a postal card carrying some sales message to everyone on the list before the canvass is started. Cards bearing incorrect addresses will be returned by the post office, thus saving useless later letters and calls. Some dealers send letters to the people on the list to be canvassed announcing the visit of the salesman and introducing him. After the call, they follow up with a letter of thanks for the courteous treatment afforded the salesman. Sometimes a definite time at which the salesman will call is put in an introductory letter and the recipient is requested to call the salesroom if he cannot see the salesman then or a post card is put in the letter which he can use to notify the dealer that he will or will not be able to see the salesman at the appointed time. This post card usually provides spaces for filling in another date and time when the salesman can see the prospect. If the prospect does not answer he can be reached on the phone.

Winter advertising, whether by newspaper or by mail, should feature the year round serviceability and utility of the product. This is what the salesman has to sell when he talks to a prospect, and the advertising should be designed to make it easier for him to get these points across. The power, strength and durability of the car should be featured. The comfort and protection offered by the closed models should be emphasized.

Salesroom displays are another aid to winter profits. An empty salesroom makes it more difficult to sell. Models that are being pushed by the sales force should be on display in the salesroom. Of course, the salesroom should be neat and clean, and the cars on display should be dusted every day and the exposed metal parts polished as often as necessary.

Special Displays on Holidays

Winter offers many opportunities for seasonable displays. Hallowe'en, Thanksgiving, Christmas, New Year's, Lincoln's Birthday and Washington's Birthday can all be featured by special displays. Something special once in a while helps to attract people to the salesroom. Just a lot of cars stuck in the salesroom is likely to become monotonous. Frequent changes in the arrangement of the cars, with occasional special displays, will maintain popular interest.

Many of the things that a passenger car sales organization can do profitably in winter can also be adapted to the business of selling trucks and tractors. *The vocational plan of truck selling is likely to reap the greatest results. This plan necessitates the classification of businesses in the territory.*

Lists of businesses in a territory can be secured from telephone directories, the local board of trade or chamber of commerce, business directories and from companies making a business of compiling such lists. These names should be classified vocationally—that is, all the laundries should be grouped under one head, all the moving companies under another head, etc. A comparison of the vocational list with the truck registration will show what classes of businesses and what individual business are now using trucks and the capacities in use.

Some businesses are busiest in winter. Some may be enjoying a period of unusual prosperity. In any event the dealer should select the classes of businesses that are most likely to be in immediate need of trucks and direct his selling efforts at these classes. When mail advertising is sent out, it should be of a vocational nature. That is, literature sent to plumbers should tell how other plumbers are using the make of truck sold by the dealer, how the dealer can supply special body equipment for his needs, etc. In selling a truck to a prospect the salesman should refer to other owners in the same business as the prospect to prove that his truck is adapted to the needs of that particular business.

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Of course, in following out this vocational plan, the dealer should, at the same time, follow up other information he receives or is able to obtain. The owner of the worn out truck on the street is a prospect. Tips from garagemen, friends, etc., should be followed. Newspaper items furnish ideas for sales work.

Winter Canvass for Tractor Dealers

The tractor dealer's best bet during the winter months is a farm to farm canvass. Such a canvass may produce a few immediate orders for spring delivery, but, more important, it will now provide information for a profitable spring canvass. When spring comes, the dealer who conducts a canvass will have accurate information as to what farmers are likely to buy tractors. When the farmers are ready to buy in the spring, the dealer who has conducted a winter canvass has a selected list of prospects for his salesmen to work on.

Winter is the best time for a farm canvass. The farmers are not busy, nor is the dealer's sales force busy unless he keeps them busy on work of this character. The farmer has the time and he is glad of the opportunity to talk to someone. The salesman has an opportunity in the canvass calls to make personal acquaintanceships that will be invaluable aids to selling in the spring. The salesman can find out accurately just what the power and machinery needs of the farmer will be in the spring.



USE SCHOOLBOYS FOR CANVASSING

There are many bright high school boys in every locality who would be glad of an opportunity to make some money after school. The picture shows such a boy making a call. These boys are paid a commission on each name they turn in which results in a sale

The dealer can take the results of the canvass calls and check up the credit of the farmers listed as prospects by the salesman. He can follow these prospects with mail advertising featuring the equipment these prospects need. When spring comes, he will know what farmers need equipment, what equipment they need and whether they can pay for it. He will be all set to put on an aggressive sales campaign that will produce sales and profits.

How to Make a Farm Canvass

The conduct of such a canvass is comparatively simple. One dealer made the township the unit of canvass. His territory included all of one county. He secured maps of each township from the county surveyor. These maps showed the owner, size and location of the farms in the township. Each salesman was given a township map and instructed to call on each farmer in the township. The salesmen were provided with report forms that indicated what information he was to obtain. When a salesman completed one township, he was given another one to cover.

The sales force can also help to get service work during the winter months. Complete overhaul jobs are profitable. There is money in replacement parts and the farmer should buy and install them in the winter months when his machinery is idle. Service schools have been potent factors in advertising and selling tractors.

The annual automobile show in any town presents an opportunity for much profitable work on the part of the sales organizations of the dealers participating in it. Automobile shows do not sell cars. Neither do they put new names in the prospect file. But they do present an opportunity for dealers to do both of these things.

Dealers who accept the show opportunity and act on it will have their sales organizations working at top speed before, during and after the show. By so doing, they will make sales for immediate and spring delivery. They will add many new and active names to their prospect files. They will get invaluable advertising for the cars they sell. They will instil new enthusiasm into their salesmen. They will more than pay the costs of exhibiting.

Good attendance is the first requirement for a successful show. People must come to see the exhibits. People will come if they are invited. The show management should advertise the show. Newspapers, window cards and bill boards should be used. Interesting publicity stories should be furnished the newspapers regularly for publication in the editorial columns.

Special features are a powerful factor in attracting crowds to an automobile show. Exhibits portraying the history of transportation and highway displays have been used successfully in this way.

The individual dealers making up the show are interested in securing a general attendance. But they also have an interest in getting the people who attend to visit their exhibits. This is the object of show promotion work by the individual dealer. His promotion work will bring people to the show and it will bring them to his exhibit.

At least a week before the opening date of the show the dealer should start to tell about his exhibit and where it will be located in the show, through newspaper advertising. These ads should tell where and what—where the exhibit of X—— cars is located in the show and what will be on exhibition there. The copy should arouse interest in the models on display so that people will make it a point to see them when at the show. And having created an interest in the models on display, the advertising should impress the location of the exhibit in relation to other spaces in the show.

Dealers should circularize their entire mailing lists before the show. Some dealers send out formal invitations to the names on this list. These invitations are either engraved or a high-class printing job. Announcements of the show should be prominently displayed in the salesroom. Envelope stuffers should be used. Prospects should be invited by telephone.

During the time immediately preceding the show, the salesmen should be hard at work calling on their prospects, endeavoring to get them to come to the show. They should also prepare prospects so that they will go into the

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show favorably disposed to the car they are selling and be able to make comparisons of its selling points with those of other cars in the show.

Training Salesmen for the Show

The salesmen should be trained prior to the show in the special features of handling show records. They should be impressed with the importance of alertness and courtesy. Special instructions should be given on the models to be exhibited so that they will be able to answer all ordinary questions. Deportment in the exhibit should also be considered. Salesmen on duty should be on their feet and they should have the appearance of having but one interest, and that to receive visitors. Many a show visitor has walked out of an exhibit because a salesman has delayed greeting him while he finished a story he was telling another salesman.

A special prospect card comes in handy at show time. These should preferably be supplied the salesman in pad form. These forms should provide for all the information desired about a prospect and the salesman should endeavor to get as much of it as possible. Some dealers provide a box with a slit in the top in which the salesmen deposit filled-in prospect cards. Many dealers put a clerk in the booth to handle the prospect records.

A great deal of study should be given to the arrangement and decoration of the exhibit. A good way to secure an attractive arrangement is to mark out the space on the floor of the service station. Then put the cards that are to be shown in this space. Various arrangements can be tried here and the one that gives the best display selected. Or the space can be drawn to scale and scale dummies of the cars and furniture made. These can be juggled to get the most desirable arrangement.

In arranging the show space, ease of entrance to the exhibit should be considered. The booth should be open to the aisle. There should be plenty of room around the cars for visitors to inspect them. Two cars well displayed are better than three cars poorly displayed. Crowding too many cars into a display space reduces its attractiveness.

The appearance of one or more stock models can be materially improved by the addition of equipment such as nickel-plated bumpers, windshield wings, spotlights, etc. Cleanliness is another important factor in appearance. Models on display should be kept clean inside and out. Finished surfaces should be polished. The booth itself should be kept clean and neat. Literature should be neatly stacked. The floor should be kept clear of litter. A chest for coats and hats is preferable to a hat tree. It is a good plan to have a porter on duty all the time for just this sort of work.

During the show it is a good plan to have a booth manager to take charge of the display. He should be responsible for the conduct of the salesmen and the appearance of the exhibit. The schedule should be posted showing when the salesmen are on duty. The importance of getting names and addresses of visitors should be stressed. Salesmen should not be allowed to judge by appearances. Anybody who shows any interest in the car is worth following up.

Follow Show Prospects Quickly

Names obtained during the show should be followed up as quickly as possible. Some dealers make a practice of mailing a catalog to each address obtained the same day so that it will be received in the first mail the next day. As far as possible salesmen should spend the time they are not on duty in the exhibit following show prospects.

The salesroom should also be decorated specially during show week. Every possible agency should be used to make people think automobiles during show week. A special display in the salesroom will assist in this work and will focus attention on the particular make of car sold by a dealer.

After the show comes follow-up work. The show arouses a buying interest in automobiles. Dealers can only realize on this interest by solicitation of the people whose names were obtained at the show and by advertising after the show.

After the Show—Work

Show prospects should be followed immediately. The dead ones should be eliminated as quickly as possible and efforts concentrated on the live ones, as other dealers have their names and are making every effort to sell them. During this period the sales force needs all the assistance that advertising can give them.

The show gives the sales force new enthusiasm. It gets them a large number of new names to work on. A sales contest starting immediately after the show and lasting for perhaps a month will help to maintain this enthusiasm at a high point.

The annual automobile show in any town can be made the biggest advertisement of the year for the automobile. The advertising that any one dealer gets out of the show is measured by the effort he puts into it. The advertising that all the dealers get out of the show is determined by what they do co-operatively. Maximum returns on the cost of the show are secured only as the result of hard work on the part of the dealers individually and collectively. A show that has the right kind of promotion will be well attended and it will renew the popular interest in automobiles.

Dealers who are located in towns that do not have shows can put on their own individual shows in their own salesrooms. All the things that can be done to make a co-operative show successful can be done by the individual dealer to make his show successful.

A dealer undertaking to put on a show in his own salesroom should set aside a week for the purpose. During this week his salesroom should be decorated distinctively and the atmosphere of a big automobile show copied as nearly as possible. Prior to and during the show the dealer should advertise that during the week of the show he will hold open house. Everybody should be invited to come in to inspect the models on display. The salesmen should be trained and organized to handle visitors just as though the display were in an automobile show. Some dealers, with the co-operation of local merchants, have put on fashion displays to attract the women to the display.

Winter Work Produces Winter Profits

Whether a dealer sells cars or trucks or tractors, or all three of them, any falling off in demand that comes with the winter months should not be taken as a signal to stop selling. *When it is hardest to sell is the time to sell hardest.* A sales organization that does not operate with an open throttle during the winter months is eating up the profits that were made during the preceding summer or that will be made during the coming spring and summer.

Suppose you can't sell a car, truck or tractor during January and February. You are going to sell some in March, April and May. If you find out this winter some of the people who are going to buy in the spring, you will be in a position to get more business and get it more profitably than if you wait for buying to commence in the spring.

Much of the expense of conducting your business continues right through the winter months. This expense will not be a loss if you work for winter sales and spring prospects.

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Would This Help YOU?—*A Salesman's Prospect File*

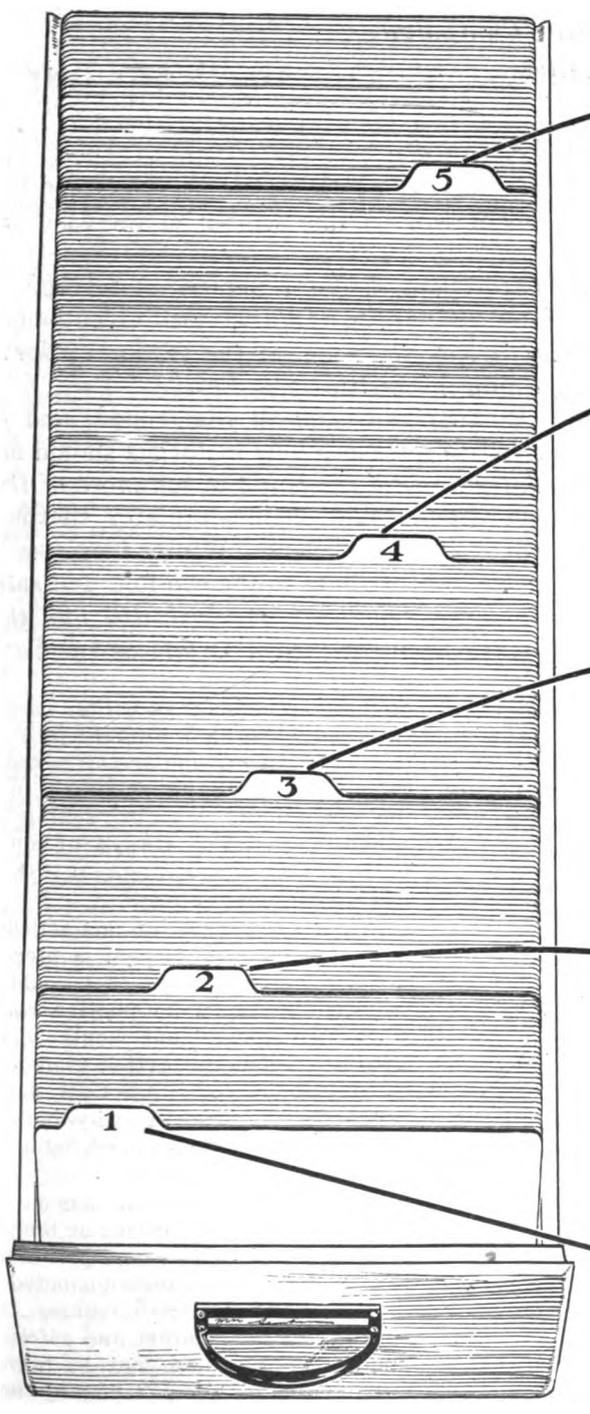
Organized to Make Winter Sales and Get Spring Prospects

THE management of a sales organization has two things to do this winter:

1—Plan an aggressive sales campaign that will get winter sales and spring prospects.

2—See that the salesmen carry out this campaign.

This page describes and illustrates a plan for the organization of the salesmen's individual prospect files that will simplify the work of seeing that the salesmen do carry out the sales plans. Furthermore, it provides an incentive to the salesforce to work as hard in winter as in spring and summer.



OWNERS. A salesman must call on the owner within 30 days of delivery of his car and at least every six months thereafter to retain protection.

REMOTE Prospects. Prospects who may buy in six months or less. Canvassing will produce most of the names in this and the third section. The dealer or sales manager should watch these sections in winter to see that the salesmen canvass in their spare time.

DEFERRED Prospects. People who will buy in three months. Prospects for early spring business should be filed here. Salesmen receive three months' protection on this class, although if another salesman effects the sale during the protection period, he receives a portion of the commission. As prospects develop in this section, they are transferred to the second section.

INACTIVE Prospects. Salesman is protected on these prospects provided he reports on them at least once every three weeks. If another salesman sells one of these prospects during the protection period, he receives half the commission. If a salesman allows his protection on any prospect in this class to lapse, any salesman may sell him and get the entire commission. As prospects develop in this section they are transferred to the first section.

ACTIVE Prospects. Salesmen are protected on these prospects and must follow them up closely. The dealer or sales manager should watch this section to see that salesmen are not neglecting likely prospects.

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How to

Make This Winter Sell More Automotive Equipment

A Plan to Turn the Necessity for Safety and Comfort in Motoring Into Winter Sales and Profits

1. By Organizing a Winter Selling Campaign
2. By Featuring Winter Necessities

By LEON F. BANIGAN

THERE is one thing that every automotive equipment merchant can do this winter to increase sales and profits.

That is: *Sell the motorist something to add to the comfort and safety of winter motoring.* To do this it is not necessary to invest a lot of money in so-called winter specialties. In any stock of automotive equipment, whether it is in the large accessory store or the little corner stockroom of the garage or service station, there will be found several items that can be sold as winter necessities.

Take such a widely stocked item as the bumper, for example. Bumpers are sold all year round, and yet, winter with its wet and slippery pavements furnishes particularly strong reasons why motorists should have them. *And the dealer who sells the bumper this winter as a winter necessity is going to sell more of them than the fellow who doesn't.* The same thing is true of windshield wipers, skid chains, radiator thermometers, and many other accessories that are usually regarded as all year round sellers. Winter increases the necessity for practically all of the items of equipment that are made to contribute to the comfort and safety of motoring. *And because winter does increase the necessity for these items, the motorist will buy them more freely if the dealer's winter merchandising plans are designed to present them to him as such.*

IT is not enough for the equipment merchant to merely tell people he has them in stock. He must tell people why they NEED them this winter—and why they should buy them.

Now is the time to plan the details of how accessories are to be sold this winter as winter necessities. These details will vary, of course, according to the locality, the size of the dealer's business, and the amount of effort and money he can afford to invest in a winter selling campaign—*but every accessory merchant can do SOMETHING this winter to sell more accessories as winter necessities.* The reward is more winter profits and more customers.

For the average accessory merchant the first step will be to make a list of the accessories in stock that may be sold as winter necessities. He may wish to talk it over with his jobber salesmen and learn what assistance his jobbers can give him in presenting the winter items through cutouts, pamphlets, etc.

When he has decided upon the items that may be used, he will regard these as his WINTER LEADERS. That is, he will make a special effort each week during the winter to sell one or more of these accessories as winter necessities, and when he is brought into contact with buyers who are attracted by these LEADERS he will cash in on the opportunity by also selling the staple items, which always, of course, form a large percentage of the accessory merchant's sales.



A WINTER DISPLAY IDEA

Make a sign listing winter necessities for the motor car and display it prominently on the wall of the automotive equipment store

It is not the object of this article to lay out a detailed plan of winter accessory merchandising that could be followed by every automotive equipment merchant. That would be impossible. What this article aims to do is to present some practical winter merchandising ideas in a way that may be made adaptable to most retail accessory businesses.

Assuming that the automotive equipment merchant is sold on the possibilities of more sales and profits this winter through a campaign based on selling the motorist something that will add to the comfort and safety of winter driving—and that he has selected from his stock a list of items that he is going to make WINTER

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LEADERS—he will wish to get into the details of his winter selling campaign.

These details group themselves under the following headings:

1—*Display*
2—*Advertising*
3—*Letters*
4—*Canvassing*

How to put the winter merchandising campaign into the window displays:

1—*Feature each week one or a related group of winter leaders and surround them with a few staple items as reminders.*

The WINTER LEADER should dominate the window. But it should be more than displayed. It should be SOLD as a winter necessity with signs, cutouts, catalogs, etc. Suppose the winter leader this week is a windshield wiper. One might be mounted on a windshield in the center of the window, the glass covered with Bon-Ami or some other white substance to show the sweep of the wiper. A neatly lettered card mounted on the windshield or in the window, in front of it, would carry the selling message—tell the public why motorists NEED windshield wipers in winter. Make the display SELL the featured article.

2—*Make a timely special display.* On stormy mornings feature some particular items such as skid-chains, windshield wiper, radiator hood. In white paint, on the side of the window glass where it will not obscure the view of its contents, print—SPECIAL—Windshield Wiper.. (Price).

How to sell winter accessories in store displays:

1—*Above all else the store should be neat, clean and well lighted.* These are essentials. Most people dislike buying in a dirty, untidy, ill-smelling store just as much as they do eating in a dirty, untidy, ill-smelling restaurant.

2—*Feature winter necessities on a table in the center of the store near the entrance, or on a counter, near the entrance.* Use a cut-out counter stand or a home-made card to attract particular attention to this display.

3—*Display conspicuously in the store a sign* calling attention to a list of winter necessities carried in stock—items that contribute to the comfort and safety of winter driving.

How to carry the winter appeal to customers in letters, pamphlets, postcards, etc.

1—*Keep the mailing list up-to-date.* The most important factor in a mail advertising campaign is the list. In another section of this issue the subject of letter writing is taken up in detail. The best mailing list is one which contains the names of all people who have purchased previously. These names may be gotten and added to the list by providing that the name and address and name of car owned be inquired for and written on the sales check when it is being made out. The duplicates then go to the person in charge of the mailing list to be added to it. Classification of the mailing list according to car ownership is sometimes of practical assistance when its size warrants.

2—*Have letters typed or pamphlets printed presenting certain accessories as winter necessities and attach to these descriptive factory literature.*

3—*Have postcards printed presenting newly stocked items and send them out as required.* Postcard efforts of this nature are usually most effective if they contain a short, trite message and a picture of the article. Suppose the article to be sold is a radiator cover. A cut of the cover one-quarter to one-half the size of the postcard probably would be supplied by the jobber or manufacturer on request. In fairly large type under it or over it might be placed the name of the particular item and its retail price. The selling message might be as follows: "Are You Wasting Power this Winter? Heat is essential for the efficient operation of your engine. Protect it with a well-fitted radiator cover and relieve your nerves and your battery of the strain of starting a cold engine. We have just received a brand new stock of ———— Radiator Covers. Come in and let us fit one to your car. *Don't waste power this winter!*"

Selling literature can be made stronger this winter if it always does these things:

1—*Tell the motorist WHY he needs a particular accessory this winter.*

2—*Tell him that you SELL just the item to meet that necessity.*

3—*Ask him to BUY it FROM YOU.*

How to put the winter selling effort into newspaper advertising.

1—*Make one winter leader the feature of every advertisement.* Present it to the motorist by telling WHY it is needed this winter and WHY he

Sell the Winter Merchandising Campaign to the Organization

IT'S a very fine thing to decide to put on a real aggressive winter merchandising campaign, but there are two vitally important things that must be done to insure the success of such a project.

1—Lay out a definite plan of action.
2—Sell the campaign to the whole organization.

A good start is half the battle in any undertaking. When the dealer has decided upon his plan it is a good practice to call a meeting of his whole organization in the store some evening, or at a dinner table and lay the plan before the employees. Encourage them to make suggestions on "How We Can Sell More Accessories This Winter."

The idea of selling accessories as winter necessities should be explained thoroughly and the announcement of a small commission on sales should be made. If it is practicable to organize teams and begin a sales contest—fine.

But the big idea is to get the plan definitely launched and the organization enthusiastically behind it. Occasional meetings throughout the winter will help keep the organization on its toes.



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should buy the particular type of item you sell—ask him to buy it from you. Any number of other items, staple articles among them, may be used in the same advertisement, showing cuts, and giving short descriptions and prices, but—MAKE THE WINTER LEADER THE FEATURE OF THE ADVERTISEMENT. Make your advertisement attract the attention and interest of the reader by making a timely appeal—by presenting to him just the thing that he probably has felt the need for that very day. Remember that winter increases the necessity for almost all accessories designed to add to the comfort and safety of motoring and, therefore, a GOOD REASON FOR BUYING ALMOST ALL ACCESSORIES EXISTS THIS WINTER. The advertising that points out the need for an item and presents the items for that need convincingly has the strongest selling power.

2—*Advertisements that sell special groups of winter necessities are effective sometimes.* Several good advertisements based on the words "Comfort" and "Safety" may be used this winter effectively. In such advertising the feature should be a short, convincing message which points out the desirability of comfort or safety in winter driving and then presents specifically several articles that will enhance comfort or safety. A safety advertisement may be written as follows: "Can You Afford to Take Chances? Winter's icy pavements, its rain and snow and sleet, increase the hazards of motoring and rob it of pleasure and safety UNLESS the motorist is equipped with good, dependable safety devices. Most of them cost so little that no motorist can afford to take chances by driving without them. Wet and icy pavements and ruts and partly obscured vision cause most of winter's motoring accidents. And almost every accident caused by these conditions *could have been prevented. Stop taking chances this winter.* See that your car is equipped with these safety devices."

This may be followed by a division of the remaining space into squares in each of which is shown a picture of one of the following items, with the price and a short description that tells HOW it prevents accidents in winter; Bumpers, windshield wipers, skid chains, stoplights, rear view mirrors, steering wheel warmers, spotlights, goggles, brake lining, pedal pads, windshield visor, etc.

How to sell the necessity of accessories in winter in the store:

1—*Ask people to buy winter accessories, mentioning particularly the WINTER LEADERS,* and telling why these items OUGHT TO BE ON EVERY CAR this winter.

2—*Make a practice of mentioning at least one WINTER LEADER to every customer* who comes in to buy something else. Mention new goods particularly, saying: "Have you seen the new ——?" etc., and proceed to tell its virtues as a winter accessory.

3—*On stormy days mention particularly some item that MIGHT be needed by the motorist on account of the weather condition of that day.* People buy when necessity presses.

4—*Put on a sales contest with monthly prizes* for the winners and small commissions on gross sales.

5—*Use the telephone.* Make a selected list of customers and phone them telling them about your WINTER LEADERS and point out the necessity for them this winter.

How to sell the necessity of accessories in winter in the garage and service station.

1—*Supply employees with slips of paper on which are typed a list of winter necessities* and have them check the items that are not on the cars that come in for repairs and storage. Turn the slips over to one or two men to be designated as accessory salesmen in the garage and pay them a small commission on sales.

2—*Display WINTER LEADERS* in a wall case or display counter near the door where motorists going in and out will see them and SELL THE ITEMS DISPLAYED WITH SIGNS, CUT-OUTS and personal canvassing.

Whether accessories are sold in a store, or in a garage or service station they can be made to move in greater volume and produce greater winter profits if they are sold with a timely appeal.

The importance of timeliness in merchandising is well illustrated in the story of two bootblacks at a busy corner in New York one Saturday afternoon. Both had plush covered chairs well decorated with shining brass tacks. Both stood in front of his place of business and called his wares. Tony yelled: "Shine, shine 'em up, mister!" Michael yelled: "Don't forget your *Sunday shine!*" It was not surprising that Michael's receipts were twice as large as Tony's. He was actually rendering a service. Men were glad he reminded them they'd need a shine for Sunday. THEY BOUGHT BECAUSE OF THE TIMELINESS OF THE APPEAL.

There are going to be some Michaels and some Tonys handling automotive equipment in every town this winter. The Tonys are just going to "keep store." They are going to expect that they cannot do business in winter and they are not going to try. They are going to neglect their stores and their stock and spend most of their time entertaining a few cronies who are more fortunate than they are and don't have to hustle to make a living. They're going to have an easy time of it—nothing to do but warm their shins by the stove and talk about the good old summer when everybody is driving his car and rushing in for supplies.

But the Michaels are going to get the business and the profits through the fact that their timely winter selling efforts carry a suggestion of the need for their merchandise and their service. They are going to point out to the motorists that they *can* drive their cars in winter in comfort and safety if they are properly equipped. They are going to keep their stores bright and clean and well lighted. They

Some Accessories to Sell This Winter

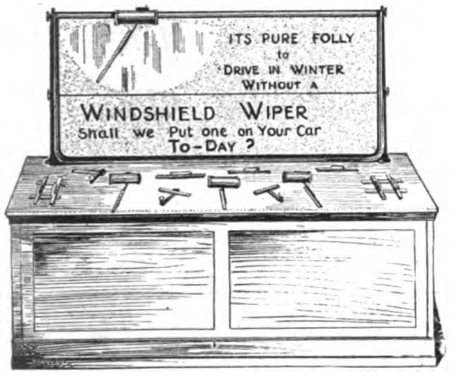
THERE are some items of automotive equipment that add particularly to the comfort and safety of motoring in winter. These may be regarded as WINTER NECESSITIES and may very profitably be made WINTER LEADERS by the accessory dealer, garageman and service man.

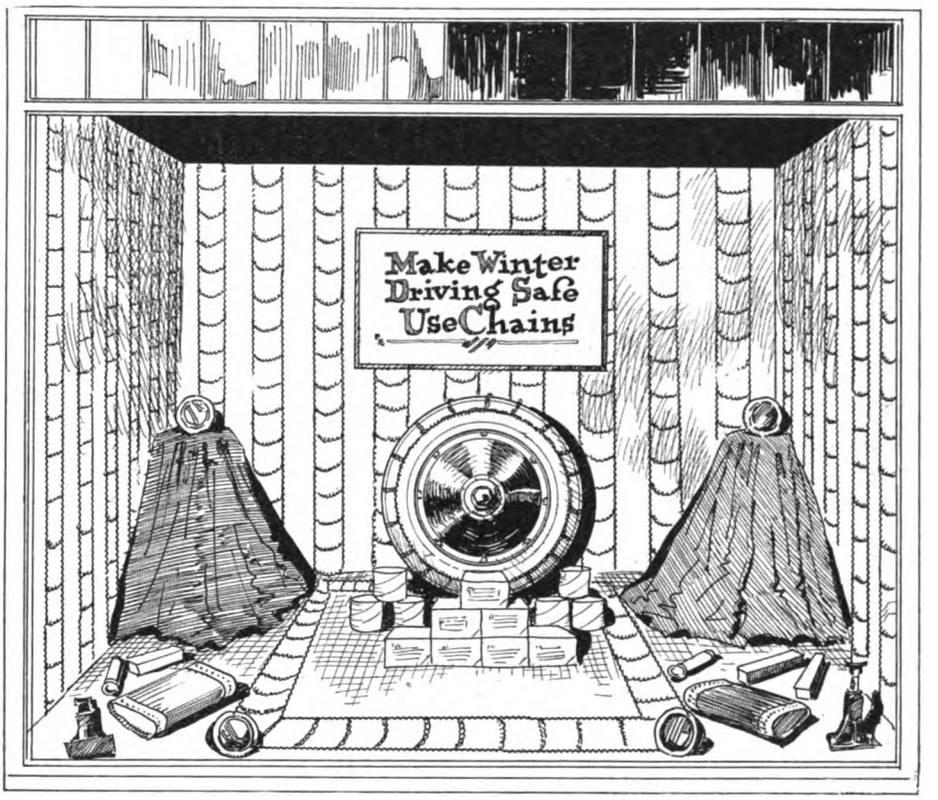
Here are some suggestions for WINTER LEADERS. You may wish to add others or substitute in places:

Alcohol
Anti-Freeze Solutions
Bulbs (extra)
Bumpers
Cigar Lighter
Chamois
Celluloid Cement
Floor Mats
Flashlights
Gloves
Garage Heaters
Goggles
Heaters
Heat Holders
Hood Covers
Lubricants (Winter Grade)
Mud Hooks
Mirrors
Polish
Polish Sprayer
Parking Lamp
Primer
Radiator Cover
Radiator Thermometer
Radiator Cement
Rain Shield
Robes
Robe Lock
Step Mats
Step Plates
Steering Wheel Warmer
Spotlight
Stop Signal
Tire Chains
Tire Cover
Tire Putty
Top Dressing
Tonneau Windshield
Trouble Lamp
Vacuum Bottle
Windshield Visor
Windshield Wings
Windshield Wiper

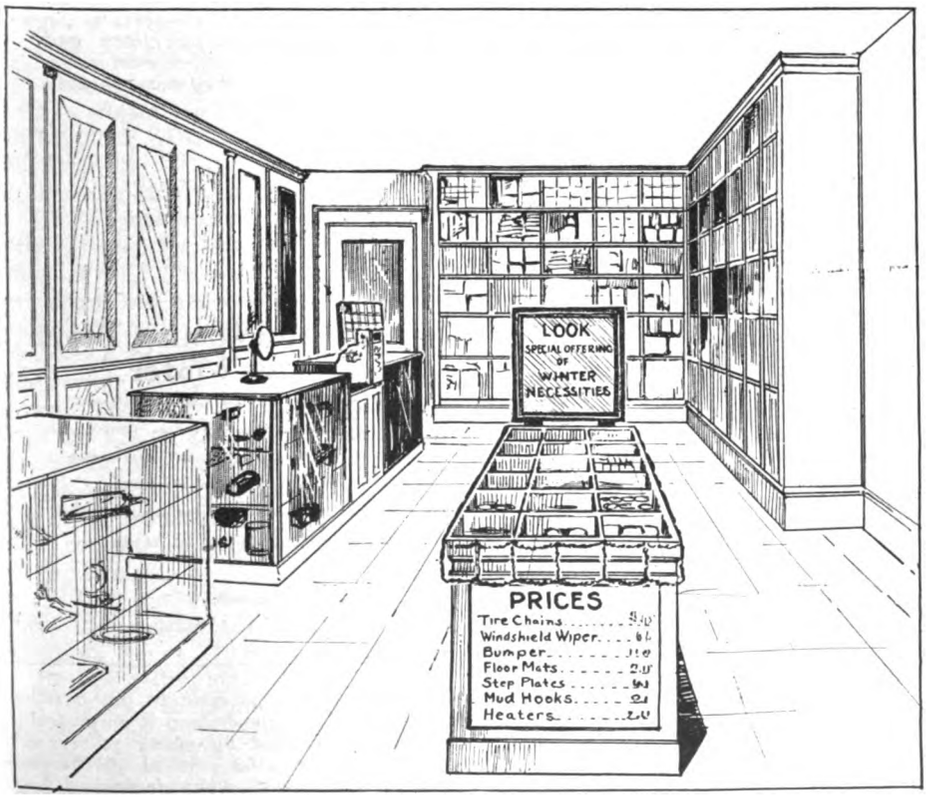
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How to Make Winter Selling Displays in the Accessory Salesroom and Window





Above—An automatic windshield wiper mounted on a windshield on a display case and operated by a small motor. Other types may be displayed on the case. A cold water paint background on the glass with lettering in black or red will provide a selling sign. Right—A window featuring one winter necessity—tire chains. The idea of this picture is to suggest making one winter necessity stand out in each window display.





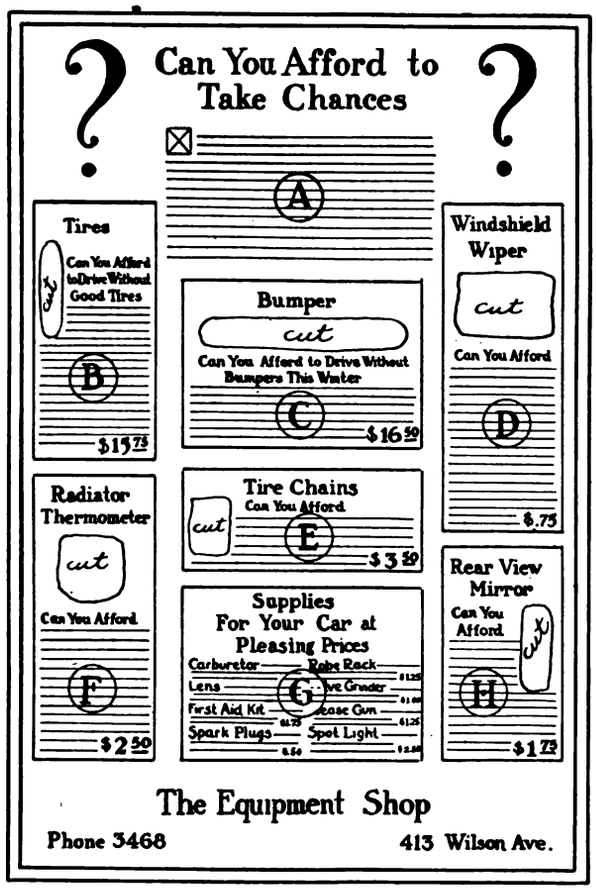
Above—A sign listing several winter necessities on an easel near the door will help remind customers of their needs and increase the sale of some of the more widely used accessories. Left—A table in the middle of the store near the door displaying winter necessities.

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are going to make people notice them and their stores by interesting displays.

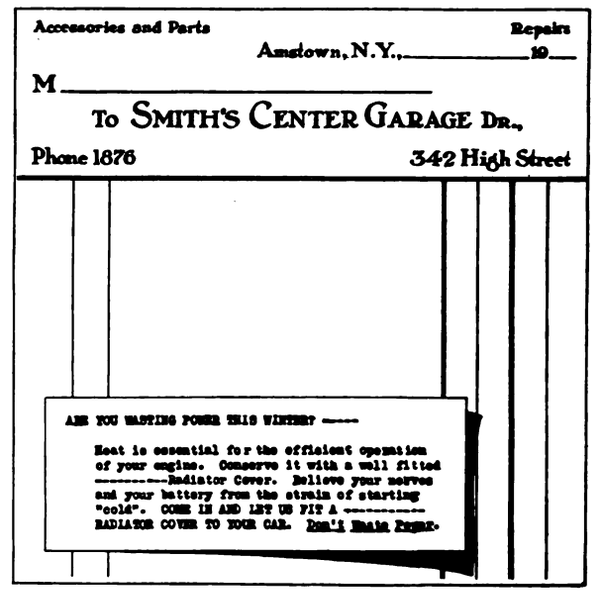
They are going to use the local newspapers and the mails to get their timely suggestions to the motor car owners of their towns. They are going to open the throttle just a few notches wider during the winter than it has been during the summer and fall and their extra effort is going to reward them in not only more sales and more profits during the winter months, but in a wider acquaintance among the motorists which is going to bring more business in the spring.

Let's make this winter's selling campaign just as timely as Michael did his shine business. Let's make it say: "Get Your Winter Equipment—Get It Here—Get it *Now*."



Here is a suggestion for an advertisement to direct attention to the need of items that make motoring safe in winter. A—A general introductory paragraph telling of the need for these items. B, C, D, E, F and H are small boxes devoted to the selling of one item. In each the question is asked: "Can you afford to drive without windshield wiper, bumper, tire chains," etc., and then a paragraph describing the particular item presented. G is a box in which half a dozen or more staple articles are presented with prices

Winter Selling Ideas for the Equipment Dealer and Garageman


Accessories and Parts — Repairs

Amstown, N.Y., _____ 19__

M _____

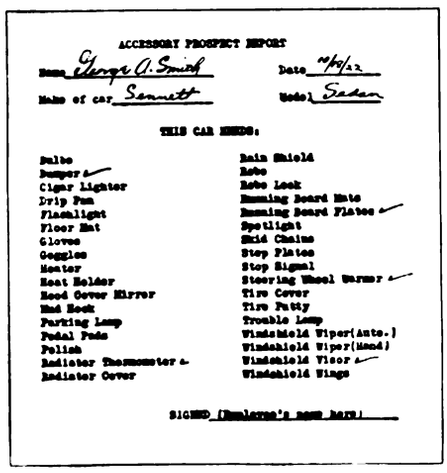
To SMITH'S CENTER GARAGE Dr.,

Phone 1876 — 342 High Street

ARE YOU WASTING POWER THIS WINTER? ——

Heat is essential for the efficient operation of your engine. Conserve it with a well fitted ——————Radiator Cover. Relieve your nerves and your battery from the strain of starting "cold". COME IN AND LET US FIT A —————— RADIATOR COVER TO YOUR CAR. Don't Waste Power.

Small selling messages may be typewritten and pasted to bills, statements, letters, etc., to customers. The above illustration shows how they may be used on a bill or statement


ACCESSORY PROSPECT REPORT

Name George A. Smith — Date 9/10/22

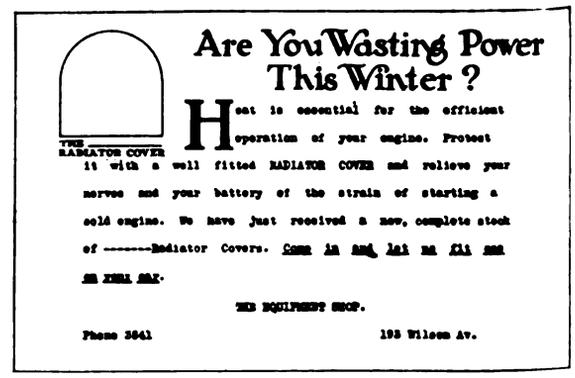
Make of car Sennett — Model Sedan

THIS CAR NEEDS:

Bulbs
Bumpers
Cigar Lighter
Drip Pan
Flashlight
Floor Mat
Gloves
Goggles
Heater
Hood Holder
Hood Cover Mirror
Hub Hook
Parking Lamp
Pedal Pads
Polish
Radiator Thermometer
Radiator Cover
Rain Shield
Robe
Robe Hook
Running Board Mats
Running Board Plates
Spotlight
Skid Chains
Step Plates
Stop Signal
Steering Wheel Warmer
Tire Cover
Tire Putty
Trouble Lamp
Windshield Wiper (Auto.)
Windshield Wiper (Hand)
Windshield Visor
Windshield Wings

SIGNED (Employee's name here)

In some garages and service stations employees are supplied with typewritten lists against which to check the cars coming in for possible accessory sales. Someone in the organization then canvasses the customer either directly or by letter.


THE RADIATOR COVER

Are You Wasting Power This Winter?

Heat is essential for the efficient operation of your engine. Protect it with a well fitted RADIATOR COVER and relieve your nerves and your battery of the strain of starting a cold engine. We have just received a new, complete stock of ———Radiator Covers. Come in and let us fit one on your car.

THE EQUIPMENT SHOP.

Phone 3641 — 193 Wilson Av.

For one cent apiece it is possible to get a selling message to customers by typewriting it on postcards. Small cuts will be supplied by many jobbers and manufacturers which may be printed on the postcards before typing, when desired

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How to Get Tire Business and Profits This Winter

A Campaign to Lift Tire Selling Out of Price Competition and Sell Service and Satisfactory Performance

HOW can I sell tires and make a profit this winter with several others handling the same brand in my territory and some selling at prices that I can't meet and stay in business?

That is the problem that some dealers are facing this fall. The fact that many dealers are staying in business and making a profit despite the unfavorable conditions proves there is a solution to the problem.

Analysis of the merchandising plans of a number of the better class of tire dealers only serves to accentuate the importance of a definitely mapped out selling plan that has as its outstanding aim the making of permanent customers out of all buyers. A striking feature of the success of many of these dealers is that they have been able to *lift the particular brands of tires they sell out of destructive price competition* and SELL SERVICE, ECONOMICAL TIRE MILEAGE, SATISFACTORY PERFORMANCE.

FOR the dealer who is equipped to handle tire service the first step in this winter's selling campaign is to SELL THE SERVICE END OF HIS BUSINESS.

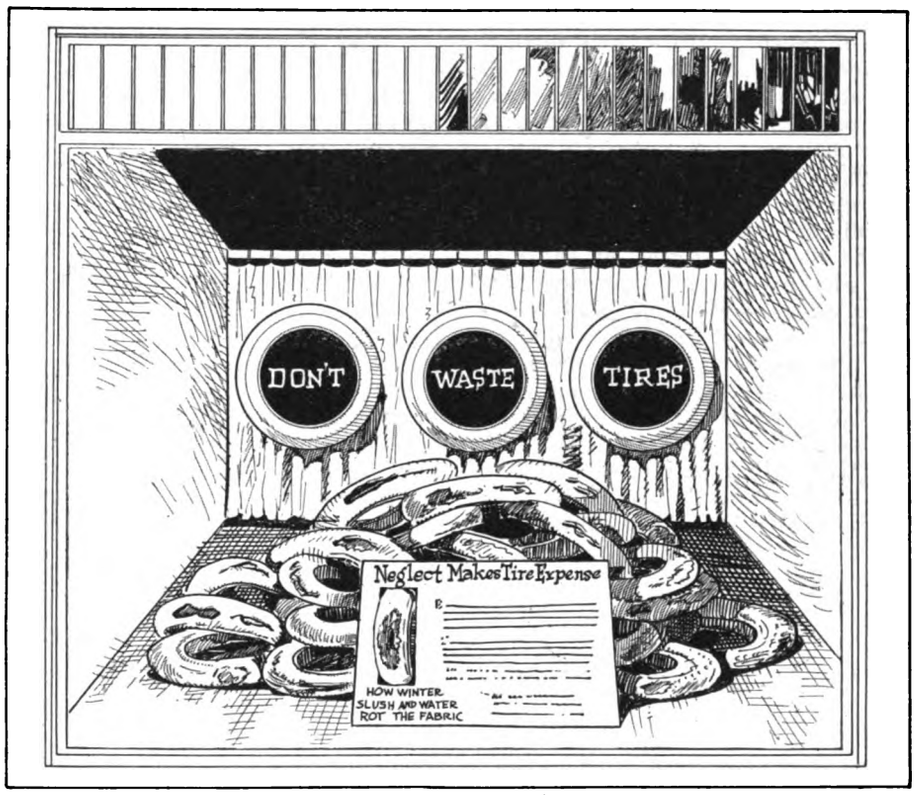
In doing this he must

1—*Tell motorists to inspect their tires frequently this winter—and tell them WHY they should do this.*

He can tell how winter's slush and rain and snow plays havoc with tires that are not in perfect condition—how the water seeps through cuts and bruises and rots the fabric and shortens the life of the tire. He can tell them how to save money by attending to the small cuts and abrasions; having them repaired and vulcanized and thus protect the fabric—the backbone of the tire.

2—Tell motorists to bring their tires to his shop periodically for inspection.

He can tell that he has organized his business to render SERVICE by carefully inspecting tires at stated intervals and patching up the small cuts and bruises, and how in purchasing tires in his store the motorist buys more than rubber—he buys not only a tire but the desire and ability of the dealer to stand behind it and see that it delivers the satisfaction the buyer expects from his investment.



This Window Sells Tires and Service

There's an educational feature to a window of this kind that could be capitalized this winter. The arrangement may be made to fit the size of the window—the idea is to get home forcibly the NEED for care of tires in winter and the dealer's desire to render tire service

In selling tires on this basis—in getting his message to the public—the tire dealer will want to use in some way most of these forms of merchandising:

a—Display
b—Advertising
c—Canvassing

The displays that get this kind of merchandising across most successfully are those of an educational nature.

How to put the educational appeal into this winter's displays:

1—*Cut some sections from old tires showing how the fabric has been rotted through the owner's neglect to have small cuts vulcanized.* Place them in the display window with neatly lettered signs explaining what caused the destruction of each tire and HOW IT COULD HAVE BEEN SAVED BY THE DEALER'S INSPECTION AND REPAIR PLAN. In the same window display a large sign worded similar to this: "Neglect Makes Tires Expensive — Neglected cuts and bruises allowed water to seep in and rot the fabric of these tires, bringing them to the junk pile hundreds of miles before they should have come. Our inspection plan prevents this wastage and PROTECTS YOUR POCKET BOOK. WE CAN SAVE TIRE MONEY FOR YOU."

2—*Make a general educational display* occasionally by showing tires in the window that have been subjected to particular abuses such as running in car tracks, stone bruises, under-inflation, over-inflation, jamming on brakes, etc. As in the other window,

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attach cards explaining what caused the trouble and suggest purchasing tires from you and the use of your inspection plan as a means of discovering causes of high tire bills and eliminating them by timely attention to these evils.

How to put the educational appeal into winter advertising:

4—*Use the camera.* Take pictures of tires that have been spoiled by neglect of cuts and bruises and the rotting of fabric and use these pictures in newspaper ads and circulars, envelope stuffers, etc. By means of these pictures SELL the service feature of your business.

Some dealers have found it distinctly profitable to send a man out occasionally to inspect tires on cars parked in the business section of the city, take pictures of tires that have been neglected or have been subjected to some of the usual tire abuses and also copy the license number of the car on which they are found. The owner of the car is traced in the registration list and HE IS SENT A PICTURE OF HIS TIRE AND A LETTER TELLING WHAT CAUSED THE TIRE TO GO BAD AND HOW THIS WASTE COULD HAVE BEEN AVERTED THROUGH USE OF THE DEALER'S INSPECTION SYSTEM AND TIMELY ATTENTION TO CUTS AND BRUISES. This method has been particularly effective in making the appeal to owners of fleets of business cars where, when the business is secured, the volume is large.

How to canvass for tire business this winter:

Call on local business men, owners of one or more business vehicles, and SELL THEM on the advantages of buying tires backed by an inspection service. Business men, especially in connection with the car that they use for business purposes, are more apt to keep a close check on tire mileage and tire expenses. They, as a class, are less liable to be swayed by the lower first cost of the price cutter.

Some dealers have found it effective to use the camera idea in connection with this kind of canvassing. Pictures of neglected tires on the trucks and commercial cars of firms whom they intend to canvass are made, and when the dealer or his salesman makes his first visit he sends in, with his card, one or more pictures of THAT PARTICULAR FIRM'S TIRES. The procedure invariably gets an audience on a basis that makes it particularly easy for the salesman to SELL the big feature of his business—tire inspection and service.

With competition keen, and sometimes destructive in nature, there is stronger need for the tire dealer to do things to attract attention to himself and his business—to hold old buyers and make new ones. Dealers who have given close attention to the subject and have succeeded in selling their whole business and gaining the confidence of their customers are remaining in business and making a profit year after year while the destructive price-cutting practices of many of their competitors are making them short lived and often suicidal.

Winter conditions provide particular reasons why the tire buyers should protect their tires from unnecessary abuses and neglect and the tire dealer who is able through his various merchandising activities to accentuate this point and SELL IT STRONGLY to his customers will sell more tires and make more profits.

Two Ways to Get the Winter Appeal to the Public

A blackboard carrying a winter message on the importance of taking care of the tires in the store is effective. The message should be changed once a month or oftener. On the right is shown one way in which the tire dealer can get his message to the public—through advertising



Want to Save ?

TIRES and Dollars are Wasted every Winter by folks who neglect the small cuts and bruises.

Our Inspection Service, which is FREE with every tire purchase, SAVES MONEY FOR YOU. It detects these blemishes in the tread and enables you to have them repaired before slush and water seep in and rot the fabric.

We believe SELDOMBLOW TIRES backed by our inspection service are the best buy in town. You'll think so too.

The Tire Mart

Phone 888 **815 Smith Street**

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How to

Sell Automotive Equipment to the Christmas Shopper

There Are Quick Cash Sales and Profits in a Christmas Selling Campaign—This Story Tells How to Plan One—The Time to Begin Is NOW

EVERY Christmas shopping period produces thousands of people frantically searching department stores and other shops for "something novel—something useful—something not too expensive." When they buy it is almost invariably for cash.

Why shouldn't a generous slice of this Christmas gift money find its way into the cash drawers of the automotive equipment merchants? *It will if the dealers and garagemen who sell motor car equipment PLAN NOW TO GET THAT BUSINESS.*

One person in every ten for whom shoppers are buying gifts during the Christmas shopping period owns a motor car. Why shouldn't many of the gifts they receive be for the car? *They can be if the automotive equipment merchant tunes his late November and December selling plans this year to appeal to Christmas shoppers.*

But, next December will be too late to begin thinking about selling automotive Christmas gifts. The selection of stock, the advertising, the circulars and sales letters, the displays in the windows and salesrooms should be planned NOW.

As his very first step toward a real effective Christmas merchandising effort it would be a good idea for every dealer to set aside some place in a drawer or file to collect every idea for Christmas selling that he finds. He will watch the department store and drug store and jewelry store windows and advertising and gather from them inspiration for his own display and advertising.

He will talk over his Christmas selling plans with every jobber salesman that visits him—he will write to his jobber and ask for suggestions as to what the jobber can do to help him sell Christmas gifts. Then, when the Christmas shopper swoops down "Main Street" in force during December, the automotive equipment merchant will be prepared to reap his share of the profits of this business.



One Way of Suggesting Christmas Gifts

Here is a simple and inexpensive Christmas selling idea. Buy some white cardboard and cut it in sheets about 15 x 20 in. Mount on these cards small accessories that may be sold as Christmas gifts; letter a selling message on each referring to the article it contains and hang the cards on a wire stretched above the counter. The sketch above shows the idea

It is not necessary to invest a lot of money in so-called Christmas novelties and extra stock of various kinds. The useful, inexpensive and most appreciated items of automotive equipment that can be given can be found on the shelves of most dealers to-day. *All that is necessary is to present these articles to the public as Christmas gift suggestions in an interesting way.*

One important thing to remember is that women, as a general rule, do most of the Christmas shopping for the family and if the automotive equipment dealer's Christmas selling plans are to be most profitable they must take into consideration attracting the attention and interest of women shoppers.

Women are, as a rule, more particular than men about the appearance of the places in which they buy. The automotive equipment merchant who would attract them to his store must be sure that his display windows and his store are bright, neat, clean and orderly. Courtesy is a big asset to the dealer who seeks the patronage of Christmas shoppers. Promptness in offering gift suggestions and willingness to demonstrate and explain the operation of equipment items will be appreciated.

The store, to attract women gift

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Putting a Christmas Appeal Into



AN IDEA FOR PAMPHLETS, CIRCULARS, ETC.



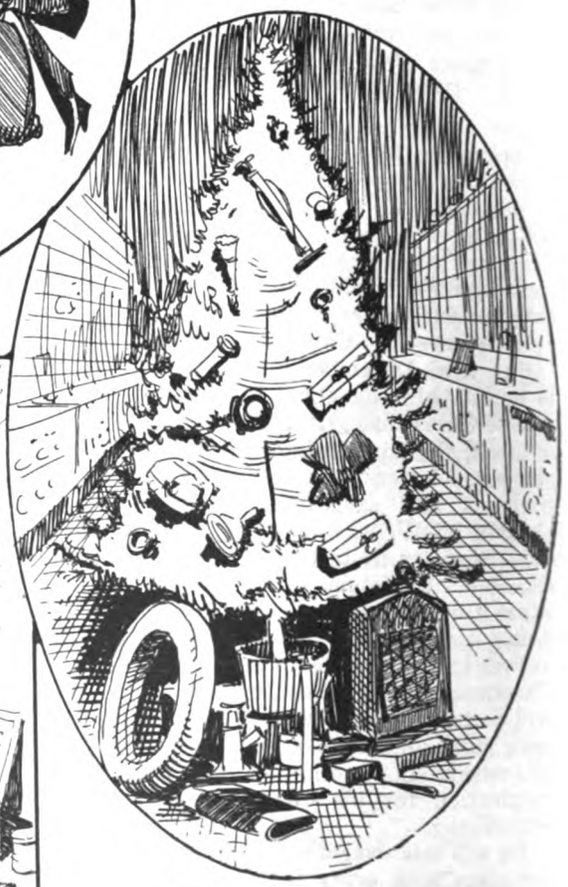
HAVE STORE WELL LIGHTED AND KEEP OPEN EVENINGS



USE XMAS DECORATIONS



CHRISTMAS GIFT WINDOW



GIFT APPEAL IN THE SALESROOM

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Automotive Equipment and Tire Selling



A CHRISTMAS GIFT TAG WHEN ARTICLES SOLD ARE TO BE PUT ON CAR



SEND XMAS SALES LETTERS



PHONE TO CUSTOMERS SUGGESTING AUTOMOTIVE GIFTS



USE MERCHANDISING CARDS IN THE STORE



USE WHITE, GREEN, OR RED PAPER AND COLORED STRING



CHRISTMAS GIFT WINDOW

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shoppers, must be in harmony with the season. Your store may be a part of your garage office or a separate accessory store. Wherever it is it must be brightly lighted and must have a suggestion of Christmas in its arrangement and decorations. Here again it is not necessary to invest large sums of money in expensive decorations. A few dollars spent for holly wreaths and greens, a Christmas tree or two, some red and green crepe paper and an hour or so of tasteful arrangement of these Christmas decorations in the window and store will give it the touch of Christmas that will put it in harmony and help to mark the store as an interesting place in which to seek Christmas gifts.

Now Is the Time to Plan

Every dealer in automotive equipment can greatly increase his sales for the month of December and turn what in the past has been a "slow" month into one of quick turnover and profits by PLANNING NOW to take advantage of the opportunity of making the Christmas gift appeal with his stock.

As in every other well organized merchandizing effort the Christmas gift campaign will naturally fall into one or all of three groups of selling.

1. *Window and interior display.*
2. *Advertising, circulars and sales letters.*
3. *Canvassing.*

This story will not attempt to lay out a definite program of Christmas selling for all automotive equipment dealers. That would be impossible considering the various types of establishments from which automotive equipment are sold and the local conditions which will influence the dealer in determining the kind of a selling effort that will prove most effective. However, this article will present display, canvassing and advertising ideas that have been successfully used by some automotive equipment dealers during past Christmas shopping periods, with the thought that they may be adapted to the needs of a large number of dealers.

Following are some window and interior display ideas:

1. *Group gift displays according to price.* For years good merchandisers in other lines have recognized the fact that the Christmas buyer, as a class, is a price buyer. He has a pretty definite idea of how much he wishes to spend for each gift and it makes it easier for him to buy to present gift suggestions in price groups. The automotive equipment merchant can help the gift buyer by displaying various items on tables or on tops of display cases and counters in price groups. One way to do this is to select items that sell for $1 to $5, $5 to $10, $10 to $15 and $15 to $20 and group them with signs telling the customer that he can find in these groups "Gift Suggestions Up to $5," "Gift Suggestions Up to $10," etc.

2. *Make Specific Gift Suggestions in Window.* The Christmas shopper appreciates definite gift suggestions. An effective window display may be made by placing a Christmas tree in one corner and possibly a chair or some other article of furniture to suggest a living room on Christmas morning and grouping around the tree and the chair such items as a tire, robe, driving gloves, vacuum bottle, etc., with signs on them marked: "Merry Christmas to Dad," "Merry Christmas to Mother," etc. Another window display that carries a strong Christmas appeal has been made by carrying the price group idea into the display, showing groups of accessories that can be purchased for $1, $2.50, $5, etc.

3. *Make the automotive equipment store stand out as a gift store.* Christmas shoppers are attracted to the stores that appeal particularly to their desire to buy gifts. The store that is brightly lighted and carries the Christmas suggestion in its general appearance attracts more Christmas shoppers than the one that makes the ordinary, all year round display. Some times it is effective to have a large sign made which is hung over the entrance and windows calling attention to the fact that the store is making a special display of Christmas gift suggestions.

In other instances a couple of evergreen trees or a few lengths of evergreen rope draped around the windows and doors will be sufficient.

The Christmas Appeal

Some Christmas advertising ideas:

1. *Make specific gift suggestions in newspaper ads.* The newspaper advertising of the automotive equipment merchant can profitably make specific Christmas appeals during December. Such advertising should have a holiday appearance. This can be secured by use of cuts of Santa Claus, holly wreaths, poinsettia, Christmas trees, etc., that are usually on hand in every newspaper office. A talk with the advertising manager will secure for you a particular decorative cut or border that may be used in all advertising during the month. If the same decorative scheme is used in all ads it will have the effect of tying up the advertising campaign and helping readers to recognize your ad through repetition. The "copy" should be so written to impress the reader with the fact that the items advertised are presented as specific gift suggestions. Such lines as: "Give Him Something Useful—Something for the Car," "Every Motorist Appreciates Gifts Like These" will help get the message across.

2. *Use letters, postcards, envelope stuffers and circulars to tell every customer you sell Christmas gifts.* Early in December—the first day is not too soon—the automotive equipment merchant can begin telling his customers that his store is a Christmas gift headquarters. An effective means of doing this is to enclose in purchases, in bills and statements and in letters a printed or typewritten list of Christmas suggestions. Such circulars need not be elaborate. The idea is to lose no opportunity of spreading the news that you are actively bidding for Christmas trade and are prepared to serve. Postcards have been very profitably employed by some dealers. These are usually most effective when they contain a short paragraph suggesting a visit to the store to make Christmas gift selections and a list of specific gift suggestions, with prices.

Some Selling Ideas

Some canvassing ideas:

1. One dealer sold several hundred dollars worth of spotlights last Christmas by buying one spotlight from his jobber and taking this out for a couple of hours each morning on canvassing trips during which he visited the homes of customers and suggested it to the women of the family as a good Christmas gift.

2. Another dealer made a list of half a dozen good Christmas gifts and used the telephone to get in touch with some customers on his mailing list.

3. Still another dealer got good Christmas sales from a canvassing plan in which he employed boys to go through the main sections of his city, where cars were parked in large numbers and place on the seat of each car a pamphlet which presented a dozen items of automotive equipment as gift suggestions.

The big idea is to get your store into the picture as a logical place in which to buy Christmas gifts. Use every method available to direct attention to the fact that the accessory store is just as much a gift shop as the department store and the stationery store and the jewelry store and SELL AUTOMOTIVE EQUIPMENT FOR CHRISTMAS GIFTS THIS YEAR.

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Is He Going to Say It About Your Place?



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How to *Keep Your Shop Profitably Busy This Winter*

Practical Selling Suggestions for the Car, Truck and Tractor Dealer and the General and Specialty Repairman

By J. HOWARD PILE

YOU can't catch minnows in a crab net. The holes are too big and the little fish swim right through.

And you can't catch crabs in a minnow seine. The mesh is so small that the net goes through the water too slowly and the crabs get out of the way.

Just as you have to use the right kind of equipment to land the kind of sea food you want, so you have to use the right selling methods to get shop profits from repair work. Just as there are crabs and minnows in the sea, so are there large and small jobs of repair work. Some of these jobs are big enough and profitable enough to be worth spending some time getting. They are worth a personal visit or two, a telephone call and some individual letters. Others are small and to make any profit they have to be obtained in quantities through circular letters, printed circulars or advertising of one kind or another.

Classification of Repair Jobs

Classify the repair jobs you are equipped to handle into divisions and work on them accordingly.

You will find many times that big jobs develop where you only expected little ones.

Disregard for the moment the big and little classification and think of three general classes into which all repair work can be divided. These are:

1.—*Overhauling and renewing.*
2.—*Maintenance and adjustment.*
3.—*Equipment installations.*

Most of the operations in class 1 include jobs of a bigger nature—those from which the shop can expect to receive a substantial profit. It is well worth while to use some selling effort to get this kind of jobs. They are generally big enough to allow for the quotation of a flat rate that can be depended on to be on the right side and at the same time to give the car owner his money's worth. They are jobs that make nice working in the shop, particularly in winter. The mechanics as a rule prefer this class of work and will turn out good jobs. Emergency work and small jobs generally do not last long enough to get them interested.

Most of the operations in classes 2 and 3 are small but are worth going after in quantities through circular letters, printed matter in the mails, advertising and other ways. Jobs on maintenance and adjustment often develop into overhaul jobs. Equipment installations, in addition to the profit on the installation, also bring a profit on the sale of the article.

It is particularly important that steps be taken to get jobs into the shop early in the fall. Large overhaul jobs, if taken in now, can be better taken care of and if enough work of this kind is sold, the plans of the shop for the winter can be worked out to a point where the size of the mechanical force can be determined upon in advance. If allowed to go till later there may be several obstacles in the way. In the first place, snow or severe cold weather may hinder getting the car to the shop for some time and in the second place the owner may say, "Well, it's getting along in the winter now, I guess I'll let it go till spring." If you were planning on a certain amount of work for November and December and either of these things happens it will mean an overmanned shop with not sufficient work to pay expenses and the uncertainty of whether the work is going to come in at all.

Overhauling and Renewing

Sell your repair work early and make up a shop schedule that will enable you to go through the winter with all sails set.

Most cars that are two years old or more are possible prospects either for an entire car overhaul or for the overhaul of one or more of the units, such as engine, axles, clutch, etc. This depends largely on the care and attention given by the owner and in the way he drives the car. A careless driver will run a car into bad condition much sooner than two years and a careful driver will have his car in reasonably good shape at the end of three years. A complete overhaul job is generally not in a hurry and is one of the best kind of jobs to have in the shop. It gives the foreman a chance to have plenty of work for all the men and the parts can be distributed to departments or mechanics for work as the time is available.

Next in desirability to complete overhauls are partial overhauls or overhauls of one or more units.

Getting Radiator Work

Radiator repairing and overhauling is more frequently called for in winter than in summer. This is due to two things. In the first place many owners do not get an anti-freeze solution into their radiators soon enough. The result is a frozen radiator and while it is possible sometimes to have a freeze-up without damage, most frozen radiators force a seam or a tube and develop a leak somewhere in the system. In the second place the roads are, in general, harder in the winter than in the summer and the springs are a little stiffer, due to the stiffening of the grease or oil between the leaves. This is harder on the radiator and subjects it to more vibration. This vibration will in time break some delicate part of the core and a leak will result. Trucks using solid tires are more susceptible to this harder winter driving than are passenger cars.

The installation of a rental radiator service and the

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proper advertising of the fact will bring in much radiator repairing. In other words, instead of the owner waiting for a day or two while you repair the radiator, you simply take his radiator off and put on a rental unit. This takes very little time. And when his radiator is finished you change back again, charge him for the job plus the rental on the radiator and make two profits. The advantages are that the car is not occupying space in your shop, you are relieved of the responsibility for the car and its contents and you do not have to do a rush job. If you are handling one or two lines of cars the proposition is very simple as you can fix up two or three old radiators for rental. For general work you can gradually add to your collection. The investment is practically nothing as you can take frozen or collision damaged radiators and repair them during spare hours.

pay a shop in any town to prepare to handle this kind of work, not only for itself, but for other shops that are not prepared to handle the work.

Painting goes along very well with top, curtain and upholstery work. When a car is in such shape that it needs repainting, it will generally need some work on the top. This applies to open cars. Upholstery will also stand some attention because in contrast to the newly painted exterior, the inside will generally appear shabby. This is a splendid opportunity to sell all of this kind of work at once. You can explain to the owner how nice and glossy the chassis parts, body and fenders will appear and then draw a contrast with the top and upholstery. It is not at all difficult to make the average owner see the necessity of making a complete job, getting new lights in the curtains, etc.

What Kind of Work Can You Get This Winter?



1—Overhauling and Renewing

General overhaul of entire car or of one or more units such as engine, clutch, steering gear, gearset, rear axle, drive shaft assembly, front wheels, radiator, body, windshield, electrical system.
Cylinder and piston overhauls—regrinding or reboring, fitting new pistons, rings and pins.
Rewiring the electrical system.
Top and curtain repairing, mending and renewing.
Painting.
Radiator repairing.
Battery overhauling.
Bringing new models up to date.

Overhauling means really rebuilding. It means not only the profit on the labor in doing the work but it means considerable additional profit on parts which are renewed. The proportion of parts to labor is much greater in this class than in simple adjusting.



2—Maintenance and Adjustment

Battery charging and minor repairs.
Winter care of batteries.
Headlamp adjustment.
Carbon removal and valve grinding.
Tuning up engine—adjust valve tappets, drain and adjust carbureter, clean and adjust spark plugs, clean and adjust breaker points, clean grease off engine, flush radiator, clean oil strainer, check charging rate, test starter, test battery, drain crankcase and refill with fresh oil, examine wiring and connections, check for water leaks, etc.
Crankcase service.
General lubrication—all oil and grease cups, engine, gearset, universal joints, clutch, rear axle, springs, steering gear, front wheels, door hinges, generator, distributor, fan pulley.
General tightening of all bolts and nuts and replacing those lost.
Clean out gasoline tank, gasoline line, strainer, carbureter and adjust.



3—Equipment Installations

Car Heater.
Primer.
Radiator shutter.
Automatic windshield wiper.
Bumpers.
Shock absorbers or rebound snubbers.
Anti-freeze solutions.
Chassis lubricating systems.
Seat and upholstery covers.
Spotlight.
Headlamp lenses.
Windshield wings.
Rear traffic signals.
Sunshades.
And others that will suggest themselves.

The selling of equipment installations also means profits in addition to labor and to facilitate sales of both labor and equipment it is often found advisable to quote a price on the article installed instead of giving separate quotations.

Painting, Top and Curtain Work

Top and curtain work and painting require special equipment and the services of mechanics who can perform the work properly. Not all shops have these advantages and as the investment in equipment is very small, it would

Bringing Old Models Up to Date

A class of repair work that has not been very well developed but which is worth going after is that of bringing older models of cars up to date. This kind of work is applicable to only the higher grade of cars and those which are seven or eight years old. There are many very fine

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cars in the Pierce-Arrow, Packard, and Locomobile classes, as well as many foreign cars, that are in fine mechanical condition but which are minus equipment that we now regard as indispensable. Some have no electric lighting or starting systems. On others the windshield is not of the modern convenient variety. Many have old style carburetors which are not capable of vaporizing the gasoline of to-day. Ignition systems are not equal to modern requirements and sometimes one or more of the units such as clutch, gearset or axle have given out, leaving the rest of the car in good condition. Many of the older cars are using wheels and rims of a size and type for which tires are either no longer made or are made only by a few companies. These wheels and rims can be changed to take modern straight side tires.

Adjusting Headlamps

An important but much neglected service that can be rendered the car owner is the adjustment of headlamps. In states that have not gone scientifically into the testing of headlamps and the rigid enforcement of laws, it will be found that out of ten headlamps, about four are blinding, four do not give enough light on the road for safe driving at night and the other two are about right. States with testing equipment and a policy of rigid headlight law enforcement have cut this figure down considerably. In most states the only cases of arrest are where the headlamps are blinding. Some states like Massachusetts insist not only that the headlights be not blinding, but that they give enough road light to make driving safe. So many owners are driving with headlight handicaps that there is a splendid chance to sell headlamp adjustment.

Getting the Business for the Shop

Getting business for the shop is selling, just as much as selling cars, trucks, accessories or equipment. The particular selling of shop work might be divided into two classes:

1.—*Work which the owner knows he needs to have done but keeps putting it off due either to expense or to disinclination to have the car out of service.*

2.—*Work which should be done on the car which the owner does not know about.*

It is a little bit easier to sell the first class than it is the second because if the owner knows the work has to be done, it is only a matter of convincing him of the economy of having it done now or showing him that it will not take very long and may prevent a protracted and expensive layup later on. The trick in this kind of selling is to find out what the owner knows. This can be done by diplomatic questioning and suggestions.

Let's dramatize the questioning:

Scene 1—At the Gasoline Pump

Owner—"Five gallons, please. Are you sure there is no dirt in your gas? I've been having a lot of trouble here lately with dirty gas. Got hung up way out at Seven Oaks two nights ago with a clogged gas line."

Gas Pump Man—"We strain all our gasoline and so do most all gasoline stations but in spite of this, dirt gets into the needle valve. Many times chemical combinations form between the copper and the gasoline or moisture condenses inside the tank. I would suggest that you have your tank, gas line and carbureter cleaned out now, and about once every six months after that. It will save you a lot of trouble such as you had the other night."

Scene 2—Also at the Gasoline Pump

Gas Pump Man—"Your engine seems a little noisy, Mr. Jones. Have you had the oil in your crankcase drained recently?"

Owner—"No, not for a couple of months. Will that make the engine run better?"

Gas Pump Man—"Yes, it will sound like a different engine. And not only that, but by letting this oil get thinned out you are causing a lot of wear on your bearings, pistons and cylinders and the first thing you know you will have a shot bearing. We can do this job for you in ten minutes and you can sit right where you are."

Scene 3—In the Garage Office

Owner—"Is my battery charged yet?"

Manager—"Yes, Mr. Jones, it is all ready to put in. The bill is $1.50. We have looked up our records and find that you have had that battery in here for charging three times in the last two months. There must be something the matter with your wiring or generator to run the battery down so often. Why not allow us to give your electrical system a thorough inspection and find out what is the matter. It may be only the adjusting of the generator charging rate which will take only a few minutes to fix, or you may have a slow short circuit somewhere in the wiring or equipment."

Scene 4—At the Gasoline Pump

Gas Pump Man—"I notice you carry your spark lever half way down, Mr. Jones. Does she run better that way?"

Owner—"Yes. If I advance the spark, she knocks and pounds and as it is I can't climb hills at all on high."

Gas Pump Man—"The cause of that is carbon in the cylinders. If you will have it cleaned out and the valves ground, the car will run as well as the day you got it and you can still climb the hills on high that you used to."

Using these conversations more or less as samples, the same idea can be applied in many ways. Here is a synopsis of the repair jobs listed in the first part of this article:

1—Overhauling and Renewing

Overhauling of entire car or several units.—These jobs constitute the biggest moneymakers in the shop, therefore considerable time and effort can well be expended in getting them. There are a number of places where hints can be picked up as to cars that need some of this kind of work. The man at the gas pump is an important factor. He can quickly tell when a car drives up to the curb whether the engine is noisy, whether the brakes are holding and so on. If the customer is in a hurry or in no mood to talk repairs, a note may be made of the man's name or if that is not known the license number so that the name and address can be looked up afterwards. A regular sequence of individual letters, telephone calls and personal solicitation can be carried on until the sale of the work is made or until the man is no longer a prospect owing to somebody else having obtained the work or the car moved out of the territory. Much valuable information as to the need for overhauls can be secured when a car is left in the shop for some minor trouble, washing, storage or tire changing.

Cylinder and piston overhauls.—Go after the cars that need the work and do not waste time on those that do not need it. Practically any car over two or three years old would be a prospect for a job of this kind. Such a list could be made up from registration figures in the territory and a campaign of letters, circulars and telephone calls started. The most promising prospects are worth following up personally. It would hardly pay to canvass the whole list with personal calls. Advertising will help too.

Rewiring, top and curtain work, painting and battery work.—These jobs are most economically gone after through quick inspections, observation, circular letters and advertising.

Battery overhauling.—Largely secured through free distilled water service and free hydrometer testing at which time the condition of the battery can be ascertained and the owner sold on a battery overhaul or repair if it needs it. It must be made known that you have such a service and you can let owners know by means of signs in your establishment, by advertising and by letter. This is a

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service and a means of getting customers that is a little newer than in some of the other branches of repair work and some owners are a little suspicious that there is a string attached to it. Many owners buy distilled water at drug stores and attend to the filling of their own batteries. Others buy bottles of distilled water from battery shops and from garages. Without trying to discourage the sale of distilled water by garages, it would be far better to offer to fill the battery regularly than to sell the water. It can be explained very frankly to the car owner that you are rendering this free service because some time he will need some battery work done and you hope he will consider your shop. Other possibilities for selling battery recharging and repairs are through inspections for trouble with the starting switch, dim lights or no lights at all, poor contacts on the battery, ignition trouble, changing the charging rate, etc.

Another source of profit is the winter care of batteries when the car is laid up. If you have any storage business, there will be some customers who will use dead storage over winter and the proposition of keeping the battery in condition can be sold them without difficulty. There will be others not on dead storage, but who use their cars at infrequent intervals during the winter months. It is very easy to check up on these and a letter or a short talk should sell the work. There are also a number of cars laid up for the winter in private garages. It is not so easy to get a list of these but in a small town it is quite often possible to get a fairly good list by asking questions and making observations. A circular letter to all owners in your territory at this season, giving briefly the troubles to which the battery is subject, your proposed remedy and a flat rate for the winter, say till March 1, will get results. Figuring four months of care, you should receive at least $5 provided the battery needs no other attention.

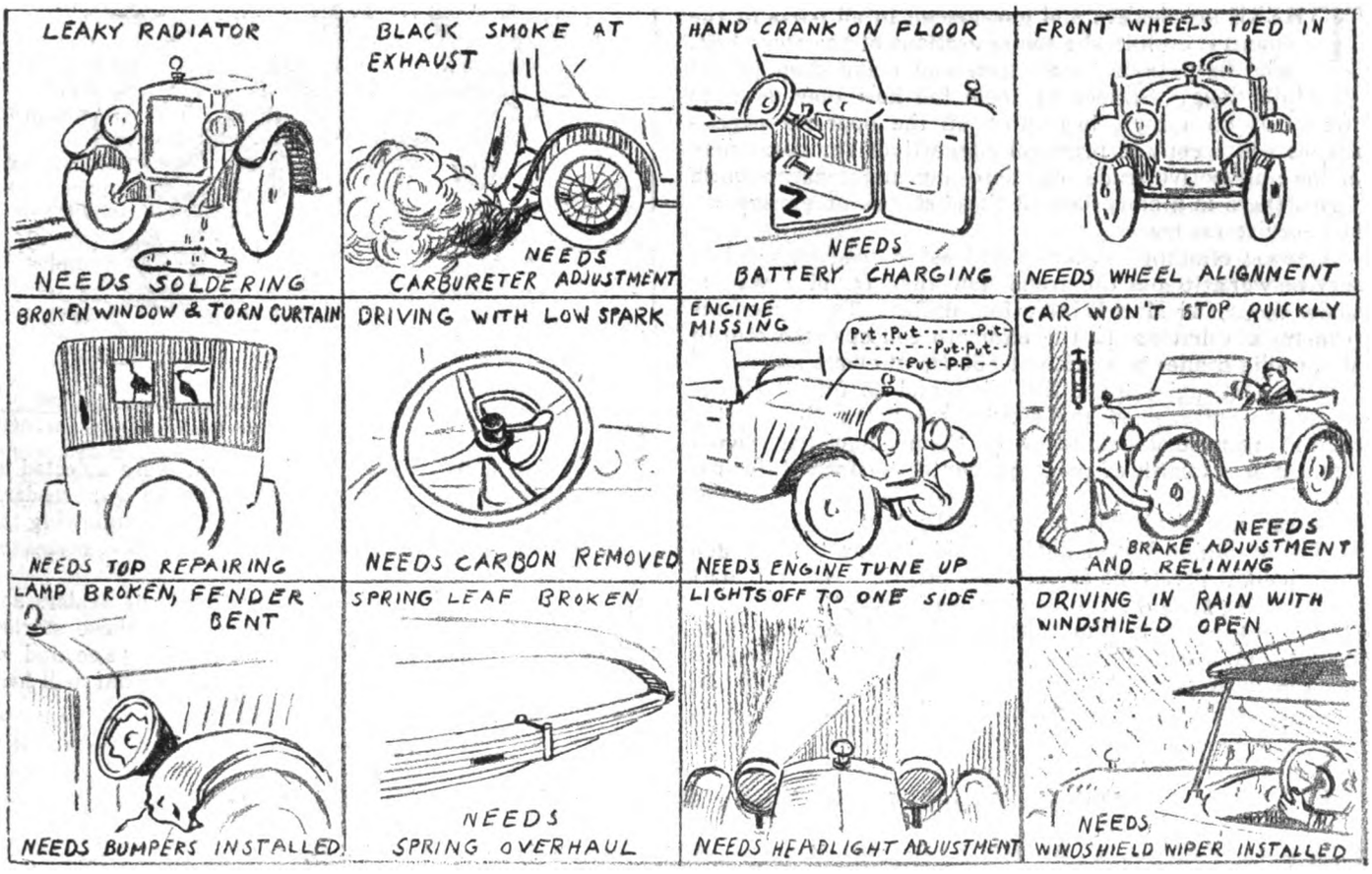
Bringing new models up to date.—Probably you know some owners of the class of cars you would want to do this work on that store in your garage or deal with you. These can be taken care of personally. Other names can be secured from a registration list of cars in the territory.

2—Maintenance and Adjustment

Battery charging and winter care.—Much of the work can be brought in through the free water and hydrometer tests. Circular letters to all car owners in the territory backed up with local advertising will help.

Headlamp adjustment and practically all the other headings under No. 2, carbon removal, valve grinding, engine tuning, crankcase service, lubrication, tightening loose nuts and gas line clean up can be handled alike. A system of circular letters, folders, advertising in newspapers, by signs in the shop and by personal solicitation of those that come to the shop are the best worked out lines of getting the business.

Car Trouble Hints—Look for Them and Make Shop Profits



3—Equipment Installations

Much of this class of work will necessarily come from the department that sells the equipment. On the other hand, much of the equipment can be sold through the shop. The sales and installation are closely tied together and all departments of the business can work together on it. The shop really gets more opportunity to suggest the convenience or necessity of the various equipment and the man at the gas pump is especially valuable in this connection. It is simply carrying the "Ask 'em to buy" campaign a little further to get some shop profits from the sale as well as the actual sales profit.

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How I Make Shop Profits in Winter

16 Garagemen and Service Managers Tell How They Do It—Read Their Prize-Winning Stories



THERE are dealers and garagemen in all parts of the country, even in the colder sections of the snow belt, who keep their shops open and make shop profits all winter long. Sixteen of them tell how they do it in stories of their own, beginning on the opposite page—stories which contain practical suggestions for every man in the automotive trade who does any maintenance work.

But there is a story behind these stories of garagemen and service managers.

A few weeks ago Motor World asked men engaged in service work to tell the trade how they found a way to shake down Old Man Winter for profits. To compensate readers to volunteer in the effort to collect these stories Motor World offered a prize of $50 for the best story, $25 for the next and $10 for the third, and $5 for all stories accepted. Garagemen and service managers all over the country responded and many of them submitted stories containing a wealth of practical winter business information.

It was a difficult job to select the best stories. The editors of Motor World finally decided upon three which they thought presented in the most practical way the most practical suggestions for getting work into the shop and profits out of it in the cold months. After the prize stories had been selected it was equally difficult to pick out the most practical ones from the others submitted. Finally a considerable number, describing different methods of going after winter service work, were selected as being likely to prove of greatest value to our readers. Some of them are being printed in this issue following the prize stories and others will appear in later issues of Motor World.

Motor World believes that its big family of dealers and garagemen will want to read every one of these stories. We suggest that you begin on the opposite page and go right through to the end, looking for ideas that will help make your own shop earn winter profits.

Prize Winners in the Motor World "Shop Profits" Contest:

First prize ($50)—W. M. Hinds, Service Manager, Bliss Auto Sales Co., Toledo, O.

Second prize ($25)—S. Massey, Advertising Manager, Foss-Hughes Co., Philadelphia.

Third prize ($10)—George R. Webber, President, Webber's Auto Electric Service, Augusta, Me.

Stories Winning Honorable Mention

James C. Thomas, Assistant Service Manager, The Henley-Kimball Co., Portland, Me.

T. C. Barrow, Manager, Winton Garage, Cleveland.

Ralph Denike, Aqueduct Garage, Hastings-on-Hudson, N. Y.

Art Johnson, Manager, Collinson Buick Co., Winfield, Kans.

F. C. Jones, Proprietor Jones Bros. Auto Co., Toledo, Iowa.

Henry W. Lemay, Service Manager, The Arrow Co., Springfield, Mass.

Everett E. Lamm, Mechanic, West End Garage, Missouri Valley, Iowa.

John C. Trindl, Branch Manager, Trindl Co., Milwaukee.

J. H. Becker, Proprietor, Becker Repair Co., Cleveland.

Joe Moore, Service Manager, Wildhack Co., Indianapolis.

R. R. Hall, President, R. R. Hall Cadillac Co., Denver.

George Simpson, President and Service Manager, K. R. Charlton, Inc., Holyoke, Mass.

F. W. Darnstaedt, Service Manager, Willys-Overland, Inc., Springfield, Mass.

L. K. Bridgman, Service Manager, O. L. Huntting Co., Springfield, Mass.

P. G. Little, Service Manager, Nash Sales Co., Milwaukee.

Walter Root, Service Manager, Bruening Bros., Kansas City, Mo.

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Service Salesman With Book of Photographs Takes the Shop to Car Owners

First Prize Story

By W. M. HINDS,
Service Manager, Bliss Auto Sales Co., Toledo

"THERE'S plenty of service work in winter or other slack times, but you have got to go out and dig it up! Ask 'em to buy SERVICE—just as you ask 'em to buy cars! And that's the only way a shop force of about fifteen men can turn over a profit to the employing company.

We are preparing now to circularize every owner of a Hudson or Essex car in the district the first time that the regular service begins to slow up after snow flies. It has been my experience that one or two good letters will bring in some business, but if it doesn't then I open up my big guns and go right to the owner and sell him the service.

We start a service salesman out on the list. He sells them our service.

His equipment consists of a book of accurate photographs taken in our shop showing our use of special tools and the care we take in doing any particular job.

There the owner can see his car—a Hudson or Essex—just as the mechanic will work on it. He notes that we take care of his hood, use the right kind of wrenches, have the best method for grinding pistons—he *sees in advance* what we are going to do to his car if it needs anything at all.



"A service salesman, carrying a book of photographs showing how we do things in the shop, sells winter repair work for us"

Now that's the equipment for our salesman. He isn't necessarily a mechanic himself but he should be a good automotive salesman.

Next we have our tester—an expert mechanic—go over the owner's car. He makes out a list of things needed to be done and opposite them is set the labor charge for each operation. Now the salesman armed with the mechanic's facts completes the sale.

Some operations are marked essential and others just optional, and then it's up to the salesman to sell as much as he can. And the customer knows how much the work will cost except for special materials or parts needed.

Get the message to every owner, sell him on your methods and service by "taking" the shop to him; see that a fine mechanic's judgment is passed on his car, and then after the case is diagnosed sell him the service by the personal work of a good salesman.

Winter Business Calendar Helps Keep Up Broadside of Service Selling Letters

Second Prize Story

By S. MASSEY,
Advertising Manager, Foss-Hughes Co., Philadelphia

WE use a Mid-Winter Business Calendar. This is the way we keep our shop running and make it pay.

The trouble with some dealers is the fact that they will not systematize their advertising and sales or shop efforts; when really, after all, this is all one needs in the automobile industry as well as any other, simply a good old-fashioned plan of regular, hard work, and then the ability to work this plan. Customers yield to constant persuasion in this line the same as any other, for man's mental make-up simply cannot resist the persistent and overwhelming force of innumerable impressions.

Providing the service is there and the shop RIGHT, direct mail will bring results, and if possible, couple with it newspaper space and you have as good a solution as can be offered. Another thing is the fact that a great many dealers think winter should be dull and let it go at that. Their letters miss the punch; they show the writer's skepticism, as it were. As the army officer said, "If you believe it—it's so."

Here is our Winter Business Calendar:

OCTOBER

15TH

General letter on painting, upholstering, repairing of cars and trucks before fall rush.

NOVEMBER

1ST

Special letter to truck owners about thorough repairing before winter strains.

2ND

Special letter to closed car owners to have car painted, upholstered or repaired before real cold weather.

15TH

Letter to touring car owners to have car thoroughly looked over before winter. Paint, new top, etc

DECEMBER

1ST

Letter to passenger car owners about having "heaters" installed.

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15TH

Another letter to truck owners calling attention to benefits of having truck thoroughly "gone over" before first snow.

EVERY DAY

Attach stickers to customers' bills, statements, letters, inspector's reports, calling attention to advantages of heaters and radiator shields and asking them to let your shop install them.

EVERY DAY

Look over inspector's reports carefully and watch for repair jobs.

JANUARY

1ST

Battery service letters, truck and passenger owners.

5TH

Letter to passenger owners to have touring car "gone over" before spring rush.

15TH

Letter to truck owners on the benefit of mid-winter repairs.

FEBRUARY

1ST

Another general letter to passenger owners on repairs, painting, etc., before spring.

15TH

General letter to truck and passenger owners asking if service is satisfactory, etc.

Timely Service and Christmas Sales Make Profits for Electric Service Station in Maine

Third Prize Story

By GEORGE R. WEBBER

President, Webber's Auto Electric Service, Augusta, Me.

OUR winters are long and very cold, snowdrifts and country roads reduce winter driving to a minimum. Ours is a battery and electric service station, and we do not attempt general overhauling. Winter is and always has been a serious thing for us, as we must keep our organization of seven employees intact and our shop open.

We made arrangements with an insurance agent whereby every battery which we took in for winter storage was covered against loss by fire, theft or freezing. We gave our customers a regular insurance policy instead of the customary winter storage receipt. We advertised this fact by a direct mail and newspaper campaign and our storage business doubled.

We sold electrical accessories at a price which included the installation and made a drive over different articles each week for fourteen weeks. We urged the purchase of electrical accessories as Christmas presents and collected for the installation at time of sale. The gift could, therefore, be hung on the tree and be put on the car later and at no expense to the recipient, thus this plan led to the sale of many articles for the car even though the car was not in use.



"Winters are long and cold in Maine, but we keep our organization of seven men intact and our shop open"

A law was passed during the winter regulating automobile headlights, effective in the late spring. We studied the law, equipped our shop for the work and advertised the fact. We urged our car owners to comply with the law in advance of its enforcement; we sold nearly 200 pairs of lenses and focused about 300 headlights before the law became effective and during the slack time.

As the laws applying to licenses were changed, and as all applications had to be signed by a notary, we applied for and received a notary public commission. This brought people to our shop to have us help them with their license application, and as old licenses expire January 1, many came in January and February. While the notary fees amounted to a very little, the contact with the car owner was valuable, and we were able in many cases to secure jobs of generator and starter overhauling, which the owner did not intend to have done until he put his car in service in the spring.

Keeps Shop Profitably Employed Overhauling Used Cars

By EVERETT E. LAMM

Mechanic, West End Garage, Missouri Valley, Iowa

WE sell new Dodge cars and trade for old ones of all makes. Winter finds us with a number of used cars on hand that we have not had time to put in shape during our busy summer months. These cars are overhauled during our spare hours, only time that we have no pay jobs in is devoted to this. They are put in first class shape, every part gone over, new parts put in where needed. When the car is put in good shape and running smoothly it is put in one corner of the show room and dressed down with emery and steel wool and then a coat of paint applied, then more emery and steel wool, another coat of paint and after having been dressed down the second time a coat of varnish is applied. During the winter several cars are gone over in this way and spring always finds a ready market for good used cars.

Then there is radiator repair work. Most all radiator work comes in the winter, as they are mostly ruined by freezing and bursting, causing leaks.

Then let us not forget the little grease wagon or gun. We carry only one brand of oil and give free crank case service. By giving free crank case service we drain the old oil from the crank case, wash the motor out with a quart of fresh oil, never kerosene, as some is bound to stay in the case and thin the new oil, so we always use new oil to wash the motor out with, letting the motor run a few minutes. The customer is charged straight quart prices for the oil, but nothing for labor. The old oil is saved and used as fuel. We sell some to farmers for hog dip, only charging enough to pay for handling and taking care of it.

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Personal Letters to Owners Sell This Service Manager's "Winter Driving Inspection Plan"

By P. G. LITTLE,
Service Manager, Nash Sales Co., Milwaukee

TO insure our shop operating at near capacity during the so-called dead months we have found it necessary to plan and prepare during the fall and by using the following methods we have during the past two winters found that our business has averaged 80 per cent of our busiest months.

A personal letter is sent out to every owner who has purchased a car from us, the letter being timed to arrive between October 1st and November 1st. This invites the owner to bring in the car for our "Winter Driving Inspection" and, the letter being a real personal letter and not a form affair, we get immediate response, especially as we state that there will be no charge for the inspection. When the car is brought in, the owner is met by a service salesman who requests that the car be left all day and carefully explains that we intend to thoroughly test the car and not just casually look it over.

When the car is called for in the evening an itemized estimate together with our suggestions is handed the owner and it is very seldom that an appointment is not made right then for some repair job.

Too much stress cannot be laid on the importance of the neatly prepared estimate as it creates in the owner's mind the feeling that the car has been actually tested out. We point out to the owner that he should not be deprived of the use of the car during winter and show the importance of having the car in condition to facilitate easy starting, explaining that besides the need of certain accessories, it is vital that the carburetor, ignition, starting and generating systems be at highest efficiency. The doubt which exists regarding the ability to start easily has laid up many cars during the winter, and if the owner can be assured that he is going to be free of this annoyance we benefit twice, as we get the work of putting the car in condition for easy starting and also get the work later on resulting from the operation of the car.

Therefore we consider this of primary importance and build our fall campaign around the fact that a car should operate the year 'round and besides the letters we send out we have everyone in the organization talk about "Year 'Round Driving." If we can get the owners to come in, and keep the cars in winter operation, why should there be any question of the necessity of repair jobs. Every garage man knows of the many winter accessories which can be sold and of course we continually work on this line and later in the season work our letter system to get the owner to come in to talk about getting ready for the spring driving, which results in our getting big overhaul jobs. No longer do we dread the months that used to be dead, and our shop is kept busy—BY KEEPING THE CARS OPERATING IN WINTER.

Letters, Personal Calls and Cards Line Up Winter Jobs

By T. C. BARROW
Manager, Winton Garage, Cleveland

WE line up prospects by letter and personal solicitation and then put a first-class salesman on to sell service. Such a man more than pays his salary and turns in a good profit.

Once you get a customer into your garage for storage or service do everything in your power to make him remain there if he is in for storage and strive to give repair service that will cause him to return. This is a great business getter.



"One of our ways of advertising our service facilities is to place cards telling about them in cars parked on the streets"

The successful department stores have found it advisable to push a leader, and so have I in the winter. On a rainy day I advertise to wash Fords regardless of model, for $1.50. You ought to see them come in. I have to get extra washers.

The winter is a great season for conventions. I get the name and address of every convention delegate who makes a reservation at hotels I can make arrangements with and then I send them all cards advising them of the service I offer and stating I shall be pleased to attend to their cars. It is surprising how many delegates go to conventions in cars.

At the Hotel Statler, I have three boys stationed all the time. They get the trade of Statler patrons who drive cars. Does it pay? Five thousand cars handled since the first of May is the answer.

Work hard in the warm months and give real service and you'll always have a good nucleus for winter business.

We are supplementing our efforts in the garage and service department by circular letters, newspaper advertising and by distributing cards. Each year we place thousands of cards in machines that are parked on the streets.

Specialized in Winter Overhaul

By J. H. BECKER
Proprietor, Becker Repair Co., Cleveland

LAST winter we had more work in the shop for the three hardest months than we had in the summer. The winter before that, which was the first winter we were in business, we almost starved. Why? Well, after such a terrible lesson in 1919-1920, I looked around to see if there was some kind of work that we could specialize on that no one else was doing. I canvassed all the garages in our section of the town

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and found that not one was making a specialty on partial or complete overhauls. So we made that our big trump suit. I prepared an advertisement that ran something like this:

"The first day of winter is the best time to have your car made as good as it is humanly possible to make it. Drive it into the Becker Repair Co., 1353 Chester Avenue, for a thorough overhauling by mechanics specializing in overhauling."

This advertisement was inserted in the classified sections of daily newspapers on the first bad spell of weather. The result was instantaneous. One repair job amounted to $650.

The first day there was snow and ice the following advertisement was put in:

"Can you figure out a better time in the year to put that car of yours in such shape by a general overhauling that it will never be laid up when the weather is fine and the roads are free from ice and sleet?—Becker Repair Co., 1353 Chester Avenue."

Car Salesmen Sell Service

By GEORGE SIMPSON,
President and Service Manager, K. R. Charlton, Inc., Holyoke, Mass.

LATE in the fall, when car sales slacken and work in the service department lags, we find it profitable for the time being to transfer some of the efforts of some of our salesmen from the selling of cars to the selling of service. This at times enables us to retain the services of a man we would not be justified in carrying along on the strength of sales possibilities alone. It affords, moreover, excellent experience for the salesmen. It acquaints them with a side of the business that they generally know too little about. By making regular rounds of visits to Ford owners our men are enabled to learn, better than otherwise, what sort of satisfaction they are deriving, and if they have complaints or grievances the salesmen can advise as to the means of correcting the difficulties, and holding them for future patronage. We pride ourselves on our success in holding trade year after year, selling a new car when the owner is ready to turn his old one in, but we cannot count on doing this unless the owner is satisfied with his car and the manner in which it is being serviced. That is one of the reasons why I, as the service manager, have sometimes left the inside responsibility to another and gone out among the car owners for a period. I was enabled to stimulate the repair work and at the same time make the patrons better satisfied and learn a lot about things that went on inside the garage that I did not previously know. It is worth a lot to ascertain, if a patron is not satisfied, what the base of his complaint is, and so smooth out difficulties and strengthen weak places about the establishment. While I am unable to engage in this work personally at present, I am planning to have one or two of our salesmen carry on this missionary work systematically during much of the fall, confident that the work done will yield good returns in a number of ways.

Postcards Get Cleaning Jobs

By RALPH DENIKE
Aqueduct Garage, Hastings-on-Hudson, N. Y.

AFTER October, owners of cars in our locality start laying up their cars, and discharging their chauffeurs. The car is placed in the private garage just as it was last driven in, dusty, and in need of many things to make it run good should it be needed at short notice or the start of the next season. The proprietor of the Aqueduct Garage "postal-cards" every private owner asking him if he wants his car cleaned, crankcase and rear end emptied of old used oil, and cleaned and replenished with the best grade of oil, oil cups cleaned and filled, all bolts and nuts inspected and fastened up tight, engine cleaned and transmission looked over. These things are all done at the owner's private garages by such help as would have been laid off during the winter. The tools and oils and grease are transported to the place in a car equipped for just such purposes. The work is done completely and inspected by the owner should the car be laid up for the entire winter. Jacks are placed under it, thus releasing the strain upon the tires.

Watch Cars Needing Repairs

By R. R. HALL
President, R. R. Hall Cadillac Co., Denver

WHILE we use newspaper and direct mail advertising to gain winter business in way of general overhauling and painting of cars, building new bodies, etc., I believe that the best methods used by our organization to build shop business for ourselves and at the same time impress upon Cadillac owners that we are genuinely interested in their motoring welfare is our plan to keep careful tab on when each car was in our shop for any extensive repairs, and then tactfully suggest to the owner an inspection of his car at a time likely to enable us to detect needs of moderate repairs or overhauling before they have a chance to become more serious needs calling for a bigger outlay of money because not taken care of at the right time. This diplomatic sort of personal solicitation brings us a substantial volume of business during the winter, when it is easier for car owners to feel that they can spare their cars long enough for a thorough overhauling, and helps to protect our shop from severe slackness of work due to the fact that there is less motoring and less call for minor work.

We also "Ask 'em to Buy" accessories for general and seasonable use by means of a neat showcase in our showroom and another on the main floor of our service department. This method naturally helps our shop business also.

If there is a slowing down of shop work, we shorten the hours instead of laying off men. Thus we have been able to build up a steady, loyal, permanent organization of experts. Permanent employees mean better satisfied customers.

Set Prices on Special Jobs

By L. K. BRIDGMAN,
Service Manager, O. L. Huntting Co., Springfield, Mass.

WE get repair and overhaul work in dull periods by sending out special circular letters and by personal solicitation. Sometimes we offer a reduced price for work done within a specified period, but we do not make this our strongest or most frequent appeal. We attempt to impress upon the patron the truth that good service all the year 'round is not to be had by piling up work at one season and permitting the shop to become virtually idle at other periods. We therefore invite his co-operation for our mutual advantage and profit. Generally we can get this argument across by going at the matter in a tactful manner and at opportune times.

We have an inspection job for which we make a flat rate. Our aim is to bring a car in for such inspection at the end of each 100 miles' travel. That system, if lived up to, keeps a car in good working order all the while and tends to ward off a rush of repair work at the opening of the busy season or perhaps when the season's traffic is at the peak. If a car has run 2000 miles or more we charge by the hour for whatever service the inspection and overhaul may entail, as the flat charge does not apply in such cases. Most of our patrons come to realize that regular inspections pay best.

Canvasses in Summer

BY F. C. JONES
Proprietor, Jones Bros. Auto Co., Toledo, Iowa

In the summer I start lining up my work for the winter. I go to the car owners and explain the advantages of overhauling during the winter and the service we can give them, and ask them to decide about what time would be most satisfactory to have the work done.

We have a wrecking car which we designed and built ourselves, which we find is the greatest advertiser we ever had. It has a winch which works from the engine and is equipped with 150 ft. of wire cable, which we can hook on a car in a ditch 150 ft. away and wind out with the winch. It requires only one man for pulling out cars and saves one man in carrying in cars. It has a lifting capacity of 3 tons and a carrying capacity of 1½ tons.

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Free Inspection Offer Gets Jobs

By JOE MOORE
Service Manager, Wildhack Co., Indianapolis

MY company was in a very peculiar position last winter—a position that required quick thinking and hard work. We had just taken on the Reo line which was previously handled by another company. Naturally many of the customers who had purchased from the former Reo dealer and had become customers of the service station continued to take their cars to this other dealer, in spite of the fact that he had also taken on a new line. And many of the customers who had bought cars that we formerly sold continued to come to us for service, although another dealer had taken this line. We desired to vastly increase our Reo service and to cut down outside business.

We, therefore, worked out a free inspection service for Reo owners. This took the form of a letter offering the free inspection on the Reos and a free written report of the condition of the car. A multigraphed letter was sent to all owners, and there was a splendid response. The best part of it all is that 60 per cent of all the free inspections made, together with those written reports, result in orders for the needed service. All of those men are going to be regular service customers if they follow the practice of those who have patronized this service establishment before. The winter of 1922 is expected to find a full shop every week, and there will be no red ink record for this establishment when Miss Springtime 1923 makes her bow.

Service Salesman on the Job All Winter

By F. W. DARNSTAEDT,
Service Manager, Willys-Overland, Inc., Springfield, Mass.

IN my experience with the Willys-Overland branch here I have found that shop work could be greatly stimulated in winter and other dull periods through the efforts of the service salesman. I have served in that capacity myself at times, combining this function with that of service manager. The service salesman goes about with owners of the make of car for which servicing he is particularly responsible. He makes observations of a car, rides in it, and keeps his eyes, ears and other faculties open for any irregularity, advising the owner as to what, if anything, he thinks is needed. This may consist of very simple measures, or an extended overhaul, as the case may require. The service salesman, useful at all seasons, can exert himself to the special advantage of the establishment at times when business naturally lags. But my experience is that the plan is profitable only in a good sized community, or where the duties of the service salesman can be combined with service in some other capacity. It is, moreover, a plan to be applied in an agency or branch, where there is a regular clientele established through the efforts of the sales department.

Experts Get Numbers of Cars Needing Repairs

By JOHN C. TRINDL
Branch Manager, Trindl Co., Milwaukee

WE are going to post two of the best all-around mechanics at certain points of vantage on Milwaukee city streets at certain times each day—usually the dinner-time rush hour—to book the license number of cars which, to their expert eyes, appear to be in need



"We send out expert mechanics in rush hours to watch for cars that need repair. We follow them up through the registration list"

of overhauling and repairing. The name of the owners, when not known, will be secured easily from the periodical lists of registrations available to garagemen and any other person willing to subscribe for them, issued by the office of the secretary of state at Madison. Then a tactful, diplomatic letter will be addressed to each motorist, suggesting that this is a good time to bring his car to Trindl's for inspection, and incidentally describe fully our superior facilities for doing any job of overhauling and repairs, including cylinder, crankshaft and camshaft grinding; piston, piston ring and wristpin work; connecting rod bearing service—in fact, anything at all, large or small, on any or all parts and units of a motor vehicle.

If there is no response within a reasonable time, a follow-up letter will be mailed, and still others until the object is accomplished or the subject of the campaign no longer looks like a likely customer.

"It isn't what a man tells his business associates or friends about his car, it's what he tells his wife," some writer has said. By the same token, no matter how roundly a man may take his "old bus" to task to himself or before his family, he almost invariably refrains from criticism before friends; in fact, if his friends were to believe him, his car is the best in the world.

It wouldn't do at all for me to write an owner that the performance of his car on that steep hill coming out of the Menominee valley leads me to believe his car is ready for the junk-heap. We've got to make him think his rig is O.K., but like every other car, it should have an inspection periodically, and we're the boys to do it right.

Sell and Install Accessories in Winter

By JAMES C. THOMAS
Assistant Service Manager, The Henley-Kimball Co., Portland, Me.

UNTIL two years ago the idea of making our shop show a profit during the winter months was regarded as an impossibility, but it has become a reality and to-day finds us busy preparing for another profitable winter.

To obtain winter business for our shop, we have outlined several jobs, such as cleaning out carbon, grinding valves, tuning the engine, a thorough greasing and general tightening-up, using a flat-rate system of charging for the work. We also have a monthly inspection service which enables an owner to have his car thoroughly inspected for a flat charge of $5, plus the cost of oil and grease necessary. During the winter months this service is a great booster for shop profits, as an inspection often reveals items which require ten or twelve hours' additional labor.

As the service manager and myself meet all the owners, we are well posted as to the condition of their cars and are, therefore, in a position to go to their offices and advise them as to the expense necessary to put the cars in good order for the coming season.

A neat little profit can be made from the sale and installation of automatic windshield cleaners. Should the owner drop in for a short repair job on a stormy day, only a few minutes are required for a demonstration. "Ask 'em to buy."

The service man has a fine chance to be an accessory salesman also. He can easily show the owner where a front bumper would have saved a $90 radiator, or where a rear bumper would have prevented that ugly dent in the back of this new sedan body. Any owner can easily be shown why a mirror might prevent a bad accident.

Of course, when cold weather arrives, the service salesman should advise the owner what anti-freeze solution is best, also to keep the battery well charged, to drain the heavy grease from the rear unit and gearset and install a lighter grease, to use high test gasoline, etc.

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Why You Should Advertise This Winter—and How

Some Timely Suggestions on Taking Advantage of Winter's Opportunity to Find Buyers and Build Good Will

THE dealer who would grasp the full opportunities of selling this winter should advertise. He should take his place among the progressive, sound merchants of his town in his home town newspapers.

Whether the product he sells is cars, trucks, tractors, automotive equipment or repairs, there are benefits from frequent representation in the columns of the home town newspaper, among the town's best businesses, that should not be ignored.

"But I can't afford to advertise," is frequently heard, especially in the winter months when business slows down.

Man—you can't afford not to advertise!

Primarily the dealer buys space in his local paper to find buyers. That is his big object and it very properly should be the final objective of his advertising effort. But the mere finding of buyers falls far short of the total benefits of local dealer advertising.

Good, consistent advertising will do three more things besides find buyers, each of which is in a way equally as important as finding buyers. These are:

1 IMPRESS the public. Who can measure the amount of genuine good will, confidence and favorable opinion that is created in the public mind by the consistent appearance of your business story among the advertisements of the dependable businesses of the town? Can any automotive dealer who has his business future at heart afford not to be present in this roll call of progressive business?

2 IMPRESS the banker. Here is a benefit of advertising that is almost totally overlooked by the dealer, yet it is a force that advertising exerts that should not be neglected. Banks prefer to lend money to progressive businesses, to businesses that are fighting for success, and among the things that they consider are the aggressiveness and progressiveness—the chances of success—that their clients exhibit. Your advertising in your local paper gives the town bankers as well as the general public the impression that you are a going concern.



You can't afford not to advertise. It opens the door to opportunity and the fraternities of progressive business.

3 HELP the morale of your own organization. Here again is a benefit of advertising that is immeasurable. Aside from the visible benefits of advertising as a means of breaking down sales resistance and fertilizing the field for the sales force, there is a strong moral force in the impression on employees of their firm's advertising. Employees take pride in the fact that they are connected with a prosperous, progressive concern. It adds confidence to their efforts and encourages them. It makes them a part of the fraternity of progressive business just as it marks your business as among the leaders.

So, can you afford *not* to advertise?

Consistent advertising does not mean the investment of large sums of money. Moderate size advertisements appearing frequently are usually more effective than sporadic flashes at long intervals that claim attention for a moment and are soon forgotten. Most good concerns appropriate two to five per cent of gross sales for advertising and find that if space is used judiciously it brings the volume of business desired. However, a mistake that is made too often is to base advertising expenditures on past sales or profits rather than on contemplated sales. Most progressive firms of today aim at a certain gross sales for a year and appropriate two to five per cent for advertising to *get the desired volume.*

Base your appropriation on a percentage of the business you think you should do. Suppose you think you should do $100,000 business this year. You can't afford to appropriate less than $2,000 for advertising to get it. The sum may look large at first, but divided into months, as you pay your advertising bill, it is only $167.

Advertising is a pay-as-you-go investment, like rent, light and heat and once the sum is set it should be paid regularly just as you pay your electric bill.

Having determined the amount, divide the year into periods when greatest business is to be had, noting the nature of the business at such periods, repairs, supplies, cars, etc., then the periods when little business is to be had and the periods of fair, normal business. This will give you a curve of natural buying and what your advertising must do is *straighten that curve* so that the "hills" are not so high and the "valleys" not so deep.

And one of the immediate jobs for your advertising is to keep this winter's sales curve from sinking.

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The writing of advertising is the average dealer's job and should not be delegated except to a person of unquestioned ability. To write his own ads helps the dealer to define his business more clearly to himself as well as to the public. It helps him to establish his business platform and principles. The best ad is the one that tells the dealer's selling story in short, concise, direct sentences.

Remember that good advertising is not an expression of the dealer's desire to sell something but it is an EXPRESSION OF HIS ABILITY TO FULFILL THE DESIRE OF THE CUSTOMER.

The automotive dealer advertises to help the public solve its transportation needs and THE MOST EFFECTIVE ADVERTISING THAT CAN BE DONE THIS WINTER IS THE KIND THAT POINTS OUT THE NEED FOR MOTOR-DRIVEN VEHICLES AND ACCESSORIES AND REPAIR SERVICES AND TELLS THE PUBLIC WHY HE CAN FILL THOSE NEEDS SATISFACTORILY.

Advertise this winter! Winter conditions increase the NEED for the products and service of the automotive industry and if your advertising points out these needs and how they can be met by trading with you, if your business is organized to make good your advertising message, THERE WILL BE MORE BUSINESS AND MORE PROFITS FOR YOU THIS WINTER.

Ads That Will Help You Sell Used Cars

USED car advertising should tell why your cars are a good buy.. Not why you want to sell them.

Many dealers have found listings of used cars the most effective kind of advertising. Ads like the one at the right can be used in newspapers or in printed or typewritten bulletins mailed to prospects. The ad at the left is a confidence building ad.

A dealer who wants to make his used car advertising distinctive can have an artist draw an emblem along the order of the one suggested below. The cost of drawing and cut will be slight and it can be used for a long time.

Why Smith Used Cars Are Big Values

Jones drives his car 5,000 miles, then decides that he wants a different model. Jones has been careful of his car; it is running as well as the day he bought it. But because Jones wants to replace his car while it is still giving good service he must make a sacrifice in selling it.

Jones buys a new Leader car and we take the one he has driven and cared for so well. We do this to accommodate Jones and also to serve the man who wants to purchase a good car at less than the factory price.

We put Jones' car in first class condition and stand behind it with our guarantee that it will give satisfactory service.

Cars like Jones' are the kind of used cars we buy and sell. They are big values.

Come in and see them—now, while the selection is large.

SMITH MOTOR CO.

101 Market Street Phone 750

Leader Motor Cars

Is There a Car In This List For You?

Come in—Look them over—Pick out the car you like—Pay for it in small installments, weekly or monthly—We guarantee satisfactory service.

Look at These Values

SENNETT Special, Series 19. Body in dark maroon. Wheels vermilion. Seat covers and bumper. Excellent mechanical condition. Price, a bargain at $895.

LEADER, Series 20. 7-passenger touring car. Mechanical condition excellent. Paint good. Top and upholstery good. Two extra tires; complete, $1195.

SENNETT Coupe, Series 20. Only slightly used. Tires, paint and upholstery like brand new. A rare buy at $1195. Guaranteed.

SENNETT Roadster, Series 20. Special throughout in maroon and cream. Ideal for the woman who drives. Unusual comfort and ease of control. Rebuilt and guaranteed. Price $795.

EMPIRE 7-passenger touring. Series 20. Brand new paint in dark maroon. Rebuilt and guaranteed. A bargain at $995.

SENNETT Sedan, Series 20. Only very slightly used. Like new. Silk plush upholstery. Appearance perfect. Price $1495. Guaranteed.

SENNETT Touring, Series 20. Body in dark blue, wheels in black. Four brand new tires. Car in perfect condition. Price $895. Guaranteed.

EMPIRE Sedan, Series 20. Rebuilt and guaranteed. In fine condition throughout. An exceptional bargain at $1095.

SENNETT Roadster, Series 18. 4-passenger, body painted blue, chassis black. General condition. A buy at $595.

Come Early and Get First Choice

SMITH MOTOR CO.

101 Market Street Phone, Market 750

Leader Motor Cars

Digitized by Google

Ads to Sell the Motor Car This Winter and

THE motor car dealer will advertise this winter to do these things:

1—Get winter business.

2—Prepare the public for his spring campaign.

The advertising that he should do this winter can be divided into two general classes. The first is the use of the factory copy in which it is necessary to insert only his name and address and possibly a few words of local interest. For this type of advertising he will choose the copy that sells the product and the factory behind it. They will be for the most part ads that tell of the serviceability and utility of the product, its power, strength, comfort, performance, etc. The second and very important phase of his advertising ought to be the copy he writes himself, which should be designed to interest the public in his business, his organization, his service facilities, and everything that he is doing to stand behind the product he sells.

In writing the ads of this type it is good to preserve in appearance, either through the style of type used or a striking merchandising slogan of the factory, the similarity of the advertisements so each ad will be tied up in the reader's mind with those that went before. This will help the dealer get the cumulative effect of his advertising.

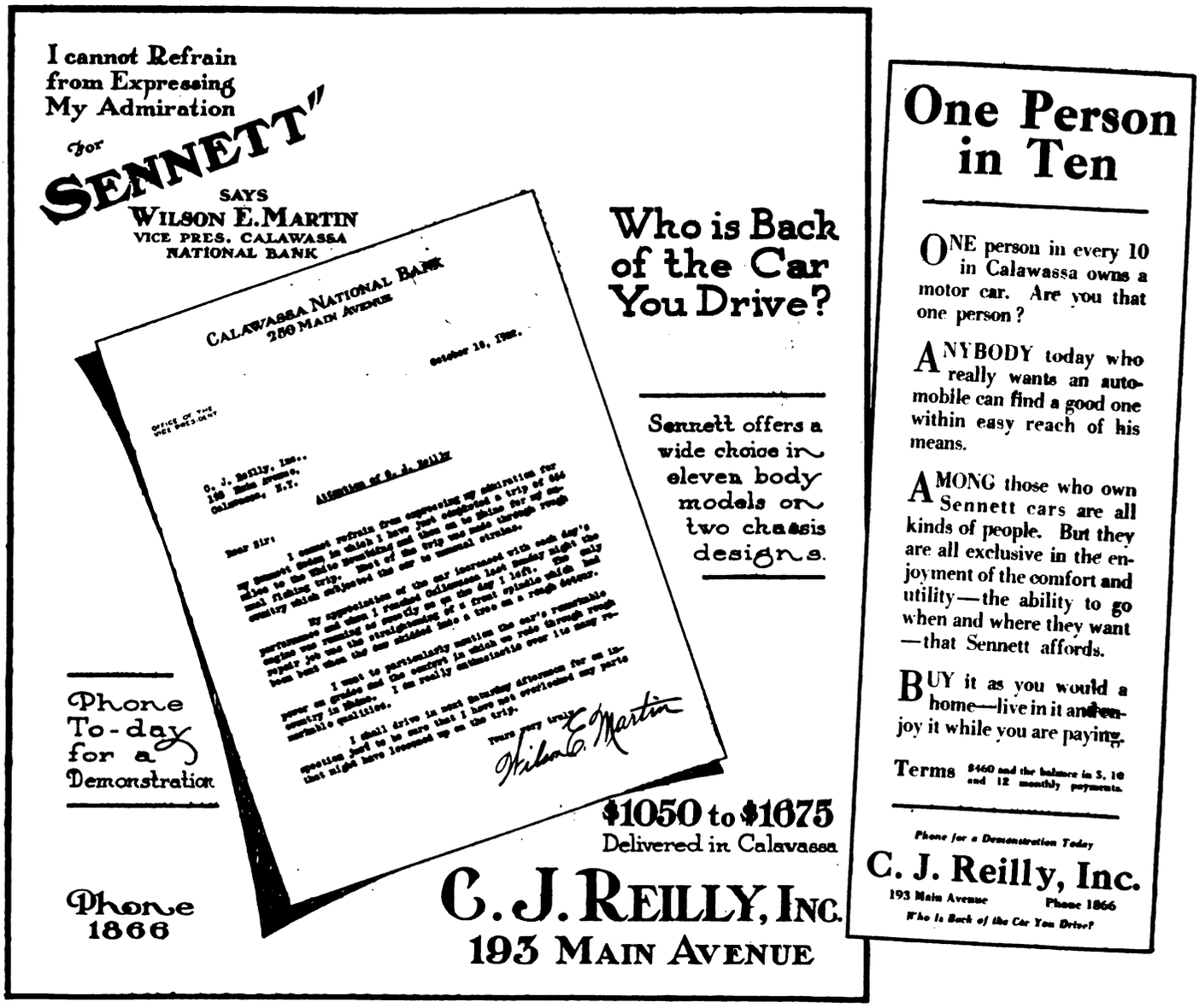
Advertisements that tell the selling message in short, simple sentences devoid of florid literature and superlative descriptions are most impressive. The dealer who would improve his advertising copy will do these things:

1—Fix in his mind definitely the idea that he wishes to get over.

2—Get a mental picture of the kind of a man he wishes to "talk to."

3—Write his advertising copy just as he would talk to that man in his own simple, direct language.

Medium size advertisements appearing regularly usually are more effective than large advertisements appearing infrequently. "Picking up" ads from week to week saves a little time and effort for the dealer, but they lose in effectiveness many times the value of the time that it would take to rewrite them.



Above are two ad suggestions that show how a testimonial letter may be presented in a striking manner, and an interesting way of telling the public about your time payment plan. Every dealer receives some letters similar to the one used in the larger ad. His newspaper's ad man will be glad to help him with the layout of the ad. Note that the slogan: "Who is back of the car you drive?" is used in each car ad. It ties together the dealer's ads and at the same time carries the inference that he stands behind the cars he sells

Digitized by Google

Prepare the Way for the Big Spring Campaign

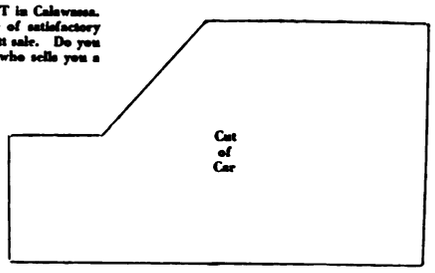
"There are lots of Good Cars"—

Yet no matter how good they are the service that goes with them is a highly important factor.

Who Is Back of the Car You Drive?

C. J. REILLY stands back of the SENNETT in Calawassa. His personal bond and his guarantee of satisfactory performance become a factor in every Sennett sale. Do you realize the importance of knowing the man who sells you a car?

And then there is the Sennett itself to think about. Come in and examine the new Sedan model. It is a happy combination of UTILITY and COMFORT. A sturdily built, finely finished car.



Sennett

Coupé $1,250 Sedan $1,675
Delivered at your door

Phone 1866 C. J. Reilly, Inc. Phone 1866

193 Main Avenue

Phone Today for a Demonstration

Merry Xmas

What Shall I Give This Christmas?

Our Christmas Selling Plan

Pay one-third down and the balance in eight monthly payments.

Prices Delivered at your door.

THIS is a special message to you men who are asking yourselves this annual question.

Here you will find the solution in the one thing that will make every member of the family happy—buy the family a

SENNETT

Phone Today for a Demonstration

C. J. Reilly, Inc.

193 Main Avenue Phone 1866

Who Is Back of the Car You Drive?

The ad on the left above shows how the dealer's desire and ability to stand behind the products he sells may be sold. It features the dealer's slogan "Who is back of the car you drive?" and at the same time carries an assurance of the car's good quality. On the right is a Christmas ad suggestion

Winter Ads for the Tractor Dealer

TRACTOR dealers should continue their advertising through the winter months. It will keep the tractor before the farmers of the territory and, during the winter months, farmers have the time to read the newspapers carefully. Your advertisement will get more careful consideration during the winter season than during the planting and growing seasons.

If your salesmen are canvassing the territory, your advertisements will help them materially. They will make it easier for them to talk to the farmers.

Two specimen advertisements are given on this page. One of these emphasizes the economy and profitableness of power farming. The other shows the importance of buying a tractor for spring delivery.

If you write your own ads, do it carefully. The results you get from your advertising depend on the copy you use. If you are going to spend $15 on an advertisement, it is well worth while to take several hours planning the copy to be used. Your local newspaper will help you in this work. Your factory will furnish cuts or complete ads if you desire.

Lower Costs or Higher Prices

If it costs you 85 cents to raise a bushel of wheat and the market price is $1, you make 15 cents on a bushel. If the market price is 85 cents, you make nothing.

If it costs you 75 cents to raise a bushel of wheat and the market price is 85 cents, you make 10 cents on a bushel. If the market is $1, you make 25 cents.

You can't control market prices.

But you can control your costs. The Hardwork tractor will reduce them. We will be glad to explain and demonstrate how it can be done on your farm.

Harrison Automobile & Tractor Co.

Lynchfield, Ohio

Preparedness

Cut of Hardwork Tractor pulling two plows.

You'll be prepared for spring plowing and seed bed preparation if you order a Hardwork tractor now for spring delivery.

No one knows what kind of weather next spring will bring. It may be wet or it may be dry. But, if you have a Hardwork tractor on order for delivery March 15th, possible unfavorable weather conditions needn't cause you any worry.

The Hardwork gets the work done on time regardless of weather conditions. It does it faster and more economically than it can be done with horses.

Ask us to send a representative to explain the economies and advantages of power farming with the Hardwork.

Harrison Automobile & Tractor Co.

Lynchfield Ohio

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An Ad Campaign for the Truck Dealer

BETTER DELIVERY SERVICE

Cut of Light Delivery Truck

THE Empire Light Delivery Truck is specially designed to meet the needs of the retail merchant who has merchandise deliveries to make at his customers' homes. It does this class of work rapidly and economically.

WE can supply it with a handsome panel body for goods that require complete protection from the weather, or with a canopy top body for less easily damaged merchandise, or with a special body to meet individual needs and tastes.

Empire Light Delivery Trucks Are Used by These Local Merchants

Home Baking Co.	Lexington Candy Co.
Eastern Grocery Co.	E. B. Bates, Druggist
H. B. Thomas, Grocer	Bonton Drygoods Store
Northside Meat Market	Cold Brook Dairies
Engle Hand Laundry	Higgins Hardware Store

Ask us how the Empire Light Delivery Truck can improve your delivery service.

Prices—Chassis, $1000 Canopy Top, $1200 Panel Body, $1250

JOHNSON MOTOR TRUCK COMPANY

Distributors of Empire Trucks

444 MAIN STREET NEWTOWN

HERE is a suggestion for a truck dealer's winter advertising campaign. Headlines are suggested for twelve advertisements to appear weekly. This campaign can be used by itself or to supplement smaller daily advertisements. Cuts can be obtained from the factory. Complete advertisements are given for headlines 2, 3 and 8.

1—Ask These Owners About Empire Trucks.
2—There Is an Empire Truck for Every Transportation Requirement.
3—Empire Trucks Make Business More Profitable.
4—Empire Trucks Get There.
5—100,000 Miles and Still Going Strong.
6—Johnson Service Keeps Empire Trucks on the Road.
7—Body Equipment That Fits the Job.
8—Better Delivery Service.
9—Heavy Duty Hauling.
10—Empire Trucks on the Farm.
11—The Empire Bus.
12—The Empire Fast Express.

Empire Trucks Make Business More Profitable

TRANSPORTATION expense is one of the costs of doing business. By reducing this expense, the spread between income and cost is widened which means that the business is more profitable.

Empire Trucks Reduce Transportation Costs

DEPRECIATION—100,000 miles is not an unusual record for an Empire Truck. They are built for a long and profitable life. Every machine wears out but in the case of the Empire the wearing out process is so slow because of the inherently rugged construction, that the depreciation expense is minimized.

MAINTENANCE—Three things combine to reduce maintenance costs on Empire trucks:

1—A monthly inspection service that keeps the truck in top-notch condition.
2—A well-equipped shop manned by skillful mechanics which means faster and better work at lower rates.
3—Accessibility—a feature of Empire truck construction. It is easy to get at the mechanism for inspection, lubrication, adjustment and repair.

OPERATING COSTS—The engines used in Empire trucks are economical of both gasoline and oil. Consequently the gasoline and oil mileage is high.

Ask us how Empire Trucks will reduce your transportation costs

JOHNSON MOTOR TRUCK CO.

Distributors of Empire Trucks

444 Main Street Newtown

There Is an Empire Truck for Every Transportation Requirement

ECONOMY in truck transportation demands that the capacity and body equipment of a truck be suited to the requirements of the business in which it is to be used. The Empire line of motor trucks meets all ordinary capacity requirements. We can supply a body that is specially designed to fit the needs of any business.

Cut of Light Delivery Truck

THE Empire Light Delivery Truck is rated at ¾ ton but will carry 1 ton over city streets without injury. It is especially well suited to retail delivery service. It gets away fast and climbs hills better than most passenger cars. Equipment includes electric starting and lighting, pneumatic tires, front fenders and comfortable driver's seat.

Price, chassis—$1000, express—$1200, panel—$1250.

Cut of Fast Express

THE Empire Fast Express is rated at 1½-ton. It has all the get-away and hill climbing ability of the light delivery truck. Pneumatic tires and electric starting and lighting are regular equipment. Intended for high speed transportation of medium weight loads. It is widely used by farmers and makes a good bus chassis.

Price—chassis—$1500.

Cut of 3 or 5 Ton Truck

THE 3 and 5 ton sizes are rugged, powerful trucks designed for hauling heavy loads under adverse conditions. They are built for hard service and they stand up under it. They are widely used by coal and lumber dealers, and contractors. Electric lighting is regular equipment. Pneumatic tires are furnished at extra cost on the 3-ton size.

Price—3-ton, chassis, $3500. 5-ton chassis, $5000.

Ask us which of these trucks will solve your transportation problems.

JOHNSON MOTOR TRUCK COMPANY

DISTRIBUTORS OF EMPIRE TRUCKS

444 MAIN STREET NEWTOWN

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Ads That Will Help Make Shop Profits in Winter

LOCAL newspaper advertising can be made to assist directly in the sale of repair work. There are two ways to advertise service, and both of them can be used, either at once or alternating. One type of advertisement features some special work for a certain price, just as department stores advertise umbrellas, aluminum griddles, etc. These ads are definite, specific and give details of exactly what is offered for sale. These services are often offered with the idea in mind of drawing new trade to the establishment or with the idea of possibly selling other services or articles than those offered in the advertisement.

The other class is good will advertising. This offers nothing specific for sale, but tells of the facilities of the organization and of its desire to assist owners in the continuous operation of their vehicles.

Effective advertising of repair work must be well made up and attractively worded. Service advertising is scarce compared with other automobile advertising copy. However, this very circumstance helps because attractive service copy will be read with greater interest.

The ads illustrated on this page are small because of the limitations of space. Your newspaper will help you with attractive type and layouts of sizes to meet the needs of your business.

YOUR SENNETT CAR
THIS WINTER

Keep It Running

The Sennett car was not built just for a summer time car. It is well built and will plow through snow just as well as it plowed through sand last summer.

But it will have to work a little harder when Jack Frost is with us. There is harder work for all parts of the car and if you would have perfect satisfaction from the winter use of your car, bring it to us for an inspection. There are some little adjustments and changes that can be made which will make the car start easier and run better.

Have these little things done by men especially trained in the service of the Sennett car.

NEWTOWN AUTOMOBILE CO.
SOUTH MAIN STREET NEWTOWN, N. J.

THE CAR DEALER AD

Selling the idea of keeping the car running all winter and at the same time introducing the subject of winter care and the necessity of conditioning and adjusting for winter running

TO OWNERS OF ALL
4-CYLINDER CARS

For the winter months only we offer a special flat rate on any four cylinder automobile on certain work that every car needs from time to time.

All for $20

Remove carbon	*Put water in battery*
Grind valves	*Re-oil differential*
Tighten fan belt	*Adjust carburetor*
Drain radiator	*Fill all grease cups*

Clean and adjust breaker points
Clean and space spark plugs
Furnish cylinder head gasket
Furnish from 6 to 8 quarts of engine oil
Furnish from 6 to 8 quarts of gear grease
Drain and refill crankcase with new oil

All for $20

We have six first-class mechanics in attendance for this work

NEWTOWN AUTOMOBILE CO.
SOUTH MAIN STREET NEWTOWN, N. J.

A SPECIAL OFFER

The pulling power of special offer advertising is very strong. The featuring of specific work for a definite amount of money can be expected to bring direct results

YOUR BATTERY

IT NEEDS CARE THIS WINTER

Your battery will have to work harder this winter than it did last summer. Is it in good vigorous condition to do this hard work?

A discharged battery will not stand up to this work and it is liable to freeze. If you are keeping your car in commission this winter, have it charged from an outside source about every six or eight weeks. We can charge the battery in two days and furnish you a rental battery while your own is on charge.

If you are going to lay your car up, the battery should be taken out and given a small charge every week or so. We will give your battery winter care, including a weekly charge, keeping the electrolyte level up and protecting it from freezing.

Winter Care, November 1 to March 1..$5
Battery Charging $1

NEWTOWN AUTOMOBILE CO.
SOUTH MAIN STREET NEWTOWN, N. J.

A BATTERY STATION AD

Owner interest is here sought by giving some helpful information about care that the owner can give, then making a definite offer of service for a definite price

Quick **Radiator** Service

ON YOUR WAY IN ONE HOUR

No necessity to lay your car up two or thee days to have a frozen or broken radiator repaired. With our rental radiators we have you on your way in one hour. You pay $1 a day for the rental radiator and when your own radiator is finished and tested we put it on the car and take the rental radiator off. This gives us time to do a really good job and your car is not out of service.

If you cannot drive in, phone the name and model or your car and we will send our service car with the rental radiator.

NEWTOWN AUTOMOBILE CO.
SOUTH MAIN STREET NEWTOWN, N. J.

RADIATOR REPAIR ADVERTISING

This advertisement is built around the rental radiator plan and draws particular attention to the minimum loss in time in getting the car on the road again

WINTER FURS AND
AUTOMOBILES

You have necessary repairs and alterations done to winter furs in the summer time, don't you? Because there is not much of a rush in the fur shops in summer and they can do a better job and do it for less money. The winter time is the non-rush season in automobile repairing.

WINTER TIME IS REPAIR TIME

We have a staff of first-class mechanics whom we employ all winter. If all our customers let work go until spring we are going to be pretty hard pressed to get enough help to give you the service you should have. By having this work done now you will get non-rush work, which is better and cheaper than rush work, and better still, your car will give you satisfaction through the balance of the winter and the spring.

Bring Your Car in Now for Inspection and Estimate

We Guarantee Satisfaction

NEWTOWN AUTOMOBILE CO.
SOUTH MAIN STREET NEWTOWN, N. J.

WINTER ADVERTISING FOR THE GARAGE

A comparison of business conditions in the fur shops and the automobile shops is used to visualize work in the garage and attract business from an economy standpoint

Unsurpassed Service

CARS—TRUCKS—TRACTORS

Carburetors	*Clutches*	*Engines*
Batteries	*Gearsets*	*Radiators*
Generators	*Axles*	*Bodies*
Starters	*Ignition*	*Tops*
	Painting	

Trained men and modern tool equipment are at your service. These two mean a great deal in the satisfactory operation of your car this winter. The men in our employ are well versed in their trade and our service manager is continually making a study of new and improved service methods which are adopted as soon as found practicable. Automotive service can never stand still. What is new today is old tomorrow and we are keeping ahead of the procession.

You are welcome to come in any time to see for yourself what we have to offer in *unsurpassed service.*

NEWTOWN AUTOMOBILE CO.
SOUTH MAIN STREET NEWTOWN, N. J.

FEATURING PARTS AND DETAILS

The universal service that the shop renders is featured in the head by detailing the vehicles and component parts that the station is equipped to handle

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How the Equipment and Tire Dealer Can

AUTOMOTIVE equipment and tire dealers will do more effective advertising this winter by presenting their stock to meet the need for comfort and safety and dependability in winter motoring.

Winter advertisements can be made to produce better results if some item of equipment or some service is presented as a means of getting more use and satisfaction from the motor car.

The man who sells equipment and tires will do well to study the advertising of the progressive merchants of his town.

He will note particularly how they anticipate public needs and make timely presentations of their stock through their advertising to meet those needs.

He will recognize the fact that practically every item of automotive equipment made has a comfort or safety function and that winter increases the need for comfort and safety devices. And so, in his advertising he will stress the particular advantages of the equipment and service he sells in winter weather.

He will strive particularly through his advertising to register his business in the public mind as a place to buy Christmas gifts for the motor car owner.

Following are a few suggestions for putting the winter appeal into automotive and equipment advertisements.

(Santa Claus Cut)

Give Him Something for the Car

LET us help you select useful Christmas gifts. In this store you will find gifts that will bring Christmas morning delight to every motorist. Gifts to fit every pocketbook. Come in and look around.

Heater

Cut

Car heaters are appreciated by every motorist. They make winter riding comfortable. Every car owner will appreciate such a gift.

(Continue with description of heater giving price.)

Cigar Lighter

Cut

Ever try to light up while bowling along the road? Then you know what a satisfaction a cigar lighter will be as a Christmas gift to the car owner this Christmas.

(Continue with description of lighter and price.)

Tires

Cut

Where's the motorist who doesn't appreciate a good spare tire? Why not give him one this Christmas? A tire purchased in this store is a particularly practical gift, because with the tire goes our service, which stands squarely behind every one sold.

(Continue with description of tires and prices.)

Stop Signal

Cut

Is his car equipped with a stop signal? He will surely appreciate one of these useful safety devices.

(Continue to describe signal advertised and price.)

Suggestions

(Short paragraphs describing inexpensive gift suggestions and giving prices.)

Smith's Garage

Everything for the Motor Car

442 Main Street Phone 8652

The idea behind this advertisement and all of those on this and the following pages is to present automotive equipment and tires as winter necessities and as Christmas gift suggestions. In the above ad just a few items of equipment that may be found in any store are presented. The big appeal is to give them as Christmas gifts this year. Note the interesting and timely way in which each item is sold in the small paragraphs presenting them. The effectiveness of such advertising lies in making the ad attractive in appearance and interesting to the Christmas shopper

That Sunday Trip to Greenwood Lake

Via Pompton and Midvale is 21.7 miles of excellent highways and autumn beauty.

Take it—and you'll enjoy one of the pleasantest motor trips of the year.

You can add greatly to the pleasure of the drive by filling up with gas, oil and other necessities at

SMITH'S GARAGE

Everything for the Motor Car

442 Main St., Phone 8652

Here is a novel advertising idea that may be used by the garageman, accessory dealer or tire dealer occasionally. It sells the idea of making a motor trip to some particularly interesting or pleasant spot, gives definite touring information and carries the suggestion that the motorist patronize the advertiser. Such an advertisement, if run once or twice a month, would relieve the regular line of advertising and make interesting reading that motorists would get to look for. Accessories or tires might be advertised just as effectively as gasoline and oil service is in this ad

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Put a Winter Selling Appeal into Ads

Cut Here

Automatic Windshield Wiper

Drive in Comfort This Winter

YOU have every reason to enjoy winter driving as well as summer.

One very good reason is an AUTOMATIC WINDSHIELD WIPER.

If you haven't one, come in and let us show you how it works and how it will banish your stormy day driving worries.

Your comfort and safety will far exceed the very small expense.

Attached Free of Charge

Smith's Garage

Everything for the Motor Car

442 Main Street **Phone 8652**

THOSE WHO KNOW COME TO US

YOU may have a tire fixed today and it may run five thousand miles, or it may "blow" the day after you receive it from the repairman. It depends on the grade of work the repairman does.

POOR work is expensive, especially this winter when a neglected cut may allow water to seep in and rot the fabric. You can't afford anything but the best tire repair work. And it costs no more here.

THAT is why "those who know" bring their tire repair work to us. They KNOW from experience they will receive the best of work priced reasonably.

—Use Our Inspection Service—

THE TIRE MART

Phone 888 **815 Smith Street**

Christmas Cut

Give Him Miles of Joy

TIRES are like baby carriages—not bought until they're absolutely needed.

Think of the joy and satisfaction of the motorist whose Christmas morning gifts include a brand new "spare".

When you give a Seldomblow Cord you give 8,000 miles of joy—especially if it is purchased here and backed by our winter inspection service. Prices range from $15.50 to $45.65.

The Tire Mart

Phone 888 **815 Smith Street**

Tire Cut

Put Your Salesmen on Seldomblow Tires

BUSINESS is labelled "RUSH" this winter, and your salesmen use automobiles to rush them from customer to customer.

WHERE motor cars are used to rush business, how inconsistent to equip them with tires that *waste time* by frequent changing on the road.

WE believe that Seldomblow Tires bought here and backed by our inspection service will save time and money for you this winter.

The Tire Mart

—Use Our Inspection Plan—

Phone 888. 815 Smith St.

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How to

Make Letters Help You Get Business This Winter

This Story Tells How to Keep Away from Red Tape and Make Your Letters Stand Out from the Flood of Mail That Prospects Receive—It Contains Ideas for Dealers and Repairmen

By E. P. CRAMER

ABOUT thirty years ago, the advertising which appeared in business papers like Motor World consisted largely of business "cards." Since then more care and study has been given until to-day the advertising appearing in a modern periodical is vastly more attractive to the reader and vastly more productive for the advertiser than it used to be.

The sales letters that are customarily used for getting business nowadays offer much the same opportunity for improvement that the advertising of thirty years ago offered.

Letters are such an economical means of getting business that they have been overworked. Prominent citizens of most communities, as well as retail dealers of most lines of business, are continually flooded with such volumes of circular or form letters that it is simply impossible for any one letter to receive much attention unless it stands out from the others. It will be the purpose of this article to suggest a few things you can do to make your selling letters stand out from the other sales letters which your customers and prospects are receiving in the same mail with yours.

The way a mailing list is customarily used often spoils what might otherwise be a profitable series of letters, and it is in the use of mailing lists that one very important opportunity for improving the effectiveness of sales letters lies.

Usually a man will make up a mailing list of his prospects and customers and then mail out the same letters to the whole list. This is all right when the letter is general enough to be of interest to everyone whose name appears on the list. Usually, however, a letter will appeal more to one part of the list than another so that a part of the letters represent either just a waste of money or actual harm done.

For instance, suppose a dealer desires to send out a series of sales letters for the purpose of stimulating his accessory sales, and suppose that he sends them to both customers and prospective customers. If he has some news to announce as, for example, some new products he has added, lower prices, a new form of guarantee, moving to a new building, or something of that kind, the letters will be of interest to old customers as well as prospective customers.

On the other hand, if he has no news to announce and the letters must, therefore, be confined to information with which his regular customers are already familiar, the mailing list ought to be confined to prospective customers. If the letters are mailed to regular customers, they will do actual harm. It is not because a customer is likely to be offended by receiving a letter which doesn't "fit" him; it is because the more letters of that kind which he receives the less attention he is likely to pay to any future letters.

The following is an open paragraph of a letter for getting new accessory business:

> You often pass our store but have you thought how convenient it would be to secure your motoring needs here?

It is easy to see that to mail such a letter to a regular customer is only to invite him to pay less attention to any further letters.

Similarly, in selling cars, there are different things that appeal to different people. In selling trucks, the nature of one prospect's business differs from another's and, consequently, the features of the truck which ought to be emphasized in the one case may vary from those which ought to be emphasized in the other. And so on.

A sales letter differs from a newspaper advertisement largely in that it may be individualized, but to make letters individual the names to which they are addressed must be classified properly on the mailing list. This is not nearly so difficult to do as it sounds. *The main thing to watch is to avoid "red tape."*

The first thing to do is to arrange the mailing list so that it is physically flexible and may be added to, subtracted from, changed or reclassified on a moment's notice. This means that each name should be placed on a small card or slip of paper, depending on whatever filing devices are available. The most common are cards kept in drawers or trays. A mailing list should never consist of rows of names one after another on large sheets of paper.

The next thing to do is to indicate on each card whether the name is that of a customer or a prospective cus-

Letters to Get Business for YOU

SOME sales letters will make sales—of merchandise or service. Others pave the way for a salesman or repairwork solicitor to talk with the prospect and get his business. Either kind of letter must be so worded that it will attract the reader's attention and interest.

On pages 71 to 75 are specimens of letters that dealers and repairmen can have typed on their own stationery and send to prospects and customers. On one or more of these pages are letters for YOUR business. Look for them and use them.

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tomer. This is the one classification which will be useful most frequently. It may be done, if desired, by some system of key letters or numbers. For instance, "C" might be used to designate "customer" and "P" to designate "prospect."

The next thing to do is to indicate the products in which customer or prospect is interested. This may be carried to greater or less detail. For instance, in a departmentized business the classification might be something like this: Repairs, tires, accessories, cars. Or, where the sale of cars alone is considered, the classification might be something like this: Coupe, sedan, touring, roadster, six, four—in other words, just as the prospect file for the use of personal salesmen is classified.



The classification between customers and prospects should be invariable. As to how far to go with further classifications, we can only say in a general article like this that it depends upon the individual sales problems of the individual business. But here is a rule which you may follow and which will always work. After getting your customers and prospects on cards, go through them one at a time. Try to call each individual person to mind. Try to imagine what you know would appeal to that person if you were to *talk* to him. Then turn to the next and ask yourself if the same thing would appeal to him. As soon as you strike one whom you know to be radically different, put that card on a separate file.

If you already have your customers and prospects classified for other sales purposes, you will find that the same classification is what you should have for sales letters. At any rate the work of classifying the mailing list will not be difficult if you can visualize the flesh-and-blood man which each name on the list represents.

When you get them you will have no less than two classifications—customers and prospects—and perhaps four, six, eight or more. And in mailing out letters you will have two, four, six, eight or more *different* letters to reach each name once. Theoretically it may seem that this will increase the cost of using sales letters. It *may*, if you have them multigraphed. But in the first place you will find, in actual practice, that you will not often have letters to send to all the classifications at the same time. In fact when you have a letter to mail to a single one of your classifications you may be surprised when you realize the money you would have wasted through mailing it to people who shouldn't get it, but would get it if you had not classified your list. In the second place, each letter, by reason of its being more individual, is more effective.

It goes without saying that no matter how the names are arranged a letter of general interest to all may always be sent. Also as special business-getting ideas occur to you, it is always entirely practical to go through the cards and arrange them under temporary classifications, from which they may be returned to the original or permanent classifications after the special letters have been sent. All these things are easier to do, the smaller your list is. In other words, the smaller the business the more personal it is practicable to be in letters as in actual contact. But in any case it is through intelligent arrangement of the mailing list that sales letters may be vastly improved in effectiveness. This is particularly true right now because so few users of sales letters either in the automotive field, or in any other, treat their mailing lists as anything more than a mass of names.

Another important improvement that may be made in sales letters is in their processing. It has been customary for a long time to send out sales letters spasmodically rather than regularly, and usually in so-called multigraphed or mimeographed form designed to imitate typewriting. Under the plan of sending a series of letters, each the same to the entire list, it was only natural to seek some method of producing the effect of typewriting at less cost. Such processed letters have advantages but they have served to obscure the fact that a genuine typewritten letter is better than an imitation.

Where one or more typists are employed anyway, it usually is practicable, by means of a reasonable amount of planning, to have them type sales letters during what otherwise would be spare time. If this plan is followed regularly the sales letters will cost even less than they would if multigraphed or mimeographed.

This also will make it possible, by a simple expedient, to make each letter different, thoroughly individual, and one which the recipient will realize could not possibly be a form letter.

In soliciting a man to buy an automobile, sooner or later, there is bound to be considerable discussion about the mechanical features, and whenever the discussion progresses to this point the automobile salesman has the same story to tell to every prospective buyer. But it is not often possible for an automobile salesman to begin there. He first has to figure out some way to attract the prospect's attention and interest. To do that he will find out how large a family the prospect has, whether he has considerable wealth or is in moderate circumstances, whether he would use a car for business, for his family or both. These and other details will give him an idea of the size and model of car which will be most useful and be most likely to appeal.

In other words, in selling a car it is usually necessary to begin the solicitation in a variety of ways, depending upon the variety of prospective buyers whom the salesman has on his list and in that way lead up to the demonstration of the car itself. It is the same in sales letters.

Everything an automotive dealer has to sell can be demonstrated or presented in about the same way to every prospective buyer, but it has to be introduced in a variety of ways, depend-

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ing on the variety of people on the prospect list.

Consequently a very practical way to individualize sales letters, without going to the labor of writing each one separately, is to use letters which are complete except for the opening paragraph, and then write the opening paragraphs individually.

Individualizing Letters

TO illustrate, let us take the first letter appearing on the opposite page and remove the first paragraph. Next let us assume that you have on cards the names of all your immediate prospects for that car. The first man on the list is the one who never has owned a car. He has always objected that prices have been too high and quality too low since the war. He is on the list because he has "nibbled" once or twice during the last year. The following would introduce the letter to him:

> Remembering what you told me last summer, when we were talking about the automobile subject, I think it would pay you to drop in and see the Sennett sedan. You know, of course, that prices are now away down and, while I can't say definitely, I have certain reasons for believing that this particular car at this price is not going to be obtainable indefinitely.

The next on the list is a man who has a car, but ought to own a newer and larger one, not only because the older one is pretty well worn out, but also because he has a larger family than when he bought the old one. The first paragraph in the letter to send him, might be like this:

> Pretty soon John Junior is going to need a seat all his own when you go driving. So, sooner or later, you will want a car with a roomier body, and I want to extend you and your wife an invitation to come in and see the Sennett sedan.

Next appears a man who already has a large car for the use of his family but who is a prospect for a small car also for knockabout use. An opening paragraph for him would be:

> Your Sennett sedan is exactly what you need for general use, but have you considered how convenient it would be to have available for short errands a light yet substantial car like the Sennett roadster?

Write as You Would Talk

AND so you can go through the whole list. What would you say in opening a conversation with these various people? Say the same thing in opening a letter to them.

You will find, once you get the knack of it, that you can sit down with 50 or 75 of your prospect cards, and in an hour's time give to your stenographer an opening paragraph for a letter to each one. Then she can write the complete letters as time permits and you can sign them with the rest of your mail.

If you do not employ a stenographer but do employ a typist, a good plan to follow is to number each of the various sales letters (minus the opening paragraph). It is a convenience to have them filed in a loose-leaf binder.

Then go through the prospect cards one at a time and attach a small sheet of paper to each one with a paper clip. On the sheet of paper write down the number corresponding with the letter you want to send. Above the number write down in longhand the opening paragraph. The typist can then write the complete letters. Where you do this frequently it will be a convenience to have two sets of letters, one for your own use and one for the typist's.

There are a good many advantages in a sales letter plan of this kind, aside from the fact that each one is a real, typewritten, personal letter.

One advantage is that it can be made to fit right in with the regular operations of your business and can be handled continuously. Sales letters are exactly like everything else that can be used to promote sales in the respect that they are always most effective when they are sent out persistently.

System in Letter Campaign

NEWSPAPER advertising nowadays is usually carried with a fair degree of persistency but sales letters are too often considered as a "stunt" to be indulged in only on special occasions. When they are prepared as form letters it is necessary to make up lists and send them to some one who is equipped to process them all at one time. After that it is then necessary to sign, seal, stamp and mail them all at one time. This brings a lot of work in a short space of time and naturally discourages their regular use.

No one would think of doing personal sales solicitation just on special occasions or, to make the comparison still more absurd, no one would think of having his place of business open only on special occasions. Every means of getting business that has proved its value ought to be utilized every day.

Another advantage of the sales letter plan, as we have outlined it, is that it enables you to keep your lists alive automatically. As you go through the cards you will frequently come upon names of people who have recently died, moved away, or for other reasons ceased to be of value on the list. Any "system" for keeping the list alive is likely to involve more "red tape" than it is worth. Using the list regularly is the best way.

Letters to New Prospects

IT is a good idea to have a series of letters on hand ready to mail out to a new prospect as his name is secured. People who have just moved to town, who have just married, who have been promoted—from whatever source you are now securing names for your new prospect list—can be reached with apt, timely letters copied off on the typewriter and their business won in cases where other contact would be impracticable.

The circumstances under which such letters may be profitably used are so many and varied that we could hardly begin to enumerate all of them. Whatever plan you are following now to secure the names of new, prospective customers will fit right into this plan.

NOW!

Do You Need Some Letters?

THE story ending on this page tells how men in the automotive trade can keep away from red tape in sales letter writing and make their letters bring in winter business.

It does not tell how to write letters, leaving information along that line to winter business letters themselves, to a fine collection of sales letters for all branches of the trade, which suggest what to say in letters better than any kind of story could suggest. The first letters of this collection appear on the opposite page and there are others on the pages following.

How many of these winter business letters will help you? Study them and use those that fit your business.

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36 Sales Letters That Will Help You Get More Business This Winter

How to Put a Seasonal Appeal Into the Direct Mail Campaign of Dealers, Service Managers and Garagemen

ON the following pages are presented thirty-six sales letters for the car, truck and tractor dealer, the automotive equipment and tire dealer, the garageman and the service manager. They are designed to suggest ways of making a strong winter appeal and selling more automotive products and service. Read them. Use them as they stand or take from them ideas that may be used in your own letters.

Six Letters That Sell the Car with a Seasonal Appeal

Letter No. 1—STRESSING SALIENT POINTS

(See the reference to this letter in the story on the opposite page)

Perhaps you have noticed the large number of Sennett sedans on the streets of Calawassa this winter. Many people have, and they have asked us how we have managed to make this model so popular and what there is about the car that has interested so many motorists and made them owners of Sennett sedans.

The Sennett is winning on its merits and its best boosters are its owners. Of course, we are proud of our ability to insure the satisfactory performance of these cars in our exceptionally well equipped service station.

Have you ever compared this model, point by point, with the other cars that sell at about the same price?

Do you know that the Sennett sedan has—

- Complete instrument mounting on the dash,
- Real leather upholstery,
- Body finish produced by 24 separate paint and varnish operations,
- Cord tires as standard equipment,
- An approved steering wheel lock,
- Windshield visor,
- Detachable engine head,
- Remarkable reserve power, insuring quick acceleration, and
- Hot spot intake manifold?

Phone to-day for a demonstration. It places you under no obligation.

Letter No. 2—
THE CHRISTMAS GIFT SUGGESTION

Have you a pencil?

Then, turn this letter over and use the back of it for a little quick calculation.

How much are you going to spend this Christmas for gifts right in your own family? Make a list of your probable expenditures and find the total. Quite a tidy little sum, isn't it—yet the chances are you'll spend more than that before you have all the gifts bought.

Why not bulk the gifts this year in a motor car for the whole family?

Do you know that for $750 you can have a brand new, shining Sennett sedan at your door Christmas morning? And do you know that you can pay the balance in six monthly payments of $125 each?

Bulk your Christmas gifts and buy a car and make this the family's happiest Christmas.

Phone to-day for a demonstration.

WOULD YOU DO THIS
FOR A FRIEND?

Some of your friends are going to buy new cars next spring. Among them, no doubt, there are a few who have ridden in your Sennett and have been impressed with its many fine qualities. You'd like to see them own a Sennett, we're sure.

We like to feel that all of our customers are friends and that's why we are going to ask you to help us widen our circle of Sennett owners by writing their names on the attached postcard and dropping it in the mail.

Would you do that much for a friend? Thank you.

C. J. REILLY INC.

C. J. REILLY, INC.:

The following persons may be interested in buying a Sennett car:

Name	Address	Phone	Make of Car Now Owned

Signature.....

Here is a return postal idea that may be used to solicit spring and winter prospects from owners. It is a double postcard. On the back of the top card is space for addressing it to owners. On the back of the lower card, which may be detached along the dotted line, is printed the return address of the dealer

Letter No. 3—WINTER COMFORT APPEAL

There will be very few, if any, days this winter when you cannot drive in comfort in a Sennett sedan. Your community realized some time ago that it was a mistake to allow snow and ice to interfere with traffic and the street department now keeps all the main arteries of travel open all winter.

Then why stand on a street corner until you're chilled through—your feet damp and numb—waiting for one of those long over-due street cars? Don't cuss your luck and look with longing and wistful eyes at the snug, cosy motorists as they rush by you in their warm, dry, comfortable cars.

The closed car is becoming more popular every year. The Sennett sedan, with large windows that lower full length, cowl ventilator, comfortable upholstery and dependable,

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sweet running engine, will be just as comfortable next summer as it is this winter.

Why wait until spring to buy a new car?

Letter No. 4—SELLING THE DEALER

In the old days in Calawassa, when folks rode behind horses instead of in automobiles and Hank Wilson ran his carriage and blacksmith shop down on Main Street, it wasn't necessary to write a letter like this.

Business didn't move as fast as it has since the coming of the automobile and 'most everybody had time to sit and chat with Hank. 'Most everybody knew him.

But things have changed. People don't seem to have time to sit and chat with the business men they patronize as they did in the old days, and they don't get to know them so well as they knew Hank.

For instance. You may have thought that this institution is an automobile salesroom. Yet, if we could get better acquainted, you would learn that the sales department of this establishment is only one of the departments that exist here for the service of the automobile owner. And this is important to everyone who is in the market for an automobile.

The performance of any car depends upon the dealer who sells the car. Every owner has different individual requirements. It is the business of the dealer to see that the car harmonizes with the requirements of the man who bought it.

It is for these reasons that we maintain an establishment very much larger than would be required merely to sell automobiles. We have everything here to keep the cars we sell running satisfactorily.

Come in and visit our large modern service station. See our extensive stock of parts so vital for the prompt repair of our cars. Come in and get acquainted with those extensive departments of our institution that exist to serve our customers AFTER A SALE IS MADE.

Come in and satisfy yourself that C. J. Reilly, Inc., is not only selling automobiles but is equipped to guarantee its customers the full performance of the cars we sell.

Letter No. 5—

ASKING OWNERS FOR PROSPECTS

Some of your friends are going to buy new cars next spring. We would like to have a chance to tell them about C. J. Reilly, Inc., and the Sennett line.

Perhaps many of your friends have ridden with you in your Sennett sedan. They no doubt have been impressed as you have been with its many fine qualities.

If you will write on the inclosed card the names of any persons you believe to be in the market for an automobile, we will appreciate it. Every new car in this market like yours adds to the resale value of the car you own.

Please fill out the card and mail it to-day.

Letter No. 6—TO DOCTORS

How would you like to own an automobile especially built to meet every requirement of the professional man? The new Sennett coupe is that sort of a car. Just as the instruments that you use and the furniture in your office are designed to help you discharge your professional duties more efficiently, so the new Sennett coupe is built to meet your every requirement.

The Sennett coupe is a single seated car with room for two or three people. There is ample floor space and the driver's seat is particularly accessible. Special interior design, which we would be pleased to explain in detail and demonstrate if you will phone or write, makes it an ideal car for the professional man. It is fitted with glass windows and doors which raise and lower, thus affording the comfort and protection which is so welcome on cold, rainy, disagreeable days and during night driving.

Of particular importance to you as a Sennett coupe owner would be the fact that physicians' cars have the right of way in our service station at all times.

Won't you phone and make an appointment soon to drive one of our coupes on one of your morning trips?

Letters That Help Sell Used Cars!

Four Letters to a Prospect or Group of Prospects

Send them out a week apart

Letter No. 1 To Inspire Confidence in Your Used Cars

One of the best known business men in town bought a car from us six months ago. He was mighty proud of it, as he had a right to be of such a car, and between trips in town and around the countryside he gave it wonderful care. It was just about as good as new—he insisted it was entirely as good—when he drove it in the other day, telling us that he would have to trade it in; he needed a bigger car.

We took the car, but not at a new car price, or anywhere near that. Because it is a used car custom decreed that the owner must let it go at much less than its actual worth in miles of transportation. And because it is a used car we can sell it, to you or someone else looking for big value in an automobile, at a price which gives you a lot of automobile for a little money.

Our used cars were all turned in on new ones for reasons just as sound as this.

We do not deal in worn out, mechanically unfit cars.

You will find in our used car salesroom none but cars which we have thoroughly inspected and are willing to stand back of as cars which will give satisfactory service.

We have a fine selection of open and closed models at prices to fit all kinds of pocketbooks.

It will pay you to come in and look them over.

Letter No. 2 To Emphasize the Low Cost With High Value of Your Used Cars

Did you ever stop to think that the value of anything you buy is not measured by what you pay for it but by the service it gives you?

You want an automobile to carry you and your family and friends quickly, surely and comfortably wherever you want to go. If it does that, and is a car whose appearance and performance you can be proud of, it is of high value to you. But its cost need not be high.

Let us explain:

Our used cars are accepted from owners in part payment upon new cars. Every one of them has many thousands of miles of good service in it, service that will give you much more in happiness and health than you pay for in money. Why? Because the mere fact that the car is changing ownership enables us to obtain it and offer it to you at a figure far below what we would have to ask for a new car with the same ability to meet your needs.

Just now we have an unusually fine display of first class used cars. The range of prices is equally attractive. And we put our reputation as merchants behind every one of these cars.

Come in and see them—now while the selection is large.

Letter No. 3 To Emphasize the Dependability of Your Used Cars

There are more than ten million automobiles in use in the United States. Less than two million of them were built within the past year. This gives you some idea of the dependability of these cars. It also sets you thinking, doesn't it? about the millions of used cars which are giving their owners satisfactory service, because all these ten million automobiles, except a few which are fresh from salesrooms, are used cars.

The used cars which we are offering our customers are cars which have been well treated by their former owners. More than that, we have carefully inspected them and re-conditioned them when necessary. We are so confident of their ability to give satisfaction—complete satisfaction—that we guarantee it.

Come in, see these cars, get a pleasant shock at their low prices and let us tell you how we put the name and reputation of our firm behind every one that leaves the salesroom.

Letter No. 4 To Counteract Prejudice Against Used Cars

Can you stand on the curb and spot the used cars that go by? That is, can you tell whether a car is being driven by its first, second, third or even a later owner, unless, of course, it's a brand new car on its way from the salesroom?

There is no way of telling the difference between a car bought as a used car and one bought as a new car. But there is a difference and in this difference is the reason why many far-sighted, thrifty people are becoming owners of good used cars. The difference is in the price. The used car buyer gets the miles of service in his car for much less per mile than the new car buyer gets his.

Some men are willing to pay for the satisfaction of driving a car its first few thousand miles—a price that the used car owner thinks is high. These same men, when they have driven their cars these few thousand miles, are willing to dispose of them at low figures so that they can again sit at the wheel of a new car. These are the men from whom we obtain our used cars, good cars which we inspect and put in first class condition and offer to these thrifty used car buyers who are looking first, last and all the time for their money's worth in automobile performance.

You will be able to find the car you want—one that looks right and is right—in our present selection of used automobiles. The price, will be right, too, much lower, we think, than you imagine.

Come in now while our selection is large.

Three Seasonal Used Car Letters to People Who Don't Own Cars

Letter No. 1—Fall

It's pretty hard these crisp fall days to resist the call of the hills and woods. You don't have to resist it, you can have a fine time yielding to it if you have a good car to pack your family in and start for the open road.

If just now you don't want to pay the price of a new car of the kind you prefer, you are likely to find just the car you are looking for in our fine selection of used cars. You will find them in open and closed models, in large cars and small, with a surprisingly low range of prices.

Why not satisfy that yearning for the open country? Why not make yourself and your family happy with one of our high value, low price used cars?

Come in and ask for a demonstration.

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Letter No. 2—Mid-winter

Are you tired of walking in slushy streets, riding in crowded street cars?

Do you wish you could "chuck it all" and travel in an automobile—your automobile?

Is the cost the reason you don't do it?

If you will visit our used car department you are quite likely to find that the cost isn't any reason at all.

You can have an automobile, and a mighty good one, at a surprisingly low figure. You can be sure that it will give satisfactory service because we put every used car we sell in first class condition and stand back of it as a good car.

Why not get out of the slush and the crowded street cars—now?

Come in, look over our cars, ride in them. Our demonstrators are always at your service.

Letter No. 3—Just Before Spring

Spring will be here soon—green trees and leaves, blossoms and blue sky. Wonderful weather for motoring. Everybody who has a car will be stepping on the gas and getting out into the country.

Will you?

A good many people who thought they wouldn't have changed their minds since they discovered the low prices placed on our line of high class used cars. They will be among the first to respond to the springtime call of the open road.

We put our used cars in first class condition. We put our reputation behind their ability to give satisfaction. They are good cars, but we can sell them at low prices because that is the way we buy them.

Join the ranks of the motorists this spring. Call at our used car department and find your car. We shall be glad to give you a demonstration.

A Letter to Sell a Used Car for Business Purposes

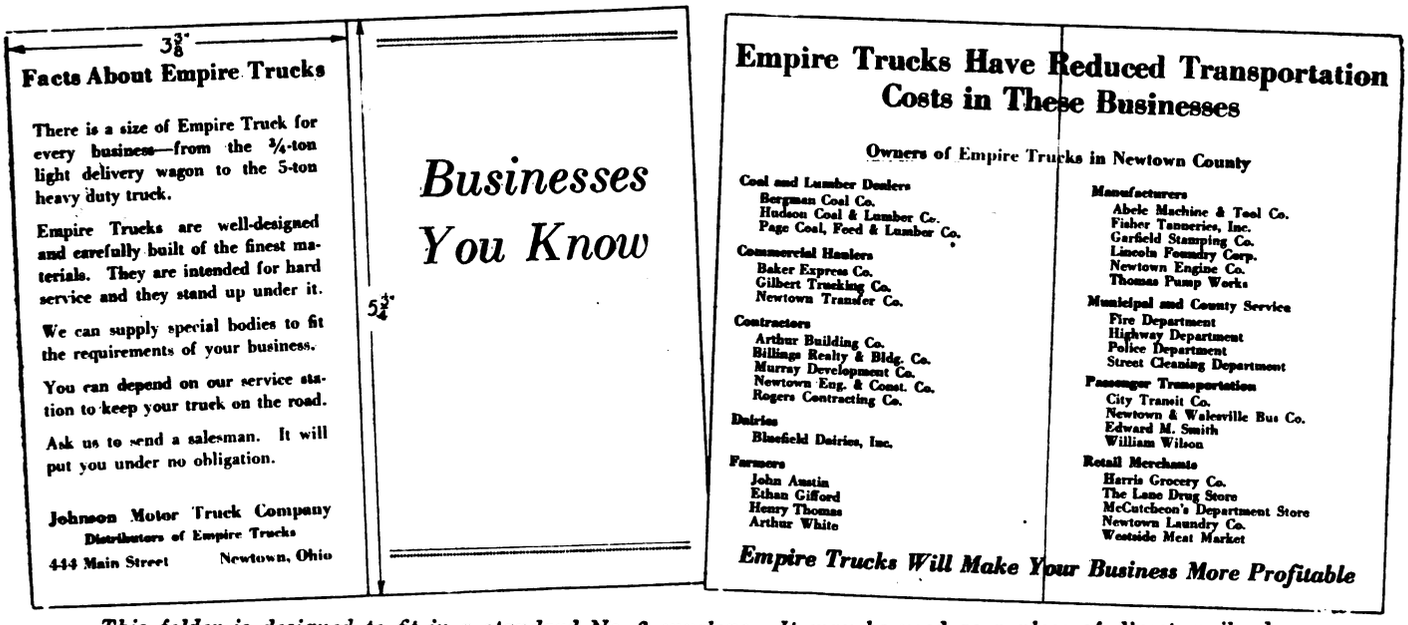
Are you hesitating about getting that car you need in your business because you hate to put a new automobile out in the slush and mud of winter?

Why not get a used car? It will provide the transportation your business should not be without from now until spring, and the investment will be small.

You will find in our used car department a good selection of cars thoroughly capable of delivering the dependable service you require. We think the prices will command your attention as a business man.

It will pay you to come in and see these cars or, if you prefer, we will send a demonstrator around to your office.

Making a Vocational Appeal in Truck Letters



This folder is designed to fit in a standard No. 6 envelope. It may be used as a piece of direct mail advertising by itself or as an envelope stuffer. Successful dealers find that the results obtained by satisfied owners are their best sales arguments

Series of Four Letters Illustrating Vocational Direct-by-Mail Advertising

The Plumbing Business Is Used as an Example

Letter No. 1

Townsend Plumbing Co.,
Newtown, Ohio.

Attention Mr. H. H. Brown

Dear Mr. Brown:

Out to Mrs. Welling's new house with some fixtures, then down to the railroad yards for a shipment of pipe—long hauls, short hauls, heavy loads and light loads—but you know the kind of service a plumber's truck gets. It is service that requires a dependable, economical and speedy truck.

The Empire Speed Truck is such a truck.

There is no better evidence of the suitability of this truck to the plumbing business than the fact that it is used by large numbers of plumbers all over the country. Right here in Newtown, it is being used with satisfaction by the Dalton Plumbing and Heating Co. and in the Fisher Bros'. plumbing business.

May we send our representative with records of what the Empire Speed Truck has done in the plumbing business.

Letter No. 2

Dear Mr. Brown:

Your costs for transporting material will be decreased if you do the work with an Empire Speed Truck. The three major expenses of truck operation are Depreciation, Maintenance and Gasoline, Oil and Tires. We have records to prove that these items are comparatively small on Empire trucks.

We would like very much to send our representative to your office to tell you what this truck can do in your business. We are confident that the Empire Speed Truck can make your business more profitable by decreasing your transportation costs.

When will it be convenient for you to see our representative?

Letter No. 3

Dear Mr. Brown:

Your business needs a dependable truck—one that is ready every day to do its daily work. The Empire Speed Truck has the dependability you need.

We stand back of this dependable truck with dependable service. Our inspectors go over every Empire truck we have sold once each month. These inspections are made in the owner's garage, on the road or in our service station. Copies of inspection reports are sent to the truck owner. These reports indicate what should be done to keep the truck in top-notch condition.

Our service station is equipped to handle all maintenance and repair jobs on Empire Trucks. Skilled mechanics insure good workmanship. Special tools make good work at low rates possible. Lubrication, adjustment and repair work are done with a minimum of interference with the work of the truck.

May our representative call next Thursday morning to talk over your hauling methods and costs?

Letter No. 4

Dear Mr. Brown:

Thank you very much for the time you gave our Mr. Jones to tell you about the

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usefulness of the Empire Speed Truck. We appreciate your courtesy a great deal.

Mr. Jones tells me he left a list of Empire owners in this vicinity with you. Many of the people on this list are personal friends of yours. We would like very much to have you call any of them up to ask them what they think of Empire trucks and of our treatment of them.

We would especially like you to call up Empire owners in the plumbing business. Their problems are the same as yours and they can tell you from personal experience just how well the Empire Speed Truck solves these problems.

Selling Winter Service with Sales Letters

A Series of Three Letters to Owners on Winter Care

Letter No. 1. Cold Weather Precautions

Freezing weather can be expected almost any time now. Some slight attention and expense on your part now will save you considerable inconvenience and greater expense later.

Your cooling system should be drained and an anti-freezing mixture put in. You can use alcohol or any one of a number of anti-freeze compounds.

Your battery should be fully charged. A fully charged battery will not freeze, but if your battery is partly discharged it will be liable to freeze, in which case the jars would burst, the plates buckle and the battery would be ruined almost beyond hope of repair.

The oil in your engine should be changed to a lighter grade. Summer oil is too heavy. It will not flow fast enough to lubricate the cylinder walls and bearings and may result in scored cylinders or burned bearings. It will also be too thick to allow the starter to turn the engine over, thus straining both the battery and the starter.

If you are not in a position to attend to these necessary details yourself, we can look after all these things at a very slight cost. Bring your car in now, before freezing weather comes along.

Letter No. 2. Better Cold Weather Performance

Did you receive our letter suggesting some precautions for cold weather? Our intention was to save you money. If you have lost it, we will gladly make another copy. The letter contained much valuable informationn.

May we also suggest at this time that there are some little attentions to the car that will make for easier starting and better running in cold weather. For one thing, you should have the cold air shutter on the carbureter intake either entirely closed or with a very small slit in it. The needle valve of the carbureter, if of the adjustable type, should be slightly opened to obtain better cold weather running. Some types of carbureters require a slight change in the air valve.

It is harder to start the engine in cold weather. The gasoline vaporizes with difficulty and the cold oil makes it hard for the parts to slide and revolve. It is necessary therefore that all other things be in pink of condition. Ignition breaker points and spark plug electrodes should be clean and in correct adjustment to provide the maximum of spark to fire the somewhat imperfect mixture used in starting. Valves should be tight and piston rings should hold compression.

We will gladly make an inspection of your car free and will make any minor adjustments without cost. A slight outlay of money in getting things in good shape for the winter will pay dividends in a sweet running car.

Letter No. 3. Changing the Oil

The oil in your engine should be changed every 500 miles in winter. The difficulty of completely vaporizing low grade gasoline at freezing temperatures and the extended use of the choke while starting are responsible for a considerable amount of liquid gasoline and kerosene slipping past the piston rings and into the crankcase. This rapidly thins out the oil to a point where it is no longer a lubricant. Burned bearings and scored cylinders will result from the continued use of oil after the five hundred mile period. If you bought your car a number of years ago and have an old instruction book with directions to change the oil every one or two thousand miles, write for the latest instructions.

We are specializing in crankcase service and will do this oil changing for you in ten minutes. There is no cost except for the new oil and you will avoid the necessity of getting down in the muck to drain the crankcase.

A Letter on Carbon Removal and Valve Grinding

Do you remember the feeling of satisfaction you had when your new car pulled up City Line hill on high gear? Will she do it now? If not, you have doubtless thought that the engine was losing its pep and the car getting old and worn out.

But this is generally not true. In most cases the cause of the lack of hill climbing power is the accumulation of carbon in the cylinders and the leakage of the compression past the valves. Both these troubles are easily remedied and then your car will behave as well as it did when you first got it.

We are able to quote a flat rate on the operations of carbon removal and valve grinding at $2 per cyclinder. This includes a thorough cleaning of the piston head inside of the combustion chamber and valve passages. The valves are ground and trued and the tappet clearance adjusted correctly to eliminate noise and give the greatest amount of power. We also check and adjust the spark plugs and adjust the carbureter.

If you will call for a service appointment we will arrange to have your car finished the same day you leave it.

Letter on General Lubrication

There is practically no limit to the life of a car which is properly and periodically lubricated. But filling grease cups under the chassis and getting oil and grease in your hair and ears often deters you from fulfilling your lubrication duties, and the life of the car is thereby shortened.

We have installed a special lubrication service to save you inconvenience and extend the life of your car. The cost is much less than the saving in wear on the car. This service consists of oiling and greasing every part of the car from one end to the other, using the right grade of lubricant in every case. A special spray is used on springs, fenders and other places that are liable to squeak.

We have established a flat rate of $5 for this operation and suggest that it be done once a month. The only lubrication you will have to attend to in the meantime is to look after the engine oil, unless, of course you intend to cover abnormal mileage during a month.

We believe that we can save you from $100 to $300 for this expenditure of $60 per year.

Drive in and ask us about it.

A Letter from the Electrical Service Man

Once upon a time the blacksmith and the general machinist were called upon to do automobile repairing and, to do them justice, they kept the wheels moving. The advancement of automobile design and construction have called for a specialist who knows automobile details better than the man with the more general machine knowledge.

The great strides made in recent years in the electrical equipment of the automobile have made necessary a still further specialization in automobile repairing.

This organization does electrical repair work and nothing else. We have made a careful study of magneto and battery ignition systems, starting and lighting and battery work and have machines and equipment specially designed for the work.

If your trouble is electrical, let us remedy it.

A Battery Service Letter

Cold weather is a good deal harder on batteries than warm weather. The engine oil, when cold, is gummy and a great deal of current is necessary to turn the starting motor over. A battery that is in rather poor condition, nearly discharged, while it might have given you satisfaction in summer, will give you trouble this winter due to the more severe current drains on the starter and the longer use of lights.

It will cost you nothing to call at our shop to have water added and a test made of the battery to determine whether it is in good shape to see you through the winter. Perhaps a small amount of necessary work done now will save you annoyance and greater expense later on.

If you are going to lay your car up for the winter ask us to send you our special booklet on the winter care of the battery. This is free and will give you much valuable information that you will appreciate when spring weather comes around.

Tractor Letters That Get Business

A Letter on Speeding Up Farm Work With a Tractor

Getting things done on time is an important feature of successful farming. In the spring it means getting the fields planted in time to get the maximum crops. Delays at this stage mean material losses in yield.

Speed is one of the great advantages of farming with the Hardwork. Last spring weather conditions interfered seriously with spring work on farms in this section. Yet Hardwork owners got their crops in on time despite these unfavorable conditions.

In the Hardwork tractor a farmer gets speed with economy. The cost of farming with the Hardwork is less than it is with horses. And in addition to these advantages, it makes farming easier.

Our salesman, Mr. Robert Jones, will call on you in the near future. Ask him to show you some records of what other farmers have accomplished with their Hardwork tractors.

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A Letter on Bigger Crops and Profits Made Possible by Using a Tractor

You can grow bigger crops at lower costs on your farm.

Other farmers on similar farms are doing it. They are doing it because the Hardwork tractor is pulling the heavy loads on their farms. The tractor enables them to make a better seed bed and to get the seed planted on time, both of which mean heavier crops.

The cost of producing the crops is reduced because the Hardwork tractor does the work at less expense than it can be done with horses. We can prove with actual records of operating costs that farming with power is the economical way.

You can depend on the Hardwork tractor to be ready for service when you want to use it. It is built by a reliable company with a reputation for producing a high grade product.

Our salesman will call on you in the near future. Ask him to tell you how the Hardwork tractor will enable you to grow bigger crops at bigger profits.

Letter to a Tractor Prospect Before a Canvass Call

What new machinery will you need to handle next season's crops?

Plowing time is not far off. Following that comes planting, cultivating and harvesting. All of these operations can be done faster and more economically with modern machinery. Perhaps some of your machinery is worn out, or it may be profitable to replace some of it with more modern equipment.

Our Mr. Thompson will call on you on Thursday, Jan. 11. Ask him to go over your implements and machinery with you. He will advise you honestly what repairs your machinery needs, what implements should be replaced and what additions you should make to your equipment.

He'll also be glad to tell you about the economies the Hardwork tractor can effect on your farm. We are enclosing a circular describing this dependable farm tractor, which also tells about the results other farmers are getting with it.

Letter to a Tractor Prospect After a Canvass Call

Thank you for your courteous reception of our Mr. Thompson when he called on you on the 11th. His report shows that your equipment on the whole is in unusually good shape and ready for hard work.

I notice, however, that a few of your machines need some replacement parts. May we order these parts now for you so that, when it comes time to use the machines, they will be ready?

Mr. Thompson tells me that you are interested in the Hardwork tractor but that you are not sure that it would be a profitable investment for you. The best answer to this is that the Hardwork has shown itself to be a profitable investment on farms that are very similar to yours.

We are enclosing a folder which tells about the reliability and simplicity of operation and maintenance of this tractor. Look it over when you have a few spare moments. Mr. Thompson will be glad to answer any questions when he calls again.

A Letter Suggesting Livestock Profits Made Possible by Power Farming

Many farmers are finding livestock a source of profits. They are raising pure-bred stock as a sideline to their regular farming operations. They have discovered that the more time they can devote to this part of their work the greater are their profits from it.

By using Hardwork tractors they have speeded up their regular farming operations so much that they have the time required to take care of their live stock properly. They are producing their crops with less hours of labor and at less cost, and they are using the time saved to grow livestock, from which they derive additional income and profits.

Are you interested in obtaining more definite information on this subject? We have collected considerable data that we would be glad to show you. When you are in town, stop in at our store or ask us to send a representative to talk it over with you.

Winter Accessory and Tire Letters

Three Letters Making a Seasonal Appeal to Sell Accessories

Letter No. 1—SAFETY DEVICES

It's better to be sure than sorry—and it is cheaper.

Can you afford to take chances this year by driving your car without having it properly equipped with good safety devices?

Wet and icy pavements, ruts and partly obscured vision cause many of winter's motoring accidents. Most of them could have been prevented by equipping the cars with:

Bumpers,
Windshield wiper,
Tire chains,
Rear view mirror,
Spotlight.

Any one of these items will pay for itself many times this winter in the protection it gives.

We are specializing this winter in the installation of safety appliances of all kinds. You can have them attached while you wait.

Letter No. 2—SUGGESTING CHRISTMAS GIFTS

Every year there are some gifts that we just seem to put off until the last moment because we don't want to buy the ordinary things—socks, neckties, etc.

"If I could only think of something nice—something practical—something that he will use and appreciate," we say.

Does he drive a car? Then he will appreciate best or all one of those extra equipment articles that makes every car more comfortable or nicer to look at.

Here are a few suggestions:

Cigar lighter,
Ash receiver,
Flashlight,
Driving gloves,
Robe,
Radiator thermometer,
Vacuum bottle,
Tire lock,
Spare tube,
Spare tire,
Spotlight,
Rear view mirror.

Solve your Christmas gift worries by giving your motorist friends the things motorists like to receive.

Put Smith's Auto Supply Shop on your shopping list to-day.

Letter No. 3—SELLING A SINGLE ITEM

There are many reasons why you should enjoy comfort and safety while driving your car this winter.

One very good reason is an automatic windshield wiper.

In heavy traffic on slippery city streets or along the ice-rutted country roads you need both hands and a clear view of the road. But when rain and snow and sleet beat upon your windshield you need both hands and a clear view tenfold.

An automatic windshield wiper works silently and efficiently. It allows you to give all your attention to the car and the road. It takes but a few minutes to install and will pay you its value a hundred times this winter in the comfort and safety it brings.

Drop in to-morrow and see how it works.

Three Tire Letters to Get Winter Business

Letter No. 1—TO DOCTORS

In how many instances that you can recall has the very life of a patient depended on your ability to reach him in the quickest possible time?

You make your professional calls in an automobile, and one of its essential parts is its tires. You realize, even more fully than we can perhaps, what it means to you to have your car on tires that are at all times dependable. It is serious, isn't it, when a puncture or blowout delays you, especially on an emergency call.

We sell Seldomblow tires and tubes. But what we believe may be equally as interesting as the name of this popular brand to you is that we render a service to purchasers of these tires that practically eliminates the danger of delay through tire failure. We refer to our MONTHLY INSPECTION PLAN.

This plan entitles you to free inspection by experts who detect cuts, bruises and other weaknesses and remedy them before they develop to a stage where they may produce a blowout. Our repair department is organized to give prompt service, and prices are extremely reasonable.

Letter No. 2—SELLING TIRE REPAIR SERVICE

If reading this letter helps you to save some money this winter, that's fair enough, isn't it?

Then, without further delay, let's get to the point.

Next to quality of product the most important consideration in the purchase of tires is quality of service. These winter months tires are submitted to extra heavy wear. Ice and stones on hard pavements cut the tread and expose the fabric. Water seeps in and rots the fabric.

Frequent inspection by competent tire men will disclose these blemishes and very often a repair job that takes but a few minutes and costs but a few cents will add hundreds of miles to the life of a tire.

Our customers get just that kind of service free.

We can save money for you this winter. Drop in for a free inspection next time you are in our vicinity and let's get acquainted.

Letter No. 3—
SELLING TIRE AS CHRISTMAS GIFT

Merry Christmas!

Why not say it with Seldomblow tires this year and give your motorist friends 8000 miles of joy.

Phone your order to-day and we will deliver it on Christmas eve appropriately wrapped and tagged, anywhere in Calawassa.

Seldomblow tires are made to fit all cars.

With every tire purchased here goes our guarantee of satisfactory wear. Our plan entitles the owner of a Seldomblow tire purchased here to free inspection by experts.

A Seldomblow tire as a Christmas gift is an investment in comfort and happiness.

Our phone number is 888.

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1923 Cars Have Best Quality Yet Produced

Manufacturers Have Made Progress in Durability, Accessibility and Comfort—No Radical Changes, but Important Refinements Described in This Story That Every Dealer Will Want to Read

By J. EDWARD SCHIPPER

WHILE there are still several new car announcements to come before the close of 1922, there have been a sufficient number of new models brought out so far and there is sufficient information available about the changes to be made in those which are still to come, to draw an accurate picture of engineering progress in 1922. When the history of the automobile industry is written, we will look back on 1922 as the year of many important detail refinements. These detail refinements have, as a net result, produced a car which is more comfortable for the user, more durable and more accessible, thereby reducing the owner's repair bill. The 1923 cars also are economical to manufacture, and, at the same time, have the best quality of any cars so far produced.

A survey of the bodies offered this year shows that the manufacturers have probably come closer to the bullseye than ever before in designing bodies to fulfill the owner's needs. The low priced closed car, for the man who wants closed car comfort at open car price; the sport model for those who like a dash of originality in their cars, and the touring sedan for those who want to combine the roominess and luggage carrying capacity of the open car with the comforts of the closed car on long trips, have been the body styles which seem to have struck most closely to the mark.

There have been many interesting detail refinements mechanically this year, which, taken in the aggregate, present a marvelous array of improvements. Probably the majority of these improvements are for the purpose of silence and life. The two go hand in hand, as it is axiomatic that whatever is silent mechanically is generally long lived. Better roadability of the vehicle through improvements in acceleration and in spring suspension rank second, with accessibility a close third.

Changes in Pistons

If we were to look into the vitals of engine design, for instance, during the year, we would find that in the aluminum piston field some important recruits have been gained. The Hudson company, while using this type of piston in the Essex for a considerable time, has now adopted it for the super-six, which has hitherto always been equipped with iron pistons. The piston selected for the Hudson is much along the same design as that which has been used for the Essex. It is a diagonally split type. This same type of piston is used in the Maxwell.

Another tendency which may be noted in piston design is a little greater care in proportioning the length. On the Buick car, for instance, in the six-cylinder engine, the pistons have been lengthened ½ in. above the wrist pin. The connecting rods have been lengthened 1-3/16 in., raising the entire block by 1-11/16 in., so that, although the compression remains the same with the longer piston and connecting rod, piston slap and wear on the cylinder walls is not nearly so apt to occur.

In redesigning the Stutz, just the opposite procedure was followed. The pistons were made shorter. On the other hand, the pistons on the older models were notably of extremely heavy type and a considerable increase of power output has been obtained, which is directly traceable to the lighter pistons.

Connecting Rod Changes

While the Buick company is the only one which has made any changes in connecting rod length, a number of makers have altered connecting rod shapes during the year so as to give a better distribution of load over the lower rod bearings. An interesting point in connection with connecting rod practice is the increased adoption of aluminum. This is now used on the Franklin, and other concerns have put these rods out on cars which have been shipped to dealers with the idea of closely watching their performance and seeing if there are any come-backs on their use. To date there has been practically no record of any failures in the cars sent out into service with these rods.

Heavier crankshafts still continue to be the trend, and in connection with their manufacture, there is a growing tendency for makers to put every shaft through a dynamic balancing machine before assembly. The result of this is that there has been a remarkable improvement all along the line in engine balance. Vibration periods have been practically eliminated in cars which have carefully gone into the manufacturing possibilities of good balancing machines. Dealers should appreciate that this is a remarkable accomplishment when it is considered that not so very long ago a dynamic balancing machine was regarded as a laboratory proposition and nothing to be used in a commercial way. It sometimes requires an hour to put a shaft in balance on one of these machines and the fact that manufacturers are willing to spend the large sums of money necessary to install a sufficient number of these machines to balance every crankshaft that comes through, is one of the outstanding examples of the determination of automobile manufacturers to produce the best possible automobiles.

Another development phase which has been instrumental in making cars more quiet has been the increased study which has been given to the front end drive. This is the drive which takes care of the camshaft and the auxiliaries such as the generator, water pump, etc. The drift toward chain drive may be noted from the fact that during the past year its use has increased from 16 to 25 per cent.

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In other words, ¼ of all models produced employ this type of drive. Formerly, chain drive has been most popular on high priced cars, but its use on lower priced cars is increasing. New recruits to the chain drive this year include such concerns as Hudson, Haynes, Rickenbacker, Star and several manufacturers of assembled cars using Continental engines. There are two other cars not yet announced which will be fitted with this type of drive during the year. The new Duesenberg stock engine has a chain front end drive, as has also the Weidely, and in addition to these, a number of stock engines are now being made with the timing gear so arranged that it may be adapted either to chain or helical gear drive.

Chains and Gears Improved

One of the main reasons for the adoption of the chain drive is because of the superior methods of adjustment. On some of the Link-Belt installations, an automatic idler is provided which, by means of a spring tension, keeps the timing chain tight at all times. On other installations, a simple method of swinging the generator has been evolved so as to give a rapid adjustment of the timing chain. In the helical gear drive, there has been a gradual tendency toward increase in the face width of the gears.

Another radical change in practice has been the use of forged aluminum gears such as those employed on some of the Continental engines. The forged aluminum or duralumin gear has worked out successfully and with notable absence of resonance.

Another feature of engine design which has been the subject of material improvements almost universally is in the better layout of the intake manifold. Year by year, improvements in intake manifold designs have been made, with the result that the distribution in engines for 1923 is better than ever before. The quality of the fuel supplied cannot be said to have dropped any during the past year. In fact, various reports indicate that the fuel we are getting to-day is possibly somewhat better than a year ago. At the same time, inlet manifolds have been materially improved. On the redesigned Stutz the inlet manifold is designed to create an eddy in a circular chamber. The liquid particles are broken up as they come in contact with hot, internal fins. These fins are heated by exhaust gas drawn through a tube running directly across the engine between the central cylinders. This tube is in a dead air pocket, which tends to decrease radiation from the tube itself and permit a maximum amount of heat to be carried over to the heated fins. The heated fins of the intake are placed at an elbow so as to trap the liquid particles in the intake without adding much heat to the air. The intake has been designed with the passages sloping away from the cylinder, so that all drainage is back toward the carbureter and the manifolding is cast in aluminum to take advantage of the good heat conduction properties of this metal. The intake manifold is attached to the engine by means of an aluminum flange intended to transfer heat from the engine to the intake system. About one-fourth of the exhaust is used to heat the inlet, the arrangement being such as to prevent undue back pressure on the exhaust.

Progress in Silence

From the standpoint of silence, one of the most interesting things which has been done during the year is on the Buick engine, which is an overhead valve type. The long push rods employed to operate the valve rockers have been made partially of aluminum and partially of steel, so that the expansion on the push rods will be equal to the expansion on the cylinder. This has enabled the valve adjustment to be given a lash of .006 in. as compared with .010 in. formerly. This naturally provides a much more quiet engine.

From the foregoing, it will be seen that while there have not been any radical changes in engine design, there has been a marked attention to detail. There is not space here to enumerate all of the little improvements which have been made in various cars through the year, but not a single unit can be mentioned that has not been changed in one or more details.

Developments in other units of the chassis have not been as marked as those in the engine, although there has been a gradual cleaning up following along the same lines as have been noted from year to year. The clutch development has not been altered materially, although there have been some tendencies, particularly in reducing the stresses on the engaging surfaces by increasing the area and rendering the clutch oversize to such an extent that adjustment will be seldom or ever necessary. A newcomer in the clutch field is the Long clutch, which has been adopted on Jewett, Paige and will probably be seen on other cars before or at the next New York show. This is a plate clutch which is featured by extremely light rotating parts facilitating easy gear shifting.

There is a growing tendency toward so arranging the forward universal joint that it may be oiled from the gearset.

A rather clever arrangement to take care of this is used on the Gray car, one of the newcomers of the year. In this unit, the clutch, gearset and front universal are all parts of the engine oil circulating system. This takes away all responsibility from the owner except keeping the level in the crankcase up to what it should be and changing the oil in accordance with the usual requirements.

Frames, Wheels and Springs

A tendency toward stiffer chassis frames still continues and throughout the revised cars for 1923, a great number of added cross-members or heavier frame sections will be noted. This has resulted in less distortion of bodies and a greater elimination of rattles. A tendency in steering gears which may be noted in passing is the recent trend toward greater gear reduction. While all the way from 6 to 1 to 9 to 1 was considered good practice formerly, some of the car manufacturers are insisting on a 12 to 1 reduction from the steering gear manufacturers. This tendency is possibly one which may be criticised, as the 12 to 1 reduction makes a vehicle which is not at all pleasant to handle in traffic. It would seem that easier steering could be secured by more care in the manufacture of the parts which tend to bind on the steering mechanism. This is one of the problems which may well be attacked during the coming year, as it probably can still be regarded as a weak spot.

Another interesting feature is the possibility of the use of 20-in. wheels. This is still a long ways off, but can be clearly seen above the horizon of development. The 20-in. wheel employs such tire sizes as 30 by 5; 32 by 6, or 34 by 7. Engineers do not unanimously favor such a wheel, however, on account of the difficulty of securing clearance for the brake drum.

From the standpoint of spring suspension, the biggest change of the year has been the adoption of the semi-elliptic by Peerless. This concern has always clung to the platform type of suspension, and when it changed over to the semi-elliptic the sole survivor in the platform field was the Cadillac. Buick has made some alterations in its spring suspension, also, this year. The offset of the cantilever spring on the six-cylinder Buick has been increased 4 in., making the forward end of the spring 14 in. longer than the rear. This has resulted not only in lowering the car, but also in reducing rebound and eliminating side-sway. The rebound is reduced materially by the fact that greater advantage is taken of the interfriction.

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Editorial Notes

This Issue

MOTOR WORLD presents its seventh annual Winter Business Number with the hope that many men in the automotive trade may find in these pages suggestions that will help them to profit by the business possibilities of the winter months. In this number are many ideas, particularly along the lines of advertising and display, which can be used just as they are. They will fit businesses of various sizes.

Only a few of the many automotive establishments in the country have advertisement writers, letter writers and men to create merchandising displays. It is natural that work of this sort should seem to men burdened with the cares of managing a business as out of their line. Yet almost any man, if he will apply himself, can do these things which play so important a part in successful selling. It is hoped that some of the suggestions in this issue may prompt readers to put their own ingenuity to work a little harder than they may have done in past seasons.

This issue will be followed from week to week with others also containing ideas for the building of winter business. Winter business will be the target the trade is shooting at for several months, and it is the ambition of Motor World to help the trade hit the mark.

Shows

WITH the approach of cold weather the trade naturally begins to think of automobile shows. There are early indications that more than the usual number of shows will be held this winter. This suggests that the trade has a keen appreciation of the promotional possibilities of the show and that there is no inclination to rest on the assumption that the public is fully sold on motor transportation and needs no propaganda such as the show affords.

It has come to be the custom for dealers in large communities to hold an annual show. The idea has been spreading during the past two or three years through smaller cities and towns, but it can well go much further. It is possible for a group of dealers in many a small community to hold a show without going down into their pockets, except temporarily, to finance it. A well managed show will at least pay for itself, and in many cases will return a profit to the participating dealers. It is even possible for a single dealer to hold a salesroom show and to get enough business out of it so that it will be little more expensive than other forms of advertising which he takes as a matter of course.

In Michigan last winter a way was found to take the show idea to a number of small cities which had never been able to benefit by this form of promotion. The State dealers' association arranged and conducted a show circuit plan. It might be possible in some territories, where there is no association available to do the work, for a number of distributors to band together to help their dealers hold shows in strategic points in their territories.

The show season naturally starts with the New York exposition shortly after the New Year. It continues well into early spring. Between now and the end of the year there is ample opportunity for dealers to canvass the show possibilities of their communities, to secure advice from show managers in nearby large cities and to plan a show for their towns if there is a reasonable chance of its success.

Christmas

LETTERS which have been coming in to the editors of Motor World indicate that the trade is taking considerably more interest this year than in former years in the possibilities of profit in gift merchandise. There have always been a few dealers who have sold cars, accessories and tires as Christmas gifts, but this year, according to indications, much greater attention will be paid, particularly in the automotive equipment field, to securing the business of Christmas gift buyers.

In this issue several pages are devoted to suggestions for cashing in on the gift giving season. It is an opportunity for the trade which should not be overlooked. Everyone knows how the average man or woman is stumped trying to think of gifts for certain members of the family and friends. In despair these gift givers turn from one line of merchandise to another until finally they buy "any old thing" in order to get the job off their hands.

If the automotive trade would try persistently and energetically this year to get accessories and tires prominently in the minds of gift givers they would obtain a substantial November and December business with accompanying profits.

Radio

QUITE a number of accessory dealers and garagemen and some automobile dealers have found it profitable to develop radio merchandising as a side line of their business. Their success suggests that other men in the trade who have not thought seriously about the possibilities of getting into the radio field might might do well to investigate it. It seems fairly well established that a business primarily engaged in some other line can undertake radio merchandising with reasonable promise of success if there is a man in

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the organization with some ability along that line who can give it special attention. It is not an activity to be rushed into but the dealer or garageman who feels that he might be able to develop winter profits through selling radio will find it possible to get good advice from his automotive equipment jobber or perhaps from a special radio jobber in his vicinity.

What About a Contest?

THE automotive business man who is looking for a means of injecting new life into his organization in the winter months should not overlook the possibilities of contests. The contest idea, which is a development of the spirit of competition on which all activities of mankind are based, can be applied in many ways to any organization. It is possible during the late fall or winter months, when interest is likely to lag, to create enthusiasm by pitting employees against each other in contests leading to rewards for excellence. Many a sales organization, even a small one with only half a dozen men, has been rejuvenated by a contest which has spurred men to work not merely for the reward but for the satisfaction of proving their individual ability to do their jobs well. In a sales organization it is possible to hold contests not only for actual sales but for such things as suggestions for increasing business, displays, publicity stunts, sales letters and many other things that might be mentioned. Many a dealer who has racked his brains for new ideas for letters to prospects, for instance, has obtained a wealth of just the material he desired by offering awards to people in his entire organization for the best sales letters turned in during a given contest period.

In every normal man or woman there is a latent desire to be a leader. This desire can be capitalized into that kind of effort which, for want of a better word, we often call "pep."

Shop Equipment

THERE is no time so favorable as late fall and winter for a dealer or garageman to take stock of his facilities for serving his trade. Fall and winter ought to be the time when men in the trade will set themselves to the task of thoroughly examining their shop equipment. The summer time rush of work is over and the shop proprietor or manager has an opportunity to go carefully over his equipment, sizing up its capabilities or lack of capabilities for doing the work his shop must do to hold and build business.

It is doubtful if the trade has ever fully realized how much of the complaining of car and truck owners about poor work and high prices is due to inadequate shop equipment. This applies not only to the larger and more costly tools which come under the classification of machinery but also to the hand tools of various classes.

The car owner who gets a bill for three hours' work for a job which he knows, or feels, should be done in half an hour, is not likely to go back to that shop again, nor to buy another car from the dealer involved if such is the case. In addition he may take the trouble to tell a good many of his friends of his dissatisfaction. The same sort of aftermath is likely in cases of work poorly done or not finished at a certain promised time. Often lack of proper tools is the real cause of the trouble.

Any dealer with a service station or any garageman with a shop which caters to the motor vehicle driving public can add to his immediate profits and insure his business future by providing himself with thoroughly adequate equipment. This is just as essential as competent men and fair charges.

The automotive equipment and machine tool industries have brought out within the past few years many devices which will pay for themselves over and over again in an automotive repair shop. Dealers and garagemen owe it to themselves to learn the profit-making and customer-satisfying possibilities of these machines and tools. They will always find manufacturers' and jobbers' salesmen ready to help them in their quest for information.

Recently a group of automotive shop equipment manufacturers have been advertising the slogan, "the well equipped shop gets the business." Every man in the automotive trade who has any knowledge of maintenance work knows that this is true. Every man in the trade should look over his shop this fall and winter and see to it that, for the class and volume of business he may reasonably expect to get, it is well equipped.

DOUGLAS FAIRBANKS, practicing archery on a New York hotel roof, missed his target and sent an arrow into the shoulder of a business man who happened to be standing by a window in his office half a block away. "Doug" got bigger game than he was shooting at. The clerk or garage boy accommodating a customer who wants a spark plug or a quart of oil may think he needn't bother much about courtesy for such small fry. But the spark plug or oil customer may buy a car or a big repair job next—who knows?

Which would you rather find in your Christmas "stocking," a mirror to shave by or a rear view mirror for your car? We thought that's what you would say. There are hundreds, maybe thousands of men owning cars in your town who would feel just the same way about it. Will some of them get rear view mirrors, and will they be bought from you?

How many people failed to "come again" to your gas pump because you scratched the paint on their fenders with the hose nozzle?

How often do you have to charge a repair customer for a boy's time chasing downtown for a part that you've just run out of? And how many customers who never came back suspected that was one of the reasons their bill was high?

You say you don't like to "pester" customers to buy accessories? Do you "pester" a man when you induce him to provide clear vision in storms by installing an automatic windshield wiper?

In California almost nobody will drive an open car without windshield wings. They have a lot of good ideas out in California.

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Dealer Suggests Cost of Business Survey

Thinks It Would Center Attention on Manufacturers Problem of Assuring Retailers Reasonable Expectations of Prosperity

SEVERAL weeks ago a Western automobile dealer, retailing two makes of cars, one medium priced and one low priced, wrote to Motor World urging that manufacturers take a hand in lightening the trade's used car burdens. He advocated elimination of trading from the new car business. Incidentally, he touched on the necessity, as he saw it, of longer retail discounts if capital is going to retain an interest in the automobile business as a good field of investment. This same dealer has written us again, dwelling more at length on the need of a longer discount and urging a survey of the cost of operating an automobile business as a means of attracting factory attention to the dealer's plight. His letter follows:

EDITOR, Motor World:—On the subject of profits in the automobile business, isn't the manufacturer a little inclined to be a hog? He has always insisted on 10 per cent net on gross sales, and most of the prominent ones are doing that this year. A department store rarely ever makes more than six per cent net on gross sales. Automobile dealers rarely ever make more than four per cent net on gross sales.

Now it has been my idea for almost a year that a survey of costs would so open up the whole subject that manufacturers would have their attention distracted from the selfish little world in which they live—and it is little and it is selfish—to some of the real problems that confront them. No set of men ever had a bigger problem to deal with than to keep the automobile retailer prosperous. Why? Because the automobile retailer has the hardest merchandise problem to solve that there is right now.

The automobile dealer has been working on such a very narrow margin from the beginning that his business will not permit any mark down in used cars. Yet there is no merchant who does not mark down some of his goods. To get by without a mark down would be perfection, and there is no such thing as perfection in merchandising, automobiles or anything else. What we want to know is what sort of a mark down must be expected and then stay with it. The department store manager knows that because he knows costs and deals with his problem in an exact way.

Second, any increase in discount possible will not demoralize the situation, because the men who are demoralizing the situation could not succeed on this market if they got 60 per cent discount. The chances are that most of these fellows are so tied up right now that they don't know which way to turn. That is what has happened here to some extent, and I presume the same is true everywhere. It's time to strike for more pay, as the union leader says, but not for the same reason.

The small dealer is an important factor in the industry, and he must succeed or the industry one of these days will be like the old "honker" goose that had his wings clipped and couldn't fly.

As a matter of fact, it's no one's business what I do with my money. Have the manufacturers been such good and perfect business men that they have not wasted millions foolishly? How about the foolish engineering mistakes, the misguided men that have called themselves sales promoters and all of the rest of the procession of misfits that have taken toll from factory executives? Perhaps if the truth were known, the dealer has not been so bad as some would make him out.—Western Dealer.

Write to Motor World About It

This page every week is devoted to discussions of topics of the trade by Motor World readers. Have you a suggestion to overcome a difficulty or improve some condition within the industry? Write to Motor World about it.

The Instrument Board

Editor Motor World:—Permit me to comment on the article, "Too Many Contraptions on the Auto," printed in a recent magazine.

The writer of that article condemns what he calls "the multiplication of instruments on the dash of the current automobile," which he likens to "the control board of a central power station, an overcrowded pawnshop window or an instrument maker's laboratory," and especially ridicules such useful appliances as a clock and an electric cigar lighter.

Isn't this absurd? I don't know what particular aversion that writer has to a clock, but I will venture the opinion that he neither smokes himself nor approves of those who do, when he refers contemptuously to the use of the electric cigar lighter, a device which has been adopted as standard equipment by the manufacturers of many well known cars, and evidently only after satisfying themselves that such a device is necessary to the comfort of the motoring public who smoke.

It is often a genuine hardship to a smoker not to be able to "light up" when he wants to, and I know of some motorists who would rather w-a-l-k than ride in a car without a smoke. Why, then, ridicule the use of this convenient instrument which permits the motorist to avail himself of a quick, sure light that would be impossible by any other method and which at the same time prevents damage, accidents and burns to himself and his car through the use of matches? Rather the use of matches, always a menace while driving, should be condemned.

As for a clock on a motor car, is it not as useful there as anywhere else, and possibly more so? The element of time is quite often as important while motoring as while otherwise engaged, and is frequently very important in enabling the motor car driver to regulate his speed for the purpose of reaching a certain place at a definite time. It is true he may have another timepiece in his pocket, but a clock in plain sight on the instrument board makes it unnecessary for him to remove his hands from the wheel to fish for his watch, the doing of which would encourage accidents and endanger lives.

I believe in instruments on the instrument board, and plenty of them of any kind, so long as they bring added contentment and pleasure to those who use them.

I am sure expressions by other readers would be greatly appreciated.—Anselm B. Hance, Meriden, Conn.

A Winter Business Idea

Editor Motor World:—I plan to keep my men busy during every winter, and last winter, by cultivating the demand for more power on the older model cars I developed, using standard Delco parts, an ignition system that could be used in conjunction with the standard magneto system, thereby giving two sparks to every cylinder.

We sent a letter out to every owner and this brought very gratifying results, inasmuch as it sold not only ignition systems, but the repairing and relining of brakes, grinding of valves, and, in fact, all kinds of repair work that we probably would not have secured had it not been for the interest manifested in this ignition system. The increase in business amounted to thousands of dollars and every owner seemed very well satisfied.—Henry W. Lemay, Service Manager, the Arrow Co., Springfield, Mass.

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Repairman Liable for Damage Due to Poor Work

Car Owner Justified in Suing for Compensation When Careless Work Causes Him Loss or Injury

EDITOR Motor World:—Will you tell us just what responsibility we incur if one of our workmen does a job in an improper manner—that is, instead of making a first class job out of some repair work he fails to tighten up something right or puts a machine together wrong so that a car is damaged and the owner of it has to have it repaired again after paying us for the work we have done?—Subscriber, New York, N. Y.

Answer:—Repairmen are under a legal obligation to do their work in a proper and workmanlike manner and if they fail they are responsible for any damages caused by their incompetence or the incompetence or carelessness of their employees.

If a car owner finds that damages are caused to him as a result of improper or careless repair work he is justified in suing the repairman and if he can prove his case he will be allowed a recover of damages to compensate him for his loss.

In a case of this kind a car owner may have no doubt but that an accident is a direct and proximate result of inferior repair work or carelessness oftentimes he is unable to furnish legal proof of that fact as it is a difficult thing to prove.

The principle holds good, however, that when a man offers to do something for hire and then does it in such a negligent manner that loss is caused to the person who paid him he must make good the damages sustained by the person to whom he caused the loss.

If One Dealer Talks About Another

Editor Motor World:—Can you give us some information on the following point? Suppose that one dealer makes remarks about another one? Can the one about whom the remarks are made stop the other dealer from continuing? Suppose the remarks are true? If they are true is that libel? Subscriber, Chicago, Illinois.

Answer.—Libel is always a written defamation. What you have in mind is slander. Whether or not one dealer would be justified in making disparaging remarks about another dealer to his customers would depend to a great extent on the nature of the remarks made, aside from the fact that such a course of conduct is universally considered poor business policy.

If dealer Smith tells his customers that he thinks dealer Brown's car is not nearly as good as his own Brown may have a right to feel aggrieved but as Smith is entitled to have an opinion Brown will probably have no recourse even if Brown's car happens to be better than Smith's.

If on the other hand Smith should tell his customers that Brown is a crook and steals everything that isn't fastened to cars left in his care Brown would have a perfect right to sue Smith for slander and a good chance to recover damages, whether the remarks were true or not and could get a judgment unless Smith were able to show that the remarks were true or if they were not true that he did not act maliciously and had made every proper effort to ascertain the truth.

Even then Smith would have a difficult time and would in all likelihood find himself paying out heavy damages to his competitor before the matter was ended.

Can You?

PERHAPS you are thinking of selling your garage. Can you

1—Be held to an agreement never to engage in the garage business again?

2—Assign your lease without the consent of your landlord?

3—Be held responsible for the loss or damage of customer's car after you have sold out your business?

Or, suppose you sell your garage business and a broker comes along and claims a commission, proving that he sent the purchaser to you. Should you pay him a commission.

Questions like these and many others are answered weekly on this page.

Are there any legal questions you would like answered?

Write to the legal editor.

Should Get Owners' Consent to Repairs

Editor Motor World:—Some time ago a car which had been in a collision was brought in to us to be fixed up. We repaired it but let it go out of our garage before we were paid, as we knew the man it belonged to, and he is financially O.K. and the repairing was ordered by his brother, who we know is in the habit of running the car. Now it seems the owner did not know it was repaired as the accident happened while he was on his vacation and his brother never told him about it or that he had it fixed up. We can't collect from the brother who had the repairs made as he has nothing and we wonder if we can force collection in a case like this from the owner if he gets sore and refuses to pay. A. K. Albany, New York.

Answer.—Of course you lost your right of lien by not getting authority from the owner himself to make the repairs. If as you think the brother on his own responsibility had the repairs made and you had no express authority or implied authority from the owner to do the work he is not legally bound to pay your bill even though he may have benefited by reason of your labor, etc. Morally he perhaps ought to pay but legally he is not bound to do so.

Oil Companies Can Control Rented Pumps

That it is not "unfair trade" for gasoline distributors to compel retailers to sign an agreement that they will use gasoline pumps rented to them for a nominal sum only for the product of such distributors when the pumps bear the distributors trade marks, was the decision of the Circuit Court of Appeals in the recent case of Stand... l Oil Co. vs. Federal Trade Commission, 273 Fed. Rep. pg. 478, 17 L. R. A. 389.

The court held that such practice was not unfair trade either at common law or under the Clayton Act but pointed out that it might tend in the future to develop into a monopoly.

Should Attach Lien

Editor Motor World:—I would like to know what I can do with this car. A party came to my garage about eighteen months ago and had work and supplies to the amount of $223.75.

He asked me the price of regular storage and left his car here and has not paid one cent on the bill. He has never taken the car out of the garage since the car was brought in and the work was done. Can I sell it for the bill and what procedure will I have to follow?—S. G., Durango, Cal.

Answer:—Mechanics have liens for repairs in your State. Let your local attorney collect this bill for you. You need his help.

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2,000,000 Year Expected in 1922

MAY EXCEED RECORD ESTABLISHED IN 1920

To Reach That Year This Quarter Must Produce 403,000 Cars and Trucks

NEW YORK, Oct. 15.—The automotive industry has entered the final quarter of the year with assurances that no matter what may happen to retard progress during this period the total production of cars and trucks for the twelve months will surpass the 1921 aggregate and from all indications will forge ahead of the record established in 1920, the banner year in the industry.

What the industry has accomplished in production so far this year is evident from a comparison of the totals for the last two years and for the first three quarters of 1922.

2,276,000 Output in 1920

In 1920 there were produced 2,276,000 cars and trucks of which 1,928,000 were built in the first nine months, the slump which affected all lines of business seriously hitting the industry in the last quarter. The total output in 1921 was 1,668,550 and in the first nine months of 1922, 1,873,000. To reach the production record of 1920 the industry must produce 403,000 cars and trucks in the next three months, which is less than 60,000 under the total of the third quarter of 1920 when the industry was suffering its most severe setback, and only 68,000 more than for the third quarter of last year, which was not an exceptional period.

There is little question but that this figure will be reached and that 1922 will be another 2,000,000 year. Ford, which reduced its total in September through the closing of its plants, has come back with a 5,000 daily production schedule and the majority of other plants are working on high production programs. Reports of parts makers that orders are being placed well in advance indicate the purpose of the car manufacturers to keep output at a high mark.

Pre-Show Season Started

So far, October has shown no signs of more than a slight falling off in sections widely separated. Interest has been sustained until the industry has started on its pre-show season when scattered closed car exhibits are having a stimulating effect on sales.

The problem confronting the industry in Detroit of securing its steel supply, due to the diversion of rail equipment for the shipment of coal, particularly to lake ports, and the transportation of farm produce, will probably be solved by the employment of motor trucks between Pittsburgh, the principal source of supply, and that city. This condition is expected to continue until the closing of lake navigation. The success of the plan will remove one of the chief obstacles in the way of sustaining production at a high figure. Materials are reaching Detroit with only slight interruption, not great enough to prove a serious deterrent.

Light duty trucks continue to gain in demand, due directly to the coal situation and the apportioning of supplies to householders in small quantities. These vehicles are showing a stronger growth than is noticeable in the heavier trucks, which, however, are more than holding their own.

FARMERS IN ALABAMA RETURNING TO NORMAL

BIRMINGHAM, ALA., Oct. 14—Prospects for the sale of automobiles in the country districts of Alabama are looking better every day. Farmers are paying debts that they have owed for the last three years, according to F. O. Hooten, supervisor of this bureau of markets of the State department of agriculture, who recently made a trip through the central section of the State.

This tendency to liquidate debts of long standing is noted throughout the South.

In Chattanooga the bankers are reporting that payrolls, which have been way down, are now near normal and prospects for a good year in every industry are bright.

SWEET NAMED HEAD OF KLAXON COMPANY

NEW YORK, Oct. 16—Alfred P. Sloan, Jr., vice-president in charge of operations of the General Motors Corp., has announced the appointment of William M. Sweet as general manager of the Klaxon Co., with headquarters at Bloomfield, N. J. Sweet, who has been a director and vice-president of the Klaxon Company for several years, relinquished his other duties with General Motors last October to devote his entire attention to Klaxon interests.

Sweet was for years general manager of the Motor and Accessory Manufacturers Association, going from there to United Motors, where he filled a high executive office. When United Motors was taken over by General Motors Sweet went with it as assistant to the then president of the accessory division of G. M. C., A. P. Sloan, Jr.

TRUCKS MAY DELIVER STEEL TO FACTORIES

Railroad Facilities Are Diverted to Coal and Farm Produce Shipments

DETROIT, Oct. 17.—Under the rush of coal shipping to lake ports before the closing of navigation on the lakes and the diversion of rail equipment to the transportation of farm products from western states, service to automobile manufacturing companies in the Detroit district is approaching a point where it may be necessary to employ motor trucks for hauling material to keep factories operating.

The use of trucks up to this time has been limited to the hauling of material around congested transportation centers to points where it may be loaded for delivery either by rail or boat to Detroit. Steel is being hauled out of Pittsburgh by truck to railroad yards where freight cars are available to avoid the delays experienced in getting cars in and out of the immediate Pittsburgh districts.

Embargoes by Railroads

Rail shipments direct from Pittsburgh are requiring 10 days and upward to make the normal three day trip to Detroit.

Embargoes by railroads in the eastern districts and in some sections of the Middle West and South are interfering with both deliveries and shipments to and from automobile factories. For the most part, however, these are intermittent and occasion only temporary delays. It has been necessary at several points to resort to trucks to haul material to points where rail service was still open but factories are avoiding the additional truck costs by waiting wherever possible.

Plants to Go to Limit

Production schedules are being interfered with somewhat by difficulty in obtaining material and departments in some plants have been compelled to close for short periods, owing to holdups. There has been no cessation of operations in any plants, however, due to material shortages and factories will go to any limits necessary to maintain production at a point required by sales.

Traffic and purchasing departments do not look for any relief from the rail difficulties until the coal requirements of the Northwest and other regions served by lake shipping are met. This is expected to require a month or more and until that time, deliveries and shipping schedules will be upset. Driveaways are continuing to be the rule on deliveries within 1000 miles.

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CHALMERS EXPANSION LIKELY TO COME NOW

Note Holders Consent to Plan by Which Company Becomes Part of Maxwell

DETROIT, Oct. 12.—The consent of Chalmers note holders to the plan by which the company will become an integral part of the Maxwell Motor Corp. properties, marks the first development in the reorganization movement, President W. R. Wilson of Maxwell said yesterday. Several more weeks will be required to work out the final plans, he said, and when these are complete the company will announce its plan for the development of the Chalmers line.

Production of Chalmers for the past six months has been on a limited scale owing to the determination of Wilson to hold its operations to a basis in keeping with its financial position. This scale of operations was lower than sales requirements and was not extensive enough to meet its financial obligations, though sufficient to meet ordinary operating expenses and yield profit. Under this operating plan the large stock of materials on hand when the plant came under Wilson control has been practically cleared out.

New Models to Be Added

Some time ago Maxwell officials outlined a plan for the operation of Chalmers should their organization arrangements be approved. This was not disclosed but is understood to follow the plan used in the development of Maxwell whereby this car came in for unusual demand and became one of the big money makers of the industry almost over night. This was accomplished largely by the popularity of its models. It is understood a number of new models will be added to the Chalmers line.

The impression that the Chalmers plant in Detroit might be discontinued with the vesting of title rights in the Maxwell organization has been denied on several occasions by executives. Recently a bid was entered by Maxwell for the Chrysler plant at Elizabeth, N. J., and it was regarded as indicating Maxwell's desire to locate an eastern plant for the manufacture of both cars, with the Maxwell plant in Detroit to make both cars for Middle West and Western business. Wilson at that time said Maxwell wanted the Chrysler plant because it was regarded a good buy at a certain figure.

Olds Proportions Output

LANSING, Oct. 14—The Olds Motor Works, as a result of recent price reductions, reports business to be running in excess of production and as a result, is compelled to distribute its output on a proportionate basis among distributors. Demand for cars is reported to be especially brisk on the west coast where good business is expected to develop as the resort season progresses. Two trainloads of cars will be shipped to the Coast as soon as officials feel that this number can be allotted to any one section.

Passenger Car Specifications

READERS will notice that the passenger car specifications in this week's Motor World—pages 95 and 96—occupy two pages instead of one, as formerly. Additional items have been put into the specifications, covering virtually all points of essentiality in the construction and design of the car.

The change was decided upon after the editors had obtained and analyzed the opinions of a great many readers of Motor World. The specifications as they now stand represent the indicated desires of the readers. It is hoped that they will enhance the practical value of this feature of many years' standing in the pages of Motor World.

URGE TIRE DEALERS TO USE CASH BASIS

CHICAGO, Oct. 17—Better times ahead for tire manufacturers in the midwestern group were predicted by W. W. Wuchter, president of the Midwest Rubber Manufacturers Association, at the association's monthly meeting here. He declared that within six months those companies which are able to continue operation will see improved conditions under which they will be able to make money.

The association voted to hold its November meeting in St. Louis, the place to be announced later.

Manufacturers were urged to advise their dealers to operate on a cash basis only by Dr. R. P. Shepard, economist, representing the Chicago Association of Commerce. "The retailer who extends credit to his customers ceases to be a merchant and becomes a banker," he said. "It is not fair for the customers to ask the retailer to loan them a part of his capital. They should borrow the money at the bank and pay cash for their purchases."

MONTREAL CAR SHOW MEETS EXPECTATIONS

MONTREAL, CANADA, Oct. 14—The good judgment of the directors of the Montreal Automobile Trade Association in holding a closed car show at this season of the year was amply vindicated by the complete success attending the display.

The many advantages of the closed car were placed strongly before the public, and the results of the show will be permanent. It was the first closed car exhibit to be held in Montreal. The interest taken in the show by the general public was demonstrated by the continuously substantial attendance.

ELECTRIC SERVICE SURVEY UNDERTAKEN

Aim Is to Show That Members of Association Can Render Best Service

DETROIT, Oct. 11.—The Automotive Electric Service Association is making a complete survey of the extent and resources of this branch of the automotive industry as part of its campaign to place electrical service before the industry in its proper perspective. Questionnaires are being sent to all authorized service agents of all electrical equipment manufacturers from the offices of D. W. Burke, secretary of the association in Detroit which will give the information regarded as necessary to promote the best interests of this service group.

The questionnaire lists the names of the electrical manufacturers represented, number of employees in each department and names of officers, the total investment in buildings equipment, shop tools and fixtures, stock of parts and the gross volume of business in 1920, 1921 and 1922, approximately. The information in the individual questionnaires will be held in confidence, the summary of them all being the only feature which will be laid before the manufacturers.

Say Stocks Can Be Reduced

With the aid of this date it is proposed to present to electrical equipment makers, and through them the car makers, the general capacity for service of the association and to recommend that the electrical requirements of all car dealers throughout the country can be met better through the Electrical Service Association than through the service departments of the car maker. By making use of the facilities of the association members, it will be shown that stocks of electrical parts can be greatly reduced or dispensed with in the automobile factory or the car dealers' room.

Where dealers are equipped to do electrical service work they can obtain their supplies as they need them from the association members, and where this equipment is not available, the association members will be prepared both to furnish parts and make necessary installations and repairs. The possibilities of this service will be especially urged as effective in smaller communities and in overcoming difficulties involved where car dealerships are subject to change.

Association Gains Strength

The Automotive Electric Service Association now includes over 250 members and is rapidly gaining in strength. Practically all of the larger service agents are now included and it is hoped to bring in most of the others before the annual meeting in Chicago, Jan. 29 to 31 inclusive. This will be held in the Florentine room of the Congress and is during the week of the Chicago automobile show. Joint sessions will be hold with the Automotive Electric Association.

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FORD CUTS PRICES; PHAETON NOW $298

Reduction Is $50 on Each Model Except Four-Door Sedan and Tractor

NEW YORK, Oct. 17—Ford Motor Co. announced to-day that it has reduced prices on all models, except the new four door sedan and the tractor. The cut is $50 on each model and brings the Ford to the lowest price level in its history.

The following table shows the old and new prices:

	Old Price	New Price	New Price with demountable rims and starter
2-pass. ...	$319	$269	$364
5-pass. ...	348	298	364
Coupe	580	530	530
Sedan ...	645	595	595
Truck	430	380	450

Of the Ford models, only the coupe and the sedan are equipped with demountable rims and self-starter without extra charge.

In 1916 the five-passenger Ford listed at $360 without starter and demountable rims. This stood until 1917, when it was advanced to $365. Another advance to $450 was made February, 1918, and in August, the same year, it went to $525. March, 1920, this model was listed at $575, the peak. From that time on it has been reduced at different times, going to $440 in January, 1921; to $415 in June, 1921; to $355, September, 1921; to $348, January, 1922, and to $298 in October, 1922.

These price reductions, so far as can be learned to-day, will have no effect on others in the low priced field. General Motors was interested, but felt that the Chevrolet is not included among Ford competitors, and no change can be expected in this quarter.

It had been expected that Durant might have something to say as to Star prices, but no statement is forthcoming from that quarter at present. Whether or not Durant will meet the Ford cut has not been settled.

HUPP NOW PRODUCING NEW PHAETON MODEL

DETROIT, Oct. 14—Hupp Motor Car Co. is now in production of a special phaeton model which will embody sport line features and sell at $1,250, f.o.b. Detroit. A roadster of similar type will be started in production in the near future. The car has nickeled radiator, rails, lights, etc., aluminum steps, disk wheels and a genuine Burbank top.

Elgin Continues Operation

CHICAGO, Oct. 13—An involuntary petition in bankruptcy against the Elgin Motor Car Corp. of Argo, Ill., a suburb of Chicago, was filed in Federal court here yesterday by three bank creditors. Fred E. Hummel was appointed receiver.

It is stated that the plant will be continued in operation and that efforts to effect a reorganization will be continued. The petitioners claim the company's liabilities are more than $1,000,000. Counsel for the company asserts that liabilities are only $600,000 and that assets are more than $900,000.

HAWAII ASKS DEALER HELP IN ROAD WORK

LOS ANGELES, Oct. 15—Automotive interests in Hawaii have appealed to the factories, dealers and clubs in the United States to exert their influences in behalf of Hawaii's claims to recognition in the dispensation of Government aid for road building. Hawaii's roads are a commercial asset to the island, not so much from the touring standpoint as in the transportation of produce.

The famous Pali road, which penetrates the pineapple fields and leads from the opposite side of the island to Honolulu, is the most celebrated thoroughfare in the island and thousands of tons are hauled over it annually by truck. There are other roads of equal importance, and the construction and maintenance of these highways is said to be proving too severe a drain on the small percentage of the population that contributes to extension and maintenance.

PRICE FLUCTUATIONS DISTURBING BANKERS

DETROIT, Oct. 17.—Fluctuations in automobile prices are being viewed with considerable disquiet in banking circles according to a factory executive of one of the largest companies in Detroit, and difficulty may be experienced in financing dealer shipments during the fall and winter unless some sort of guarantees are given that further revisions are not contemplated. This condition applies particularly in the East where this executive has been in touch with banking officials.

New prices and new models have practically wiped out used car valuations, he said and many dealers are liquidating used car stocks at prices which must be made up on new car profits. Too little consideration has been given the condition of dealers' stocks in bringing out new models and cutting prices. In no case where price cuts are made, he said, should they exceed the amount of dealer discount leaving always some margin of profit on sales.

Vulcanizer in Receivership

INDIANAPOLIS, Oct. 14—As a result of an action brought by local creditors, the Haywood Tire & Equipment Co. has been thrown into the hands of Victor L. Wright, receiver. The Hayward company has been a considerable factor in the manufacture and sale of vulcanizing outfits.

FORD WILL NOT BUY ADDITIONAL PLANTS

In Interview Also Says He Knows Nothing of Plans for Developing New Car

DETROIT, Oct. 16—Henry Ford denies emphatically, in an interview with AUTOMOTIVE INDUSTRIES, that he proposes to buy any additional plants.

"We've got enough to do now and are not going to buy any more cars or factories. That applies to the Wills car and the Wills plant. Why should we try to get any company out of the field? They all make business for us, and we make business for them."

When asked if he could tell anything about his plans for a new car, Ford said: "What new car? I hadn't heard of any. We can't build enough of the one we are making now. We're trying to get our production up to 5300 a day."

"It is reported, Mr. Ford, that you contemplate some additions to your tractor line."

"We shall make no more tractor models, but will stick to the one we have," he replied.

Answers Road Question

Ford declared his company would use no more aluminum in its products until it produced the metal itself. This may be done at Muscle Shoals, if his offer is accepted by the Government.

In a discussion of highway questions, Ford said:

"The best way to get good roads is to load trucks to their full capacity. When the roads won't stand up under these loads, the people will realize they must build heavier highways to carry the traffic. One of the best ways to kill foolish opposition to spending money for better roads is for a few of the old fogies who are standing out against it to die off. This applies not only to good roads, but to most forward looking projects."

Ford was asked what he expects will happen with the constant increase in the number of motor vehicles in use now that highways in some places seem to be carrying about all they'll hold.

"We'll have to build more roads," he said. "Of course, there will have to be two lines, one for traffic in each direction."

Shoals Fight Not Begun

Ford asserted that he had not yet begun to fight for Muscle Shoals, and he seemed confident that his offer for them will be accepted. If it is, he will use all the power developed and expects to employ one man for every horsepower. There are approximately 1,000,000 in sight. He has not worked out in detail what he will do to utilize the energy developed and says he will be unable to do so until he gets at it.

Ford is intensely interested in the development of water power projects in all parts of the country and will devote much of his attention to this subject in the future.

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UNDERWRITERS FIGHT PENNSYLVANIA PLAN

Object to Proposal That Car Owners Take Out Insurance with State

PHILADELPHIA, Oct. 17.—At a meeting held here of the Underwriters Association of the Middle Department attended by nearly 200 representative insurance men and executives, a movement was launched to combat proposed legislation which would make a compulsory State automobile insurance fund and force all motor vehicle owners to purchase their insurance from the State.

While the movement is as yet local it is thought that it may spread to other States as made evident by John T. Hutchinson, secretary of the Insurance Federation of America, coming here from Detroit to throw the weight of the national organization against the proposed legislation.

Hutchinson stated that it was a serious matter for the insurance companies and declared that if this piece of legislation went through it would be the forerunner of others which would be the taking over of fire, life and other insurance lines by the State and eventually the socialization of all business.

According to an editorial read at the meeting, the proposed legislation would permit motor vehicle owners to secure insurance at cost and make it mandatory for all owners to insure in the State fund.

KELLY TIRE 6 MONTHS' EARNINGS, $1,500,000

NEW YORK, Oct. 12—Net profits for the first six months of the year for the Kelly-Springfield Tire Co. are estimated to be in excess of $1,500,000.

The company is producing more than 6000 casings a day. Akron is running at capacity, while Cumberland is operating full with the available force, finding it hard to get skilled tire builders.

NEW YORK REPORTS 5103 REGISTRATIONS

NEW YORK, Oct. 12—The seasonal decline in the metropolitan district is apparent in the registration figures for September as compiled by Sherlock & Arnold, publisher of the Automobile Sales Analysis, for the ten counties in and around New York City. Total registrations for the month were 5103 as compared with 6438 in August and 8494 in July. For the first nine months of the year, registrations aggregated 59,613 as against 39,366 for the same period a year ago.

Four makes lead in the low and medium priced class field, with five falling not far behind and showing sales substantially greater than the remainder of this class. Ten cars in the high priced class are well ahead in the field.

A summary of registrations for the first nine months in the high, medium and low priced classes is as follows:

	High Price	Medium and Low Price
January	283	2016
February	273	2231
March	632	6354
April	862	8428
May	961	8470
June	866	8203
July	678	7816
August	516	5922
September	511	4592

A. E. A. Sticker



A new sales promotion plan being used by the merchandising department of the Automotive Equipment Association is the distribution of attractive and well-worded stickers to manufacturing and jobber members to be pasted on correspondence with dealers. About 400,000 of the first sticker have been distributed

EQUIPMENT MAKERS DRAFT CONSTITUTION

CHICAGO, Oct. 14—A draft of a new constitution and by-laws for the Association of Automotive Equipment Manufacturers has been approved by the Board of Directors and will be submitted to the membership at the annual meeting about Nov. 20. The constitution will provide for complete control of the association by the membership. Provision will be made for divisional meetings in the larger cities, including Boston, New York, Cleveland and St. Louis.

Gordon Lee, chief of the automotive division of the Department of Commerce, has accepted an invitation to address the association Nov. 3 in Chicago.

Correction

In the Sept. 27 issue of Motor World the prices of the Oakland sedan and coupe were unfortunately interchanged. The correct prices are coupe, $1,445; sedan, $1,545. The illustration No. 5 on page 13 of the same issue should have read "Oakland 5 passenger coupe."

RITCHIE WILL HEAD CHICAGO MOTOR BUS

Green to Be Associated with Him—Yellow Cab Subsidiary to Make Vehicles

CHICAGO, Oct. 14—Announcement that motor buses are to be built on an extensive scale by a subsidiary of the Yellow Cab Manufacturing Co., maker of Yellow taxicabs, was made by John Hertz, president of the cab company and also head of a syndicate which recently purchased the Chicago Motor Bus Co. Bus production will start, as soon as manufacturing preparations are completed, on an order of 300 cars for the Chicago bus company. The buses, however, will be sold throughout the United States under a plan similar to that for the widespread sale of Yellow cabs.

Two former officials of the Fifth Avenue Coach Co., of New York, will be in active charge of the Chicago Motorbus Co., under the new ownership, and also will be actively connected with the designing and production of the buses. They are J. A. Ritchie, president, and Col. George A. Green, chief engineer, of the Fifth Avenue company. Ritchie will be president and Green, vice-president of both the Chicago bus company and the manufacturing subsidiary.

A line of single and double deck buses will be built. They probably will be modeled after the Fifth Avenue vehicles. With the completion of manufacturing facilities here it is expected that large scale production will be started.

ANOTHER EQUIPMENT SHOW FOR CHICAGO

CHICAGO, Oct. 16—"There is absolutely no connection between the Association of Automotive Equipment Manufacturers and a privately managed show of automotive equipment, scheduled to be held in the Chicago Armory, the week of Nov. 13," declared George Fritz, manager of the Association of Automotive Equipment Manufacturers, to-day.

The privately managed show is being promoted by Charles P. Hughes, former secretary of committees of the Automotive Equipment Association. Its dates coincide with those of the Automotive Equipment Association's show, exclusively for its members, to be held at the Chicago Coliseum.

Fritz declared that the association of which he is manager has no desire to interfere in any way with the success of the A. E. A. show and will not in any way encourage or participate in the privately managed show.

A. E. A. Exhibitors Number 212

CHICAGO, Oct. 12—Spaces to the number of 265 have been allotted to 212 exhibitors for the annual show of the Automotive Equipment Association, which will be held here Nov. 13 to 18.

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WEST EXPERIENCES VARIED CONDITIONS

Prospects in Eastern Nebraska Bright—Texas Outlook Excellent

ST. LOUIS, Oct. 12.—"I have just returned from a four weeks' trip through sections of the West and Southwest, and I never felt quite so enthusiastic as I do right now," said N. E. McDarby, advertising manager of the Moon Motor Car Co., discussing the business outlook.

In Kansas City McDarby found conditions fairly good in the automotive industry — "exceptionally good for some lines," he said. He found crop conditions splendid throughout Kansas and predicts that dealers in small towns should enjoy wonderful business this fall.

Conditions were somewhat different in Omaha. Only one or two lines were enjoying good business. That was before the settlement of the coal and railway strikes and he has been informed since that considerable improvement has become apparent.

In Lincoln, Neb., conditions were exceptionally good. "Eastern Nebraska," he said, "from all appearances is in for wonderful business this fall. Crops are fine. The farmers are going to make some money and they are going to buy automobiles. They certainly need them —they haven't gotten a new automobile for practically two or three years, and if they don't secure new transportation equipment soon, they will have to go back to walking."

Conditions in western Nebraska, around Hastings, were not so good. Crops are not good and have not been good for two or three years, and there is not going to be much surplus money.

Business was going along nicely in Denver for dealers handling a good product and properly financed.

The outlook in Texas was excellent. The majority of dealers were said to be clamoring for cars, many being far behind with deliveries. Closed cars were not as much in demand there as in northern States. Business was good in New Orleans. Memphis, hard hit by the depression of 1920, started to come back a few weeks ago, but then the price of cotton declined and prospects are not now so bright.

Pan Motor Receivers

ST. CLOUD, MINN., Oct. 16—Edward E. Clark and R. E. Gale have been appointed receivers for the Pan Motor Co., following the filing of a suit for $30,000 against the concern. Assets, apart from deferred capital stock and good will, are given as $2,633,385, with liabilities of $506,061.

Harroun Bankrupt

DETROIT, Oct. 16—The Harroun Motor Car Co. of Wayne, Mich., has been adjudged bankrupt by Judge Little in the Federal Court. Although the creditors petitioned to have the concern declared bankrupt some years ago, court proceedings have been delayed until now because the directors believed that they could put the concern on its feet if granted time.

SHOP KEEPERS OBJECT TO PARALLEL PARKING

BERKELEY, CAL., Oct. 14—Ten days' trial of parallel parking in the business district of the city of 65,000 inhabitants brought so many protests from virtually all the merchants along the main business streets that it has been abandoned and diagonal parking substituted. The merchants stated that parallel parking virtually closed the streets to women coming in their cars to do shopping from 9 a. m. to 5 p. m. every day, and that their businesses would be ruined if the rule was maintained.

EDITORS OF BUSINESS PAPERS HOLD MEETING

NEW YORK, Oct. 16—The National Conference of Business Paper Editors has held its annual meeting in this city in a joint session with the Associated Business Papers. Both organizations are national in scope and include in their membership all of the prominent business papers, among them Motor World.

The convention attracted international attention, England sending over five of her publishers and editors who were guests of the A. B. P. The visitors included F. E. Hamer of Benn Bros. Ltd., London; R. Child Bayley of Iliffe & Sons, Ltd., London; Roland E. Dangerfield of Temple Press, London; Alfred Dawson of Percival Marshall & Co., London and James Selkirk Allan of *Engineering*, of London.

At the banquet of the A. B. P., international friendship was cemented when congratulatory letters were read from A. J. Balfour, Lord Riddle and half a dozen other British publishers.

Neal G. Adair, editor of Motor World was elected a member of the executive board of the National Conference.

KELLY TRUCK OUTPUT WILL BE INCREASED

SPRINGFIELD, OHIO, Oct. 17—Production is to be increased at the plant of the Kelly-Springfield Motor Truck Co. The average lately has been 50 motor trucks a month.

T. J. Saunders, branch manager of Kelly-Springfield at Kansas City, has been conferring with factory representatives. Prospects are good in his section, Saunders stated.

During the past few days the average driveaways have been about 35 trucks a day, it is stated by representatives of the International Harvester Co.

ALL DURANT PRODUCTS ON DISPLAY TOGETHER

A. H. Sarver, Formerly of Scripps, Named Michigan Distributor for Star

DETROIT, Oct. 14—The first showing of Star cars in Detroit was made this week by the Star Motor Co. of Michigan, together with Durant fours, and sixes, Locomobile and the Mason light truck, the event marking the first complete showing of Durant products anywhere. Notices issued by Durant officials calls attention to the record Durant has made in the assemblage of such a complete line in 18 months.

In connection with the showing of Stars, announcement was made of the selection of A. H. Sarver, former president of the Scripps-Booth Corp. of Michigan, as general manager of the Star Motor Co. of Michigan, which takes over the distribution of this car in this State. Sarver also is a director of the Durant Motor Co., Inc.

The Star headquarters in Detroit are on Grand Boulevard, two blocks west of General Motors building and facing the Henry Ford hospital. There is a commodious sales room facing on two streets, and two floors of offices. Distribution territory will be opened in the State as rapidly as production can be obtained.

Under the Durant plan of merchandising, the Star will be handled in conjunction with the other Durant products and in most cases, dealers will represent the entire line.

BARNUM BECOMES NEW PRESIDENT OF MERCER

TRENTON, N. J., Oct. 14—A change in the personnel of the Mercer Motors Co. was made at a directors' meeting by which R. W. Barnum has been made president, succeeding George P. Smith, who becomes chairman of the board. W. A. Smith, elected acting vice-president at a previous meeting, becomes the permanent vice-president and will continue as general sales manager. D. F. Fogg, formerly assistant secretary, has been elected secretary-treasurer. R. W. Barnum and W. A. Smith also have been elected directors.

Under the new order Barnum will look after production and finance, and W. A. Smith will handle sales. Barnum, for several years has been at the head of the Mercer's body plant at New Haven, while Smith has been in the Mercer service for the past 12 years.

Starts Salesmanship Course

SYRACUSE, Oct. 16—The Overland-Knight Motors of this city has established an automobile salesmanship course at its place of business, in charge of C. S. Culp.

The registration at the opening exceeded the limit set by the company. The course is free.

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CHANGES IN THE TRADE

Stewart Motor Co., Ogden, Utah, has secured the agency for the Star.

Motor Sales Corp., Birmingham, Ala., has acquired the Hupmobile franchise.

Hoffman Brothers, Hartford, Conn., have taken on the Gray for that section of the state.

Krisor Bros. Garage, Kenosha, Wis., has been appointed local dealer in the Durant and Star.

A. P. Sullivan & Co. will be the distributor for the Peerless car in the Houston, Texas, territory.

Hipp Chevrolet Co. has been organized at Charlotte, N. C., to handle Chevrolet cars and trucks in that territory.

L. A. Bell, Jr., has joined the sales force of the **Courier Motors Co.** of Sandusky and will travel in the south for Courier.

R. A. Brower has been appointed sales manager for the Covey-Ballard Motor Co., Salt Lake City, distributor of the Ford and Lincoln cars.

Union Motor Company has been organized at Monroe, N. C., by **Philo Alcott** and **R. B. Redwine, Jr.**, to handle Studebaker and Dodge Brothers cars.

A. M. Harger has been appointed sales manager of the **Frint Motor Car Co.**, Milwaukee, distributor of the Oldsmobile in Wisconsin and Upper Michigan.

Fletcher Motor Sales Co. has been organized at East St. Louis, Ill., by **Harry Fletcher** to distribute the Star and Durant cars in the Madison County territory.

Galbraith Motor Co., Rock Island, Ill., has been appointed agents for the Oldsmobile in Rock Island, Mercer and Henry counties, Illinois, and Scott County, Iowa.

Moon Motor Sales Co., Madison, Wis., has been organized by **A. G. Brandel, C. H. Pierce** and **W. H. Ryde** to deal in the Moon. **A. L. Kvanig** has been appointed sales manager.

Richard Horn has resigned as district sales representative at Portland for the Cleveland **Tractor Co.** to represent **Bear Tractors, Inc.**, as district sales manager on the Pacific Coast.

Charles Bohrman, sales manager of the **Badger State Motors Corp.**, Milwaukee, has resigned to become associated with the **Wm. F. Sims Motor Co.**, Milwaukee, distributor of the Lincoln.

C. E. Booze, Jr., Port Arthur, Texas, has been appointed Jordan dealer and distributor in Orange and Jefferson counties. Headquarters are maintained at Port Arthur with branch houses at Beaumont and Orange.

Alfred B. Brady and **W. C.** and **L. O'Dell**, all of Salisbury, N. C., have organized and incorporated the O'Dell Auto Equipment Co., to carry on a business at Salisbury as accessory and equipment dealers.

P. H. Palmer Co. has been organized and incorporated at Jacksonville, Fla., and will establish a business as automobile accessory dealers. **P. H. Palmer** of Jacksonville is president and **F. C. Dey** secretary.

Howard Thielen, for years auditor of the Apperson branch in Philadelphia, has been promoted to the position of manager of the Apperson factory branch for the State of Vermont, with headquarters at Burlington.

Texas Chevrolet Co., Dallas, has appointed two new dealers. They are **Rose Motor Co.**, distributor of the Chandler, and **Superior Chevrolet Co.**, headed by **Ray Sheldon** and **W. M. Perry**, both experienced automobile men.

W. T. Jennings, recently of the **Jennings-Sullivan Tire & Rubber Co.**, East St. Louis, has been appointed distributor for Illinois and Missouri by the **National Body Corp.** of Cincinnati. He will shortly open a sales agency in East St. Louis.

James R. Findlater, vice-president and Pacific Coast manager of Earl Motors, has been compelled to take an indefinite leave of absence to secure a much-needed rest and regain his health, and has severed all connections with business activities.

Howard D. Graves, formerly of **Taber Rodgers, Inc.**, Hartford, Conn., has joined the firm of **Russell P. Taber, Inc.**, Reo and Peerless distributor, and will devote his time to Peerless. Graves has also acquired an interest in the Taber organization.

Miller Motor Co. has been formed in Dallas to distribute the Peerless. **Byron Miller** is president and **C. C. Tippins** is vice-president and general manager. Salesmen will be employed immediately and arrangements made for agents in various towns of the territory.

B. W. Burkle, formerly of the **Welty Buick Co.**, and **H. J. Hoffman** have purchased the **Wheeling Nash Co.**, Wheeling, W. Va. **W. E. Earle**, formerly in charge of the branch, resumes his duties as district manager for the **Nash Motors Co.**, with headquarters in Wheeling.

Otis R. Cook, vice-president and general sales director of the **Howe Rubber Corp.** announces that **Harry Hayden's** connection with the company as advertising manager has been severed. All advertising matters in future will be cared for by **F. M. Griffin**, Cleveland.

Onondaga Auto Supply Co. of Syracuse has established a branch store at Watertown to care for its northern New York trade. **Fred Heald** has been appointed manager of the branch, which will be formally opened Oct. 14. The firm deals exclusively in wholesale accessories.

Blanchard-Wing Co. has been organized and incorporated in Atlanta as wholesalers in the southeastern territory of automobile accessories. **F. R. Wing** and **A. A. Hall**, both of whom have been in the accessory business in Atlanta several years, are the incorporators.

San Juan Auto Storage Co. has been organized and incorporated at San Juan, Fla., and in addition to operating a large garage will handle power farming machinery and automobile parts. Incorporators are **L. B. Fort**, who is named president, **W. D. Rogers** and **George Fields.**

Signal Truck Corp. has opened a direct factory branch in Indianapolis under the management of **J. T. Crossland**, who has served as district manager for a long time. Complete sales and service equipment has been installed to care for the increased business in that territory.

George W. Noble, a veteran in the distributor and dealer trade of Wisconsin, has become associated with the **Downer Garage & Sales Co.**, Milwaukee, as manager of sales of the H. C. S. division, the Downer company being distributor of the H. C. S. in Wisconsin and Upper Michigan.

Strickland & Rodgers, Inc., have been appointed Brooklyn distributors of Franklin cars. The new concern will operate directly under factory supervision instead of under a New York corporation. Rodgers was branch manager of the Brooklyn Franklin agency when it was under control of Glen Tisdale.

Modern Tire Co., Houston, Texas, has added a line of batteries to its business. The company is discontinuing its battery road service and will extend its efforts to maintaining the road service for tires in this section of the state. The battery and battery charging department is in charge of **M. J. Pottinger.**

Harry L. Olive Co. of Spokane, Wash., is being formed by **Harry L. Olive** to take over the Willys-Knight and Overland. A large staff of department heads, salesmen and mechanics has been engaged. Olive introduced the Willys-Knight and Overland lines in that region eleven years ago and sold out to the factory in 1916.

Charles B. Dunbar of Milwaukee has been appointed manager of tire sales of the Milwaukee branch of the **Brunswick-Balke-Collender Co.** He formerly was branch manager of the **Ajax Tire & Rubber Co.** and more recently general manager of the United Consumers Corp., dealing in automotive equipment, supplies, etc.

William W. Lewis, after serving for five years as assistant general sales manager of an automobile manufacturing company, has been appointed central district manager for Cadillac Motor Car Co. Previous to his work as assistant general sales manager Lewis was identified for six years in field work, most of the time as district manager.

G. G. Gardner has been awarded the Star and Durant distribution for Oshkosh and Winnebago counties in Wisconsin. Headquarter salesroom has been opened in Oshkosh under the name **Standard Motor Sales Co.** Branch salesrooms will be established in Neenah and Appleton. Gardner was formerly a salesman for the Beckly-Ralston Co., Chicago, and is well known to the trade.

Warren-Given, Inc., Minneapolis and St. Paul, among the oldest electric car distributors in the Northwest, has been granted an associate franchise for the Buick in those two cities. They will continue to distribute Rauch & Lang electrics and Milburn electrics in addition to the Buick. **H. N. Gilman** operates as branch manager for the company in Minneapolis, while **H. E. Warren** and **H. F. Given** are actively in charge of the St. Paul organization.

Peerless Motor Car Co., in addition to opening two direct factory branches, one in Washington, D. C., and the other in Detroit, has appointed the following distributors: **Lifsey Smith Hill Co.**, Atlanta; **Miller Motor Car Co.**, Dallas; **Colorado Motor Sales Co.**, Denver; **A. P. Sullivan & Co.**, Houston; **Robbinson Motor Co.**, Jacksonville, Fla.; **Harold Johnson**, Louisville; **Greenville Peerless Co.**, Greenville, S. C. and **Ledoux Jannings, Ltd.**, of Montreal.

Rickenbacker-Philadelphia Co., distributer of Rickenbacker cars in Philadelphia, has purchased the Winton factory branch in that city and become distributor for the Winton in addition to the Rickenbacker. This is the first time the Winton has been represented in this territory by a distributor, the factory having maintained a branch here, only. The officers of the Philadelphia-Rickenbacker Co., are: **C. H. Steer**, president; **Bob R. Ramey**, vice-president, and **William F. Steer**, secretary and treasurer. Ramey will continue as manager of sales for the Rickenbacker line and **George R. Eastburn**, formerly manager of the Winton branch, will be in charge of the Winton department of the business.

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ASSOCIATION ACTIVITIES

Goldman Elected in Houston

Houston, Tex., Oct. 17.—H. H. Goldman of the Mosehart-Keller Auto Co., was elected president of the Houston Automotive Trades Association at the annual meeting. The organization is composed of the various local associations. Vice-presidents were named from the different associations as follows: Frank Bradley, dealers, first vice-president; William H. Still, electrical, second vice-president; T. C. Morrow, repairmen, third vice-president, and J. H. Glass, tires and accessories, fourth vice-president. J. H. Shelor was elected treasurer. The board of directors follows: R. E. Houser, E. P. Maynard, Thomas A. P. Pendarvis, W. N. Kuntz and C. W. Manford. F. W. Mozart was chosen secretary-manager.

In his inaugural address President Goldman said co-operation would be the keynote of the association's activities for the next year, and that that meant co-operation with each other and with automobile owners.

One of the features of the work for the coming year will be that of the publicity department. This department, the new president said, will endeavor to tell the car owners how to care for their cars and tires.

Service Managers Meeting

NEW YORK, Oct. 16—The National Automobile Chamber of Commerce has practically completed arrangements for the semi-annual convention of factory service managers. Tentative dates of Nov. 14 and 15 have been set and the place selected is Chicago. The first day of the convention will be given over to discussions and papers concerning factory service problems. The second day will be devoted entirely to the subject of service associations, a phase of service in which the N. A. C. C. has taken much interest. An invitation has been extended to all service and trade associations to send delegates. The detailed program will be completed in a week or two.

Salesmanagers' Body Begins Work

PHILADELPHIA, Oct. 14.—Representatives of the N. A. D. A. have conferred with Charles C. Bulkley, secretary of the Salesmanagers' Division of the Philadelphia Automobile Trade Association on the aim and objects of the new organization. It was explained to the visitors that one of the first functions that the division contemplates is strict co-operation with the local association's used car plans, which have been so improved that, if adhered to, it is believed will solve this problem of the trade in the Quaker City.

At a meeting of the division, which included the representatives of about half the dealers in the city, it was decided to compile complete records of all employees of dealers represented in the division and to keep these records on file at the office of the trade association for any dealer desiring information regarding an applicant for employment. A questionnaire will be sent out immediately to the dealers, asking for this information, showing what position the employee holds, how long he has been with them and any other data concerning him. This information also will be filed in the bureau.

A representative of the salesmanagers last week addressed the Wilmington Automobile Dealers Trade Association, explaining the used car plan and the objects of the Salesmanagers' Division. Plans are under way for a representative of the Philadelphia Automobile Trade Association to visit the automobile trade associations throughout the State to enlist their interest and support in the used car plan so that it may be made 100 per cent operative throughout the Philadelphia territory.

Service Men See Films

NEW YORK, Oct. 14—The October meeting of the Automotive Service Association of New York was held in the large auditorium of the Automobile Club of American and over one hundred attended, this being one of the largest meetings in the history of the organization.

The Paige-Detroit dealer film and the "Shop Profits" film of the Automotive Equipment Association were shown. The latter film has the Black & Decker addition, which added considerably to the value of the showing. J. Howard Pile, Technical Editor of Motor World, gave a short talk on the subject of shop profits to introduce the film. After the pictures were shown short addresses were made by Alfred Reeves, general manager of the National Automobile Chamber of Commerce; G. W. Brogan of the Black & Decker Manufacturing Co., Ralph C. Rognon and J. Willard Lord.

Springfield Hears Shaw

Springfield, Ill., Oct. 16.—Springfield Automobile Dealers' Association at the October meeting heard L. M. Shaw, St. Louis, assistant general manager of the National Automobile Dealers' Association, discuss trade conditions. Sales methods, relationship between buyer and seller and the general association program were topics. It was a largely attended meeting.

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1 and 1½ Ton.....Mar. 8, 1922-31
Overland ¼ Ton.....Apr. 19, 1922-41
Standard Model 75.....July 5, 1922-43
Stewart Utility Wagon.....July 12, 1922-30
Transport
1, ½, 2, 3, 3½ and 5 Ton....May 17, 1922-22
United States 1¼ Ton.....Mar. 8, 1922-38
Vim Speed Truck.....Aug. 30, 1922-24

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Calendar of Trade Events

CONVENTIONS

Chicago .....Oct. 18-19-20
National Association of Farm Equipment Manufacturers.

Washington .....Oct. 26-28
Second Annual Conference for the Study of Highway Transportation and Highway Engineering Problems under the auspices of the Highway Education Board.

Chicago .....Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

Chicago .....Nov. 14-15
Semi-Annual Convention, Factory Service Managers, under Auspices of the National Automobile Chamber of Commerce.

Harrisburg.....Nov. 20-21
Annual Convention of the Pennsylvania Automotive Association, George G. McFarland, president; L. H. Haberling, secretary and general manager.

Toledo.....Dec. 6-8
Annual Convention of the Ohio Automotive Trades Association.

Chicago .....Jan. 29-31
Annual Meeting, Automotive Electric Service Association, Congress Hotel.

SHOWS

Pittsburgh .....Oct. 14-21
Twenty-fifth Annual Automobile Show, Motor Square Garden, under the auspices of the Automotive Association, Inc., John J. Bell, manager.

Akron.....Oct. 16-21
First Closed Car Show, Armory, under the auspices of the Akron Motor Vehicle Association.

Detroit .....Oct. 17-21
Closed Car Salon, General Motors Building, Detroit Automobile Dealers Association, H. H. Shuart, Manager.

Washington, D. C.....Oct. 21-28
Annual Closed Car Salon held under auspices of the Washington Automobile Trade Association, Convention Hall.

Houston.....Nov. 8-18
South Texas Fair.

Jersey City.....Nov. 11-18
Third Annual Show, Fourth Regiment armory, under the auspices of the Hudson County Automobile Trade Association.

Chicago .....Nov. 13-18
Annual Show of Automotive Equipment Association.

Los Angeles.....Nov. 11-19
Automobile Show, Motor Car Dealers Association, Burt Roberts, manager.

Cincinnati .....Nov. 22-29
Second Annual Automobile Accessory and Radio Exposition, Music Hall, under the auspices of the Cincinnati Automotive Trade Association.

New York.....Dec. 3-9
Eighteenth Annual Automobile Salon, Commodore Hotel.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, auspices of the Automobile Body Builders Association.

Cleveland.....Jan. 20-27
Annual Automobile Show, New Public Auditorium, under the Auspices of the Cleveland Automobile Manufacturers and Dealers Association, Herbert Buckman, Manager.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Chicago .....Jan. 27-Feb. 3
Annual Automobile Salon, Drake Hotel.

Ann Arbor, Mich.....Jan. 29-Feb. 3

Minneapolis .....Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Lansing, Mich.....Feb. 5-10

Kalamazoo and Flint, Mich.....Feb. 12-17

Grand Rapids and Mt. Clemens, Mich. Feb. 19-24

Brooklyn, N. Y.....Feb. 24-Mar. 3
Annual Automobile Show under auspices of the Brooklyn Motor Vehicle Dealers Association, 23rd Regiment Armory.

Muskegon, Mich.....Feb. 26-March 3

Syracuse.....Feb. 26-Mar. 3
Annual Automobile Show under auspices of the Syracuse Automobile Dealers Association.

Springfield, Mass.....Feb. 26-March 3
Annual Automobile Show under the auspices of the Springfield Automotive Dealers Association.

Bay City, Mich.....March 5-10

Newark, N. J.....Mar. 10-17
Annual Automobile Show under the auspices of the New Jersey Automobile Exhibition Co., Claude E. Holgate, manager.

Port Huron, Mich.....March 12-17

Battle Creek, Mich.....March 19-24

Alpena, Mich.....April 2-7

CLOSED CAR WEEK

Chicago.....Oct. 14-22

Battle Creek, Mich.....Oct. 23-28

RACES

Los Angeles.....Nov. 30

San Diego.....January

LAST QUARTER BEST IN NASH PRODUCTION

KENOSHA, WIS., Oct. 14—Last quarter's production of Nash automobiles was the largest of any quarter in the history of the Nash Motors Co., it was announced here by C. B. Voorhis, vice-president and director of sales. Indications are that the production this month will be the largest of any October in the company's history, Voorhis said. The output is running between 192 and 200 sixes and fours daily.

Sales are continuing good, Voorhis said, with the farm districts buying in greater quantity than he had expected. The demand for closed models is increasing rapidly, and the company is doubling the capacity of its body plant in Milwaukee, where closed bodies are made.

New Stutz Financing

NEW YORK, Oct. 16—New financing of the Stutz Motor Car Co. of America, Inc., is proposed to furnish money for a campaign of development and improvement in the company's business. In order to secure the new capital, a meeting of stockholders has been called for Nov. 1 to authorize an issue of $1,500,000 face value of the 15 year 7½ per cent convertible sinking fund gold debenture bonds of the company, of which it is intended to issue $1,000,000 face value at present.

BUSINESS IN TRUCKS SHOWS GAIN IN OHIO

COLUMBUS, Oct. 16—There is a decided improvement in the demand for commercial vehicles and motor trucks in Columbus and central Ohio territory. Dealers in all sizes of trucks report a good increase in the number of inquiries and sales, and apparently the slump is now a thing of the past. This applies more particularly to the light delivery wagon, which is selling extremely well.

The heavier trucks, those ranging from 3 to 5 tons, are also in better demand, despite the fact that retail coal business is unsettled. Dealers are not selling coal to speak of, although it is the time of the year for such business, and even if their motor equipment needs replacing, they are not inclined to come into the market until the public shows a disposition to place orders for coal deliveries.

ROUGE PLANT MAKES MOST FORD BODIES

DETROIT, Oct. 18—The Ford Motor Co. now is building all of its bodies for models on which it has the heaviest production and sale at the River Rouge plant. With the termination of contracts with the O. J. Beaudette Co., Pontiac, Mich., which formerly built roadster bodies, the Rouge plant now is building 800 of these daily. The Beaudette plant recently has been taken over by the Fisher Body Co.

Phaeton bodies and the all-steel two-door sedan bodies of the conventional Ford sedan also are being built at the River Rouge, exclusively. The phaeton body production has run as high as 3015 daily and averages about 2550. Sedan body production at the Rouge plant approximates 900 daily.

Bodies for the Ford coupe and for the new Ford four-door sedan are being made by the Briggs Manufacturing Co., these being the only bodies not built by the company itself. Production of these is lower than on the other models and rounds out the daily schedule of approximately 5000 cars daily which the Ford Motor Co. has been maintaining.

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾-1	$1650a	3¾x5	34x5n	34x5n	W
Acason...RB	1½	1950	3¾x5¼	36x3½	36x6	W
Acason...H	2½	2750	4⅛x5¾	36x4k	36x8k	W
Acason...L	3½	3450	4⅝x5¾	36x5k	36x10k	W
Acason...M	5	4350	5 x6¼	36x6	40x12	W
Ace	1½-1½	2400	3¾x5	34x3½	34x6	W
Ace	2	2850	4¼x5¼	36x4	36x7	W
Ace	2½-3	3400	4¼x5¼	36x4	36x8	
Acme	1	....	3¼x5	35x5n	35x5n	W
Acme	1½	....	3¾x5	34x3½	34x5	W
Acme	2	....	3¾x5	34x3½	34x5	W
Acme	3	....	4¼x5¼	36x4	36x7	W
Acme	3	....	4¼x5¼	36x4	36x7k	W
Acme	4½	....	4¼x5½	36x5	40x10	W
Acme	6¼	....	4⅝x6	36x6	40x12	W
American	2½	3350	4 x6	36x4k	36x4dk	W
American	4	4275	4½x6	36x5k	36x5dk	W
American	5	4500	4½x6	36x5	36x12	W
Armleder	1	....	3¾x5¼	34x3½k	34x6k	W
Armleder	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder...40-B	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder...40-C	1½	....	4½x5¼	34x3½k	34x6k	W
Armleder...HW-B	2½	....	4¼x5½	36x4k	36x7k	W
Armleder...HW-C	2½	....	4½x5¼	36x4k	36x7k	W
Armleder...KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder...KW-C	3½	....	4½x5¼	36x5k	36x5dk	W
*Atlas...22	1	1495	3¾x5½	34x4½n	34x4½n	W
*Atlas...44	1½-2	1950	3¾ 5½	36x6n	36x6n	W
Atterbury...20R	1½	2475	3¾x5	34x3½	34x5	W
Atterbury...22C	2½	3375	4¼x5¼	36x4	36x4d	W
Atterbury...22C	2½	3375	4¼x5¼	36x4	36x4d	W
Atterbury...22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury...22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury...8E	5	4975	4¾x6	36x5	40x6d	W
Atterbury...8E	5	5125	4¾x6	36x5	40x6	W
Autocar...21UF	1½-2	1950	4¾x4½t	34x4k	34x6	D
Autocar...21UG	1½-2	2050	4¾x4½t	34x4k	34x6	D
Autocar...27H	2-3	2950	4 x5½	34x5	36x7	D
Autocar...27K	2-3	3075	4 x5½	34x5	36x7k	D
Autocar...26Y	4-6	3950	4¼x5½	34x6	36x12	D
Autocar...26-B	4-6	4100	4¼x5½	34x6	36x12	D
Available...H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available...H2	2	2775	4 x5	36x3½k	36x6k	W
Available...H2½	2½	3160	4 x5	36x4k	36x8k	W
Available...H3½	3½	4175	4½x5½	36x5	40x5d	W
Available...H5	5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x4s	34x5n	34x5n	I
Beck...A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	I
Beck...B-30	1½	1350	3¾x5	34x5	36x6	
Beck...C-40	2	1850	3¾x5	36x6	36x6	
Beck...D-50	2½	1950	4¼x5¼	38x7	40x8	
Bell...M (Iowa)	1	1495	3¾x5½	35x5	35x5n	W
Bell...E (Iowa)	1½	2100	3¾x5¼	34x3½	34x5	I
Bell...O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Bessemer...G	1	....	3½x5	35x5n	35x5n	I
Bessemer...H-2	1½	....	3¾x5	36x3½	36x5	I
Bessemer...J-2	2½	....	4¼x5¼	36x4	36x4d	I
Bessemer...K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem...KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem...GN	2	1795	4 x5¼	34x4	34x6k	I
Bethlehem...GN	3	2495	4 x5¼	36x4k	36x8k	I
Bridgeport...A	1½	....	3⅜x5½	34x3½	34x6	W
Bridgeport...B	2½	....	4½x5½	36x4	36x4d	W
Bridgeport...C	3½	....	4¼x6	36x5	36x10	W
Brinton...C	2	2500	3¾x5	34x4	34x5	W
Brinton...D	3	2975	4½x5¼	36x4	36x7	W
Brockway...E	1	....	4 x5	33x5n	33x5n	B
Brockway...S-S	1½	....	4 x5	36x4	36x6	W
Brockway...S K	1½	....	4½x5¼	36x4	36x6	W
Brockway...KR	2½	....	4½x5½	36x4	36x8	W
Brockway...K-S	2½	....	4½x5¼	36x4	36x8	W
Brockway...RT	3½	....	4¾x6	36x5	36x10	W
Brockway...R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway...T-4	5	....	4¾x6	36x6	40x6d	W
*Buick	½	945b	3⅜x4¾	31x4n	31x4n	B
Case	2	....	4¼x5¾	36x6	38x7	I
*Chevrolet	¼	510b	3⅛x4	30x3½n	30x3½n	B
*Chevrolet...G	¾	650	3⅛x4	34x4n	34x4½n	B
*Chevrolet...T	1	1095	3⅛x5¼	33x4n	35x5n	W
Chicago...C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago...C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago...C3½	3½	....	4½x5½	36x5	36x10	W
Chicago...D5	5	....	4½x5½	36x6	40x12	W
Clydesdale...10	¼-1½	1485	3¾x5	34x5n	34x5n	B
Clydesdale...10A	¼-1½	1535	3¾x5	34x5n	34x5n	B
Clydesdale...18	¼-1½	1890	3¾x5	34x5	34x5	W
Clydesdale...20	1-1½	2385	3¾x5	34x5	34x5k	W
Clydesdale...42	1½-2	2475	3¾x5	36x3½	36x6	W
Clydesdale...65X	2½-3	3250	4½x5¼	36x4	36x8	W
Clydesdale...65EX	2½-3	3450	4½x5½	36x4	36x8	W
Clydesdale...90	3½-4½	4100	4½x5½	36x5	36x10	W
Clydesdale...120	5-6	4500	4¾x6	36x6	40x12	W
Comet	1½	1950	3¾x5	34x4	34x4	W
Commerce...9	¾-1½	1150	3¾x5	32x4½n	32x4½n	B
Commerce...9	¾-1½	1150	3¾x5	32x4½n	32x4½n	B
Commerce...T	¾-1½	1450	3¾x5	34x4½n	34x4½n	B
Commerce...10	¾-1½	2500	3¾x5	33x5n	33x5n	B
Commerce...12	¾-1½	1695	3¾x5	34x4½	34x4	I
Commerce...12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce...16	2	1995	3¾x5	34x4	34x6	I
Commerce...16	2	2150	3¾x5	35x5n	36x6n	I
Commerce...18	2½	2150	4½x5½	36x4	36x7	I
Commerce...18	2½	2495	4½x5¾	36x6n	40x8n	I
Commerce...25	2½	2425	4½x5¾	36x4	36x7	W
Commerce...25	2½	2770	4½x5¼	36x6	40x8n	W
Cook...51	2½	3600	4 x5½	36x6n	40x8n	W
*Corbitt	¾-1	1250	3½x5	33x5	33x5	
Corbitt...E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt...D-22	1½	2200	3¾x5	34x3½	34x5	W
Corbitt...C-22	2	2600	4½x5¼	36x3½	36x7	W
Corbitt...B-22	2½	3000	4½x5¼	36x4	36x7	W
Corbitt...R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt...A-22	3½-4	3800	4½x5½	36x5	36x10	W
Corbitt...AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder...AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder...B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder...D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder...C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder...F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder...E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn...E	1	1600	3⅜x5½	35x5n	35x5n	W
Dearborn...FX	1½	2300	3¾x5½	34x4	34x5	W
Dearborn...F	1½	2180	3¾x5½	34x4	34x5	W
Dearborn...48	2	2590	3¾x5½	34x4½n	34x7	W
Defiance...G	1	1525	3¾x5	35x5n	35x5n	B
Defiance...D	1½	1845	3¾x5	36x5n	36x6n	I
Defiance...E	2	2075	3¾x5	35x5n	38x7n	I
Denby...31	1¼	1485	3⅜x5	35x5n	35x5n	B
Denby...33	1½	2145	3¾x5	35x5n	38x7n	I
Denby...35	2½-3	2795	4½x5¼	36x4	36x7	I
Denby...27	4	3895	4½x5½	36x5	36x5d	I
Denby...210	5	4295	4½x5½	36x6	40x6d	I
Dependable...A	¾-1	1650	3⅝x5½	34x5n	36x6n	W
Dependable...C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable...D	2½	2650	4 x5½	34x5	36x6	W
Dependable...E	3	2950	4¼x5½	36x4	36x7	W
Diamond T...O-3	1-1¼	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T...T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T...U	2-2½	2650	4 x5¼	36x4	36x7	W
Diamond T...K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T...EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T...S	5	4500	4⅝x6	36x6	40x6d	W
Deane	2½	4100b	4¼x5¾	36x5	36x7	C
Deane	3½	5100b	4⅝x5¾	36x5	36x5d	C
Deane	6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers	¾	730	3⅞x4½	32x4n	32x4n	B
Dorris...K-2	1	2490	4 x5½	33x5n	33x5n	B
Dorris...K-4	2-2½	3400	4¼x5½	36x4	36x7	W
Dorris...K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort	103	½	685a	3½x5	31x4	34x4n	B
Double Drive...B	3	4000	4¼x5½	6	6	W
Duplex...A	2	2775	4 x5¼	35x5n	38x7n	W
Duplex...E	3½	3500	4¼x5½	36x8	36x8	I
Duty...22	2	1590	3½x5	34x3½	34x5	I
Eagle...101	1½	1875	3⅝x5½	34x5	34x5	I
Eagle...103-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D...B	3	4200	4⅜x5½	36x6	36x6	B
Fageol...1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol...2½	2½	3900	4¼x5¼	34x4	36x7	W
Fageol...3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol...5	5	5700	4½x5¼	36x6	40x6d	W
Fargo...R	2	1700	3¾x5	36x4	36x6	I
*Federal	1½	1375	3¾x5	—x5n	—x5n	
Federal...SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal...TE	1½	2175	4½x5¼	36x3½	36x5	W
Federal...UE	2-2½	2425	4½x5¼	36x4	36x7	W
Federal...WE	3½-4	3150	4½x5½	36x5	36x5d	W
Federal...X2	5-6	4500	4¾x6	36x6	40x6d	W
*Ford	TT	1	430	3¾x4	30x3½n	32x4½n	W
Front Drive...C	1½	2800	3¾x5½	5	4	W
G.M.C...K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C...K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C...K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C...K-41T	5†	2450	4 x5½	36x4	36x8	W
G.M.C...K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C...K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C...K-71T	10†	3700	4½x6	36x5	40x12	W
G.M.C...K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C...K-101T	15†	4050	4½x6	36x5	40x14	W
G.M.C...K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W	1½	1850	3¾x5½	35x5	35x5	I
*Garford	15	1590	3¾x5½	34x5n	34x5n	W
Garford...25-B	1½	1990	3¾x5½	36x3½	36x5	W
Garford...70-H	2½	2750	1¼x5½	36x4	36x8	W
Garford...77-D	4	3750	4½x6	36x5	36x5d	W
Garford...68-D	5	4500	5 x6½	36x6	40x6d	W
Garford...150-A	7½	$5200	5 x6½	36x6	40x7d	C
Gary...F	1-1½	1775	3¾x5	36x3½	36x5	W
Gary...1	2	2450	4 x5½	36x3½	36x6	W
Gary...J	2½	2850	4¼x5½	36x4	36x8	W
Gary...K	3½	3790	4½x6	36x5	40x5d	W
Gary...M	5	4450	5 x6½	36x6	40x6d	W
Gersix...M	1½	3100	4 x5½	36x3½	36x7	W
Gersix...K	2½	3500	4½x5½	36x4	36x8	W
Gersix...J	3½	4500	4½x6	36x5	40x12	W
Getfredson...20	1	2075	3¾x5½	34x5	34x5	W
Getfredson...31	1½-2	3000	4 x5½	36x6	38x7n	W
Getfredson...A	2½	3375	4 x5½	36x4	36x7	W
Getfredson...B	3½-4	4475	4½x5½	36x5	36x10	W
Getfredson...100	5-6	5500	5 x6½	36x6	40x14	W
Graham Bros.	1	1265	3⅞x4½	33x4½n	34x5n	B
Graham Bros.	1½	1325	3⅞x4½	33x4½n	36x6n	B
‡Gramm-Pion...10	1	1245	3½x5	33x5n	33x5n	B
‡Gramm-Pion...15	1½-2	1750a	3¾x5	36x3½k	36x5k	I
‡Gramm-Pion...65	1½-2	2250a	3¾x5	36x3½k	36x5	W
‡Gramm-Pion...20	2-2½	2475a	4½x5¼	36x4k	36x7k	W
‡Gramm-Pion...30	3	3300a	4½x5½	36x5k	36x5dk	W
‡Gramm-Pion.75P	3½	4225a	4½x5½	36x6n	42x9n	W
‡Gramm-Pion.*40	4	3850a	4½x5½	36x5	36x5dk	W
‡Gramm-Pion...50	5-6	4450a	4¾x6	36x6	40x6dk	W
Hall...1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall...2½	2½	3275	4¼x5¼	36x4	36x6	W
Hall...3½	3½	4100	4½x5½	36x5	36x5d	W
Hall...5	5	5100	4½x5½	36x5	40x6d	W
Hall...7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey...WOA	2	2650	4¼x5½	34x4	34x7	W
Harvey...WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey...WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye...O	1	1375	3¼x5½	34x5n	34x5n	
Hawkeye...K	1½	1645	3¾x5½	34x3½k	34x5k	I
Hawkeye...M	2	2145	4¼x5	36x4k	36x6k	I
Hawkeye...N	3½	3700	4½x6¾	36x5k	36x10k	I
Hendrickson...O	1½	2200	3¾x5½	36x4n	36x5n	W
Hendrickson...N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson...M	3½	3000	4¼x5	36x5k	36x5dk	W
Hendrickson...K	5	4000	5 x6¼	36x6	40x6	W
Huffman...B	1½-2	1795	3¾x5	34x3½	34x6	W
Huffman...C	1½-2	1695	3¾x5½	36x3½	36x6	I
Huffman...D	2-3	2895	4¼x5½	36x4	36x7	
Hurlburt...A-A	1-1½	1950	3¾x5	34x5n	34x5n	W
Hurlburt...B-B	2-2½	2800	4¼x5¼	36x4	36x4d	W
Hurlburt...C-C	3-3½	3475	4¼x5½	36x5	36x5d	W
Hurlburt...D-D	4-4½	4150	4½x5½	36x5	36x6d	W
Hurlburt...E-E	6-6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa) B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa) G	1½	2040	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.)...HI	2½	2940	4½x5¼	36x4	36x7	I
Indiana...12	1½-2	....	3¾x5½	34x3½k	34x5k	W
Indiana...20	2	....	4½x5½	36x4k	36x7k	W
Indiana...25	2½-3	....	4¼x5½	36x4k	36x8k	W
Indiana...35	3½-4	....	4¾x5½	36x5k	36x5dk	W
Indiana...51	5-7	....	5 x6¼	36x5k	40x6dk	W
*International...S	1	1250	3½x5	32x4½n	32x4½n	I
International...21	1	1550	3½x5¼	36x3½k	36x3½	I
International...31	1½	1650	3½x5½	36x3½k	36x5k	I
International...41	2	2100	3½x5¾	36x3½k	36x6k	I
International...61	3	2400	4¼x5	36x4k	36x7k	I
International...101	5	3600	4¼x5	36x5	40x12k	I
Jackson...4WD	3½	3850	4½x5½	36x7	36x7	B
K-Z...1	1	1750	3½x5	34x3½	34x5	W
K-Z...1½	1½	2075	3¾x5	36x4	36x6	W
K-Z...2½	2½	2550	4¼x5¼	36x4	36x8	W
K-Z...3½	3½	3350	4½x5½	36x5	40x10	W
K-Z...5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo...T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo...G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo...LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo...NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo...HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo...SK	4	3845	4¼x6	36x5	36x12	W
Kalamazoo...OK	5	4350	4½x6	36x6	40x6d	W
²Kelly-S...K-31	1½	2700	3¾x5¼	36x3½	36x6	C
²Kelly-S...K-34	1½	2700	3¾x5¼	36x3½	36x6	W
²Kelly-S...K-38	2½	2900	3¾x5¼	36x4	36x4d	W
²Kelly-S...K-35	2½	2900	3¾x5¼	36x4	36x4d	C
²Kelly-S...K-40	3½	3900	4¼x6½	36x5	40x5d	C
²Kelly-S...K-41	3½	3900	4¼x6½	36x5	36x10	I
²Kelly-S...K-42	3½	3900	4¼x6½	36x5	40x5d	W
²Kelly-S...K-50	5	4400	4¼x6½	36x6	40x6d	C
²Kelly-S...K-60	6	4600	4¼x6½	36x6	40x7d	C
²Kelly-S...K-61	5-7	4800	4¼x6½	36x6	36x7d	I
Kimball...AB	2	3675	4 x6	36x4	36x7	W
Kimball...AC	2½	3975	4¼x6	36x4	36x8	W
Kimball...AK	3	4500	4½x6	36x4	36x10	W
Kimball...AE	4	5000	4½x6	36x5	40x12	W
Kimball...AF	5	5500	5 x6	36x6	40x7d	W
*Kissel...Express	1	1585	3⅞x5½	34x5n	34x5n	W
Kissel...Utility	1½	1975	3⅞x5½	36x3½	36x6	W
Kissel...Freighter	2½	2875	4¼x5½	36x4	36x8	W
Kissel...H. D.	4	3675	4¼x5½	36x5	36x12	W
Kleiber...AA	1	2200	4½x5½	34x3½k	34x5k	W
Kleiber...A	1½	3100	4½x5½	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac—tractor. †Capacity with semi-trailer.

1—Gramm-Pioneer. 2—Kelly-Springfield.

Passenger Car Specifications on pages 95 and 96

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kissel Kar.....BB	2	$3600	4½x5½	36x4k	36x7k	W
Kissel Kar.....B	2½	3950	4½x5½	36x5k	36x8	W
Kissel Kar.....C	3½	4600	4½x5½	36x5	36x5d	W
Kissel Kar.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....D	1½	2150	3½x5	34x3½	34x5	W
Koehler.....M	2½	3175	4 x5½	36x4	36x7	W
Koehler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Koehler.....F	3½	4470	4½x5½	36x5	36x10	W
Koehler,MT. Trac	5	3275	4 x5½	36x4	36x7	W
Krebs.....23	¾	1360	3½x5	34x4½	34x4½	B
Krebs.....24	1	1675	3½x5	34x5	34x5	W
Krebs.....45	1½	2275	4½x5½	36x4	36x7	W
Krebs.....75	2½	2550	4½x5½	36x4	36x8	W
Krebs.....110	3½	3175	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1925	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2400	3½x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3½x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½-3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5-7	4800	4½x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4½x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack...AB D.R.	1½	3450	4 x5	36x4k	36x3½dk	D
Mack...AB Chain	1½	3000	4 x5	36x4k	36x3½dk	C
Mack...AB Chain	2	3300	4½x5	36x4k	36x4dk	C
Mack....AB D.R.	2	3750	4½x5	36x4k	36x4dk	D
Mack....AB D.R.	2½	3850	4½x5	36x4k	36x4dk	D
Mack...AB Chain	2½	3400	4½x5	36x4k	36x4dk	C
Mack...AC Chain	3½	4950	5 x6	36x5k	40x5dk	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4½x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Maplesleaf.....**	1½	3000	3½x5¼	34x5n	36x6n	W
Maplesleaf...AA**	2	3600	4 x5½	36x4	36x7	W
Maplesleaf...BB**	3	4050	4½x5½	36x4	36x4d	W
Maplesleaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Maplesleaf..DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2200	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x6	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4½x5½	34x4	36x8	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x8	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4190	4½x6	36x5	40x6d	D
Master.....B	5	4990	4½x6½	36x6	40x6d	W
Master.....F	5	5090	4½x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3½x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1½	2000	3½x5	34x3½	36x5	W
Menominee....H	1½	2475	4 x5	36x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3900	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4½x6	36x6	40x12	W
Moline.....10	1½	1985	3½x5	34x5n	36x6n	I
3Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-5	4600	4½x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3½x5½	34x4	34x5	I
Nash.....3018	2-2½	2150	3½x5½	34x4k	34x7k	I
Nash.....Quad.	2-2½	2750	4½x5½	36x6	36x8k	I
Nash..3018, LWB	2-2½	2200	3½x5½	34x4k	34x7k	I
Nash Quad. LWB	2-2½	2800	4½x5½	36x6	36x6	I
Nash.....5018	2½	2250	3½x5½	34x4k	34x7k	I
4Nelson.....G2	1½	....	4½x5½	36x3½	36x6	W
4Nelson.....G3	2½	....	4½x5½	36x4	36x7	W
4Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
4Nelson.....G5	5	....	4½x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5½	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5½	36x4k	36x7k	W
Noble.....A21	1¼	1840	3½x5½	34x5	34x5	W
Noble.....B3I	1½-2	2480	3½x5½	36x4	36x7	W
Noble.....D5I	2½-3	2950	4½x5½	36x4	36x8	W
Noble.....E7I	3½-5	3800	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3½x5½	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4½x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4½x5½	34x4	36x6	W
Northwestern..WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E.Spec	1½	2285	3½x5¼	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3½x5	36x3½	36x5	W
Ogden.....E	2½	....	4½x5¼	36x4	36x8	W
Old Hickory...W	1	$1775	3¾x5	36x3½k	36x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4½x6	34x4	36x4d	W
Old Reliable ...C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4½x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4½x6½	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5½	35x5n	35x5n	I
Olympic.....A	2½	3200	4½x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5½	36x3½	36x7	
Oneida.....C9	2½	3200	4 x5½	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	2485	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	2585	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3485	4 x5½	38x7n	38x7n	B
Oshkosh.....BB	2½	3585	4 x5½	38x7n	38x7n	B
*Overland.....4	½	425	3½x4	30x3½n	*30x3½n	B
Packard.....EC	2-3	3100	4½x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4½x5½	36x6n	40x8n	W
Packard.....ED	3½-4½	4100	4½x5½	36x5	36x8d	W
Packard.....EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5½	34x3½	34x5	W
Paige.....54-20	2½	2420	4½x5½	34x4	34x8	W
Paige.....51-18	3½	3145	4½x5½	36x5	36x8d	W
Parker.....C-22	1	1875	3½x5½	34x5n	34x5n	W
Parker.....G-22	2½	3200	4½x6	34x4	36x4d	W
Parker.....J-29	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-29	5	4850	5 x6	36x6	40x6d	W
Patriot...Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot...Lincoln	2	2050	4 x5½	34x4	34x6	W
Patriot....LS-800	2	2175	4 x5½			
Patriot .Washgt'n	3	2900	4½x5½	36x5	36x7	W
Pierce-Arrow.....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow....	3½	4350	4½x6¾	36x5	36x8d	W
Pierce-Arrow....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3½x5	36x4	36x6	..
Pittsburgher.....	3	3800	4½x5½	36x5k	36x8	W
Power.....F	2	3150	4 x5½	36x5	36x7	W
Power.....C	3½	....	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier.....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3½x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3½x5	34x3½	34x5	W
Rainier.....R-28	2	....	4½x5½	34x4	34x6	W
Rainier.....R-20	2½-3	....	4½x5½	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R25	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-17	5-6	....	4½x6	36x6	40x6d	W
Rainier.....R27	6	....	4½x6	36x6	40x6d	W
Ranger..TK-20-2	1½	2450	3½x5	36x6n	38x7n	W
*Reo.....F	¾-1½	1185	3½x4½	3½x4½n	34x4½n	B
Reliance.....10A	1½	2100	4 x5½	36x3½	36x5	I
Reliance.....20B	2½	3100	4½x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3½x5	34x3	34x4	I
Republic..10 Exp	1	1695	3½x5	34x5n	34x5n	I
Republic.....11X	1½	1795	3½x5	34x4	34x6	I
Republic.....19	2½	2195	4½x5½	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rowe.....CW	1½	3000	3½x5	36x6n	36x6n	W
Rowe....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rowe....G.S.W.	3	4150	4 x6	34x5	36x8d	W
Rowe....G.P.W.	3	5250	3½x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4½x6	36x5	36x6d	W
Rowe.....F. W.	5	4850	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3½x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4-3½x4	32x4n	32x4n	B
Samson.....25	1½	....	4-3½x5½	35x5n	35x5n	B
Sanford....W-15	1½-2	2150b	3¾x5	36x3½k	36x5k	..
Sanford.....25	2½-3½	....	4½x5½	36x4	36x4d	W
Sanford.....35	3½-5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5-7	....	4½x6	36x5	40x6d	W
Schacht....2-Ten	2	3200	4½x5½	36x4	36x7	W
Schacht....3-Ten	3	3800	4½x5½	36x5	36x5d	W
Schacht....4-Ten	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ten	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ten	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3½x5½	34x3½	34x7	W
Schwartz.....L	3	3600	4½x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½-2½	2250	3½x5	34x3½	34x5	W
Selden.....31	1½-2½	3350	4½x5½	34x5n	38x7n	W
Selden.....50	2½-3½	3250	4½x5½	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4½x6	36x6	40x12	W
Sensea.....M	½	$ 830	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3½x4½	32x4½n	32x4½n	B
*Service.....25	1½	....	3¾x5½	34x5n	34x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4½x5½	35x5n	38x7n	W
Service.....52	3	....	4½x5½	36x4	36x8	W
Service.....72	3½	....	4½x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....162	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	1450	3¾x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5½	34x4	36x6	W
Signal.....J	2½	2375	4½x5½	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x8d	W
Signal.....R	5	3900	4½x6	36x6	40x6d	W
*Standard.....75	1¼	1330	3½x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5½	36x4k	36x8	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x12	W
Standard.....5-K	5-7	4400	4½x6	36x6	40x14	W
*Star.....	½	610b	3½x4¾	30x3½n	30x3½n	B
Sterling.....1½	1½	2885	4 x5½	34x3½k	36x5k	W
Sterling.....2	2	3085	4 x5½	36x4k	36x6k	W
Sterling.....2½	2½	3290	4½x5½	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6½	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6½	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6½	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6½	36x6	40x7d	C
*Stewart...Utility	½-1½	1245	3½x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3½x5½	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3½x5	34x3½	34x6	I
Stewart.....7	2-2½	2190	4½x5½	34x4	34x7	I
Stewart.....7-X	2½-3	2390	4½x5½	34x4	34x8	I
Stewart.....10	3½-4	3190	4½x5½	36x5	36x10	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x10	I
*Stewart.....	1¾	1245	4-3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1095	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3½x5½	34x5n	34x5n	W
Stoughton.....B	1½	2150	3½x5½	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....F	3	3150	4½x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4½x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Thomart.....	1½	1795	4 x5½	34x5	34x5	C
Tiffin.....GW	1½	2100	4½x5½	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5½	36x4	36x3½d	W
Tiffin.....PW	3½	3600a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4½x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4½x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4½x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4½x5½	35x5n	38x7n	W
Tower.....H	2½	2475	4½x5½	36x4	36x7	W
Tower.....G	3½	3475	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595a	3½x5	35x5n	35x5n	I
Traffic.....C	2	1595a	3½x5	34x3½	34x5k	I
Traffic.....	3	1895a	3½x5	36x4	36x7	I
*Transport.....15	1	1295	3½x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3½x5½	34x3½k	34x5k	I
Transport.....35	2	1885n	3½x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5½	36x4k	36x8k	I
Transport.....60	3½	2585	4½x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Traylor.....B	1½	2390	3½x5½	34x3½	34x5	W
Traylor.....C	2-2½	2850	4 x5½	36x4	36x7	W
Traylor.....D	3-3½	2300	4½x5½	36x4	36x8k	W
Traylor.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3½x5	34x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3½x5½	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3½x5½	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5½	36x4k	36x7k	I
Twin City...B.W.	2	2750	4 x5½	36x6	40x8	I
Twin City...A.W.	3½	3950	4½x6	36x5	40x5d	W
5Twin City.....B	3½	....	5½x6	36x6	36x6	I
5Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4½x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4½x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4½x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4½x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
United.....A	1½	2445	3½x5½	36x3½k	34x5k	W
United.....B	2½	3150	4½x5½	36x4k	36x7k	W
United.....C	3½	3975	4½x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States..U	1¼	1800	3½x5½	34x5n	34x5n	B
UnitedStates,NW	1½-2	2375	3½x5	36x5	36x3½	W
United States...N	1½-2	2175	3½x5	36x3½k	36x5k	I
United States...R	3	3300	4 x5½	36x4	36x4d	W
United States...S	4	4075	4½x5½	36x5	36x5d	W
United States...T	5-7	4975	4½x6½	36x6	40x6d	W
Velie.....46	1½	1585	3½x5	36x3½k	36x5k	I
Velie.....53	2½	2185	4 x5½	36x4k	36x7k	I
Veteran.....M**	1½	2699	3½x5½	35x5n	35x5n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Veteran.....P**	2	$3609	4½x5½	36x4	36x7	W
Veteran.....R**	3	4200	4½x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	1½	1050	3½x4½	31x4n	31x4n	W
*Vim.....50	½-¾	995	4 x5	32x4n	32x4n	B
Walker-JohnsonA	2	2500	3¼x5	34x3½	34x6	W
Walker-JohnsonB	3	3000	4¼x5½	36x4	36x8	W
Walter.....M	2½	3850	4½x5¾	36x4	36x8	D
Walter.....S	5	4850	4½x6¼	36x6	40x6d	W
*Watson.....C	1	1465a	3½x5½	35x5n	35x5n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2450	4½x5¼	36x3½k	36x5k	W
Western....L1½	1½	2550	3¼x5	36x3½k	36x5k	W
Western....W2½	2½	3250	4½x5¼	36x4	36x7	W
Western....L2½	2½	2450	4¼x6	36x4	36x7	W
Western....W3½	3½	4000	4½x6	36x5	40x5d	W
*White.....15	¾	2400	3¾x5½	34x5n	34x5n	B
White.....28	2	$3250	3¾x5½	36x4k	36x7k	D
White.....40	3½	4200	3¾x5¾	36x5	40x5d	D
White.....45	5	4500	4½x5¾	36x6	40x6d	D
White Hick....E	1	1225	3¾x5	31x5n	34x5n	W
White Hick....H	1½	1375	3¾x5	36x3½	36x5	W
White Hick....K	2½	1675	4½x5¼	36x4	36x5	W
Wichita.....K	1	1875	3¾x5¼	36x3½	36x4k	W
Wichita.....M	2	2400	3¾x5¼	36x3½k	36x6k	W
Wichita.....RX	3	3300	4¾x5¾	36x4k	36x8k	W
Wichita.....O	4	$3500	4½x6¼	36x5k	36x5k	W
Wilcox.....AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4¼x5	36x4k	36x3½dk	W
Wilcox.....E	3½	3050	4½x6	36x5k	36x5dk	W
Wilcox.....F	5	4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¾x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4½x5½	36x4	36x7	W
Wilson.....G	3½	3085	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin.....A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin.....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin.....C	2½	2700	4 x5½	36x6n	36x7	W
Wisconsin.....D	3½	3000	4¾x5¾	36x6n	40x8	W
Wisconsin.....E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin.....F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will.....N	1½	2450	3¾x5	36x3½k	36x6k	W
Witt-Will.....P	2½	2900	4½x5½	36x4k	36x8k	W

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Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm...	15-25	1185	4	Midw.	4-4½x5½	Gas.	3
Allis-Chalm...	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm.	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork...2-G	14-28	1595	4	Own	4-4¼x6	GorK	3
Allwork.....C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T....	15-30	1900	4	Clim.	4-5 x6½	G,K,D	4
Aultman-T....	22-45	2800	4	Own	4-5½x8	G,K,D	6
Aultman-T....	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Automot. B-3	12-21	1250	4	Here.	4-4 x5½	Gas.	2-3
Avery,SR.Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery...Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4½x6	G,K,D	3-4
§Avery.....	....	....	*	Own	4-4x5½	G,K,D	3
Avery.....	12-25	....	4	Own	2-6½x7	G,K,D	3-4
Avery.....	14-28	....	4	Own	4-4½	G,K,D	3-4
Avery.....	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7¾x8	G,K,D	8-10
Bates Mule.11	15-25	....	4	Midw	4-4½x5½	Gas.	3
Bates Mule, F	18-25	....	*2	Midw	4-4½x5½	Gas.	3
‡Bates MuleG	25-35	....	*2	Midw	4-4½x6	Gas.	..
Bear.....	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman Jr..	¾-1½	180	2	B&S	1-2½x2½	Gas.	..
¶Beeman...G	2-4	240	4	Own	1-3½x4½	Gas.	..
Best.....	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best.....	60	....	*2	Own	4-6½x8½	G,K,D	8-9
¶Bolens.....	....	....	4	B & S.	1-2½x2½	G.	..
Bering.....	5-10	395	4	LeR.	4-3½x4½	G	..
Bering...1921	....	1850	3	Wauk	4-4¾x5½	GorK	2
**Bryan.....	15-30	....	4	Own	2-4 x5	K.	3
Capital.....	15-30	1000	2	Own	4-4¼x6	Gas.	3
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	2-3
Case.....	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case.....	22-40	2550	4	Own	4-5½x6½	G,K,D	4-5
Case.....	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T3S	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar .ST	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur.....	5-21½	345	2	N Way	2-4¼x4½	GorK	1
Cletrac.....F	9-16	595	*2	Own	4-3¼x4½	G,K,D	2
Cletrac.....W	12-20	1315	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Dill.....D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dill.....R.W.	20	2980	4	Midw	4-4½x6	Gas.	3
De-It-All,Baby	1	237	..	Own	2¾x2¾	Gas.	1
De-It-All....A	3-6	495	..	Own	1-4½x5	Gas.	1
De-It-All, Jack	6	395	..	Own	3½x3½	Gas.	1
De-It-All, Twin 6	12	495	2	Own	2-3½x3½	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B.....AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol.....D	9-18	1175	4	Lyc.	4-3½x5	Gas.	2
Farm Horse.B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Farquhar.....	15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar.....	18-35	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar.....	25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch..4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	$ 395	4	Own	4-4x5	G,K	2
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt,..A	18-30	2150	4	Wauk.	4-4¾x6¾	G or K	4
Gray.....	20-36	1975	3	Wauk.	4-4½x6¼	Gas.	4
Gray.....	22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. Western St	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr..20	20	865	4	Own	2-5½x6½	K.D.	2
Hart-Parr..30	30	1045	4	Own	2-6½x7	K.D.	3
‡Hart-Parr....	....	1395	4	Own	6½x7	K.D.	..
Heider.....D	9-16	628	4	Wauk	4-4¼x5½	G,K	2
Heider.....C	12-20	725	4	Wauk	4-4½x6¾	G,K	3
Heider...Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4.	12-25	985	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4	15-30	1885	4	Midw	4-4½x6	Gas	3
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International .	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†780	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5½x8	G,K,D	4
¶Kinkade....	1½	190	1	Own	1-3 x3	Gas.	....
La Crosse.....	12-24	985	2	Own	2-6 x7	G,K	3
Lauson.....S	12-25	1295	4	Midw	4-4½x5¼	Gas.	3
Lauson.....21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lauson Road	15-30	2000	4	Beav.	4-4¾x6	K	..
Leader.....B	12-18	685	4	Own	2-6 x6½	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn.....H4J	40-	4500	*	Cont.	4-4½x5½	Gas	4
Linn.....W	60	5000	*	Wauk	4-5 x6¼	Gas	6
Little Giant..B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant..A	26-35	3300	4	Own	4-5½x6	K	6
Lombard.1922	85-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2½x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Mod.D	22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD	35-70	3850	4	Own	4-7½x9	G or K	8-9
Mohawk .1922	8-16	650	2	Light	4-3½x4½	K or G	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch..	9-18	....	2	Own	4-3½x5	Gas.	2-3
‡Monarch.....	20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Motor Macult,	1½	195	2	Own	1-2½x3½	Gas.	..
NB.....1	3-6	375	4	Own	2-3¾x4	Gas.	1
Nichols-Shep.	20-42	2650	4	Own	2-8 x10	G or K	3-6
Nichols Shep.	25-50	3000	4	Own	2-9 x12	G or K	4-8
Nichols-Shep.	35-70	3650	4	Own	2-10½x14	G or K	8-12
Nilsen Senior..	20-40	1975	5	Wauk	4-5 x6¼	G,K	4
OilPull.....K	12-20	....	4	Own	2-6 x8	K,D	3
OilPull.....H	16-30	....	4	Own	2-7 x8½	K,D	4
OilPull.....G	20-40	....	4	Own	2-8 x10	K,D	5-6
OilPull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar ..K	2½-5	$225	4	Own	1-6½x8½	Gas.	1
Pioneer.....G	18-36	....	4	Own	4-8½x6	G,K,D	4
Pioneer.....C	40-75	....	4	Own	4-7 x8	Gas.	10
Plowman....A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable.....	10-20	390	4	Own	2-6 x7	Ker.	2
Russell.....	12-24	1500	4	Own	4-4¼x5½	G or K	2-3
Russell.....	15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson....M	....	445	4	Own	4-4 x5½	G,K	2
Sandusky,...J	10-20	1250	4	Own	4-4¼x5½	G,K,D	2
Sandusky...E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
¶Shelby.....	1	150	3	B & S	1-2½x2½	G	..
Shelby.....D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby.....C	9-18	....	4	Wauk	4-3½x5½	G or K	2
Toro Cultivator	6	750	3	LeR	4-3½x4½	Gas.	2
ToroTractor'22	6-10	495	3	LeR	4-3½x4½	Gas.	2
Townsend....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend....	25-50	2500	2	Own	4-8½x10	Ker.	4-6
Traction Meter	40-50	....	4	....	8-3½x5	Gas.	4-5
Trayler....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar...10	25-40	3750	*2	Wauk	4-5 x6½	G or K	4
Twin City....	12-20	1200	4	Own	4-4½x6	G,K	3
Twin City....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City....	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle Sam C20	12-20	1295	4	Weid.	4-4 x5½	G	2-3
Uncle Sam B19	20-30	1985	4	Beav.	4-4½x6	G or K	3-4
Uncle Sam D21	20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utiliter....501	2½-4	295	4	Own	1-3½x4½	G	1
Utiliter...501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	....	4	Own	4-4½x5¾	G,K	3
Waterloo....N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore 21-22	12-25	1185	4	Wauk	4-4 x5½	G,K	3
Whitney....D	9-18	595	4	Own	2-6½x6½	Gas.	3
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin...E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin...F	20-40	2050	4	Wauk	4-5 x6½	G or K	4
Wisconsin...H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba....12-20	12-20	2400	*2	Wisc.	4-4½x6½	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4½x6	G,K,D	..
Yuba....23-35	20-35	3900	*2	Wisc.	4-5½x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5½x7	G,K,D	..
‡Yuba.....	25-40	4750	*2	Yuba	4-5½x7	D	..

ABBREVIATIONS: G—Gasoline. K—Kerosene, D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont.—Continental. Dom.—Domas Evin.—Evinrude. Here.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Ncr.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor. ¶Garden Tractor. **Steam Tractor

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (S.A.E.)	NAME AND MODEL	Carburetor	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle Type and Make	†Gear Ratios
.....	$4500c	$4500	.....	.....	$6500	136	33x5	Cont..	6-3 5/16x5 1/4	31.54	Ambassador.....R	Strom...	West.....	Bosch....	m-d B-L....	B-L....	f Norwalk..	F Tim..	4.45
$1995c	1735	1850	$1885c	.....	2485	127	33x4 1/2	H-S...	6-3 1/2x5	29.40	American.....D-66	Strom...	G-D.....	A-K.....	s-p B&B....	B & B..	m Hartford..	F Salis..	4.50
.....	1135	.....	$1450c	.....	.....	114	32x4	Cont..	6-3 1/8x4 1/4	23.44	Anderson...Aluminum 6	.....	West.....	West.....	s-p B&B....	.....	.....	Salis..	.....
1495 1785p	1495	1595	1595c 1945c	1995c	1995d	120	33x4	Cont..	6-3 3/8x4 1/2	27.34	Anderson.....Series 40	Rayfield.	Remy.....	Remy.....	s-p B&B....	Durst...	f Snead.....	3/4F Salis..	4.50
1575	1575	1615	.....	3625	3695	130	34x4 1/2	Own..	8-3 1/4x5	33.80	Appersen.....8-21-S	Johnson	Bijur.....	Remy.....	m-d Own....	Own....	m Sterl.....	1/2F Own..	4.25
1575	1475	1545n	1595n 1995n	2275	2345	121	32x4	Cont..	6-3 3/8x4 1/2	27.34	Auburn.....6-51	Strom...	Remy.....	Remy.....	s-p B&B....	G-L....	m Univers...	F Salis..	4.75
1800	1800	.....	.....	2400	2500	121	32x4	Cont..	6-3 1/4x4 1/2	25.35	Bay State.....	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Spicer...	3/4F Col..	4.67
2950	2950c	.....	.....	3950	3950	121	32x4	Buda.	4-3 3/4x5 1/8	22.50	Biddle.....B1 & B5	Zenith...	G-D.....	Simms....	s-p Warner .	Warner..	m Spicer...	1/2F Std..	4.50
5000	5000	.....	.....	.....	7000	125	32x4 1/2	Own..	4-4 x5 1/2	25.60	Brewster.....91	Zenith...	USL.....	Bosch....	c Own....	Own....	F Own.....	F Own..	3.92
865	885	725g	.....	1175	1305 1325	109	31x4	Own..	4-4 3/8x4 3/4	18.23	Buick..1923-34-5-6-7-38	Marvel.	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	3/4F Own..	4.66
1175	1195	975g	.....	1935	1985	118	33x4	Own..	6-3 3/8x4 1/2	27.34	Buick....1923-41-4-5-47	Marvel.	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	3/4F Own..	4.60
.....	.....	1435	1625a 1675c	1895	2195	124	34x4 1/2	Own..	6-3 3/8x4 1/2	27.34	Buick.1923-48-9-50-4-55	Marvel.	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	3/4F Own..	4.90
3100	3150	3150	.....	3875a 3925d	4100	132	33x5	Own..	8-3 1/8x5 1/8	31.25	Cadillac.....61	Own....	Delco.....	Delco.....	m-d Own....	Own....	m Spicer....	F Tim..	4.50
1750	1790	.....	.....	2550	2690	122	32x4 1/2	Cont..	6-3 3/8x4 1/2	27.34	Case.....X	Rayfield.	Delco.....	Delco.....	m-d Own....	Own....	f Snead	1/2F Col..	5.25
.....	2200	2250	.....	2850	3250	129	34x4 1/2	Cont..	6-3 5/8x5 1/4	31.54	Case.....W	Rayfield.	Delco.....	Delco.....	m-d Own....	Own....	f Arvac....	3/4F Col..	4.45
1185	1185	.....	.....	1595	2295	117	32x4	Own..	6-3 1/4x4 1/2	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own....	m Hardy....	1/2F Adams	5.13
.....	.....	1345	.....	.....	.....	122	32x4	Own..	6-3 1/4x4 1/2	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own....	m Hardy....	1/2F Adams	5.13
1495	1495c	1615	.....	1995c	2295d 2375 f	123	33x4	Own..	6-3 1/2x5	29.40	Chandler.....Six	Rayfield.	Bosch.....	Bosch.....	s-p B&B....	Own....	f	F Own..	4.45
510	525	425g	.....	840c 630k	860	102	30x3 1/2	Own..	4-3 11/16x4	21.53	Chevrolet.....Superior	Zenith...	A-L.....	Remy.....	c Own....	Own....	m Own.....	1/2F Own..	3.66
1085	1095	.....	1260	1195	1585	112	32x4	Ow...	6-3 1/16x4 1/2	22.5	Cleveland.....41	Strom...	Bosch.....	Bosch.....	s-p Own....	Own....	m Mech.....	3/4F Own..	4.45
2685	.....	2685	2635c	2885a 3385c	3985c 3685 f	127 1/4	33x5	Nort..	8-3 1/2x4 1/2	39.20	Cole.....890	Johnson.	Delco.....	Delco.....	c North....	North...	m Spicer....	F Col....	4.46
1475	1475	.....	1475c	1925c	1995d	115	32x4	Cont..	6-3 3/8x4 1/2	27.34	Columbia.....Elite	Strom...	A-L.....	A-K.....	s-p B&B....	Durst...	m Spicer....	3/4F Tim..	.....
995	985	.....	.....	.....	1395d	115	31x4	Cont..	6-3 1/8x4 1/4	23.44	Columbia.....Light Six	Strom...	A-L.....	A-L.....	s-p B&B....	Durst...	m Spicer....	3/4F Tim..	.....
.....	1985	3095f	.....	2985d	3085f	125	33x4 1/2	Cont..	6-3 1/2x5 1/4	29.40	Comet.....C-53	Strom...	Wagner....	Wagner....	s-p B&B....	Muncie..	m Arvac....	3/4F Col..	4.45
1395	1395	.....	1195b 1495c	2065b	2165d	116	32x4	Falls.	6-3 1/8x4 1/4	23.44	Courier.....	Till.....	Bijur.....	A-K.....	s-p B&B....	Muncie..	f Norwalk..	3/4F Col..	5.00
3000	3000	3000	.....	.....	4500	122 1/2	32x4	Cont..	6-3 5/16x5 1/2	31.54	Crawford.....22-6-60	Strom...	West.....	Bosch....	m-d B-L....	B-L....	Spicer....	1/2F Tim..	.....
.....	.....	.....	3500	.....	.....	135	33x5	Cont..	6-3 5/16x5 1/2	31.54	Crawford-Dagmar...6-60	Zenith...	West.....	Bosch....	m-d B-L....	B-L....	Spicer....	1/2F Tim..	.....
.....	.....	.....	.....	.....	.....	112	33x5	Own..	8-3 3/4x5	45 00	Cunningham.....V	Strom...	Delco.....	Delco.....	m-d Own....	Own....	f Snead.....	F Tim..	4.23
.....	4350c	4350	.....	5250	6000	132	33x5	Own..	8-3 1/2x5 1/4	39.20	Daniels.....D-19	Zenith...	Delco.....	Delco.....	m-d Own....	Own....	m Spicer....	F Tim..	.....
.....	1205	.....	1495	1795	1795	114	31x4	Cont..	6-3 1/8x4 1/4	23.44	Davis.....71	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Peters....	1/2F Tim..	5.10
1595	1595	.....	1695	2095	.....	120	32x4	Cont..	6-3 3/8x4 1/2	27.34	Davis.....61-67	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Peters....	3/4F Tim..	5.15
1175	1175	1295c	1215	1515	1595	112	32x4	H-S...	4-3 1/2x5	19.60	Dixie Flyer.....H-S-70	Strom...	Dyneto....	Eise.....	s-p B&B....	G-L....	f Hardy....	F Peru..	4.75
850	880	.....	.....	980b	1440	114	32x4	Own..	4-3 7/16x4 1/2	24.03	Dodge Brothers.....	Stewart..	N.E.....	N.E.....	m-d Own....	Own....	m Own.....	F Own..	4.16
.....	3950c	3950	.....	4985c	5750f	132	33x5	Own..	6-4 x5	38.40	Derris.....6-80	Strom...	West.....	Bosch....	m-d Own....	Warner..	m Spicer....	F Tim..	4 1/2
885	885	.....	.....	1265 1015k	1385 1095k	108	31x4	D-Ly.	4-3 1/2x5	19.60	Dort.....19-14	Carter...	Bosch.....	Conn.....	m-d Det....	Own....	m Mech....	3/4F Flint..	4.66
1275	1275	.....	.....	.....	1975	104	30x3 1/2	Own..	4-2 5/8x4 1/2	11.03	Driggs.....	Zenith...	Bosch.....	Bosch.....	s-p Hoos...	Mech...	m Spicer....	3/4F Own..	4.75
6500	6500	6750	.....	7800	7800	134	33x5	Own..	8-2 7/8x5	26.75	Duesenberg...Straight 8	Strom...	Delco.....	Delco.....	s-p Own....	Own....	f	1/2F Own..	4.45
3000	3200	.....	.....	3800	4000	124	32x4 1/2	Own..	4-3 11/16x5 1/2	24.81	Du Pont.....A	Y&T....	West.....	Eise.....	m-d B-L....	B-L....	m Spicer....	Col....	4.50
890	890	.....	.....	1365	1365	109	31x4	Cont..	4-3 7/8x4 1/4	24.03	Durant.....A-22	Till.....	A-L.....	A-L.....	s-p Own....	Own....	m,f Spicer...	3/4F Adams	4.30
1600	1650	.....	.....	2250	2400	123 1/2	32x4 1/2	Anst.	6-3 1/4x4 1/2	25.35	Durant.....B-22	Rayfield.	A-L.....	A-L.....	s-p Anst....	Warner..	m,f Spicer...	1/2F Tim..	5.15
1485	1095	950g	.....	1395c	1795	112	32x4	Own..	4-3 7/16x5 1/4	18.91	Earl.....40	Scoe....	A-L.....	Conn.....	s-p B&B....	Own....	f Own.....	1/2F Own..	3.66
1095	1095	.....	1095	1345	.....	118	33x4	Lyc...	4-3 1/2x5	19.60	Elcar.....K-4	Strom...	Delco.....	Delco.....	s-p B&B....	Muncie..	m Peters....	3/4F Salis..	4.50
1395	1395	.....	1395	1975	2065	118	33x4	Cont..	6-3 5/8x4 1/2	25.35	Elcar.....7-R	Strom...	Delco.....	Delco.....	m-d Warner	Warner..	m Spicer....	3/4F Salis..	4.50
.....	1125	1125c	1165p	.....	1615	118	33x4	Falls..	6-3 1/8x4 1/4	23.44	Elgin.....K-1	Strom...	West.....	Wagner....	s-p B&B....	Mech....	m Mech....	3/4F Col..	4.66
.....	1045	.....	.....	1145k	1895 1245k	108 1/2	32x4	Own..	4-3 3/8x5	18.23	Essex.....	Own....	Bosch.....	Bosch.....	m-d Own....	Own....	m Spicer....	1/2F Own..	4.66
319r	348s	285g	.....	580	615	100	30x3 1/2	Own..	4-3 3/4x4	22.50	Ford.....T	Own....	Own.....	Own.....	m-d Own....	Own....	m Own.....	1/2F Own..	3.63
3900	3900	.....	.....	4900	4900	132	32x4 1/2	Own..	6-3 3/8x5	27.34	Fox.....7F	Zenith...	West.....	Bosch....	m-d B-L....	B-L....	Spicer....	1/2F Tim..	4.45
1900	1950	1750g	.....	2750	2850	115	32x4	Own..	6-3 1/4x4	25.35	Franklin.....10	Own....	N.E.....	A-K.....	s-p B&B....	Own....	m Spicer....	1/2F Own..	4.73
895	895	.....	.....	1095k	1315d	112	32x4	Lyc...	4-3 1/2x5	29.60	Gardner.....T-R & G	Carter...	West.....	West.....	s-p B&B....	Mech....	m Mech.....	3/4F Flint..	4.80
1385	1385	.....	.....	1895	1915	116	32x4	Own..	6-3 1/8x4 1/2	23.44	Grant.....	Strom...	Bijur.....	A-K.....	s-p B&B....	Durst...	m Spicer....	3/4F Col..	4.66
490	490	.....	.....	.....	760	100	30x3 1/2	Own..	4-3 3/8x4	21.03	Gray.....	Scoe....	West.....	West.....	m-d Own....	Detr....	m Mech.....	1/2F Tim..	3.90
2475	2475c	.....	3250	.....	3475	120	32x4 1/2	Weid..	4-3 3/4x5 1/2	22.5	H.C.S.....Series 4	Strom...	Delco.....	Delco.....	m-d	B-L....	m Spicer....	3/4F Own..	.....
.....	.....	2650	.....	3450	3450	125	32x4 1/2	Own..	4-4 1/8x4 1/2	27.23	Handley-Knight.....	Till.....	A-L.....	A-L.....	m-d Warner	Warner..	m Spicer....	1/2F Tim..	4.90
.....	995	.....	.....	.....	.....	114	31x4	Cont..	6-3 1/8x4 1/4	25.35	Hansen.....30	Marvel..	Delco.....	Delco.....	s-p B&B....	Detr....	.....	3/4F Tim..	.....
1595	1595	1795	.....	2475c	2585	121	32x4	Cont..	6-3 3/8x4 1/2	27.31	Hansen.....60	Marvel..	Delco.....	Delco.....	s-p B&B....	Detr....	.....	3/4F Tim..	.....
.....	1345	1345c	.....	1950	1950	115	32x4	H-S...	4-3 1/2x5	19.60	Hatfield.....A-42	Zenith...	Dyneto....	Conn.....	s-p B&B....	G-L....	m Spicer....	3/4F Col..	4.66
2395	2395c	2395	.....	.....	3395	132	33x5	Own..	6-3 1/2x5 7/16	29.40	Haynes.....75	Strom...	L-N.....	King.....	s-p Warner	Own....	m Univers...	3/4F Own..	4.60
1515	1495	.....	1895a 1895d	2090 2195p	2395 2645p	121	32x4 1/2	Own..	6-3 1/2x5	29.40	Haynes.....55	Rayfield.	L-N.....	King.....	s-p Warner	Own....	m Univers...	1/2F Own..	4.11
.....	2500c	2500	.....	3300c	3600f	126	34x4 1/2	Own..	6-3 1/2x4 1/4	29.40	Helmes.....Series 4	Strom...	Dyneto....	Eise.....	m-d B-L....	B-L....	m Spicer....	1/2F Tim..	4.90
.....	1525c	1575	.....	2570 1745k	2295f 2650	126	34x4 1/2	Own..	6-3 1/2x5	29.40	Hudson.....Super 6	Own....	Bosch.....	Bosch.....	m-d Own....	Own....	m Spicer....	1/2F Own..	4.45
1395	1395	.....	.....	.....	2295	120	32x4	Cont..	6-3 3/8x4 1/2	27.34	Huffman.....	.....	.....	.....	.....	.....	.....	.....	.....
1150	1150	.....	1025g	1635 1335k	1785	112	32x4	Own..	4-3 1/4x5 1/2	16.90	Hupmobile.....Series R	Strom...	West.....	A-K.....	m-d Own....	Own....	m Univers...	3/4F Own..	4.87
.....	1485	1685c	.....	2985	2985	121	32x4 1/2	Cont..	6-3 1/4x4 1/2	25.35	Jackson.....638	Strom...	A-L.....	Remy.....	s-p B&B....	Cov....	f Snead....	3/4F Salis..	4.75
995b	995	.....	.....	1445c	1465d	112	31x4	Own..	6-3 1/4x5	25.35	Jewett.....Six	Strom...	Remy.....	A-K.....	m-d Long...	Warner..	m Mech.....	1/2F Tim..	4.45
1895	1795	.....	.....	2785	2785	120	32x4	Own..	6-3 1/16x4 3/4	26.38	Jordan.....MX	Strom...	Delco.....	Delco.....	s-p Detr....	Detr....	m Spicer....	1/2F Tim..	4.42
.....	.....	.....	2150c	.....	.....	124	32x4	Own..	6-3 1/16x4 3/4	26.38	Jordan.....H	Strom...	Delco.....	Delco.....	s-p Detr....	Detr....	m Univers...	1/2F Tim..	4.42
.....	985	.....	.....	.....	1450	111	32x3 1/2	Gray..	4-3 1/2x5	19.60	Kelsey.....4	Scoe....	Bosch.....	Bosch.....	f-d Own....	f-d Own..	.....	Own..	4.50
.....	995	.....	.....	.....	1450	111	32x3 1/2	Gray..	4-3 1/2x5	19.60	Kelsey.....4	Scoe....	Bosch.....	Boscn.....	.....	B&B....	Detr....	Snead....	1/2F Std	4.75
.....	1525	.....	.....	.....	2175	118	32x4	Walk'r	6-3 1/8x4 1/2	23.44	Kelsey.....6	Strom...	Bijur.....	Bosch.....	f-d Own....	f-d Own..	.....	Own..	.....
5000	5000	5250	.....	5000	6000	130	32x4 1/2	Own..	8-3 x5 1/4	28.80	Kenworthy.....8-90	.....	.....	.....	.....	.....	.....	.....	.....
1795	1795	.....	1795c	2100	2550	120	32x4 1/2	Own..	8-3 x5	28.80	King.....K	Ball&B	West.....	A-K.....	s-p Detr....	Own....	f Hardy....	F Col....	4.08
.....	1885	2385	2385c	2975c	3075	124	32x4 1/2	Own..	6-3 1/16x5 1/2	26.38	Kissel.....45	Strom...	Remy.....	Remy.....	m-d Warner	Warner..	m Spicer....	F	3.92
1690	1690	1690	1890	2750	2890	121	33x4	Cont..	6-3 3/8x4 1/2	27.34	Kline Kar.....6-55-K	Rayfield.	Wagner....	Conn.....	s-p B&B....	G-L....	f Snead....	1/2F Std.	4.75

MISCELLANEOUS
a—2 Passenger,
b—3 Passenger,
c—4 Passenger,
d—5 Passenger,
e—6 Passenger,
f—7 Passenger,
g—Chassis Price,
h—All Metal Type,
k—Soft Top Type,
n—Tire Size 32x4½,
p—Sport.
r—Price without starter and demountable rims. Complete rims $414.
s—Price without starter and demountable rims. Complete rims $443.
*Standard Phaetons.

ENGINE
Anst—Ansted
Bea—Beaver
Cont—Continental
Curt—Curtiss
D.-Ly—Dort Lycoming
G-B—Grey Beal
H-S—Herschell-Spillman
Lyc-Lycoming
Nort—Northway
Roch—Rochester
Rut-Rutenberg
Supr—Supreme
Walk'r—Walker
Weid—Weidely
Wisc—Wisconsin

CARBURETOR
Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg

GEARSET
f-d—Friction Drive
B-L—Brown-Lipe
Cov—Covert
Detr—Detroit
Durst—Durston
G-L—Grant-Lees
Hoos—Hoosier
Mech—Mechanics
North—Northway

CLUTCH
f-d—Friction drive
c—Cone
m-d—Multiple disc
s-p—Single plate
Anst—Ansted
B & B—Borg & Beck
B-L—Brown-Lipe
Det—Detlaff
Detr.—Detroit

STARTING, LIGHTING IGNITION
A-L—Auto Lite
Bring—Berling
G-D—Gray & Davis
L-N—Leece Neville
N. E.—North East
West—Westinghouse

UNIVERSAL
f—fabric
m—metal
Detr—Detroit
M &E—Merchant & Evans
Mech—Mechanics
Sterl—Sterling
Univers—Universal

REAR AXLE
F—Floating
½F—Semi-Floating
¾F—Three-Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
W-M—Weston-Mott
Tim—Timken

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (S.A.E.)	NAME AND MODEL	Carbureter	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle: Type and Make	†Gear Ratio
3985	4090c	4090	.....	5500	5500	132	33x5	Own..	8-3½x5½	33.80	LaFayette	Johnson.	Deleo	Deleo	m-d Own.	Own.	m Own.	F Own.	4.56
5500	5530	5500	.....	5500	5500	134	32x4½	Own..	6-3¾x5¼	33.75	Leach 999	Rayfield.	Deleo	Deleo	m-d	Own.	m,f	Tim.	.....
1695	(1695	(1795	2045d	2345c	(2545d	123	32x4½	Anst.	6-3½x4½	25.35	Lexington 23	Rayfield.	G-D.	Conn.	m-d Anst.	Warner.	f Snead.	¾F Own.	5.10
	1995	2005			2145d														
1575	1395	.....	1575	(2085	2345	117	32x4	Own..	6-3½x5	23.44	Liberty 10-D	Strom.	Wagner	Wagner	s-p B&B.	Detr.	m Spicer	½F Tim.	4.80
				1695k															
3800	3800c	3800	.....	4400d	4700d	136	33x5	Own..	8-3½x5	36.45	Lincoln	Strom.	Deleo	Deleo	m-d Own.	Own.	m Spicer	F Tim.	4.58
.....	7600c	7600	.....	10500	11000	142	35x5	Own..	6-4½x5½	48.60	Locomobile 48	Ball&B.	West	Deleo	m-d Own.	Own.	m Own.	F Own.	3.50
3385	3185c	3185	.....	3985	4385	136	32x4½	Own..	6-3¾x5½	33.75	Marmon 34	Strom.	Deleo	Deleo	m-d Own.	Own.	m Spicer	¾F Own.	3.75
885	885	.....	.....	985	1335	109	31x4	Own..	4-3¾x4½	21.03	Maxwell	Stewart.	A-L	Simms	c Own.	Own.	.....	¾F Own.	4.56
				1235															
6300	6300c	6300	.....	7500	7500	140	33x5	Own..	6-4½x6	48.60	McFarlan 1922	Rayfield.	West	Split	s-p B&B.	B-L	m Peters	F Tim.	3.50
3950	3950c	3950c	.....	4850	5250	132	32x4½	Own..	4-3¾x6¾	22.50	Mercer Series 5	Ball&B.	West	ise	m-d Own.	Own.	m Spicer	F Own.	3.57
1895	1895	.....	.....	.....	.....	119	32x4	Cont.	6-3¼x4½	25.35	Merit	Strom.	Deleo	Deleo	s-p B&B.	Muncie.	f Snead.	F Col.	4.60
1490b	1590	.....	1850c	2050c	2275d	120	32x4	Own.	6-3½x5	29.40	Mitchell F-50	Strom.	Remy	Remy	s-p B&B.	Own.	m Own.	F Own.	4.42
.....	.....	1690	.....	.....	.....	127	32x4½	Own.	6-3½x5	29.40	Mitchell F-50	Strom.	Remy	Remy	s-p B&B.	Own.	m Own.	F Own.	4.42
950	950	.....	.....	.....	.....	115	32x4½	Own.	4-3¼x4½	16.90	Monroe 1922-S-9	Zenith.	A-L	Conn.	m-d Own.	Mech.	m Univers.	¾F Own.	5.30
1295	1295	p1445d	1885c	1585c	1695	115	31x4	Cont.	6-3¼x4½	23.44	Moon 6-40	Strom.	Deleo	Deleo	s-p B&B.	Warner.	m Spicer	½F Tim.	4.80
1785	1785	1785	1885	2785	(2785	128	33x4½	Cont.	6-3½x4½	27.34	Moon 6-58	Strom.	Deleo	Deleo	B&B.	B-L	Spicer	½F Tim.	5¼
					2485f														
1210	1240	.....	1395c	.....	2040d	121	33x4	Own.	6-3¼x5	25.35	Nash 691-96-97	Marvel.	Deleo	Deleo	s-p B&B.	Own.	m Own.	½F	4.50
.....	.....	1390	1615	1890c	2190f	127	34x4½	Own.	6-3¼x5	25.35	Nash 692-94-95	Marvel.	Deleo	Deleo	s-p B&B.	Own.	m Own.	½F	4.50
915	935	.....	.....	(1385b	(1545d	112	33x4	Own.	4-3½x5	18.23	Nash Four 41-4	Schebler.	Deleo	Deleo	s-p B&B.	Own.	m Own.	½F	4.88
				1195k	1275k														
2475b	2475c	(2375	.....	(3250c	3825f	130	32x4½	Own.	6-3½x5¼	29.40	National BB	Rayfield.	West	Deleo	s-p B&B.	B-L	m Arvac	F Col.	4.08
		3150		3725c															
2500	2500c	2600c	.....	.....	3500d	128	32x4½	Cont.	6-3¼x4½	25.35	Noma 3C	Claudel.	Deleo	Deleo	s-p B&B.	Detr.	m Spicer	½F Tim.	4.45
3000	3100c	3200e	.....	.....	5500	128	32x4½	Bea.	6-3½x5¼	29.40	Noma 1D	Zenith.	Deleo	Deleo	s-p B&B.	Detr.	f	½F Tim.	.....
.....	1035	.....	.....	.....	.....	116	32x3½	Lyc.	4-3½x5	19.60	Norwalk 430-KS	Zenith.	Dyneto.	Deleo	s-p B&B.	G-L	m Univers.	¾F Col.	5.00
975	995	795g	1165c	(1445d	1545	115	32x4	Own.	6-2½x4¾	18.99	Oakland 6-44	Marvel.	Remy	Remy	c Own.	Muncie.	m Mech	F Own.	4.33
				1185a															
3750c	3750	3850	3750c	4500c	4800f	134	33x5	Cont.	6-3¾x5¼	31.54	Ogren 6 T D Luxe	Rayfield.	Bosch	Bosch	m-d B-L	B-L	m	F Col.	4.00
955	975	.....	1075	1475	1595	115	32x4	Own.	4-3½x5¼	21.86	Oldsmobile 43 A	Zenith.	A-L	Remy	s-p B&B.	Warner.	m Own.	¾F Own.	4.33
1735c	1850c	1735	.....	.....	.....	122	33x4½	Own.	8-2⅞x4¾	26.45	Oldsmobile 46	Ball&B.	Deleo	Deleo	c Own.	Warner.	m Own.	F	4.93
1625p	1375	.....	1675	1875	2025	115	32x4	Own.	8-2⅞x4½	26.45	Oldsmobile 47	Johnson.	Deleo	Deleo	s-p B&B.	Warner.	m Spicer	¾F Own.	5.10
550	550	.....	.....	850	895	100	30x3½	Own.	4-3¾x4	18.23	Overland 4	Till.	A-L	Conn.	s-p B&B.	Own.	m Own.	½F Own.	4.50
2485	2485	2250g	.....	3175	3275	126	33x4½	Own.	6-3⅜x5	27.34	Packard Single-Six	Own.	A-K	Deleo	m-d Own.	Own.	f Spicer	½F Own.	4.30
.....	2350g	2685	.....	.....	3525	133	33x4½	Own.	6-3⅜x5	27.34	Packard Single-Six	Own.	A-K	Deleo	m-d Own.	Own.	f Spicer	½F Own.	4.66
3850	3850	3850	.....	5240	5400	136	35x5	Own.	12-3x 5	43.20	Packard Twin-Six	Own.	Bijur	Deleo	m-d Own.	Own.	m Spicer	½F Own.	4.36
1465	1465	1290g	.....	1995	2245	119	32x4	Own.	6-3½x5	25.35	Paige 6-44	Strom.	Remy	A-K	s-p Long.	Own.	m Univers.	¾F Salis.	4.75
2495b	.....	2195	2245	3100	3155	131	33x4½	Cont.	6-3¾x5	33.75	Paige 6-66	Rayfield.	Remy	A-K	s-p Long.	Warner.	m Mech	¾F Tim.	4.60
.....	1390	1425	.....	2395	2395	120	32x4½	Cont.	6-3⅜x4½	27.34	Paterson 22-6-52	Strom.	Deleo	Deleo	s-p B&B.	Durst.	m Hartford	½F Std.	4.50
.....	2990c	2990	.....	(3300a	(3990d	128	33x5	Own.	8-3½x5	33.80	Peerless 23	Ball&B.	Deleo	Deleo	m-d Own.	Own.	M Spicer	¾F Tim.	4.90
				3400c	4090f														
5250	5250c	5250	.....	6800	6900	138	33x5	Own.	6-4 x5½	38.40	Pierce-Arrow	Own.	Deleo	Deleo	m-d Own.	Own.	m Spicer	½F Own.	3.93
					700														
2050	2000	2050	.....	2950	3000	126	32x4½	H-S.	6-3¼x5	25.35	Pilot 6-50	Till.	Bijur	Conn.	s-p B&B.	Muncie.	m Hartford	¾F Col.	4.33
3150	3100c	3250	.....	4300	5100	126¾	32x4½	Own.	6-3⅜x5½	27.34	Premier 6-D	Johnson	Deleo	Deleo	s-p B&B.	Own.	m Spicer	¾F	4.88
1095	1095	.....	.....	1750	1825	117	32x4	Falls.	6-3½x4½	23.44	Premocar 6-60-A	Strom.	Wagner	Wagner	s-p B&B.	Mech.	m Spicer	¾F	4.66
.....	1665	.....	.....	2385	2475	116	32x4	Own.	4-3¾x5	22.50	R & V Knight R	Strom.	Wagner	Wagner	s-p B&B.	B-L	m Spicer	F Salis.	4.75
2475	2475c	2475	.....	3015	3105	127	32x4½	Own.	6-3½x4½	29.40	R & V Knight J	Strom.	Wagner	Wagner	s-p B&B.	B-L	m Spicer	½F Tim.	4.90
1595	1645	1485	1745	2355c	2435f	120	33x4	Own.	6-3½x5	24.34	Rae Series T6 & U6	Rayfield.	N.E.	N.E.	m-d Own.	Own.	m,f Own.	½F Own.	4.70
3200	3200	3200	.....	.....	4000	131	32x4½	Dues.	4-4¼x6	28.90	ReVere C	Strom.	West	Bosch	m-d B-L	B-L	m Spicer	¾F Std.	4.00
.....	1485	.....	.....	1885	1985	117	32x4	Own.	6-3⅛x4¾	23.44	Rickenbacker A	Strom.	Simms	A-K	c Own.	Own.	m Univers.	¾F Own.	.....
2850	2585c	2785	.....	3850	3850	128	32x4½	Cont.	6-3½x5¼	29.40	Reamer 6-54-E	Strom.	Bijur	Bosch	s-p G-L	G-L	f Snead	½F Tim.	4.88
3985	3585c	.....	3750c	.....	4650c	128	32x4½	Dues.	4-4¼x6	28.90	Reamer 4-75-E	Strom.	Bijur	Split	m-d B-L	B-L	f Snead	½F Tim.	3.77
.....	10900	.....	.....	.....	.....	143½	35x5	Own.	6-4½x4¾	48.60	Rolls-Royce	Own.	Bijur	Bijur	c Own.	Own.	m Own.	F Own.	3.25
1195	1195	.....	.....	1795	1795	112	32x4	Own.	4-3½x5	19.60	Saxon 125	Strom.	Wagner	Wagner	s-p Det.	Cov.	m Peters	¾F	4.75
1645	1645	.....	.....	2645	2615	118	33x4	Cont.	6-3¼x4½	25.35	Sayers Six DP	Strom.	Deleo	Deleo	s-p B&B.	G-L	m Arvac	½F Std.	4.75
875	875	.....	.....	.....	.....	108	30x3½	Lyc.	4-3½x5	19.60	Seneca L-2 & O-2	Zenith.	A-L	A-L	s-p B&B.	G-L	m Univers.	F	4.75
1095	1095	.....	.....	.....	.....	112	31x4	Lyc.	4-3½x5	19.60	Seneca 50 & 51	Zenith.	A-L	A-L	s-p B&B.	G-L	Detr.	F	4.50
930	980	.....	.....	1685	1685	114	32x4	Supr.	4-3⅜x5	18.23	Sperling A	Zenith.	Bijur	Dixie	s-p B&B.	.....	.....	¾F Pers.	.....
2150	.....	2395	2395	2750	3200	127	34x4½	Own.	8-3¼x5	33.80	Standard 98	Zenith.	West	Split	s-p B&B.	G-L	m Arvac	½F Tim.	4.45
2750	2750	2750	2425g	3950c	3985f	130	32x4½	Own.	2-4 x5	.....	Stanley 740	None.	Bijur	None	None	None	m Peters	½F Own.	1.50
1765	1765	.....	.....	2750	.....	118	33x4	Cont.	6-3¼x4½	25.35	Stanwood Six	Strom.	West	A-K	s-p B&B.	G-L	m Peters	½F Std.	4.50
319r	349s	285g	.....	580	615	102	30x3½	Cont.	4-3⅛x4¼	15.63	Star	Till.	A-L	A-L	s-p	.....	Spicer	Tim.	4.87
2250	2250	2450	.....	3150	3150	125	34x4½	Own.	4-3⅜x5⅝	22.50	Stearns-Knight SKL4	Rayfield.	West	A-K	m-d Own.	Own.	f Climax	½F Own.	4.50
2700	2700	2850	.....	3500	3700	130	34x4½	Own.	6-3⅜x5	27.34	Stearns-Knight :6	Rayfield.	West	A-K	m-d Own.	Own.	f Climax	½F Own.	4.50
1575	1565c	1625c	.....	2450	2550	122	33x4½	Own.	6-3¼x4½	25.35	Stephens 90	Till.	A-L	A-L	s-p B&B.	Mech.	m Mech	½F Tim.	4.90
7250	6900c	6800	(6900c	8600	8900c	138	35x5	Own.	6-4⅛x5½	47.27	Stevens-Duryea E	Strom.	West	Bring.	m-d Own.	Own.	m Own.	F Own.	3.94
			5600																
975	975	785g	.....	1225	1550	112	32x4	Own.	6-3½x4½	23.44	Studebaker Light Six	Strom.	Wagner	Wagner	s-p Own.	Own.	f	½F Own.	4.55
(1250	1275	1275c	1000	1875	2050	119	32x4	Own.	6-3½x5	29.40	Studebaker Special Six	Strom.	Wagner	Wagner	s-p Own.	Own.	m	½F Own.	4.00
1275c																			
1300z	1650	.....	1785	2275	2475	126	33x4½	Own.	6-37⁄8x5	36.04	Studebaker Big Six	Ball&B.	Wagner	Wagner	s-p Own.	Own.	m	½F Own.	3.70
2450	2790c	2640c	2670a	3400	4450	130	32x4½	Own.	4-4⅛x6	30.63	Stutz KLDH	Strom.	Remy	Deleo	m-d Warner	Own.	m Hartford	½F Own.	3.50
2025	2125	2175c	.....	2650c	2785	118	32x4	Own.	4-3⅜x5½	18.23	Templar A-445	Strom.	Bijur	Simms	s-p B&B.	Detr.	f Snead	¼F Us.	4.40
1175	1175	.....	.....	.....	.....	117	33x4	H-S.	4-3½x5	19.60	Tulsa E-1-2-3	Zenith.	Dyneto.	Conn.	s-p B&B.	Muncie.	m	F Salis.	4.50
1275	1275	.....	1305	1785	1785	115	32x4	Own.	6-3⅛x4½	23.44	Velie 58	Strom.	West	A-K	s-p Dooley.	Durst.	m Thiemer	¾F Own.	4.66
.....	1990f	1890	.....	.....	2890	125	32x4½	Cont.	6-3½x5¼	29.40	Westcott D-48	Rayfield.	Deleo	Deleo	s-p B&B.	B-L	m Peters	½F Tim.	4.45
.....	1690	.....	1890	.....	2690	120	32x4	Cont.	6-3¼x4½	35.35	Westcott B-44	Rayfield.	Deleo	Deleo	s-p B&B.	Warner.	m Peters	½F Col.	4.33
2175	2175	.....	.....	3275	3475	121	32x4½	Own.	8-3¼x4	33.80	Wills Sainte Claire..A-68	Zenith.	Deleo	Deleo	m-d Own.	Own.	m Mech	¾F Own.	4.45
1350	1375	.....	.....	1975	2095	118	32x4	Own.	4-3⅝x4¼	21.03	Willys-Knight 20	Till.	A-L	A-L	m-d Own.	Own.	f Own.	¾F Own.	4.44
3100	.....	3400	3600	4000	4550	132	33x5	Own.	6-3⅜x5¼	33.75	Winton 40	Rayfield.	Deleo	Deleo	m-d Warner	Warner.	f Climax	¾F Tim.	4.88

MISCELLANEOUS
a—2 Passenger,
b—3 Passenger,
c—4 Passenger,
d—5 Passenger
e—6 Passenger,
f—7 Passenger
g—Chassis Price.
h—All Metal Type,
k—Soft Top Type,
n—Tire Size 32x4½,
p—Sport.
r—Price without starter and demountable rims. Price, complete, $414.
s—Price without starter and demountable rims. Price, complete, $443.
†Standard Phaetons.

ENGINE
Anst—Ansted
Bea—Beaver
Cont—Continental
Curt—Curtiss
D-Ly—Dort Lycoming
G B—Grey Beal
H-S—Herschell-Spillman
Lyc—Lycoming
Nort—Northway
Roch—Rochester
Rut—Rutenberg
Supr—Supreme
Walk'r—Walker
Weid—Weidely
Wisc—Wisconsin

CARBURETOR
Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg

GEARSET
f-d—Friction Drive
B-L—Brown-Lipe
Cov—Covert
Detr—Detroit
Durst—Durston
G-L—Grant-Lees
Hoos—Hoosier
Mech—Mechanics
North—Northway

CLUTCH
c—Cone
f-d—Friction drive
m-d—Multiple disc
s-p—Single plate
Anst—Ansted
B & B—Borg & Beck
B-L—Brown-Lipe
Det—Detlaff
Detr.—Detroit

STARTING, LIGHTING IGNITION
A-L—Auto Lite
Bring—Berling
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L-N—Leece Neville
N. E.—North East
West—Westinghouse

UNIVERSAL
f—fabric
m—metal
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M&E—Merchant & Evans
Mech—Mechanics
Sterl—Sterling
Univers—Universal

REAR AXLE
F—Floating
½ Floating—Semi-Floating
¾ F—Three-Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
W-M—Weston-Mott
Tim—Timken

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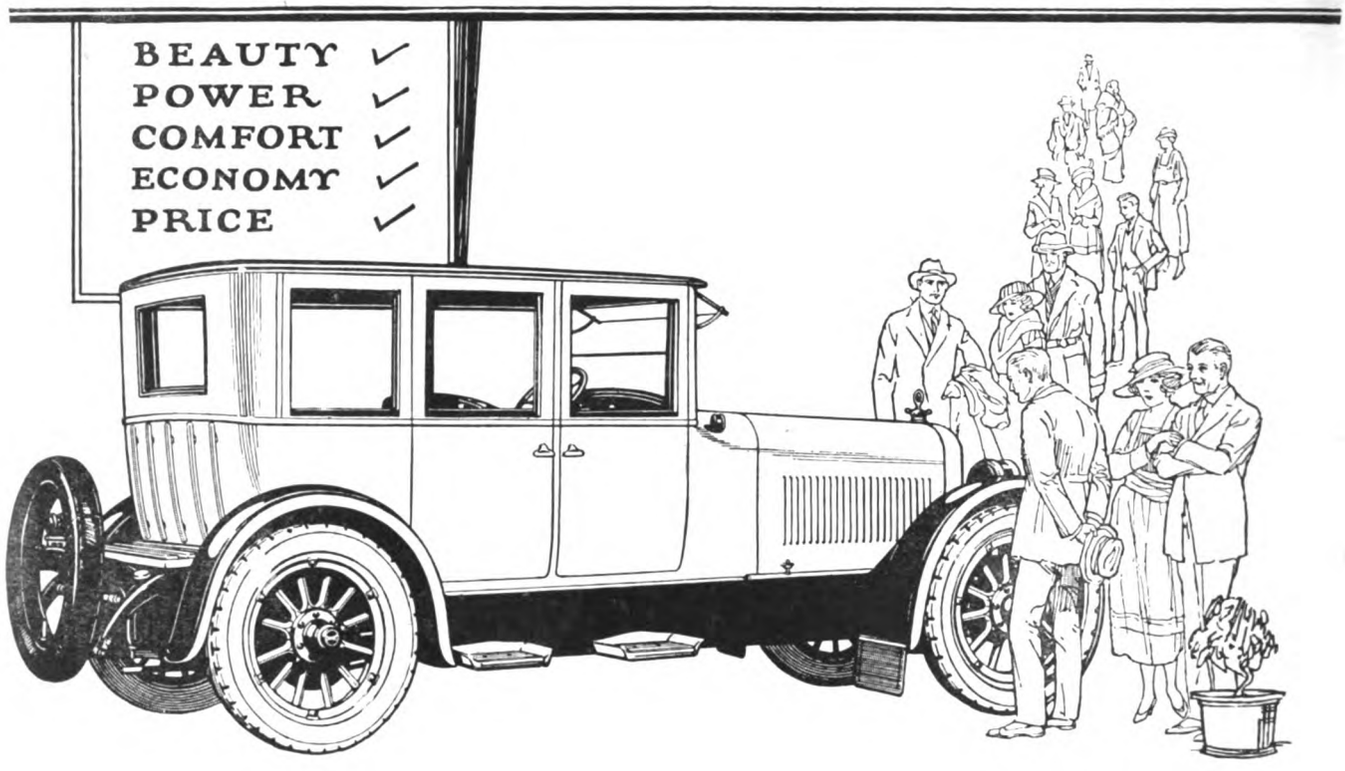
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The average car owner gets a lot of satisfaction out of the appearance and completeness of his car, and he is glad to have suggestions that will add to his comfort and pleasure. He wants you to suggest equipment that will save him time and trouble. When a motorist stops at your gas pump, or comes into your store or garage, the profit on the goods he asks for is already made, and he is a live prospect for any automobile equipment that is not on his car.

Through suggestion, you can induce many customers to leave a profit of several extra dollars' worth of other things instead of only 25 cents profit on five gallons of gasoline. CHAMPIONS are the equipment that every automobile must have, because no engine can run long without dependable spark plugs. Every motorist who has had to travel any distance with a "missing" cylinder or take out a spark plug and clean it while on the road, will welcome your suggestion that he put a couple of extra CHAMPIONS in his tool box.

The object of the "ASK 'EM TO BUY" campaign is to make it easy for all your customers to buy what they need in reliable auto equipment. In other words, it means SELLING THEM WHAT THEY NEED AS WELL AS WHAT THEY COME TO BUY. This is easily done, with little extra effort, by practical suggestions to every car driver.



Now is the time to suggest CHAMPION PRIMING PLUGS to your Ford and Fordson customers and those who have Farm and Stationary Engines, for with these plugs, starting a cold motor is positive because the gasoline must go right where the spark is—at the firing point—and less gas is needed.

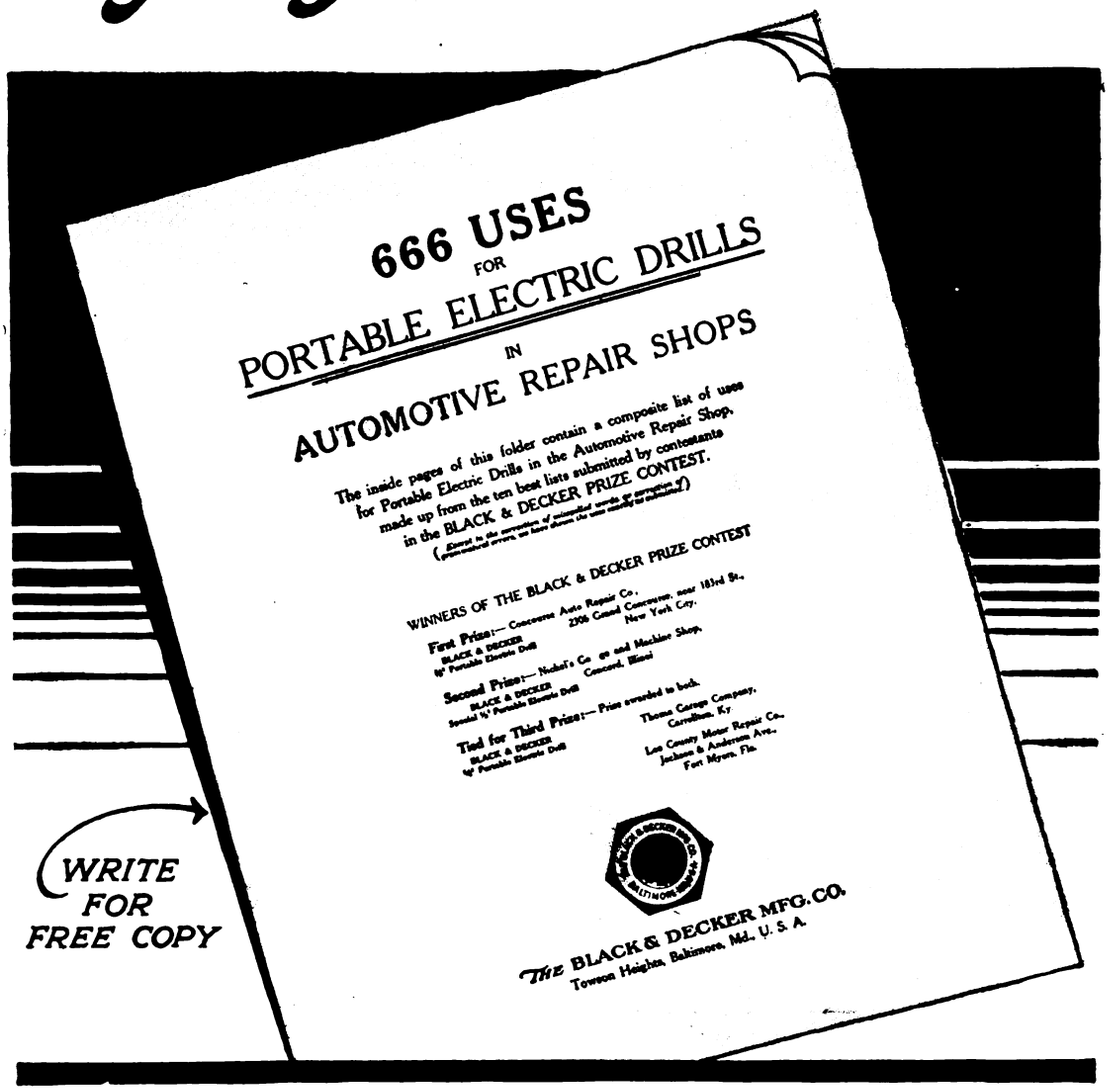
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The Black & Decker Prize Contest showed that there are 666 Uses for Portable Electric Drills in Automotive Repair Shops.

A list of these has been printed as reproduced above. This list constitutes a valuable drilling manual for automotive repair men and will be supplied free on request.



THE BLACK & DECKER MFG. CO.
Towson Heights, Baltimore, Md., U.S.A.

"The Well-Equipped Shop Gets the Business"

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MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

Reg. U. S. Pat. Off.

239 West 39th St., New York City Phone Bryant 8760

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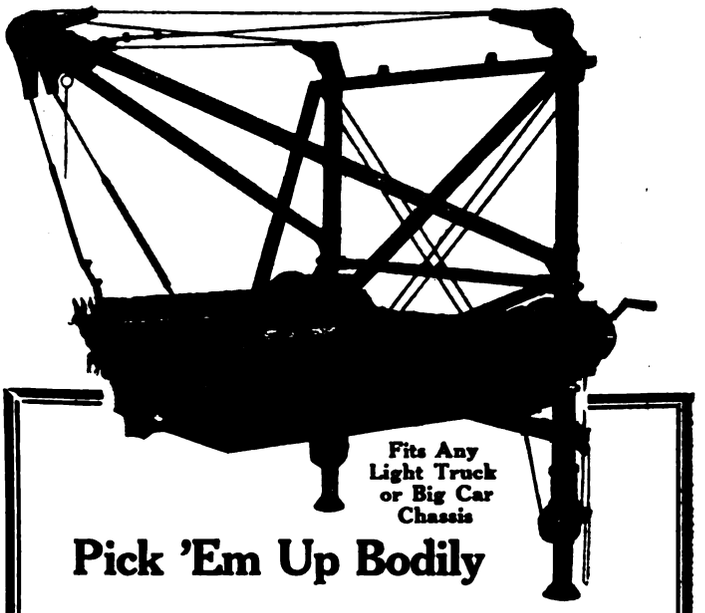
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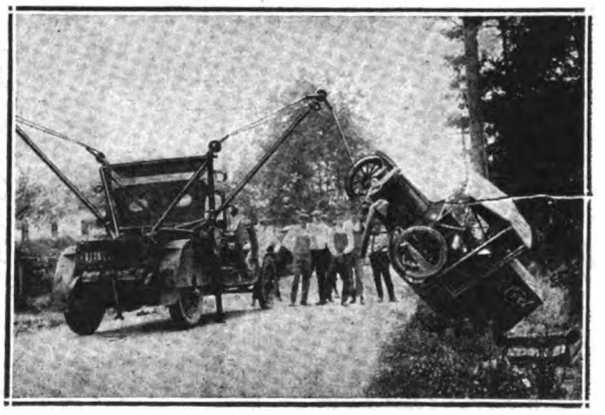
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You Can Do It With HOLMES AUTO WRECKER

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The Coachbilt

ANDERSON

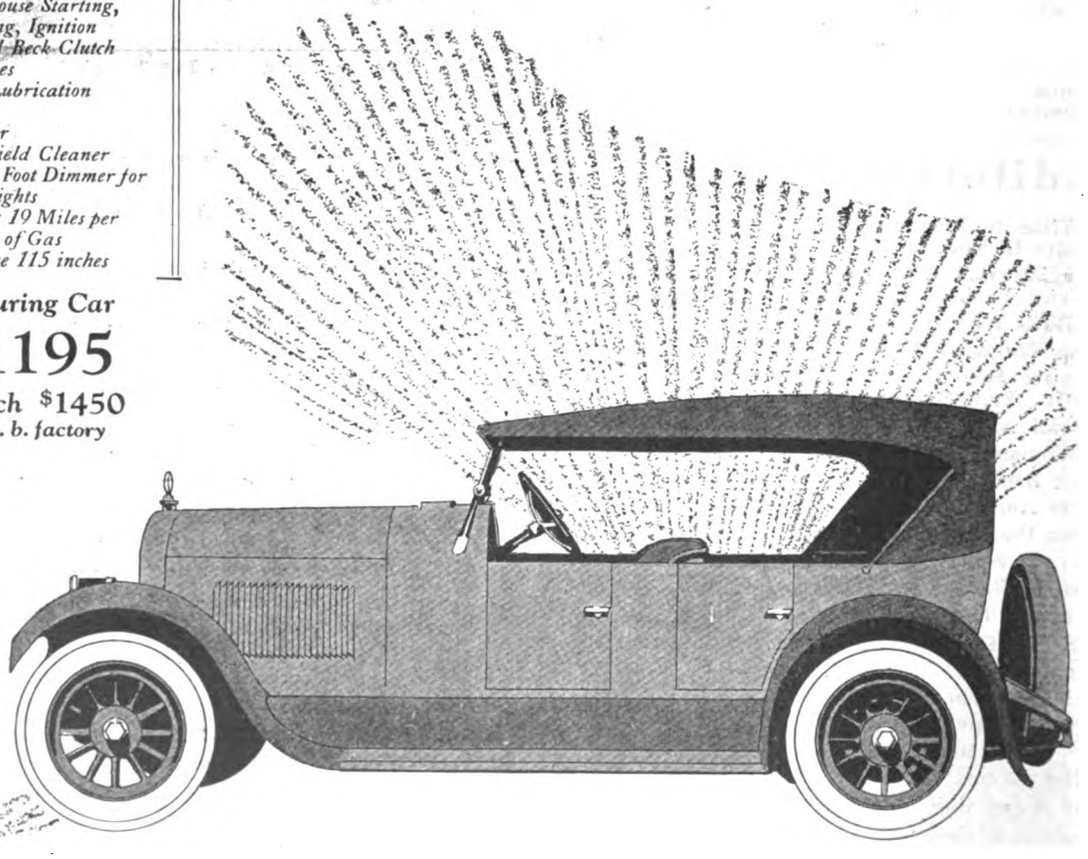
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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXIII New York, U. S. A., Wednesday, October 25, 1922 No. 4

He's Got the Ball! Get Right After Him!



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The Time to Plan for Winter Business and Profits Is— NOW!

Let's Prepare NOW to Avert a Winter Slump by Planning to Sell Automotive Transportation As a Winter Necessity

INSIDE the plate glass front of a large New York store demonstrators are showing the advantages of a new idea in winter overcoat design. The popular periodicals are carrying the advertisements of furnace makers, electrical heating devices, etc. The last issue of Motor World carried Christmas advertisements.

Is the merchant who sells automotive products going to wait until the snow plows are scurrying through his community before getting his selling plans into shape to make a winter appeal?

Whether the coming winter returns a profit will depend as much upon how the dealer thinks and plans now as it will on how he works after snow begins to fly. *This is winter planning time.*

FOR the motor car dealer it means getting enough sales at the front door and enough repair work at the back door to insure a return on his effort and his investment. It means checking up each department to detect leaks and reduce overhead to a figure favorably proportionate to earnings. For many dealers it means either getting more business or cutting down operating cost.

Most dealers are planning NOW to increase selling pressure this winter by making it aggressive and timely —by fitting their products and their service into the winter thoughts of the public. This is the most healthful way to minimize the downward winter trend of automotive business because it preserves the organization and keeps it fit for early application of the big spring selling effort.

Winter Business an Established Fact

Winter business is an established fact to-day among the more progressive dealers, jobbers and garagemen. They have hitched their winter selling efforts to the idea that *motor transportation is a definite winter need* and have worked out means of helping to supply that need. Dealers, jobbers and garagemen in many parts of the country, during the last two or three winters, have been selling cars and trucks and accessories and service as winter necessities.

They have used the spare moments that the winter lull has produced to check carefully back over the prospect lists, discard the dead wood, revive those that give promise of spring purchases and keep up the contact with them over the winter period. They have used the winter months to establish strong contact with their owners either through service inspection or salesmen's calls and have used this contact to get new winter and spring prospects.

The big thought that aggressive dealers have gotten out of their winter selling efforts of the past two or three years is that *winter is a time for increased rather than decreased application and work and that there are profits to be made in winter and important preparations to be made for spring selling.*

Winter offers particularly good opportunities for timely selling efforts.

For instance. The fall hunting season is just swinging into activity. A display of the car in a hunting scene will be particularly timely and attractive. Such a display may be as elaborate or as simple as the dealer desires. A very simple display consists of placing the car in the window, covering the floor and walls, or screens, behind the car with autumn foliage and placing a small tent at one side. A camp fire, made by burning the ends of several sticks and placing them on the floor in cone shape with a red electric bulb throwing its light through them, may be shown in the foreground. A couple of guns leaning against the tent or the car, a hunting jacket hung on a tent rope and a few other hunting articles on the running board of the car or near the tent will complete the picture.

A more elaborate application of the hunting idea in automobile display is made by dressing the floor salesmen each day in hunting togs and having them spend some time in the window reading, cleaning the shooting irons or doing some other thing that makes them a part of the picture.

Among the other opportunities for timely display offered during the next few weeks is Thanksgiving. A rustic background can be used in these displays also, and in the car may be a few figures dressed in winter togs. A sign, "To Grandma's for Thanksgiving Dinner," might be used.

Make the Winter Effort Timely

It is not the purpose of this article to suggest particular window displays for this fall so much as it is to urge that something be done to get the timely appeal working—to make the motor car salesroom stand out and tell a seasonable selling message during the fall and winter months. Such displays must not be judged by the actual sales of cars directly traceable to them—these may be few. The value of them lies in the impressions that they make—impressions that will imprint the dealer's name and his product on the public mind. And, maybe the memory of your Thanksgiving window will bring a man into the salesroom next spring, a brand new buyer with no trade-in dangling after him. Who knows?

Another idea that has been particularly successful at

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this time of the year lining up work for the service station is the winter inspection. Some dealers are announcing now that they will inspect, free, every car of the make they sell in their towns. Owners are urged to call, phone or write for inspection appointments. As contacts are made and cars inspected the owner is given a report with specific recommendation concerning the repairs that are needed to put the car in shape for satisfactory winter operation.

This is the time the accessory merchant must begin to get a winter appeal into his selling, also. In this the accessory merchant is particularly fortunate because a large number of the items on his shelves to-day—items that he has sold in good quantities through the spring and summer—may be sold with a winter appeal.

Nearly all accessories are built to enhance the comfort, safety or convenience of motor transportation. Comfort, safety and convenience are the things that make winter motoring pleasant. The item that provides comfort or safety for summer driving very often does the same thing for winter driving—but some dealers have not recognized the fact that *they can sell more accessories as winter necessities if they will but offer them to the public as such.* It merely is a matter of presenting the product with a timely, seasonal appeal.

In order to present certain items of equipment this winter as winter necessities some dealers are selecting a group of articles that are particularly useful in winter driving and featuring these in displays, advertising, etc.

One idea that has sold many thousands of dollars worth of equipment is that of placing a table in the middle of the store floor, a few feet inside the door, upon which is displayed one or more winter necessities. One or more of the same items used in the table display are featured in display windows. The windows and tables make the suggestion to the motorist and at the same time make it easy for them to buy.

Now Is the Time to Plan Winter Selling

Besides the things that the dealer and the garageman must do to get more winter business now, there is planning for future selling efforts to be done.

The car dealer, if he has not already done so, can use his time advantageously now in planning and writing his mid-winter advertisements, Christmas letters and cards to owners and prospects, his holiday window displays and possibly the details of his winter sales contest.

These are busy planning days for the accessory and tire dealer. He should be thinking of his advertising, letters and displays to present automotive equipment as Christmas gift suggestions, checking up with his jobber salesmen on the equipment that will sell this Christmas and placing his orders, printing of Christmas cards, letters, etc., getting quotations on wrapping paper, ribbon, etc., for Christmas sales and the planning of all special merchandising efforts for the winter months.

Let's discard the idea now, to-day, that winter is a time when business must just naturally sleep and salesmen can do nothing more helpful than hang around the salesroom and swap yarns.

Let's discard the idea now that selling effort is useless in winter because the amount of business to be gotten is not enough to warrant a heavy expenditure of time and effort. Every winter more and more automobiles are being depended upon for business and recreational transportation. Every winter automobile and truck owners are demanding and getting better work in their communities in keeping the highways open for all winter travel. Every winter more and more cars and more and more equipment for them are being sold.

Winter is full of opportunities.

Opportunities for studying, planning and perfecting merchandising activities.

Opportunities for observing and improving one's organization and methods.

Opportunities for canvassing and soliciting owners and calling on spring prospects.

Making the Fall Display Timely



This window display recently made by the Eldridge-Buick Co., Seattle, is a fine example of how car dealers may make a striking and timely display and with a very small expense. Autumn foliage may be used for the background and a figure dressed in a hunting costume often may be borrowed from a local dry goods or sporting goods store

Opportunities for seeking out and seizing winter business and profits.

Opportunities for doing many of the detail jobs that have been neglected or glossed over in the rush of spring and fall business or in the short handed summer period when vacations and week-end absences cut the man power and shorten the time that can be devoted to detail efforts.

Winter is a time when catalogs may be carefully read and used for the valuable information they contain. It is a time when the trade papers, carrying the stories of the developments in automotive merchandising and successful ideas of others, may be given a definite place in the reading of the dealer during the long evenings. It is a time when the advertising in them may be profitably studied for suggestions that will make profitable items for the dealer to sell and equipment for his shop.

The progressive merchants do not hibernate in winter—they study, and plan and sell—they WORK.

Let's begin now to plan to make this winter yield more business and more profits than any previous winter and prepare for an early, aggressive, efficient spring selling campaign.

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A Registration Plan That Gets Electrical Service Business

How a New Jersey Station Insures Contact with Owners of Cars Carrying Its Equipment Through Authorized Dealers

By DONALD D. BLANCHARD

IT is stated in the guarantee of every car manufacturer that he is not responsible for equipment and accessories not of his own manufacture, inasmuch as they are guaranteed individually by their makers. The electrical system is included in this category.

The manufacturers of electrical equipment stand back of their products through authorized service stations. For their own protection, however, most manufacturers make a proviso in their guarantee that the equipment must be registered with the authorized service station within five days of delivery of the new car to its purchaser.

THE car owner, the car dealer and the electrical service station all have a definite interest in having this registration made. The car owner is entitled to the protection of the guarantee and he has a right to expect that the use and enjoyment of his car will not be interfered with by electric troubles. Technically, the car dealer is not responsible for service on electrical equipment, but he has a real interest in its performance as it is essential to his business that customers be satisfied with the performance of their cars. The electrical service station is interested because it is in business to sell electrical service after the warranty period to both the car dealer and the car owner.

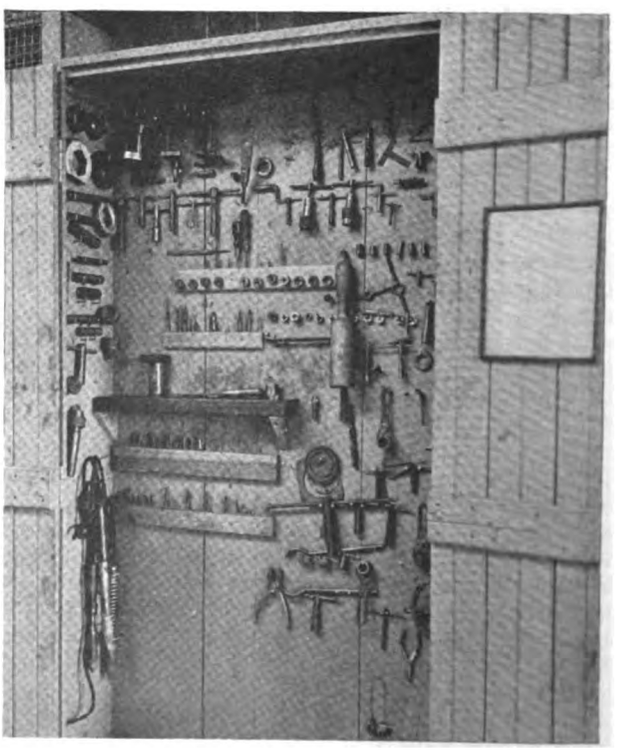
Many car owners do not register the electrical equipment on their cars with the electrical service station. Very few car dealers make any effort to encourage registrations. Yet it is very much to the interest of both to do so.

J. Harry Hearnen of Trenton, N. J., is the authorized service representative for practically all makes of starting, lighting and ignition equipment and the Willard Storage Battery. He has sold the dealers of that city on the importance, to them and to their customers, of registering the electrical equipment on new cars with him as the authorized representative of the manufacturers of this equipment. In so doing, he has secured much profitable work for his own shop and has helped the car dealers make satisfied owners of their customers.

All but two dealers in the city are co-





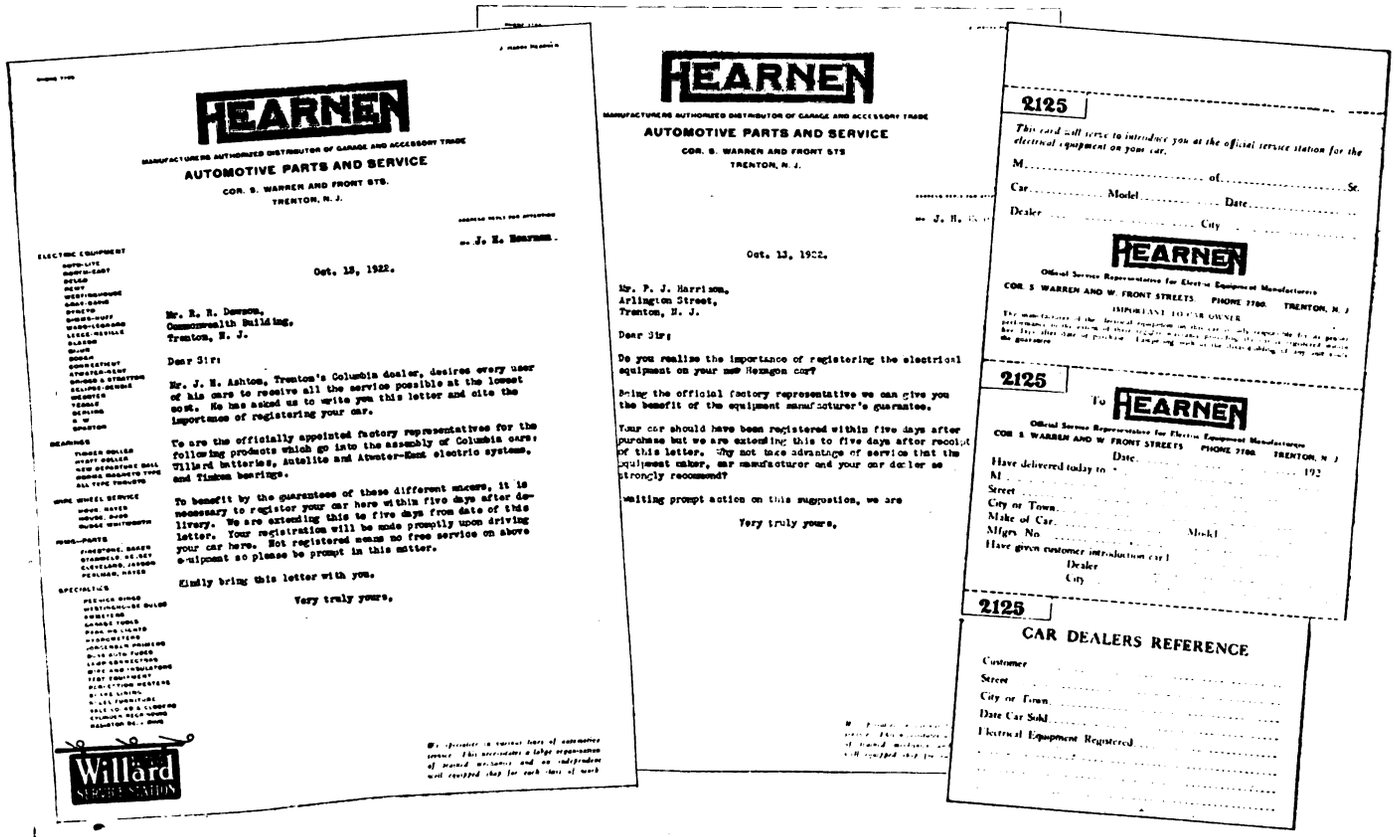


Upper left—A view of Hearnen's salesroom. The merchandise is neatly arranged and there are numerous special displays to catch the customer's interest. Lower left—An attractive battery window dressed with the assistance of a screen background. Right—A place for everything and everything in its place speeds up service work. This tool cabinet contains magneto repair equipment

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operating with Hearnen in this work of equipment registration. These two dealers operate their own electrical shops. The dealers who are working with Hearnen are giving him 100 per cent co-operation. They furnish him with the name of the owner of every new car they deliver and they give every car owner a card of introduction to the electrical service station.

To facilitate the work of the car dealer in getting the customer to register the



The registration form which Hearnen supplies to the car dealers is shown at the right. All three sections are filled out by the car dealer. The upper section is given to the owner who uses it as a card of introduction at Hearnen's service station. The second section is mailed to Hearnen by the car dealer. The third section is retained by the dealer as his record. The two letters are used by Hearnen to follow up new owners who do not register promptly

electrical equipment on his car, Hearnen provides a form for the purpose. This form is printed on card stock and is in three sections. The forms are numbered so that these numbers will not divulge any information as to the number of sales a dealer has made. It may start with 250 and run through to 266, then jump to 311 and extend to 339, etc.

The three sections of the form are filled in by the car dealer. The upper section is the customer's card of introduction to the electrical service station. The dealer mails the second section, which is postcard size, to Hearnen. Hearnen has his name and address printed on the back of this section to which he has affixed a one-cent stamp, so that the dealer may use it.

The lower section of the form is for the dealer's own record. This card is 3 x 5 in., so that the dealer may use it in a standard 3 x 5 cord filing tray. Most dealers are using these cards as their owner file index.

Without further solicitation on the part of Hearnen or the car dealers, 90 per cent of the new car buyers come in to have the electrical equipment registered. Those who do not come in, receive a mail follow-up. Hearnen has two standard letters which he uses for this purpose. One of these makes use of the car dealer's name.

From the standpoint of the electrical service station, this system has numerous advantages. It secures the registration of the electrical equipment on practically all the new cars sold in the territory. It gives the service station an opportunity to inspect and adjust the equipment, and to advise the owner as to its use. This preventive service is extremely valuable as a builder of good-will. When the owner drives his car in, a flickering ammeter hand may show a loose connection that in a few minutes can be corrected. This often saves the electric equipment manufacturer the price of an armature at least. With this saving goes hours of time by the car being tied up for generator repairs.

The registration provides an entering wedge for future business. Hearnen gets acquainted with the new car owner. He gets his name and address. The car owner likewise gets acquainted with Hearnen and learns that here is the place to go if he has any electrical troubles. Furthermore, owners that do not come in for service without further solicitation can be followed from the file of registrations either by mail, telephone or personal visit. The car owner gets better performance from the electrical equipment on his car and the electrical service station gets more business as a result of the registration plan.

Not all service stations could work this system out to the extent that Hearnen does as few stations represent so many lines. Hearnen is the representative of all of the better known makes of electrical equipment. This circumstance has made it possible for him to solicit the co-operation of every car dealer in the territory. A service station not representing so many lines could, however, ask the co-operation of dealers handling makes of cars on which the equipment it represents is standard.

The record concerning the electrical equipment on a car that has come in for registration is made on the back of the upper portion of the form which the customer uses as an introduction card. These forms are filed alphabetically under car name in a card file as a permanent record. At the time registration data are secured, the employee doing the work compares the condition of the tires with the speedometer reading to make sure that the speedometer has not been set back in an effort to show that the car is new.

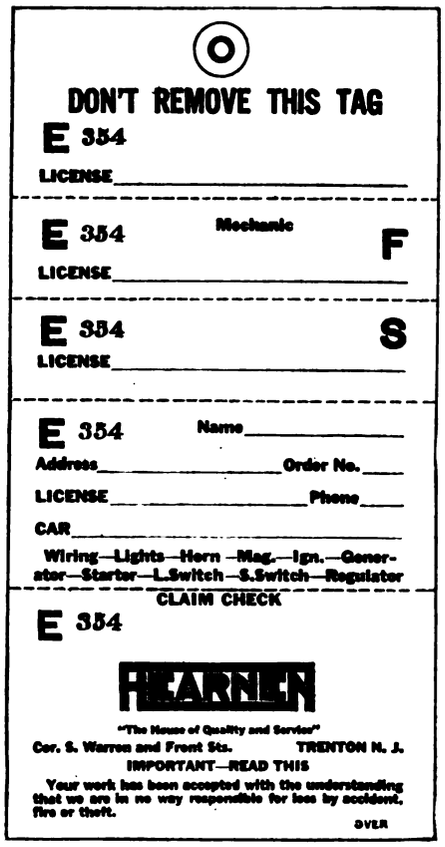
Hearnen has worked out an interesting tag form which simplifies the clerical work in connection with his electrical repair work. This tag is in five sections. These sections all bear the same number which corresponds to the detailed repair order covering the work. The

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lower section is given to the customer as a claim check. The second section remains in the office. One of the words at the bottom of this section is checked to indicate the nature of the repair. When the mechanic removes the unit to be repaired, he takes the third section of the tag, with the unit, to the shop. This identifies the unit while it is in the shop. When the work is finished, the fourth section is removed and placed in the envelope containing the repair order. This envelope then goes to the office. The fifth section remains on the car until it is delivered as evidence that the work has been completed.

The shop endeavors to operate on a cash basis. It sometimes happens that a repair will cost more than a customer expected and he will not have sufficient money to pay the bill. This means one of the two things—either he is unable to get his car or his name must be put on the books. If the customer is a responsible person, but not having a charge account, Hearnen will let him have the car, but instead of putting his name on the books, he makes the customer a personal loan for the amount short. Hearnen has found that the average man is more particular about paying a personal loan promptly than he is about a bill he has contracted with a business establishment.

A regrinding department is another feature of Hearnen's business. Although he doesn't do general repairing he will contract for a complete overhaul job which includes regrinding. The disassembly, general repair operations and reassembly are all done by a service station usually specializing on the make of the car sent them. Hearnen does only the regrinding work in his own shop. He does not make a profit on the work done outside but, on the other hand, he insures his shop of doing the regrinding work.


DON'T REMOVE THIS TAG
E 354
LICENSE
E 354 Mechanic F
LICENSE
E 354 S
LICENSE
E 354 Name
Address Order No.
LICENSE Phone
CAR
Wiring—Lights—Horn—Mag.—Ign.—Generator—Starter—L.Switch—S.Switch—Regulator
CLAIM CHECK
E 354
HEARNEN
"The House of Quality and Service"
Cor. S. Warren and Front Sts. TRENTON N. J.
IMPORTANT—READ THIS
Your work has been accepted with the understanding that we are in no way responsible for loss by accident, fire or theft.
OVER

An interesting form used in Hearnen's shop

Most of the regrinding business naturally comes from automotive repairshops. Hearnen has a salesman calling on the trade to sell this service. To provide an effective demonstration that will help one of his salesmen to feature how satisfactory a regrinding job is, he is now rebuilding a 1915 Cadillac 8. The cylinders are being reground and new pistons and pins fitted. New bearings are being installed throughout. The overhaul will not cost more than an owner often spends on a car of this age. When it is finished it will run as quietly as a new car. The salesman using the car will call on his trade with it and point out to them that they can secure similar results for customers with old cars by selling them a regrinding job.

Much of Hearnen's success is undoubtedly due to his genial personality and to the spirit of loyalty he has built up among the members of his organization. Everywhere about his building, the fine morale that exists among the employees is evident. Seven or eight times a year the entire organization get together for dinner at a downtown hotel. Several times during the summer Hearnen goes out with his men on fishing trips which range anywhere from 50 to 70 miles from home. With arrangements having been made for boats, bait and skippers, the crowd have a regular family affair.

Making the Shop Yield Winter Profits

By WALTER ROOT

Service Manager, Bruening Bros., Kansas City

WE make our shop profitable in winter as well as summer by our system of monthly inspections. The system is simply this. We have a card index of every Buick and Cadillac owner in our territory with the model, motor and frame numbers and in most instances the ownerships through which it has passed. On the same day each month we mail a postal card to the owner advising him that a certain day in the near future (and we specify the day, date and hour) is his inspection day and to please have his car at our service station as near the time specified as possible. We allot six or seven cars for each working day of the month. A majority of the owners so notified bring in their cars. We change the oil in the engine, grease the car thoroughly, lubricate the springs, fill the battery and radiator and the gas tank if nearly empty and in going over the car in the process of greasing we look for loose nuts, rattles and squeaks and anything else that may need attention. The owner will usually mention any minor things that need attention and will always have our shop do his larger jobs. This inspection enables us to determine when his valves need grinding, brakes relining, bearings taken up or any of the several things that a car may need and when these things are brought to his attention he will either have them done at once or will arrange to bring the car back at our convenience to have the work done. This method brings the work to our shop in such order that we can take care of it and it is unusual, except in cases of complete overhaul jobs, for a car to remain in our shop overnight. It also keeps our mechanics busy every day and we seldom have any rush days and no dull ones. The charges for this service are the regular time and material charges of our shop and in most instances run from $4 to $5 where no gasoline is put in or materials other than grease and oils are used.

The system gets the owner in the habit of coming to us for everything he needs for his car and gives us an opportunity to sell him and put on a tire without taking up his time or coming at an inopportune time for us.

By ART JOHNSON

Manager, Collinson Buick Co., Winfield, Kan.

I KNOW every car on our list, what has been the matter with it, if anything, what was not fixed up the last time the car was in and what the owner ought to have done to it. I call these owners up on the telephone myself, one after the other, and can talk specifically of his car and its troubles. Telephone calls of this nature cannot well be made by clerks or stenographers. They should be made by the manager, one whom the customers know by name and whom they know has charge of the whole works.

Owners have not invested as much as usual the past summer in car upkeep, and there are many suggestions that I am able to make about work that should be done.

In addition to the telephone calls, circulars are sent out to owners advising them as to the care of batteries and so forth, and the telephone calls pick up these subjects again, concentrating the subject of the circular on the particular owner's car.

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Two Birds With One Stone!

Satisfactory Service and Always a Busy and Profitable Shop

By J. B. IRVING

President, S. B. I. Motor Sales Co., Hupmobile distributor, Denver



J. B. Irving

TO every business man falls the lot of solving problems. As long as there is industry there will be unknown quantities involved. But not in the history of business have there ever been greater problems than those faced by the men engaged in the automotive business. When one considers how this industry has grown in the past decade, this is not difficult to understand.

So when we were asked by Motor World "What important problem in your business have you solved?"—we threw up our hands and slumped in our chair.

Merchants in every other line have been at solving their problems for centuries. So there is little wonder for our being flabbergasted when we were asked to which of our problems we could append "Q. E. D."

Satisfaction First

Frankly, not one of our many problems have been actually solved. True, many are nearing solution, and the one which has given us our greatest concern and has most nearly approached the point towards which we have been striving is—Service.

Service is to the automobile business what safety-vaults are to the banker. Both are essential to the security of the business.

The first consideration that must be given to service is the degree of satisfaction which the customer receives from it. For upon the degree of his satisfaction is based his faith in the integrity of the house and the product it sells. Whether profitable or unprofitable, service must give satisfaction—and satisfaction is a will-o'-the-wisp.

We soon realized that we could not please all of the people all of the time, but that there was some way to satisfy most of the people all of the time.

Now, if you want to thoroughly understand a subject, you must study it from all of its angles. And since the human angle is the base angle of service satisfaction, assuming, of course, that the service is good service, we applied ourselves to studying the human phase of the subject.

Our conclusion—we eliminated the personal factor from our service.

At first glance this may seem startling, but let us go on. We realized that our men out in the shop are good mechanics but poor psychologists. So we established our system on the theory of the law of averages; knowing that if everyone received identically the same degree of efficiency and the same degree of courtesy the majority would be satisfied.

Every person who drives a Hupmobile into our shop, be he rich or poor, white or black, receives the same solicitous treatment from an efficient supervisor. The work order is tabulated and he is then and there informed of the hour at which his car will be delivered to him. This is step No. 1—Courtesy.

The shop superintendent specifies the time for the work to begin, and the car is placed in its proper stall by a helper who arranges the tools necessary for the job and does the preparatory work for the mechanic. This is step No. 2—Promptness.

The foreman having received the inspector's report, details men especially qualified for the particular work at hand. This is step No. 3—Efficiency.

The last step, no less important than the other three, is to deliver the car at exactly the time for which it was promised. This is punctuality. Now when you combine promptness, punctuality and efficiency there is but one sequence—the least possible cost.

Here then, is where the personal element enters. The customer having received the greatest possible good in the shortest period of time for the least expenditure of money—is satisfied, and our problem of service is nearing its solution. That our theories must carry some worth, is evidenced by the fact that the service end of our business has increased about 400 per cent within the past two years as a result of our efforts.

Creating Good Will

Consider for one moment what this means. It means first of all, that our service problem has evolved itself into a lucrative one. That our winter months, formerly dull and consumed with the laying off of men and the plodding through with very little to sustain us but the hopes of an early spring, are now filled with work, a full force and a good income. But far more reaching than all of these, is the confidence and trust that has been created for our house through our service. Many purchases are traced directly to the good-will created in our shop.

Like the skipper of a bark we are constantly on the alert; ready to add to our service those factors which we feel will propitiate it, and to take away those things which may detract from it.

A new feature which we have recently added, is our free brake inspection service. This, considering the mountainous nature of our territory has proved a great boon to our drivers, and already we are noticing remunerative results.

And so it goes. Never completed, but ever unfinished, our problems will not be solved so long as the sea is restless.

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Selling Trucks to the Farmers

A Remarkably Interesting and Intensely Practical Presentation of the Problem from the Viewpoint of the Man on the Firing Line

By A MAN WHO SELLS TO FARMERS

TRUCK dealers, to get the farm business, must turn the calendar back and get in step with Mr. Farmer where he fell out of line a couple of years ago. Don't think for a minute that his shortage of funds constitutes the chief reason why he is not buying trucks to-day. Nor don't mislead yourself into believing that every farmer who purchased a truck between 1917 and 1920 bought it entirely for its efficiency instead of luxury. Even a truck can be a luxury.

The farmer has been swamped with a flood of city cousin advice on farm equipment. Men who never curried off a horse have revolutionized the farm for him on paper. The soft-collared boys with the college stripe neckties sat behind their $35 per week desks and purred softly into the farmer's ear about farming with factory methods, and in their pleasant dreams of idealisms have had the farmers keeping plumbers' hours.

Tons and tons of printer's ink have been spilled on the subject. The advertising and promotion departments have built up a wonderful case for the motor truck, and to read the literature one would be almost lead to think that the only thing that is holding back farm sales is the delay in the farmer's recovery from the depression. I want to tell you that if farming was on its best feet to-day that there is still a big job ahead of us.

I DON'T want to discourage motor truck dealers; neither do I want to falsely encourage them. But I do want to point out that farming is one of the most diversified of our industries—that there is no other industry in the world where the operations in a small way so closely resemble operations on a big scale—and that the farmer at no stage is an easy man to sell anything to.

I want to meet this situation right on the nose; better that we face the facts as they exist on the farms than the theories as they appear at the end of some desk-hound's pencil. If we don't analyze this situation, truck dealers will waste a lot of time, energy, gasoline and postage on certain farmers and they'll never get it back.

It must be remembered in the first place that hard as it is to do it, trucks can (never should) be sold to people who cannot use them profitably. Good salesmanship will do it—that is if you want to concede salesmanship good that exaggerates. Furthermore, not every farmer who bought a truck between 1917 and 1920 did so to his entire advantage.

I have no doubt but what every farmer would like a truck—like it the same way his wife hopes some day to have an extra set of dishes for best—but whether every farmer can use a motor truck in addition to the horses that he must maintain, and pay for that truck out of savings or additional earnings is another matter.

A great many farmers bought trucks during abnormal times merely as a farm luxury. They had the extra money to spend. The farmer got his truck and mother got her extra set of dishes.

A farmer operating a small farm is not a good prospect for a motor truck unless it is a dairy or fruit farm or a truck garden—a frank statement but a fact. No use fooling ourselves; it costs too much to sell goods to-day to waste our ammunition. Except in abnormal times there is no big money to be made on a small farm.

Personal Solicitation

Therefore truck dealers will do well to canvass their territory and make a good personal survey of the situation. The profit on one sale will pay for it and there is at least one farmer who needs a truck and can make it pay for itself. There are very few dealers, if any, who have territories where there is no farmer who needs or can use a truck profitably.

What I am pleading for and working toward is the necessity of personal solicitation. The farm business is too varied and there are too many farmers who can get along without a truck to make an expensive mailing campaign pay. On the other hand there are enough prospects to make putting a man out with a demonstrator pay. You cannot get along without some direct-by-mail effort but you can't rely upon it solely.

Any two grocery stores are more nearly alike than two farms, so personal knowledge of your prospect's requirement is more necessary in selling farmers than in selling merchants, and you can't get this knowledge mailing him circular letters.

You have to get right out on the road and show the farmer.

Of all the people you sell trucks to, he has more mechanical knowledge than any of them. He knows construction. You know it to be a fact that a good farmer boy around a garage is handier than a factory mechanic. Why? Because to repair machinery is born in him.

So don't scatter your shot on farmers. CONCENTRATE, SOLICIT AND DEMONSTRATE.

Trucks will not sell themselves—some salesman must do it.

Even if farmers were suddenly returned to the conditions that prevailed between 1917 and 1920 we would have to go back to our original methods.

I am afraid that so much has been heralded about every farm needing a truck that when the farmer does get squared away financially the truck dealers expecting a flock of orders to enter themselves will be caught napping.

Remember thousands of farmers are not sold on the truck idea at all and no amount of printed matter will sell them, but in hundreds of cases personal solicitation will.

Selling farmers has never been easy even in the most prosperous times so when they get back in the market don't hope for too easy sledding.

In a number of cases you will be doing the farmer a good turn if you don't sell

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him a truck, but in a great many other cases you are not only doing the farmer a good turn to induce him to buy but are also rendering the whole community a good service.

Vendors of time and labor saving devices have a great obligation to perform—a great duty they owe to humanity. Any dealer who is fortunate enough to be handling a good truck is only doing his part to hold back civilization if he does not push it.

To us gasoline is only one of the many commodities. We buy it without ever thinking that the distribution involved a lot of pioneer work and that the big organizations who now handle the bulk of this business got where they are today by going after the business when gasoline had to be sold instead of measured out to buyers as they stand in line.

The first cash registers were not shipped out on the frantic request of storekeepers who felt the pressing need for some place to put their money.

Nearly every large business concern uses cash registers, adding machines, typewriters and letter printing machines, but you can gamble your last dollar that the first of them was sold by the ingenuity, the persuasiveness and the persistence of some good salesman instead of leaving it up to Uncle Sam. The rural mail carrier is not selling the farmer much merchandise nowadays.

The fact I am driving home is that the pioneer work of motorizing farms is far from being completed. Selling motor trucks to the farmer who specializes in raising hogs differs as much from selling trucks to the dairy farmer, or the truck gardener, or to the ranch man who wants to haul coal and fence posts to a ranch 40 miles from a railroad, as selling jewelry differs from selling white flannel pants.

Selling on the Ground

The only way to sell trucks is to get right on the ground where they are to be used. And the real truck salesman is the fellow who can drive and demonstrate and who is willing to put on a pair of overalls and haul a cow to town or help bring in a load of produce before sunrise. He must demonstrate that the truck will haul more bushels of oats between the threshing machine and the elevator than three teams can haul in the same time.

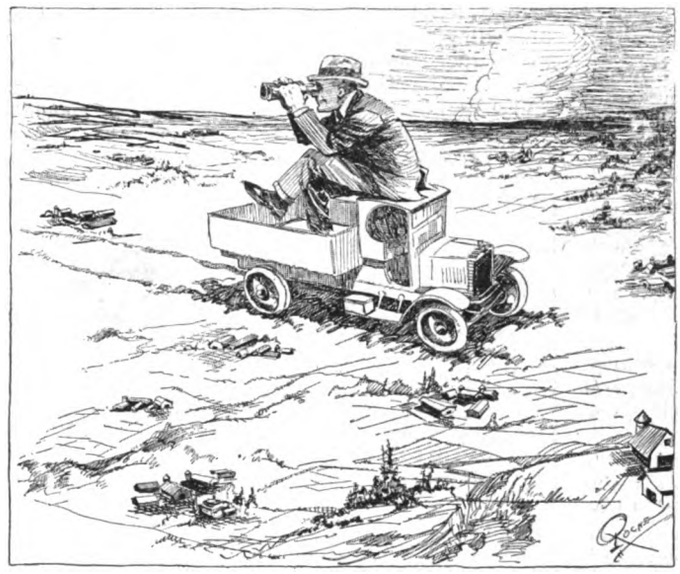
The reason why a farmer doesn't buy a truck is either because he hasn't the money or that he is not sure it will pay. There are hundreds of farms that a truck salesman should know instantly are not cut out for motor trucks. Instead of wasting his time and energy and the boss' money he should pass them right up and concentrate on the farmer who actually needs a truck.

It's a truck salesman's duty to show a farmer where the truck will save or make him money; but it is a crime to induce one who can not use the truck profitably to buy it.

A dealer who has sold hundreds of trucks to farmers and knows what he is talking about because he has the profits in the bank to back up his statement recently gave me his slant on farm sales.

The problem of the truck salesman is to show his customer that the truck he is selling will not only haul his crops to market faster than his horses, but also to show him that the truck he is selling represents transportation expressed in ton miles per hour or bushels of wheat per given distance per day. This is what he told me:

"As a wholesale distributor of trucks over a large territory it has always been our desire to market these trucks through local dealers. Our difficulty has been to get these dealers to recognize the potential demand. If a customer comes in and wants to buy a truck they recognize that fact without having it diagramed, but the less obvious, although equally certain, fact is that there are fifty fellows in their territory who would make money by owning trucks who do not, that could be sold if their utility was demonstrated.



This is much more difficult to bring to the comprehension of the dealer and for this reason we have set out to do what the average retail dealer is not willing to do.

We have employed regular truck salesmen who sell nothing but trucks. They go out with a truck and systematically cover the territory from farm to farm and it has proved to us that we have only started to develop the possibility of the farm business.

Our farm sales have not been up to the standard the last two years, but we have it in black and white who the farmers are that should get a truck when they have the money to buy, and which farmers not to bother because they do not need a truck at any price.

When I say "need" I mean have enough work to keep it busy a reasonable length of time; or in other words keep it busy enough every day so that its earnings will amount to more than the depreciation.

The Big Opportunity

Truck sales follow road improvements and just as railroads open up new territory and create commerce so do improved roads. Good roads go hand in hand with consolidated schools which are big truck consumers. After roads are built they must be kept up.

The tardiness with which consolidated school boards placed their orders for buses this year is indicative of the farmers' attitude toward spending money. They waited right up to the last minute before placing their orders and in many cases the opening of school was delayed.

The farmer has been putting it off and putting it off for so long that it is second nature. Country dealers and city distributors should be making preparation from now on to get this delayed business.

If the dealer in a farm community will connect to the right kind of a truck line and will go out among his customers and show them how many bushels of wheat or how much hops or how many tons of coal can be hauled a given number of miles in a certain time, he can secure big results, and he can build up a business more profitable and more permanent than the passenger car business.

"If any distributor who has a lot of dealers who cannot see this until they are shown will put a little nerve and a little intelligence into his merchandising system, and if he will spend a little money working up a truck business, he will show wonderful results," says my friend.

A distributor owes this education to the local dealer in the same way the dealer owes it to the farmer to teach him the truck idea. A distributor more often than not makes as much on a retail sale as the salesman who closes the deal. If distributors expect to hold their territory they must expect to do something to earn this margin.

It is impossible to build up a business with a poor truck because the expense of pioneering is too high and it requires a high grade truck turned out by reputable manufacturers to get the repeat orders.

Don't try to build a farm truck business with a poor truck, but if you want to make some real clean profit find a good truck and get set for the farm business that is coming.

Signs point that 1923 is going to be the best year of the '20s.

To bring the truck and the farmer together requires high grade salesmanship under intelligent supervision—salesmen who are not afraid to work and bosses who can make the other fellow do the work.

It takes country dealers to sell farmers because they are closer to them,

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but a great many country dealers are like the small town railway station agent. He is the baggageman, operator, mailman, freight agent, express man and janitor, and the country dealer should either get in or get out of the automobile business.

He should either get in or get out of the repair business. He can't repair cars, mend tires, keep books, sell gasoline and handle sales. He hasn't enough eyes, hours or hands.

Good Salesmen

The sooner country dealers learn to hire and supervise men the quicker they will get results. They must not hesitate to let a salesman earn $3,000 or up in a year. It looks like a lot of money, but just see how much he is making for the boss.

Too many country dealers in hiring salesmen think they should engage a man who knows every Tom, Dick and Harry in the county. He is not always the best man. Usually this kind of man pre-judges the prospect. Get an outsider and put him to work. He will look at the territory in a new light. Poor salesmen are the most expensive. A good truck salesman can sell a farmer a truck if he needs it and will refuse to sell him if he don't need it.

The farmers are beginning to realize whether they need trucks or not and 1923 is going to be a big farm truck year.

A farmer working a hundred acres uses a side delivery rake that costs him nearly a hundred dollars about three days. If he raises a crop of beans he can use it two or three days more and if he lives in the alfalfa section and raises three crops he can use it nearly a dozen days more. He pays approximately $300 for a self binder and uses it four or five days. His cultivator will cost him around $50 and he will use it less than 5 per cent of the time.

He will use a motor truck probably every day in the year. In fact it is not too much to say that the motor truck is the most used piece of machinery on the farm and for the use he gets out of it, it costs him less per hour the first year than any of his implements.

The farmer knows his costs better today than ever before; he is a comprehensive buyer.

Since he, like the manufacturer, has been assessed with an income tax he has been obliged to put farming on a cost sheet basis.

He knows now, where he guessed before, what it costs to run machinery.

Be careful how you talk to him and above all don't talk crops unless you understand farming.

Survey your territory, sort out your prospects and call on the logical buyers personally.

An Accessory Idea

DOCTORS are, perhaps, the most consistent and constant users of good automobiles. Doctors, too, are in a particularly favorable position to judge what are really essential extra equipment—accessories that contribute most to the comfort, safety and convenience of motor car transportation. Because they can afford to buy, their cars usually are equipped with accessories that they find most useful. A very convincing advertisement might be written which tells all about the accessories that doctors buy and why they buy them. The fact that an equipment merchant is selling such accessories to doctors would make a fine recommendation as to the place to purchase such items.

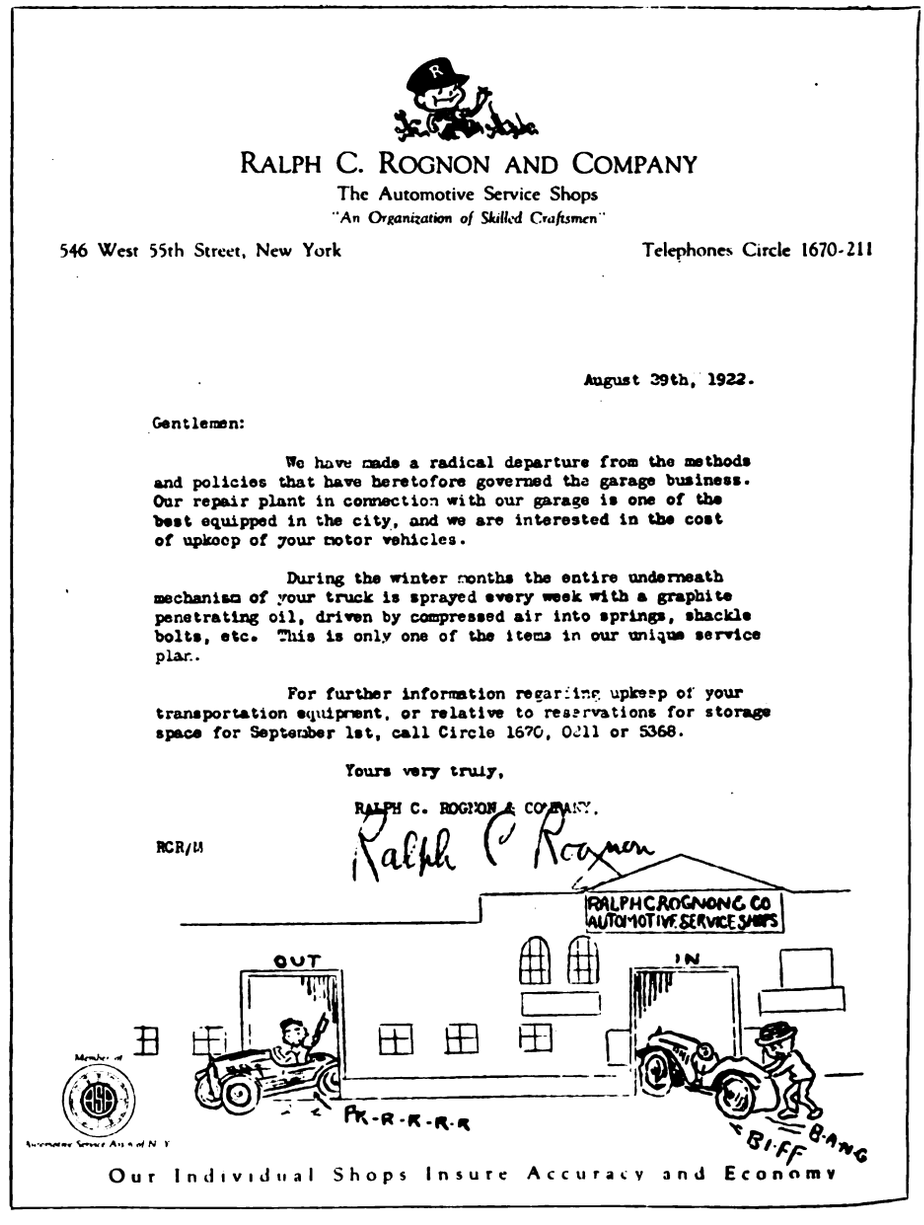
Do Your Letters Get Attention?

YOU remember, don't you, a few years ago when the Lincoln pennies first came out, how everybody watched for them and kept them aside. That was because they were new and unusual. Now there are more Lincoln pennies than the other kind and nobody bothers about them.

Since letter-writing first became a part of selling, writers have been thinking and experimenting to make their letters attractive both as to appearance and contents. So many circular letters are used to-day that the conventional letter gets scarcely any more attention than a Lincoln penny.

So to get real attention there must be something new and catchy about the letter.

Ralph C. Rognon & Co., in getting out a circular letter to prospects for repair work, are using a novel sketch showing a car going into the shop full of biffs and bangs and coming out with a gentle purr. In addition to this feature the contents of the letter are somewhat "different." The fact that a garage has made a radical departure in its policies is put right up at the front, followed by some detail of the facilities available.



RALPH C. ROGNON AND COMPANY
The Automotive Service Shops
"An Organization of Skilled Craftsmen"

546 West 55th Street, New York — Telephones Circle 1670-211

August 29th, 1922.

Gentlemen:

We have made a radical departure from the methods and policies that have heretofore governed the garage business. Our repair plant in connection with our garage is one of the best equipped in the city, and we are interested in the cost of upkeep of your motor vehicles.

During the winter months the entire underneath mechanism of your truck is sprayed every week with a graphite penetrating oil, driven by compressed air into springs, shackle bolts, etc. This is only one of the items in our unique service plan.

For further information regarding upkeep of your transportation equipment, or relative to reservations for storage space for September 1st, call Circle 1670, 0211 or 5368.

Yours very truly,

RALPH C. ROGNON & COMPANY.

RCR/M

Ralph C Rognon

Our Individual Shops Insure Accuracy and Economy

This unusual letter being sent out by an automobile repairshop stands out from the conventional circular letter

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Hardware Men Show Keen Interest In Automotive Equipment

Talk About Hardware Stores' Advantages and Disadvantages as Competitors of Automobile Dealers and Accessory Men—Manufacturers' Exhibit at Convention

By NEAL G. ADAIR

Atlantic City, October 20, 1922.

THERE is a growing interest among hardware jobbers and dealers in the profit-making possibilities of automotive equipment merchandising. The hardware men, who are now handling a considerable volume of this business, would like to get more, and they are casting about for means of obtaining some of the trade that is now going to the automobile dealer and garageman and the exclusive accessory merchant. These facts were brought out at the annual meeting here this week of the Automobile Accessories Branch of the National Hardware Association. The convention consisted of representatives of automotive equipment manufacturing and hardware jobbing companies, together with two official representatives of the National Retail Hardware Association. The proceedings, while arranged for hardware men, carried interest also for wholesalers and retailers in the automotive equipment field.

Two claims set forth by speakers in the ranks of the hardware jobbers deserve the consideration of wholesalers and retailers in the automobile field. These claims were that the hardware dealer, taken on the average, is a better merchant and better credit risk than the automotive man who sells accessories. On the other hand, the speakers stated that hardware retailers in general exhibit three striking faults in the handling of accessories. They lack the mechanical knowledge essential to the selling of many items of automotive equipment; they fail in many cases to carry complete lines, and a good many of them carry automotive products merely as a side line or an accommodation for their hardware customers and sell them without the full profit, which keeps them only half-heartedly interested in the business and also has a disturbing effect on the market, because of price-cutting prices.

Discussion at the convention carried two important suggestions to retailers in the automobile field, first, that if they are not up to the standard of the hardware men as merchants and credit risks, they should use every possible means of bringing themselves up, and, second, that the men in the automobile field should use to the full the advantage they have in mechanical knowledge necessary to install, and of assistance in selling, many lines of equipment.

The convention had very little discussion of one decided advantage of the automobile men in the accessory field, that is, his natural contact with the purchasers of equipment. The automobile dealer and garageman are constantly in touch with motor car and truck owners, who come to them for service and advice. The exclusive accessory merchant is the only retailer in the automobile field who must overcome an advantage similar to the hardware man in going out after equipment customers.

THE growing interest among hardware jobbers and dealers in automotive equipment merchandising might be accepted as a warning. Men in the automobile industry who sell accessories, to retain control of their products, must be sure their stores and selling policies are up to the standard of hardware men and use the full advantage of their mechanical knowledge and installation facilities.

It is only natural that at a hardware convention the preponderance of opinion should regard the hardware man as the logical merchandiser of any commodity which he wants to sell, but the frankness with which the hardware men admitted their faults and sought for means of correcting them gives plenty of indication of their intention of keeping up the process of working into automotive equipment merchandising. The automobile man, of course, will get no more of this business than he deserves, and there were plenty of hints in the hardware meeting that the automobile man needs to employ and develop the advantages which he has, as well as to overcome such handicaps as inexperience in merchandising and inadequacy of credits, which have been overcome to a considerable extent in the many years' duration of the hardware business.

C. H. Casey, of Jordan, Minn., president of the National Retail Hardware Association, criticized hardware jobbers for failure to instruct their salesmen sufficiently in the use and methods of selling automotive equipment. Still he did not agree with the manufacturers who advocated that hardware jobbers should have specialty salesmen to handle automotive equipment lines.

Several hardware jobbers, reporting on their automotive equipment business, credited hardware retailers with only a small portion of it. One jobber said that less than 10 per cent of the hardware men in his territory were selling accessories, but others placed the figure considerably higher. A. D. Williams, sales manager of the X Laboratories, New York, gave a summary of a canvass of jobbers in several sections of the country, showing that 48 per cent of their automotive equipment business was taken by garagemen, 19 per cent by accessory dealers, 17 per cent by car dealers, 15 per cent by hardware dealers and less than one per cent by department stores. Williams subscribed to the opinion that, while the hardware dealer in a good many cases is a better merchant and a better credit risk than the automotive man, he is not the best customer of the automotive equipment manufacturer and jobber, because of his lack of mechanical automotive knowledge.

The convention was presided over by George W. Ellis of the Supplee-Biddle Hardware Co., Philadelphia. Automotive equipment manufacturers among the speakers included Frank T. Chase of the Frank Mossberg Co., Attleboro, Mass.; M. H. Tisne of the A. Schrader's Sons, Inc., Brooklyn, N. Y.; Harry Stone of the Automotive Products Corp., Hazleton, Pa.; H. D. Laidley of the Federal Miniature Lamp Division of the General Electric Co., Chicago; B. M. Asch of Asch & Co., manufacturers' sales agent, New York, and John E. Lambert of the Pratt & Lambert Manufacturing Co., Detroit.

The convention preceded that of the National Hardware Association. In connection with the convention approximately 50 manufacturers of automotive equipment had exhibits of their products in the Ambassador Hotel. The attendance of the hardware jobbers at these exhibits between convention sessions was large and quite a bit of business was booked. The exhibits were kept open throughout the week.

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Editorial Notes

Wanted: More Closed Cars

IN a little Connecticut city a few days ago an automobile dealer reared up on his hind legs, as the homely saying has it, and howled because he hadn't any closed cars. He had orders for seven or eight which he couldn't fill. That was bad enough, but the thing that stuck in his crop was that all he had to put in his space at the closed car show opening the next day was a set of pictures of closed cars of the line he represents.

An exaggerated case? Go up and down the Row in a dozen cities or several dozen of them, and ask how many dealers have adequate stocks of closed cars or much prospect of getting them before the peak of the closed car market has been passed. When you are all through you can forget about used cars for a few moments, if you can forget about them, and put your mind on another thing that ails the automobile business.

There are a few dealers in most towns and perhaps in a few towns all the dealers, because of one circumstance or another, who have enough closed cars, but take the country generally and the best selling lines in particular and it will be found that automobile merchants are watching profits go a-glimmering every day in the week because they can't get coupes and sedans in sufficient numbers to meet demand. More closed cars have been made this year than in previous years, but more people want them and the industry has not found a way yet to make supply meet demand at the peak of the season. And, of course, freight embargoes have made the shortage still more acute this fall.

Better informed men in the trade as well as in manufacturing circles understand, of course, that the closed body facilities of the country are not adequate to meet demand in the months just preceding winter, when demand is naturally at its height. It would not be possible to bring production facilities up to demand at this period without having idle buildings, equipment and men in the closed body manufacturing field at other seasons of the year. But is it not possible to spread production throughout the year, storing closed cars in summer as open cars are stored in winter, so that the fall demand can be met? Is it quite fair to dealers for manufacturers to bring out new closed models in the early fall, present them at shows and advertise them widely, and then tell dealers that they can't get these models into quantity production until late fall or early winter? With prices at present low levels and discounts, to say the least, not exorbitant, the dealer's profit per car is so low that he needs every possible sale. Particularly he needs to sell the higher priced closed cars and he ought to have them to sell when they will sell best.

No thinking person would accuse the manufacturers of negligence in failing to provide adequate closed car stocks. They want to increase production just as dealers want to build up sales. The car manufacturers cannot be blamed because closed body manufacturing facilities, many of which they do not control, have been unable to keep pace with the rapid gain in closed-car popularity. But it is apparent that the industry must have greater production facilities in this line, or, at least, more manufacturing must be done at other periods of the year to build up stocks for fall. George Washington said something about preparing for war in time of peace, which suggests that last spring was the time for thinking and planning to insure this fall's closed car supply. But as most nations prepare for war when the enemy is marching toward their frontiers, so most people decline to become excited about distantly possible emergencies. The emergency of a closed car shortage which is limiting profits of manufacturers and curtailing the sorely needed revenue of dealers is upon us. Will it start some thinking and planning, which will be continued until another fall rolls around, to eliminate next year's otherwise inevitable closed car shortage?

Can all manufacturers instead of just a few get their new closed car bodies designed early enough to insure quantity production and shipments in September and October? Should manufacturers and some dealers warehouse closed cars in summer to be ready for the fall demand just as they store open cars in winter for the spring rush? These and other questions that are vital to much desired stability in the automobile business are worth consideration.

What do you say to the service customer who talks about laying up his car for the winter? Isn't there a way to put winter business for you and winter convenience and pleasure for him into one story?

"Can't get any closed cars, but we're still selling open jobs," a dealer said the other day, and there were echoes all over the country. Looks as though the last rows of summer are the automobile rows.

A man walks into your salesroom and looks over your display, but says your car costs more than he wants to pay. Do you call a man in overalls to "show this guy some of our used cars?"

Have you tried to figure out a way to assure your salesmen a year 'round income?

Gets dark about 5 o'clock these days. How do your display windows look after five?

Does your good-bye to your service customer suggest, "Come again," or, "Well, we got that guy's money"?

Who's running for office in your territory this fall? And after he is elected is he likely to want a new car?

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The Woman as a Factor in Motor Car Sales

Her Tastes and Mechanical Knowledge Will Be Closer to Men's in 1923 This Dealer Says

EDITOR Motor World:
Have salesmen got the woman buyer's view of motor cars?

Let's pick the situation to pieces and see if most of us have not blinded ourselves for the last two or three years to the actual part women have played in the selection of cars.

While it may be that we must not deny that she has been a powerful equation in the purchasing of automobiles, yet as a factor in the sale of the sedan, coupe, touring car and roadster she may have been over-rated. If not, possibly misjudged or—let us say—considered from the wrong angle.

Doubtless we have discredited her knowledge of quality.

The successful salesman from now on must know, instead of taking it for granted, what passes through a woman's mind when she says yes or no to her husband when the final minute arrives for signing some salesman's order.

And isn't it a fact that the woman more often emphatically says yes than emphatically no to her husband's judgment on important matters, and still more often merely remains confidently content?

We must start with the known fact that the average woman allows her husband to take the lead in matters involving as much money as in the purchase of a car. This is fundamental—natural.

What percentage of wives stamp their foot, storm around and kick up such a fuss that the husband switches to some other make? Very small, I am sure.

Or what percentage of women exercise what has been called woman's prerogative and positively override their husbands' choice of cars and force them, in order to keep peace in the family, to buy a car of lesser quality than their own preference? Take it in your own case or in the case of your friends' families.

Often have we heard it said that no man buys a car that does not suit his wife. In the next breath we hear dealers asking for longer discounts to make longer allowances possible on used cars on the claim that said allowance is the deciding factor. Which is right?

Some of those who make these statements—and both are quite universal—are willing to qualify them by adding "all other things being equal." But all other things cannot be equal in this business because there are too many variations in price, quality, appearance, trade-in allowance, maker's reputation, dealer's reputation and service.

The first thought that flashes across most salesmen's minds is that women demand artistic cars. Maybe you have never used the word artistic in that sense before, but I use it to define folderols, gingerbread and nick-nacks that are used to doll up cars, otherwise termed fineries.

It next follows, then, to ask:—does woman's desire for these override her husband's demand for quality in preference to them? Also:—are men less swayed by the trimmings and appointments than women?

The fact is that to-day the demands of both man and wife are more in common with each other.

Write to Motor World About It

This page every week is devoted to discussions of topics of the trade by Motor World readers. Have you a suggestion to overcome a difficulty or improve some condition within the industry? Write to Motor World about it.

In 1920 leather upholstery was positively scorned by women for closed cars, and taking the cue men also learned to oppose it. The arguments against it were that it put a shine on dark clothing—that although it gave the car a cold, barren aspect, too much like a taxicab, it became excessively hot under the scorching rays of the sun—and that it hid dirt and grease.

To-day salesmen tell us that there seems to be an increasing demand for that same leather, because textiles hold dirt and grease—are hard to slide over—and retain moisture after exposure to rain and snow. The report is that men are beginning to call for leather, and women are falling in with the notion, gradually.

There is every reason to believe that the same talking points that interest men will likewise interest women and vice-versa.

More women are driving cars than ever before, and they are traveling greater distances without male escorts; men, on the other hand, seem to be more particular about appearances than ever before, both about themselves and their cars.

Women know; and the fact that their demands are more in common with men is going to make it much easier for salesmen in 1923 to get husband and wife together, whether or not the wife has been as much the controlling factor in buying as has heretofore been alleged.

Women know; they want to know, at least, about mechanical differences. Words like transmission, clutch, carburetor and bearings no longer awe them. They are seeking knowledge, and the salesman who has the gift to explain the points of mechanical excellence so they can understand it is the one who will succeed.

Women know; they are better mechanics than salesmen are giving them credit.

The 1923 woman lives in an atmosphere of mechanics. She has her electric vacuum sweeper, her electrically equipped kitchen and her power driven washing machine and ironer. Salesmen who are selling her these mechanical house devices are telling her about their construction, their accessibility and their low cost of repairs. Mechanical language is no longer an unknown tongue.

Salesmen no longer need fear they are talking over her head when they delve into mechanical discussions, if they will hold it to the elementary and do so by comparison. It will flatter her to be given the credit for knowing, and she will retain what is told her.

Where is the woman that can't understand that a three-bearing crankshaft is better than a two, and a four better than a three, if you use the homely comparison of the rafters in the ceiling of her house.

Or where is the woman who won't listen instantly to an argument about heat treating if you explain to her that in heat treating the texture of metals is changed in the same way that potatoes vary when they are baked, boiled or French-fried?

Salesmanship will be much more interesting to the salesman and less dull to the prospect if we can relate some interesting processes in the factory that improve the product.

Women can be sold engineering by quoting examples and making comparisons, and they will stay sold. If women exhibit fickleness about motor cars, we can only blame ourselves. We have been handing them fickle chatter.

In 1923 passenger car salesmen must get the 1923 woman's viewpoint on motor cars. She has advanced much further than we have given her credit for and she craves to be treated with the same consideration as her husband.

As between folderols without quality and quality without folderols, don't fool yourself about which she will select from now on. I mean the average woman: I have nothing to say about the spendthrift kind that knows nothing about the value of a dollar—the butterfly-on-the-wheel kind—the pampered variety. I mean the staple type of American woman that makes up the vast majority by far.

Is the woman as a factor to be considered in making a sale overrated, or have we underrated her intelligence?

To increase your sales, increase your own knowledge—then spread it.—Midwestern Dealer.

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Mercer Brings Out a Six; Retains the Four

The New Model Retains the Main Characteristics of the Four But Has Many Changes Including a Unit Power Plant, Stiffer Frame and Three-Quarter Floating Rear Axle

A NEW chassis with a six-cylinder engine has just been added to the line of the Mercer Motor Co. which heretofore has built only four-cylinder models. For some time past Mercer cars have been marketed chiefly for use where traffic is light and speed is desired, but the increase of traffic even on suburban and country roads has made it desirable to now add a chassis capable of a very wide speed range on high gear. The result is a car which handles well on high gear in traffic and has at the same time requisite power for high speed when conditions admit.

Six standard body models are offered. The open models include a four-passenger roadster, six-passenger phaeton and four-passenger sport model. The closed bodies include a sedan and a touring limousine, each seating six, and a four-passenger coupe. Body lines are similar to those which have characterized the Mercer cars in the past. The bodies are low hung and the passengers sit well down in the body, following European practice in this respect.

The open models will sell at $3,750 and closed cars for $5,000. These prices include, among other items, the following equipment: Six 32 x 4½ in. cord tires and five Rudge Whitworth wire wheels on open models, artillery type wood wheels with 33 x 5 in. cord tires and two extra rims on closed models, Waltham clock and speedometer, Moto-Meter, Alemite lubricating system on chassis parts and a special form of finger operated dimmer switch arranged just under the steering wheel rim where it can be operated without taking the hand off the wheel.

The open models in the six cylinder chassis are a little under the price of the four. The new coupe is $150 more than the four and the new sedan is $250 less than the four.

The chassis of the six is not entirely new, but most of its major units are either new or have undergone more or less change in design to accommodate them to a symmetrical whole. At the same time certain features which have been characteristic of Mercer cars, such, for example, as the propeller shaft service brake, are retained. Other unconventional parts, such as the four-speed gearset, are no longer required with an engine of six cylinders, while the use of a unit power plant has made it desirable to employ three instead of four-point mounting.

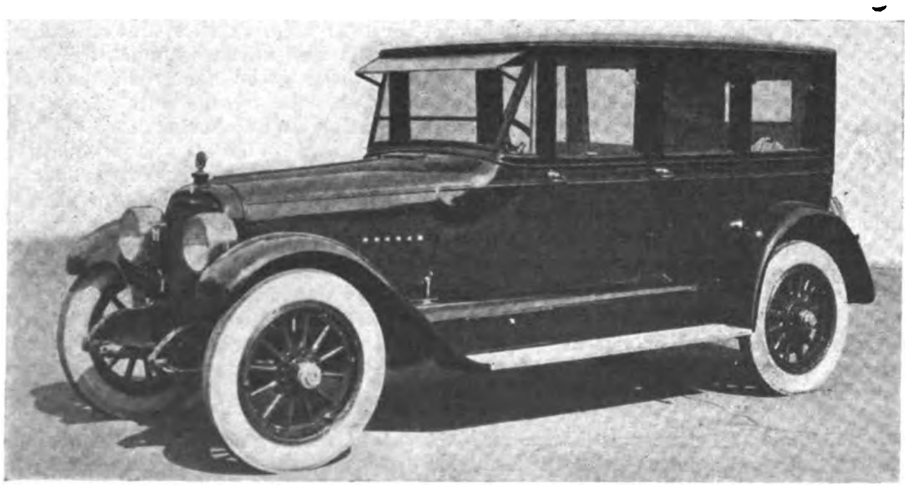
Outside the powerplant, the chief change is the substitution of a new rear axle and the use of additional and stiffer transverse frame members made necessary by the change in engine mounting. The steering gear and front axle as well as the radiator are practically the same as those used in the four-cylinder model. The mounting of the last mentioned unit is on spherical trunnions with surface kept in contact by a helical spring. The wheelbase of both the four and the six is 132 in.

Specifications of the Mercer Six

Prices:

Roadster	$3,750
Phaeton	3,750
Coupé	5,000
Sedan	5,000

Engine—6 cylinders, 3¾ x 5.
Ignition—Eisemann.
Clutch—Disk.
Gearset—3-speed.
Tires—32 x 4½ in.
Wheelbase—132 in.
Rear Axle—¾ floating.



The Mercer Six coupe, $5,000

The new engine is of the overhead valve type, with the cylinders cast in a single block from a hard gray iron. The block is narrow and has an unusually clean exterior. It is recessed to inclose the pushrods and is provided with spark-plug openings at each side, one set of which are plugged unless two plug ignition, which is not standard, is desired. The cylinder head casting is perfectly flat on its under surface. Consequently the combustion chamber has a true cylindrical form and all its surfaces are machined all over. The head is attached to the cylinder block by nickel steel studs.

The valves are vertical and seat directly in the head. The inlet and exhaust valves are identical and are made of tungsten steel. The clear opening is 1 9-16 in. Care has been taken to see that there is sufficient space between each pair of valves to avoid their seating on a common wall, thus preventing seat warpage which might otherwise occur. The upper surface of the cylinder head is provided with carriers for positioning the two hollow rocker shafts. The rocker arms are quite short and are made as light as practicable in order to reduce the inertia forces. The adjustable screws which contact with the upper end of the push rods are carefully fitted and the rockers are split diagonally and provided with tangent bolts which securely lock the adjusting screw once it is properly set. The lower end of the adjusting screws are hemispherical and contact with the cup shape upper end of the push rod, the cup being kept full of oil which lubricates these parts and provides a cushion which helps to maintain a quiet mechanism. Oil is fed under pressure to the hollow rocker shafts and issues through holes drilled in the shaft and thence through passages in the rocker arms, whence it enters the cups on the upper end of the push rods and overflows running down the rods to the base chamber, lubricating the tappets and cams in so doing.

The push rods are made of steel tubing, the inserted ends being welded in place. The cam followers are mushroom type.

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The cast aluminum cover used to inclose the valve mechanism is well ribbed and securely bolted to the head by eight cap screws. This insures an oil tight joint and obviates any drumming noise.

The cylinder block is bolted to an aluminum crankcase which is quite conventional in its general construction. The upper half of the case carries the main bearings while the lower half serves chiefly as an oil reservoir. The main bearing caps are of aluminum, with drop forged steel reinforcements. These bearings are bronze backed babbitt lined 2¼ in. in diameter. The front and center main bearings are 2½ in. and the rear main bearings 3½ in. long. The camshaft bearings are die cast babbitt and are pressed into the crankcase. The gear type oil pump is driven by a vertical shaft, its driving gear meshing directly with another gear forged integrally with the camshaft. The latter is a nickel steel forging case hardened and ground to close limits.

Helically cut timing gears are used. The pinions on the crankshaft and pumpshaft are steel forgings, while the intermediate gear is of Micarta. The gearcase cover is a heavily ribbed casting which forms the front support for the engine. The pumpshaft, which carries the fan driving pulley on its forward end is provided with oil slingers and a coarse pitch thread which effectively prevents oil leakage. The centrifugal water pump is provided with a stainless steel shaft to insure freedom from corrosion. The lighting generator is driven off the rear end of the pump shaft while the rear end of the generator shaft is used to drive the Eisemann magneto. Special care has been taken to securely lock to the respective shafts the flexible couplings which are used to drive the units in this train. The fan has four cast aluminum blades and is driven by a flat belt.

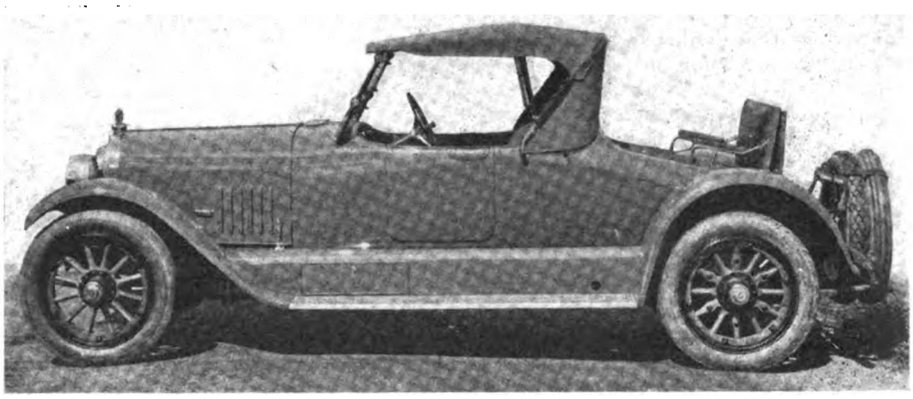
The lower crankcase is provided with external ribs to assist in cooling the lubricant and to stiffen the case. The oil drain cock is provided with a long vertical stem terminating in a handle at a point above the sheeting which is inserted between the engine and frame, the arrangement being such as to make it unnecessary to reach under the chassis to drain off spent lubricant.

The Lynite pistons are constant clearance type and are provided with three rings above the pin. No scraper ring is employed. The piston pin is of hollow tapered section and is fastened in the rod.

Connecting rods are drop forged, high carbon steel of H-section and measure 10 in. center to center. The bronze back, babbitt lined, big end bearing measures 2¼ in. in diameter by 2½ in. long. The rods are machined on the outside edges and the web is drilled to reduce weight. Two nickel steel bolts are used to secure the big end bearing.

The crankshaft has crescent shape throws, oil being fed through the shaft and around these throws by external pipe placed circumferentially in order that centrifugal force may not interfere with the flow of oil through the pipes.

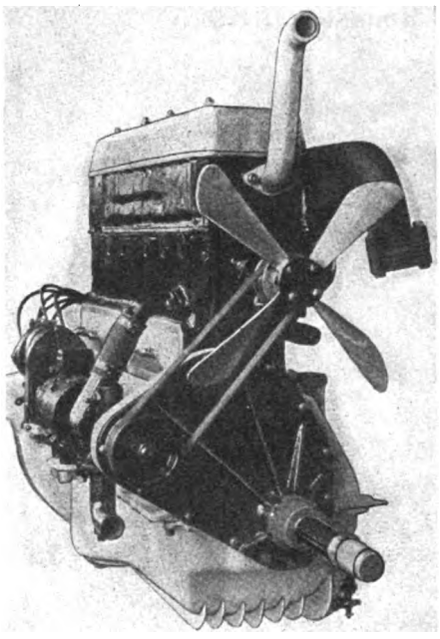
Oil pressure varies from about 5 to about 40 lb. per sq. in. as the speed increases.



The Mercer Six roadster, $3,750

The engine has 3¾ in. bore and 5 in. stroke giving a piston displacement of 331.3 cu. in. It develops its maximum of 82 to 84 horsepower at about 2600 r.p.m.

A 1½ in. Model OC 3 Stromberg carbureter of the side outlet type is employed. The air is pre-heated by contact with the exhaust manifold and the charge is afterward heated in the cylinder block by contact with the water jacketed walls



The new overhead valve engine used on the Mercer Six

and in the valve pockets where some of the walls are common between inlet and exhaust.

Fuel is fed by a vacuum tank from a large tank suspended from three points on the rear cross-member. The tank is equipped with a Rochester gasoline gage fitted into the casting which forms the filler spout. The gage is visible from the right side of the car even when a trunk rack is employed.

The exhaust manifold is provided with a front outlet which makes it possible to carry the exhaust pipe well below the floor of the car and prevent heat from entering the driver's compartment.

The front end of the engine is mounted in a spherical trunnion which is concentric with the crankshaft while the two rear supporting arms of the engine are bolted solidly to the frame. In this case, as with other parts bolted to the frame, rather thick shims are employed to give the desired alignment. This makes it possible to interchange engines in the same chassis without changing the drilling, and still assure correct alignment.

Uses a Three-Speed Gearset

The new three-speed gearset which in common with the new multiple disk clutch is of conventional type is supported on a bell housing bolted to the crankcase. The use of this gearset did not admit of a satisfactory mounting for the same propeller shaft brake which has long been a characteristic feature of Mercer cars. It was consequently mounted as an independent unit. The bracket employed is an aluminum casting which carries the brake shaft in two ball bearings. This casting is bolted up to the center cross member of the frame and thus serves as a rigid anchorage for the brake. The brake itself is similar to that employed in the four cylinder chassis. The brake shaft is connected to the gearset by a short shaft and a flexible coupling similar to that formerly employed between engine and gearset. From the brake shaft the power is transmitted to the rear axle by a propeller shaft with two Spicer universal joints. The drive is the Hotchkiss type with the springs taking torque as well as pushing the car. This arrangement has long been used on Mercer cars.

The new rear axle is three-quarter floating type. It is provided with a one-piece pressed steel housing which has a single welded joint. The spiral bevel gears give a reduction of 4.08 to 1 in case of closed car chassis and 3.77 to 1 in chassis fitted with open bodies. The ring gear is provided with serrations which fit the splined differential housing and take torsional strains, so that the rivets serve only to hold the two parts together. All bearings in the rear axle are of the taper roller type. The hand operated internal expanding brakes on the rear axle are carried in flanged drums of 16 in. diameter and are completely enclosed.

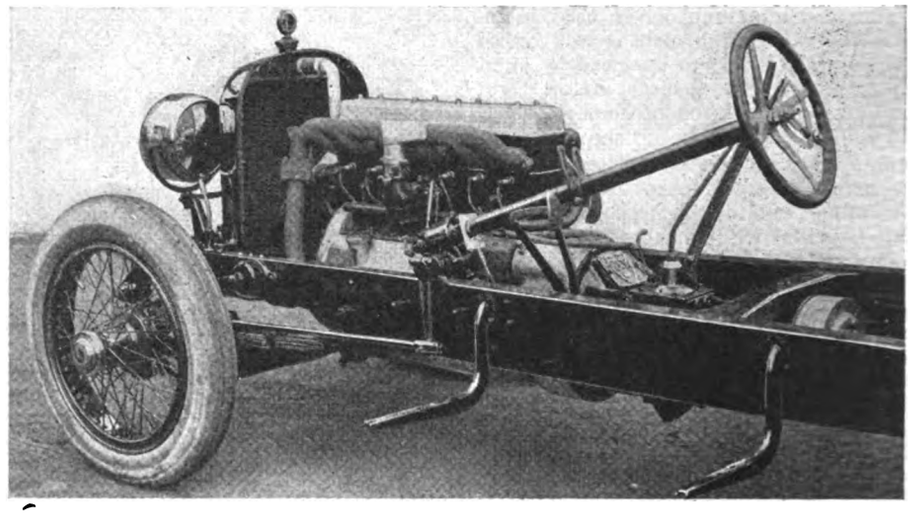
Both front and rear springs are semi-

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elliptic and are the same length as those employed in four-cylinder chassis. The front springs are 39 in. long and the rear springs being 59 in. Both sets are 2½ in. wide. The rear springs are underslung and are directly beneath the side rail of the frame. They are bolted to the axle by U-shape clips which pass around the axle housing.

New Type Spring Shackle

An interesting feature of the spring suspension is the type of shackle employed. The side links of the shackle are forged separately and are then machined with a taper hole in each end. The shackle bolts are necked at both ends and the reduced diameters are threaded through a part of their length to receive nuts. The necked portions do not fit directly into the shackle links but split collars, tapered on their outer surface to fit the tapered hole in the link are interposed. Thin washers are placed between the nuts and the collars, after which the nuts are drawn up tight. This forces the tapered collars into the tapered holes at the same time causing them to contract on the necked portions of the bolt, thus making the bolt a tight and rigid fit in the link. The thin washers are then bent over in such a way as to lock the nuts securely in place. The shoulders on the bolt space the links the desired distance apart, this distance being equal to the length of the bushing pressed into the spring eye, so that there is no side shake. With this construction the two bolts and two links become, in effect, a single piece which is exceptionally rigid. The bolts are made hollow to receive Alemite grease fitting and are so grooved on the bearing surface as to permit the grease to reach the whole bearing surface.



The front of the Mercer Six chassis.

The use of a unit power plant with three point support has necessitated some changes in the frame as compared to that employed in the four. The side rails are practically unaltered, but there is a new and rigid cross member to support the front end of the engine and a wider and stiffer rear cross member above the gasoline tank. The central cross member is provided with wider flanges than were formerly used. The tubular cross members one of which was in front of the radiator and one near the rear of the frame are now eliminated. The battery carrier is attached to the right side member of the frame, under the front seat, while the muffler and exhaust pipe are now on the left side.

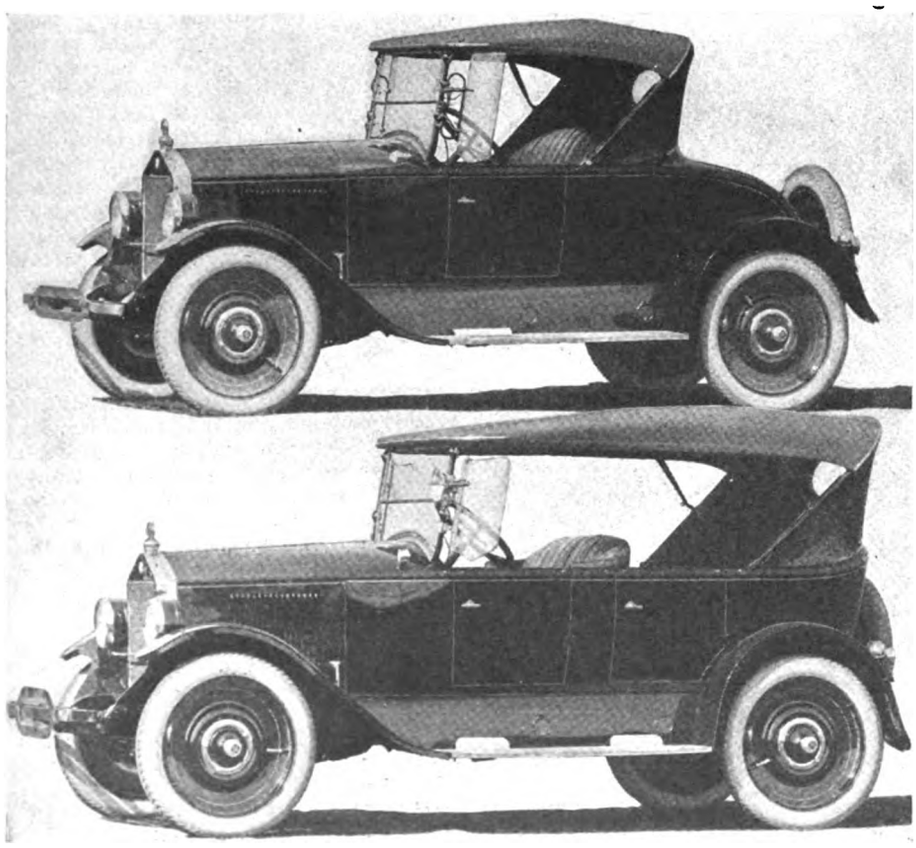
The front axle, made complete in the Mercer plant, is substantially identical with that used and found highly satisfactory for several years. It is of conventional inverted Elliott type and is forged from nickel steel. The steering knuckles and arms are made of heat-treated chrome nickel steel. The steering pivots have ball thrusts and are given a 2½ deg. rake to the rear.

The Gemmer steering gear which has been used on the four is used also in the six cylinder chassis. This is a worm and gear type. The steering post is slung on an adjustable bracket which permits of its being raised or lowered to suit drivers of different stature.

The appearance of the front end of the car has been slightly altered by removing the tubular frame member in front of the radiator and changing the shape of the splash pan. The front horns of the frame are now provided with fore and aft bolt holes for bumper mounting, and carry a new design of lamp bracket. This is triangular in side elevation and has at its upper end a socket in which forked lamp supports of various sizes can be attached.

The weight of the six-passenger phaeton is 3900 lbs. ready for the road including two extra tires. The complete car with closed body weighs about 4300 lbs.

New Dort Phaeton and Roadster, $1,015



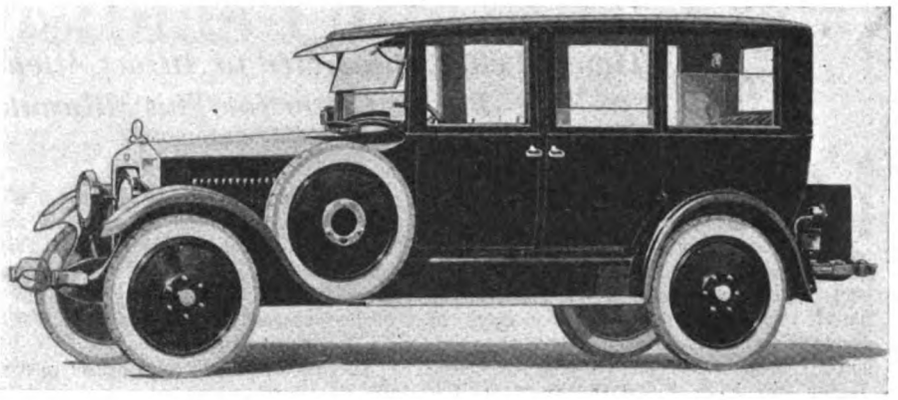
The Dort Motor Car Co. has added two new sport models, a phaeton and a roadster, to their line. Both of these are mounted on the standard Dort chassis. Both cars list at $1,015 and are trimmed in accordance with sport fashion. The cars are finished in maroon with aluminum stripe, the upholstery being genuine leather with a mottled hand finish. The top and side curtains are khaki. The rear windows are of rock crystal glass ⅛ in. thick. In the equipment furnished with this car, nickel plating is used for the drum type headlamps, cowl light, spot light, combination spot and tail light, as well as bumpers. Moto-Meter with lock and windshield wings are standard.

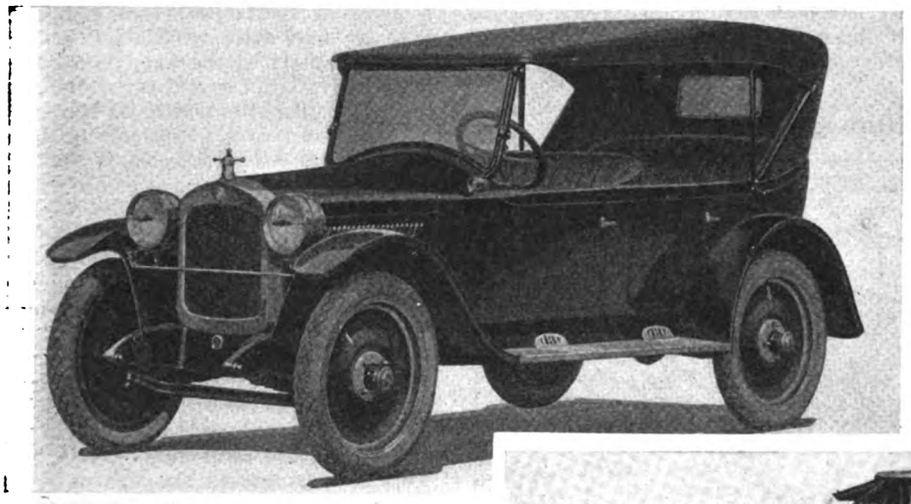
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Makers Announce New Body Models

Studebaker Big-Six Sedan (Special), $2,650

Priced somewhat higher than the regular sedan mounted on this chassis, the Big-Six sedan (special) includes many items of equipment not included on the regular model. Included in the additions are nickel plated bumpers in front and rear, trunk with dust proof cover, two extra disk wheels complete with tires mounted on the front fenders, automatic windshield cleaner, Moto-Meter, ornamental radiator cap and rear view mirror. The radiator shell is nickel plated



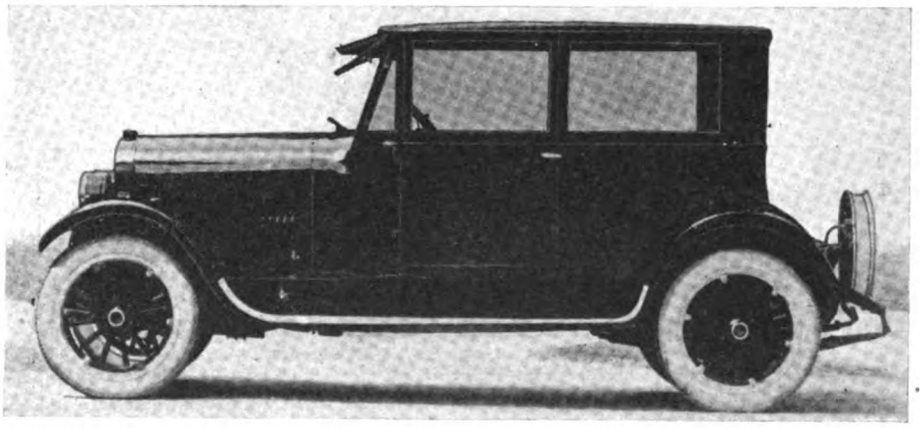


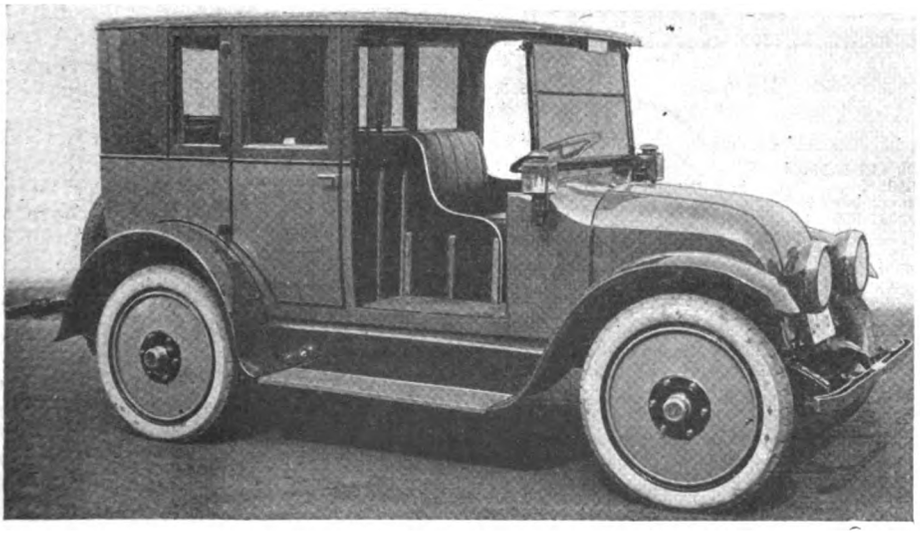
Hupmobile Special Phaeton, $1,250

This new addition to the Hupmobile line embodies the sport line features as announced in the last issue of Motor World. The radiator shell is nickel plated and so are the rails, lights, etc. Aluminum steps, disk wheels and a Burbank top are part of the regular equipment on this model. The chassis is the regular Hupmobile standard without change. A roadster of similar type will be in production later

Lexington Royal Coach, $2,145

An addition to the Lexington line is the Royal Coach at $2,145. It is a five-passenger body with ample room for three on the rear seat and with two individual Pullman type chairs in front. The body is of the two-door type, the vision being extremely wide by reason of the large glass area and the design of the slanting windshield with its glassed triangle





Rauch & Lang Electric Taxicab

A fleet of electric taxicabs similar to this one is being put in operation in New York City. Under ordinary driving conditions, it is said that the cab will make 60 miles on one charge. The battery is easily removable and it is intended that two batteries will be used with each cab, one battery being charged while the other is in service. The upholstery is gray leather with dull finish aluminum trimmings. The wheelbase is 102 in., the tires 32 x 4¼ in. and the weight about 3700 lbs.

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Making the Mimeographed Letter Attractive

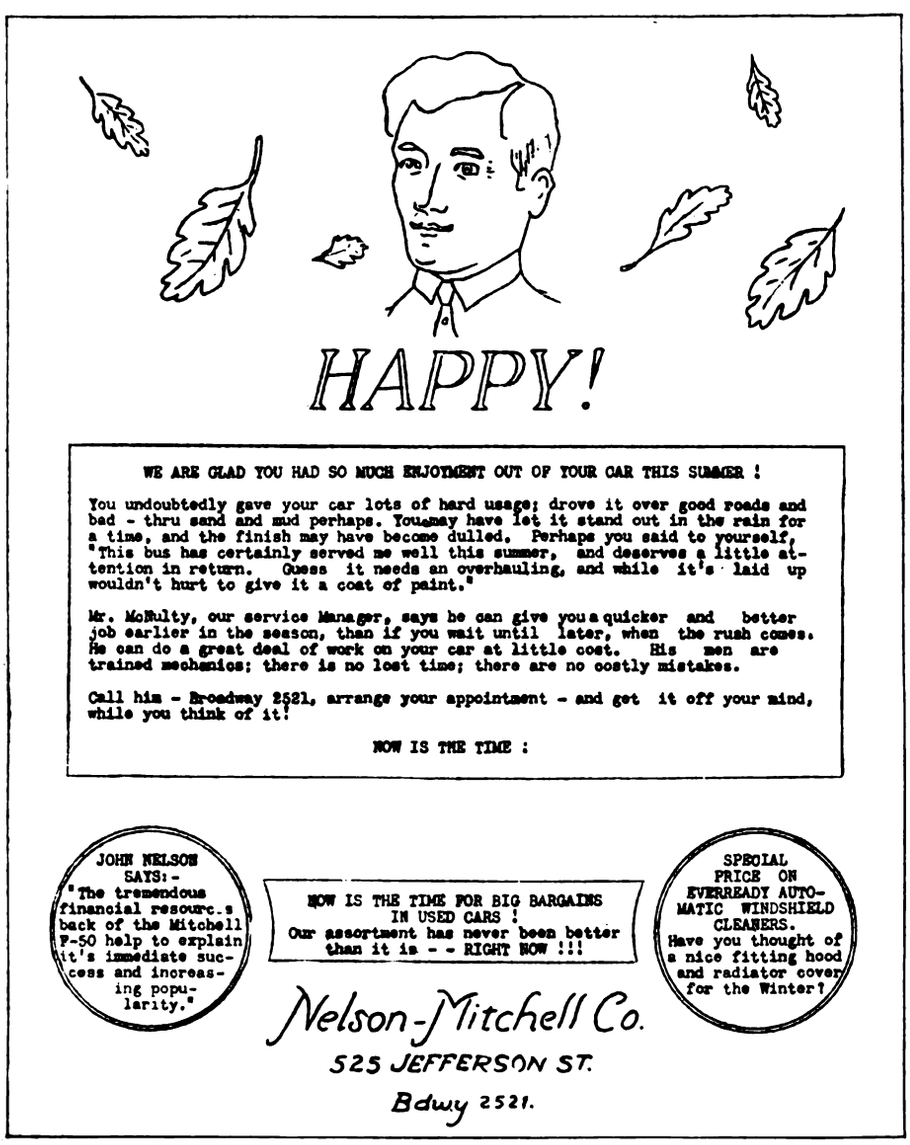
Timely Letter, Illustrated to Attract Attention, Proved a Shop Profits Getter for This Milwaukee Dealer

ONE of the most compelling pieces of literature that has yet been issued by a Milwaukee dealer for the purpose of soliciting fall and winter repairshop business to offset the usual lull following the busy days of summer, is that distributed by the Nelson-Mitchell Co., Milwaukee, Mitchell dealer and district distributor to its list of about 500 Mitchell owners in Milwaukee, Waukesha, Ozaukee and Washington counties.

The circular is worked out on a mimeographing machine, combining the ordinary machine typewriting with simple but artistic handwork which gets the circular, as a whole, away from the more or less stereotyped forms of business solicitation literature.

In this respect it is similar to a series of circulars which the Nelson-Mitchell Co. has been sending to its mailing list at intervals throughout the past year, which is its first year in the local trade.

Brightening Up the Mimeograph Letter



Here is the way a Milwaukee dealer is using mimeographed letters to boost fall business in sales and repairs. The letters are made attractive by simple drawings and a novel arrangement of the reading material

This circular was mailed to reach Mitchell owners on Oct. 7 and 9, and it happened to strike at a time when an unusually warm spell was broken by a cold wave, with a drizzling rain lasting about 24 hours putting the recipient into a receptive mood.

Besides soliciting overhauling jobs, the circular, like those preceding it, made a point of special offers of equipment, such as automatic windshield cleaners. It also introduced the happy thought of hood and radiator covers for winter driving, and called attention to the company's stock of used cars. Incidentally it also contained an effective boost for the new F-50 Mitchell.

Selling Facts in Ads

THE Abshier-Bryan Motor Co. Fayetteville, Ark., made an announcement in the home town paper to the effect that August had the largest number of deliveries ever made by the firm in one month, 38 new Fords and trucks having been sold and delivered in that month. Of the total number sold, there were 25 touring cars, six runabouts, four coupes and three trucks. Accompanying this announcement was a copy of the August report sent to the State Highway Commissioner in Little Rock, the State capital, as required by law. Names and addresses of customers to whom cars had been sold were published, together with information relative to the type of car bought, date delivered, etc.

The firm realized that people would be interested in reading the names of buyers of cars.

The whole made a very effective advertisement.

Used Car Ad Appeals to Special Groups

IN selling used cars it is a worth-while idea to use some advertising copy reading about like this:

"TO LOCAL MECHANICS:

"This ad isn't addressed to the average man who wants a motor car. It is addressed specifically to you because you will appreciate the good condition of the engine and entire mechanical equipment of our used car No. 124A. Come and look this car over. We believe it to be in the best possible condition and would like to get your opinion of it."

This sort of an ad would, of course, attract the attention of folks other than mechanics and would, undoubtedly, help a lot in selling used cars to such people as well as to mechanics.—Indiana Dealer.

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3 Ways to Sell Accessories as Christmas Gifts

How to Make Your Store Attract the Shopper Who Has Money to Spend for Presents for Motorists

IS there any better Christmas gift for a motorist than an accessory for his car or a pair of gloves for himself or a robe which will help to keep him and his friends warm riding through the snowy, blowy, wintry streets? The answer is—NO!

And the more the automotive equipment dealer hammers home this thought to the folks in his city during the weeks between now and Christmas, the more Christmas business he will do and the more money he will make.

Also, the more attractive he makes his accessories for Christmas gifts the more Christmas business he will do.

So, with this thought in mind, dealers and garagemen will find it profitable this fall to put into practice some of the following suggestions:

SUGGESTION NO. 1—Everybody who gives a Christmas gift wants it to look festive and Christmasy. Nobody cares much about giving an inner tube in its original package with only store paper wrapping around it. Nobody cares much, either, for handing a friend or relative a spark plug done up in the conventional package and all bound round with an ordinary piece of wrapping paper and a bit of white string.

But—do up your inner tube in the holly paper which is obtainable in any stationery store, tie it with red or green baby ribbon, stick a sprig of holly in the package and attach a card to the package reading like this:

"May you always ride as easily over life's rough spots as your car will with this tube is the wish of ————."

And when you do this you turn your inner tube package from a thing that doesn't appeal to anyone as being a good Christmas gift to something that makes a hit with everyone and that increases your Christmas business in inner tubes immensely.

Christmas Wrapping

It's really the easiest thing in the world to make accessories attractive as Christmas gifts by this simple procedure of wrapping them in holiday paper, tying them with appropriate ribbons, sticking in a piece of holly or mistletoe and attaching to them appropriate Christmas cards which will link up in some clever way with the article and which would express a cheerful Christmas spirit.

Of course the time to prepare your accessories in this way would be three or four weeks before Christmas. And it wouldn't be sufficient simply to "doll them up" in this fashion. You would also have to advertise that you had done the dolling up. This fact you could tell to the public by means of attractive window displays in which you would show the completed packages and by means of newspaper advertising.

Go after Christmas business in this fashion this year. It won't cost much—only a small outlay for paper, ribbons, etc., and a little time and trouble spent in tying up the packages.

SUGGESTION NO. 2—Christmas cards, as a usual thing, run along well established lines. The cards of this year will be much like the cards of last year. This, too, in spite of the fact that there is a tremendous demand from the general public for cards that are real novelties.

So, if you will have cards printed which hook up with your accessories in an attractive, clever, unusual manner you will have a decided booster for more business.

Some of the sentiments you might have printed on your cards might be:

"Amid the heat of summertime
Or in the depth of winter snows,
As constant as this sparking plug
Our spark of friendship glows.
"Merry Christmas from ————."

For a spotlight you might have this sentiment:

"However dark the year may be,
With this a spot of light you'll see,
And here's my dearest wish for you,
May this light shine the whole year through.
Merry Christmas from————."

For a rear "Stop" signal you might have a card printed bearing this sort of a sentiment:

"'STOP' dear friend, I wish to say:—
'A gladsome Christmas for you today.'"

The cards bearing these sentiments need not be particularly elaborate.

All this would be helpful to you in getting folks to "say it with accessories" this year.

SUGGESTION NO. 3—A good percentage of all the motorists in your city would, undoubtedly, prefer accessories for Christmas gifts to anything else that might be given to them. But, because the general public hasn't yet gotten into the habit of looking at accessories as suitable for Christmas gifts, there is public education needed to get folks to buy accessories from you for Christmas gifts in the quantities you'd like to have them buy.

Consequently anything that can be done to hammer home to the general public the fact that so many of the city's motorists want accessories for presents this year will help sell more accessories at Christmas time.

Christmas Advertising

One way of doing this is by advertising alleged interviews with motorists as to what accessories they'd like to have for Christmas gifts. Such an ad might say:

"IS THERE A MOTORIST IN YOUR FAMILY?

"If there is he'd probably rather have an automobile accessory for a Christmas gift this year than anything else.

"Perhaps the motorist in whom YOU are interested is included among those who have told us what they want for Christmas:

"Mr. A. ——, 'I'd rather have a robe for my car for Christmas than anything else.'

"Mr. B——, 'My notion of the right sort of a Christmas present to give me is a spotlight for my car.'

"The greatest pleasure in giving Christmas presents is in giving things that are really wanted.

"Find out what accessory the motorist in whom you are interested wants, and then get it for him at this store. You'll find our accessories all charmingly wrapped in Christmas packages and that we have provided clever Christmas cards for you to send them with your accessory Christmas gifts."

This would make many people consider accessories for Christmas gifts.

Let's go after Christmas accessory business this way and—GET IT.

Ideas **On Selling and Management**

You will find them on this and the opposite page—ideas that will make dollars or save dollars for the

Car Dealer Truck Dealer
Equipment and Tire Dealer
Tractor Dealer Repairman

Some of our readers are contributors to this section of Motor World. Have you developed a plan that might help some other men? If you have, will you write it out and send it in?

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When the Garageman Delivers a Car

He Is Responsible for Accidents Unless Driver Is Compensated by the Owner

EDITOR Motor World:—We have a man here in town who is willing and anxious to store his car with us at our garage, but has not done so because we have always refused to let our mechanics drive customers' cars between their homes and the garage. As we understand it, if we did and somebody was hurt, we would very likely be held responsible and have to pay damages. How can we get this man's business and still not be held responsible if something happens.—Subscriber, Atlantic City, N. J.

Answer:—Whether a dealer or the customer is liable when a person is run down and injured in a case of this kind depends entirely on who has control of the driver when the accident happens.

If the driver of the car is acting as the employee or servant of the dealer at the time of the accident, the dealer is responsible; on the other hand, the driver, if acting as employee or servant of the owner of the car at the time of the accident, the owner is responsible. I realize that it is often desirable and necessary to furnish a driver to a good customer when he requests that a car be delivered to his home or be called for at his home to be taken to the garage.

It must be borne in mind, however, that every time the dealer accommodates a customer in this way, he assumes a heavy responsibility.

One single accident may cost him a great deal more than he has ever profited by having such a customer or may ever reasonably expect to profit.

If the dealer has it distinctly understood that he will not furnish any drivers, but that he will procure a driver who shall be compensated by the owner, according to agreement; that the dealer has no interest in the matter of compensation, then the matter assumes a different aspect and the responsibility is not assumed by the dealer.

If the car and the passengers in it were injured through fault of the driver, the garageman would undoubtedly be held responsible if the customer were able to prove that the dealer controlled the driver.

Better to Have a Lawyer Do These Jobs

Editor Motor World:—Please advise us on the collection laws in the State of Florida for collecting bad accounts on automobile repairs, and what course is advisable to follow to get our money for such work? Also what does a mechanic's lien cover?

We ask you for all this information as all the garagemen and machine shops in our town are going on a cash basis.—L. V. S., Bradentown, Fla.

Answer.—Sec. 3502 of the Rev. Laws of Florida provides that:—

"Liens prior in dignity to all others accruing thereafter shall exist in favor of the following persons upon the following described personal property under the circumstances hereinafter set forth."

Section 3508 provides:—

"In favor of any person who shall manufacture, alter or repair any article or thing of value upon such article or thing."

Under this law the property may be retained three months. If not paid, you should turn the matter over to your local attorney so that he can enforce your lien by court action before the expiration of the three month period.

I do not just understand what you want to know about the collection laws. Turn the claims over to a local lawyer and let him collect them for you.

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

Facts Alone Determine Liability in Garage Fire

Editor Motor World:—What is our responsibility for the loss of cars by fire which are left with us on temporary storage? How can we limit our responsibility? B. S. H., Wilmington, Delaware.

Answer.—A garageman is not an insurer of cars left with him on storage but is bound by law to use reasonable care to protect the property from loss, that is, the same degree of care a reasonably prudent man would use toward his own property. Each case where a fire occurs in a garage must be determined according to its own peculiar facts. So if you have had a fire, before it can be determined whether or not you were negligent in such a degree as to cause you to be held liable for loss to customer's cars you will have to find out what caused the fire and whether you could have prevented it or saved the property by the use of ordinary common care.

The general rule is that a bailee for hire cannot limit his liability for loss caused by his negligence.

Judgment Includes Seller in This Case

That where the buyer of an automobile was sued for the possession of the car by a person who claimed title to it and notified the person who had sold it to him, who then assisted with the defense and appeared at the trial by counsel, and made suggestions, the seller waived his right to have exclusive control of the defense, and the judgment rendered against the buyer was conclusive against the seller in a subsequent action started by the buyer against the seller for damages for breach of warranty in the sale of the car to him, was the decision of the Supreme Court of Alabama in the recently decided case of Southern Motor Co. vs. Gayle Motor Co., reported in 92 Southern Reporter at page 784.

May Cross Sidewalks

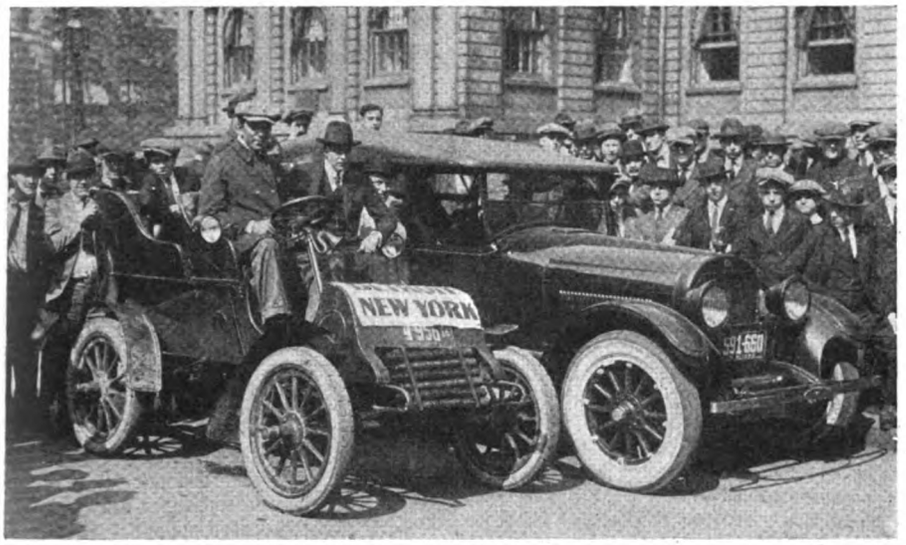
Another recent case involving gasoline stations is the case of Standard Oil Company vs. Kearing, wherein it was decided by the court, that a city cannot under the general welfare provision of its charter, forbid the operation of gasoline stations and filling stations, between designated points on its principal streets, even though the automobiles must cross the sidewalks to reach the stations. 184 Northwestern Reporter, page 109 (Nebraska).

Owner May Recover Tank

That a company which lends a gasoline tank to the owner of a garage to aid in the handling of gasoline may recover it from the purchaser of the real estate who has notice of the ownership of the tank, although it is buried in the ground to guard against injury and to lessen the fire hazard, was the decision in the recently decided case of Standard Oil Co. vs. Dolgin, reported in 115 Atlantic Reporter at page 235.

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Interesting Things Automotive



Old Timer Makes Long Run

Twenty years old and still going strong. This old Cadillac machine was built in 1902, and is shown in comparison with the newest model, 1923. The old car recently completed a run from Detroit to New York, the journey lasting about a week. I. M. Uppercu, president of New York Cadillac, is in the seat with the driver

You've Heard of "Sea-Going Hacks"— Here's One

A motor car which may be driven either on land or water has been introduced in England. Equipped both with wheels for land travel, and propellers for water travel, the car may be driven down to the beach, thence right into water without changing or turning off power, the motion of the wheels controlling the motion of the propellers, it is claimed. The car was introduced at the Sidmouth Regatta, and is shown here riding along the surface of the water





Indianapolis Dealers' Frolic

Two hundred and fifty members and friends of the Indianapolis Auto Trade Association shut up shop Saturday, Sept. 30, and whisked to New Bethel, where they fraternized, played games of skill, chance and hilarity and enjoyed themselves at a clam bake done in true City Island style. It was the first outdoor festivities and picnic the local association ever staged, and was so successful that everyone says it must be made an annual affair in the future

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The Stitch That Saves Nine

A Standardized Inspection System for Franklin Cars That Has Been Developed by the Factory with the Assistance of Field Service Men and Adopted by Franklin Dealers and Service Stations

A MONTHLY inspection system was started several years ago by some Franklin dealers with the idea in mind that if automobiles received periodic oiling, greasing, tightening and adjusting, many expensive overhaul bills would be eliminated or would be necessary only after greater mileage and longer service. The maintenance cost of the car would be reduced, and the owner would experience practically no discomfort while owning the car. This monthly inspection service as originated by the dealers has been standardized by the Franklin factory service department and has been adopted by Franklin dealers and service stations.

Three monthly inspections at no charge are furnished the owner after the purchase of a new car. To insure against unintentional overlooking of any of the operations, a printed report is followed and filled in by the mechanics as the inspection proceeds. Comments on the operations are made where necessary, and a copy of the report, signed by the mechanic and tester, is given the owner.

Inspection Operations

The following digested operations apply to both the Series 9 and Series 10 Franklin cars, excepting where it is otherwise designated:

Oil and grease. The amount of oil and grease should be inspected at all places as designated and replenished where necessary.

1. *Align Front Wheels.* Align front wheels between limits of "straight-in-line" to ¼ in. toe-in.

2. *Front Wheel Bearings.* Grease and adjust front wheel bearings. Screw adjusting nut up tight and then back it off two castles.

3. *Front Axle Yoke Pins and Bushings.* Check the wear in both front axle yoke pins and bushings.

4. *Front Springs.* Tighten spring clips and spring chair bolts and adjust pivot bolts.

5. *Steering Connections.* Adjust all steering connections, check steering device to engine rail bolts and cowl board. Check for back lash and end play in bearings. Tighten lock nuts or clamps on drag link and knuckle connecting rod.

6. *Rear Axle Shaft.* Tighten hubs on tapers of rear axle shafts, check for end play in rear axle drive shaft. There should be no perceptible end play. On wire wheels see that all wheels are tight on hubs and hub caps properly locked.

7. *Brakes.* Adjust service brake; brake should be fully on when pedal is 2 in. from the floor board. Adjust emergency brake; brake should be fully on when hand lever is vertical. Adjust each brake so that it grips the wheel with the same tension. See that brakes do not drag when released.

8. *Rear Spring.* Tighten spring clips and spring chair bolts and adjust pivot bolts.

9. *Drive Shaft Universal Joints.* Check universal joints for wear in bushings and looseness of flanges on tapers.

10. *Clutch* (Series 10). Adjust clutch. There should be 1/16 in. clearance between clutch puller yoke and clutch throw out bearing. There should be ⅛ in. clearance between clutch brake and clutch shaft sleeve nut face.

(Series 9.) Adjust clutch. There should be 1/32 in. to 1/16 in. clearance between the trunnion and the flange of the universal joint with the multiple disc clutch, and 3/16 in. clearance between the forward face of the trunnion and the hooks on the puller rods with the dry plate clutch.

11. *Battery.* Test battery. Add water, if necessary, and note after each cell its condition. The minimum hydrometer reading should be 1150, this indicates a discharged battery. If anything in particular is noted, it should be called to owner's attention.

12. *Clean Engine.* Clean off engine base, between cylinders, cylinder flanges and engine pans.

13. *Engine Rail Bolts.* Tighten engine rail to sill angle iron bolts and engine rail to crankcase nuts.

14. *Steering Device.* Tighten steering device to engine rail bolts and cowl board. Check for back lash and end play in bearings.

15. *Cylinder Hold Down Nuts.* Tighten cylinder hold down nuts.

16. *Walking Beam Tube Yoke Nuts.* Tighten valve walking beam tube yoke nuts and tube lock nuts.

17. *Carbureter and Vacuum Tank.* (Series 10.) Examine flow of gasoline. Clean out strainer screen. Check and adjust if necessary the auxiliary air valve spring. Test primer. Test primer valve for leakage by noting if the engine will run with needle valve closed.

Fuel System

(Series 9.) Examine flow of gasoline, clean out carbureter strainer if necessary. When dash lever is on "cold," see that carbureter air control valve is not half on "hot" and half on "cold" due to cable stretching. Check and adjust if necessary auxiliary air valve spring. Test master primer. Test master primer valve for leakage by noting if engine will run with throttle valve closed.

18. *Ignition System.* (Series 10.) Bear in mind that any change in adjustment of breaker gap will change the location of spark. Therefore check location of spark on flywheel or fanwheel after you have finished adjusting the Atwater Kent. In adjusting proceed in the following order:

1. Push spark control button way in.
2. Smooth breaker points if pitted or corroded.
3. Set breaker gap at .015 in. (use thickness gage furnished with equipment).
4. Check spark setting on flywheel or fanwheel. It should be from 1 in. to 1¼ in. before upper dead center. The triangular mark on the rim of fanwheel is center-line mark for 1 and 6 cylinders. To check setting put ignition switch to "On," pull out high tension wire from center of distributor cap and hold it ⅛ in. from any metal part of engine. Turn engine over slowly by hand, stopping instant spark occurs at the end of the high tension wire. This is the point at which the ignition spark occurs and should be from 1 in. to 1¼ in. before upper dead center as measured on the flywheel or fanwheel.

(Series 9 late.) Bear in mind that any change in adjustment of breaker gap will change the location of spark. Therefore check location of spark on flywheel after you have finished adjusting the Atwater Kent. In adjusting proceed in the following order:

1. Smooth breaker points if pitted or corroded.
2. Set breaker gap at .008 in. (use thickness gage furnished with equipment).
3. Check spark setting on flywheel. It should be from 1 in. to 1½ in. before upper dead center.

To check setting, put starter switch in neutral position—pull out high tension wire from center of distributor cap and hold it ⅛ in. from any metal part of

Better Mechanics

Article No. 262

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous isues.

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engine. Turn engine over slowly by hand, stopping the instant a spark occurs at the end of the high tension wire. This is the point at which ignition spark occurs and should be from 1 in. to 1⅛ in. ahead of upper dead center as measured on the flywheel.

Contact Points

(Series 9 early.) Inspect lifter for wear, replace if worn—put slight amount of light grease or vaseline on notched shaft. Adjust contact points. Gaps should be .019 in. Check ignition setting. It should be 1⅛ in. ahead of upper dead center as measured on the flywheel.

19. *Spark Plugs.* Clean spark plugs and adjust gaps .031 in. using equipment gage.

20. *Valves.* Time valves .010 in. with engine cold or .15 in. hot with engine running. While valve covers are off, oil walking beams and lifter rods; saturate felt pads (Late 9-B and Series 10) in an equal mixture of engine oil and kerosene and squeeze out all excess mixture.

21. *Compression.* Test compression. Note weak cylinders. Fire each cylinder separately. Compression should be fairly even on all cylinders.

22. *Starter.* (Series 10.) Inspect commutator; smooth off with sandpaper if oily and dirty.

(Series 9.) Inspect commutator; smooth off with sandpaper if oily and dirty. Check chain tension by rocking tire pump clutch end of armature shaft with pliers. Movement of ⅛ in. at end of pliers is normal.

23. *Generator.* (Series 10.) Inspect commutator; smooth off with sandpaper if oily or dirty. Check chain tension through inspection hole.

24. *Tire Pump.* (Series 10.) Start pump and see that it is in perfect operating condition.

(Series 9.) Oil pump. Start and see that it is in perfect operating condition. Inspect tire pump clutch for wear and alignment. Tighten pump to bracket and test.

25. *Engine Base Oil.* Note condition of oil and if changed at time of inspection state so, following instructions according to oiling chart. Remove plug from bottom of flywheel bell housing to see if engine leaks oil.

26. *Oiling System.* Check system for leaks. Engine should be kept clean. Connections should be sufficiently tight to prevent any appreciable amount of oil leaking when car is standing. Same applies to gearset and differential.

27. *Hood.* (Series 9.) Check fit of hood. Give particular attention to fit of wings on inside of hood to the engine jacket. (Unless properly fitted cooling system is vitally affected.) There should be ⅛ in. clearance between the dash and the rear edge of the hood on 9-A and early 9-B and also same amount between hood hinge and hood hinge spring.

28. *Electric Wiring Terminals.* Check and tighten all loose wire terminals under cowl.

29. *Lighting System.* Check lighting fuses on junction board and all lamps.

Form B-440—Service

Job No._____ Insp. No._____

FRANKLIN MOTOR CAR

MONTHLY INSPECTION REPORT

(For both Series 9 and Series 10 Cars unless otherwise designated)

Owner_____ Date_____

Address_____ Car No._____ Speedometer R'd'g_____

City_____ Type & Model_____ License No._____

Oiled By	Date	Inspection Made By	Date

Ck.	Oil and Grease	Use	Remarks
	Front Hub Caps	Cup Grease	
	Oil Hole in Front Wheels	Engine Oil	
	Steering Ball Joint, No. 1	Graphite Gr.	
	Steering Ball Joint, No. 2	Graphite Gr.	
	Steering Ball Joint, No. 3	Graphite Gr.	
	Steering Ball Joint, No. 4	Graphite Gr.	
	Spring Pivot Bolts, Front	Engine Oil	
	Front Axle Yoke Pin, Right	Engine Oil	
	Front Axle Yoke Pin, Left	Engine Oil	
	Spring Pivot Bolts, Rear	Engine Oil	
	Emerg. Brake Ball Joints (S-9)	Graphite Gr.	
	Emergency Brake Shaft and Pins	Engine Oil	
	Rear Axle Housing	600 W	
	Rear Wheel Bearings	Spicer Grease	
	Universal Joint, Front	Spicer Grease	
	Universal Joint, Rear	Spicer Grease	
	Clutch Driver Sleeve	Engine Oil	
	Clutch Trunnion (Series 9)	Engine Oil	
	Pedal Support Shaft (Series 9)	Engine Oil	
	Transmission	600 W	
	Hand Brake Lever Shaft	Engine Oil	
	Foot Throttle Shaft (Series 10)	Engine Oil	
	Steering Wheel	Light Oil	
	Steering Device	Spicer Grease	
	A. K. Unisparker	Light Oil	
	Starter	Light Oil	
	Generator (Series 10)	Light Oil	
	Bendix Drive (Series 10)	Engine Oil	
	Tire Pump (Series 9)	Engine Oil	
	Horn	Light Oil	

TIRE PRESSURE	R F	R R
	L F	L R

Ck.	Part	Remarks
	1 Align Front Wheels	
	2 Front Wheel Bearings	
	3 Front Axle Yoke Pins and Bushings	
	4 Front Springs	
	5 Steering Connections	
	6 Rear Axle Shafts	
	7 Brakes	
	8 Rear Springs	
	9 Drive Shaft Universal Joints	
	10 Clutch	
	11 Battery—Cell No. 1 2 3 4 5 6	
	12 Clean Motor	
	13 Engine Rail Bolts	
	14 Steering Device	
	15 Cyl. Hold Down Nuts	
	16 Walk. Beam Tube Yoke Nuts	
	17 Carb. & Vacuum Tank	
	18 Ignition System	
	19 Spark Plugs	
	20 Valves	
	21 Compression	
	22 Starter	
	23 Generator	
	24 Tire Pump	
	25 Engine Base Oil	
	26 Oiling System	
	27 Hood	
	28 Elec. Wiring Term.	
	29 Lighting System	
	30 Horn	
	31 Tires	
	32 Road Test	

General Remarks:—

OK'D BY_____

DATE_____

NOTE: By bringing your car in regularly each month and by carefully studying this report, you will greatly aid us in securing for you better service from your Franklin car

The monthly inspection report used with the Franklin inspection system

Look for corroded fuses. Check headlights and bulbs, dim and bright.

30. *Horn.* Oil horn and test for tone. Adjust if necessary.

31. *Tires.* (Series 10.) Check tires for proper pressure. Tighten rim clamps.

(Series 9.) Check tires for proper pressure.

32. *Road Test.* Test car. Note operation and noises, such as pinking, bearing knocks, throttling ability, etc. Check muffler for back pressure; if any evidence of lack of power or heating, look for plugged muffler.

What Horsepower Will Shafting Transmit?

The power that shafting will transmit varies according to a number of conditions such as speed, distance between shafting hangers, weight of pulleys and gears, width of belts, etc. For average line shafts where the hangers are 8 ft. or less center to center and the loads inexcessive, the following ratings are applicable:

Shaft Diameter	Revolutions Per Minute 200	225	250	275	300	325	350
1 1/16	12	13	15	16	18	19	21
1 1/8	18	20	22	24	27	29	31
2 3/16	25	28	31	35	38	41	44
2 7/16	34	39	43	47	52	56	60
2 11/16	46	52	58	64	69	75	81
2 15/16	60	67	75	82	90	97	105
3 3/16	76	85	95	104	114	123	133
3 7/16	95	107	119	131	143	155	167
3 11/16	117	132	146	162	176	190	205
3 15/16	142	160	178	196	213	231	249

—The Medart Co., St. Louis, Mo.

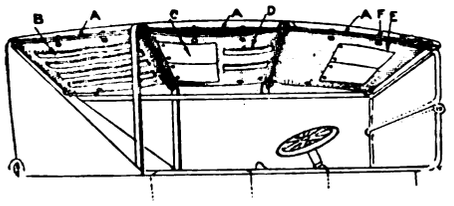
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Equipment to Sell

New Devices for the Car and Truck

Auto Top Wardrobe Carrier

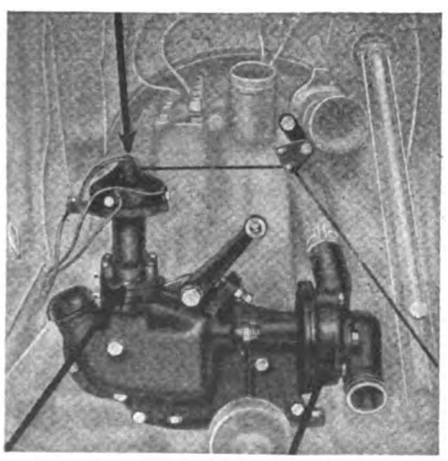
Auto Top Wardrobe Carrier Co.,
4154 Moneta Avenue, Los Angeles, Cal.
$12 for touring car size; $9.50 for roadster size.



A carrier for clothes, coats, wraps, etc., made in two sizes, one for touring cars and the other for roadsters. Both sizes are adjustable. The larger berth is made in three designs, the smaller in two. In the illustration the compartments marked "A" are for carrying coats and wraps. When the compartment is closed, it is dustproof. The compartment marked "B" is for hats and will carry four. Two pockets "C," 10 x 12 in., are for carrying small articles. "D" is a single hat carrier. "E" are two pockets for convenience of front seat occupants. "F" are snap buttons to hold pockets and compartments closed.

3 in 1 for Fords

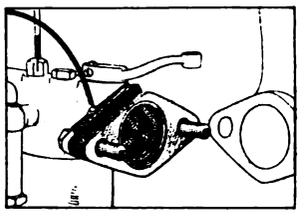
Hexagon Specialty Mfg. Co.,
3630 South Grand Avenue, St. Louis, Mo.
Price $31.



The device combines a circulating water pump, gear type force feed oil pump and elevated timer for Fords. The timer is an oil-less wipe contact raised to a convenient position away from the oil. Models equipped with Bosch battery ignition systems have the standard Bosch distributor head on top of the unit. The oil pump is a force feed gear pump, with copper tube from oil pump to a special connection at lower petcock. The water circulating pump is a gear driven impeller. The price, with manual battery ignition system is $53; with compensating battery ignition system $55.

Hot Prong Carburizer

Hot Prong Carburizer Co., Portland, Ind.
Price $5.



The device is of gasket type to be inserted between the carbureter and the intake manifold and has a wire gauze across the opening and three metal prongs which are heated by the electric current when the dash switch is turned on. It is claimed that the electricity used in heating the prongs is not greater than that required to light the headlamps.

Spee-Dee Cleanser in Collapsible Tube

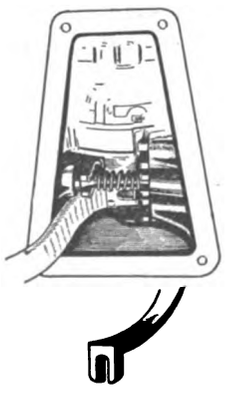
States Chemical Co.,
656 W. Austin Avenue,
Chicago.

The Spee-Dee hand cleanser previously supplied in cans is now put up in collapsible containers. Each tube holds enough for three dozen washes.



Amtex Band Linings for Fords

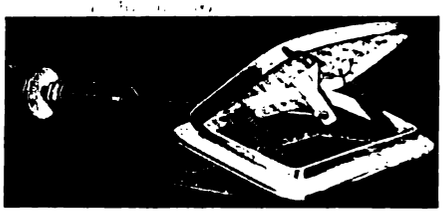
American Textile Banding Co., Inc.,
Germantown, Philadelphia
Price $2.50 per set



The linings are so constructed that once installed it is only necessary to remove the transmission cover plate, slip out the worn linings and slip in the new ones. The first installation, of course, requires the removal of the transmission cover to get the original bands out. The linings are woven of cotton yarn, impregnated.

Calkins Cowl Ventilator

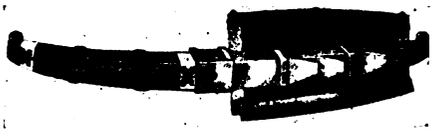
Calkins Mfg. Co.,
36 West Randolph Street, Chicago.
Price $3 for small size, $3.95 for large size.



The ventilator is provided with springs to hold the cover in place to eliminate rattling. The hinges are concealed inside the cover. The handle on the dash or instrument board is easily turned and allows rapid adjustment. A cork gasket is furnished to assure a tight fit. The ventilator is made of cast aluminum in two sizes, the small size for Fords and lighter cars, and the large size for larger cars. Both sizes can be had in black enamel or polished aluminum. The ventilator conforms to the shape of a cowl and the aluminum castings are soft enough to make them follow the curves of the cowl if they depart from the more common lines.

Red Tip Lubricating Spring Covers

Snappee Co., 1-11 Broadway,
Chelsea, Mass.



Prices:
$2 per section in Snappee material
$3 per section in leather
All 8 section cars, $16
All 10 section cars, $20

Ford set, $5; Chevrolet FB, $12; Chevrolet 490, $8; Overland 4, $8; Dodge, $16; Franklin, $24.

The spring covers are made either of leather or imitation leather. The ends are fitted with a felt grease retainer and the red tips have a bolt and nut fastener. The lacing in between gives additional protection. The hook eyes are covered so that grease cannot come through.

Suction Cup Tire Chain

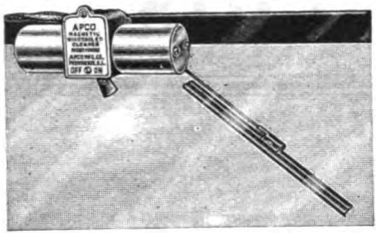
I. V. Benoit, 1004 Bergen Street
Brooklyn, N. Y.
Price $7.50 per set of two.

The cross chains have three case-hardened steel cups welded in. The cup surface grips the road and the flat surface goes against the tire. The links of the cross chain, being above the contact surfaces of the cups, do not take any road wear. Replacement cross chains are 15 cents per section.

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Apco Magnetic Windshield Cleaner

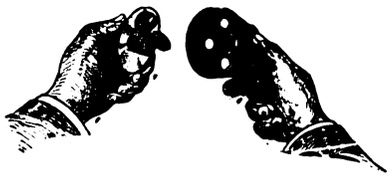
Apco Manufacturing Co., Providence, R. I.
Price $5.



The windshield cleaner uses magnets to operate instead of a motor. It has a uniform high speed which does not vary with the speed of the car and it operates noiselessly. The current used is about 3 amperes and installation can be made on any car by drilling three holes in the windshield frame.

Baltimore Commutator for Fords

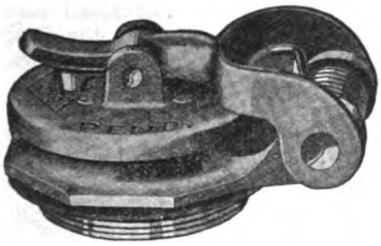
The Baltimore Commutator Co.,
Key Highway and Webster Street,
Baltimore, Md.
Price $5.



The commutator is made of Condensite with brass contacts ⅛ in. in diameter. The brush is of carbon ⅛ in. in diameter. The connections are made under a Condensite cover and the wire assembly goes out through the top in an elevated position so that the wires are not in contact with oil or water. A retaining spring extends from the stud on the breather pipe to hold the cap in place. An oil retarding disk is provided for the shaft.

Neaco Safety Gas Tank Cap

Non-Explosive Appliance Co.,
Fort Wayne, Ind.
Price $3 for Buick, Studebaker, Dodge and Chevrolet FB; $2.50 for Chevrolet Superior and Ford.



The Neaco cap is screwed into the gas tank and thereafter when it is desired to open the tank the cap is raised on its hinge. In filling, the lid is lifted and a nozzle or funnel inserted and when they are withdrawn the cap automatically snaps back into position. The necessary air hole is provided but special gaskets prevent leakage or splashing in rough driving. Claims are made that in case of fire in the gasoline tank the snapping of the cap shut will extinguish the fire.

Swartz Pistons

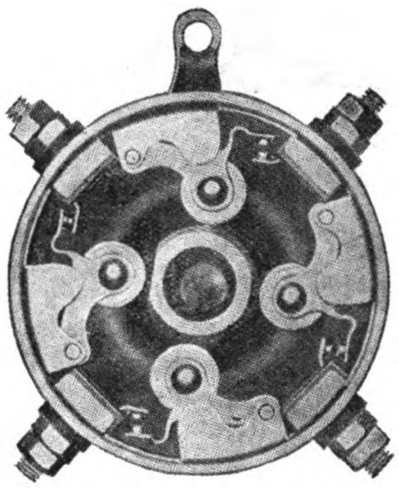
Swartz Mfg. Co., Freeport, Ill.

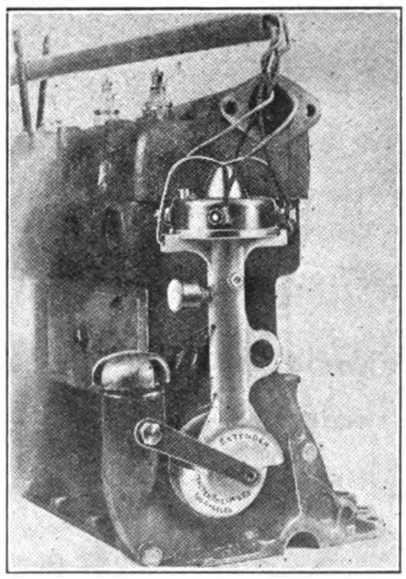


The pistons are made of gray iron, light in weight. There is a circular rib used in the construction and a spiral oil groove is used in the piston pin hole. Made for practically every make of passenger car, truck and tractor.

Master Timer and Timer Extender

Master Timer Mfg. Co.,
110 East Washington Street,
Los Angeles, Cal.
Price: Timer $3.50; Timer Extender $5.75.





The timer is of the make and break type using tungsten points and is very much the same as the distributor used on other makes of cars. There is no track to arc or get rigged. Contact is made between two tungsten points and not through the roller. the timer is self-lubricating. The shell is copperized steel. The timer extender removes the timer from the oil, dirt and water setting it in an upright position. The device is a die casting and can be installed without any machine work.

Bulldog Tire Chain

The Chain Products Co., Cleveland, Ohio.
Prices $6.75 to $18.75 per set; 30 x 3½-in. $7.25 per set.



The chain links duplicate in general appearance, form and physical characteristics the welded cross links but are made of an alloy steel which is tough and has great tensile strength. The chains are equipped with Bull Dog cross links which are finished in a natural color showing the temper of the steel and are constructed with Luminized side chains and fitted with easy opening fasteners. The fastener provides for 1¼ in. take up.

Loadacar Shock Absorber

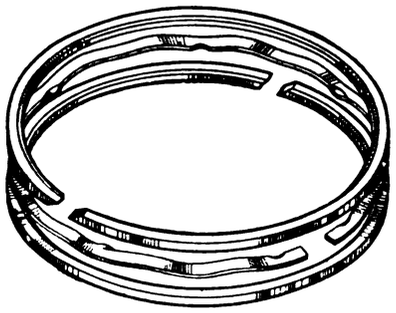
Fike Drop Forge Co., 953 Harrison Street,
Indianapolis, Ind.
Price $5 per set of four.



The device takes the place of the load giving the same spring action and eliminating rebound. It is claimed to give an easy rocking-chair motion while driving over rough roads. It acts to give a full load on the springs when the car is empty.

M. & H. Piston Ring

M. & H. Piston Ring Co.,
342-4-6 Hobart Street, Oakland, Cal.



This is a two piece piston ring with a flat spring between the two halves. The spring is of mild steel and crimped so that it cannot ride out to touch the cylinder wall. The inside of each ring half is beveled to engage the crimp. In operation, the spring acts to keep the two halves of the ring in contact with the shoulders of the piston grooves to prevent oil passing back of the rings. This construction prevents play from starting to keep the rings practically free from wear. The rings move laterally in the groove with some resistance and there is a tension in the groove but not a wall tension.

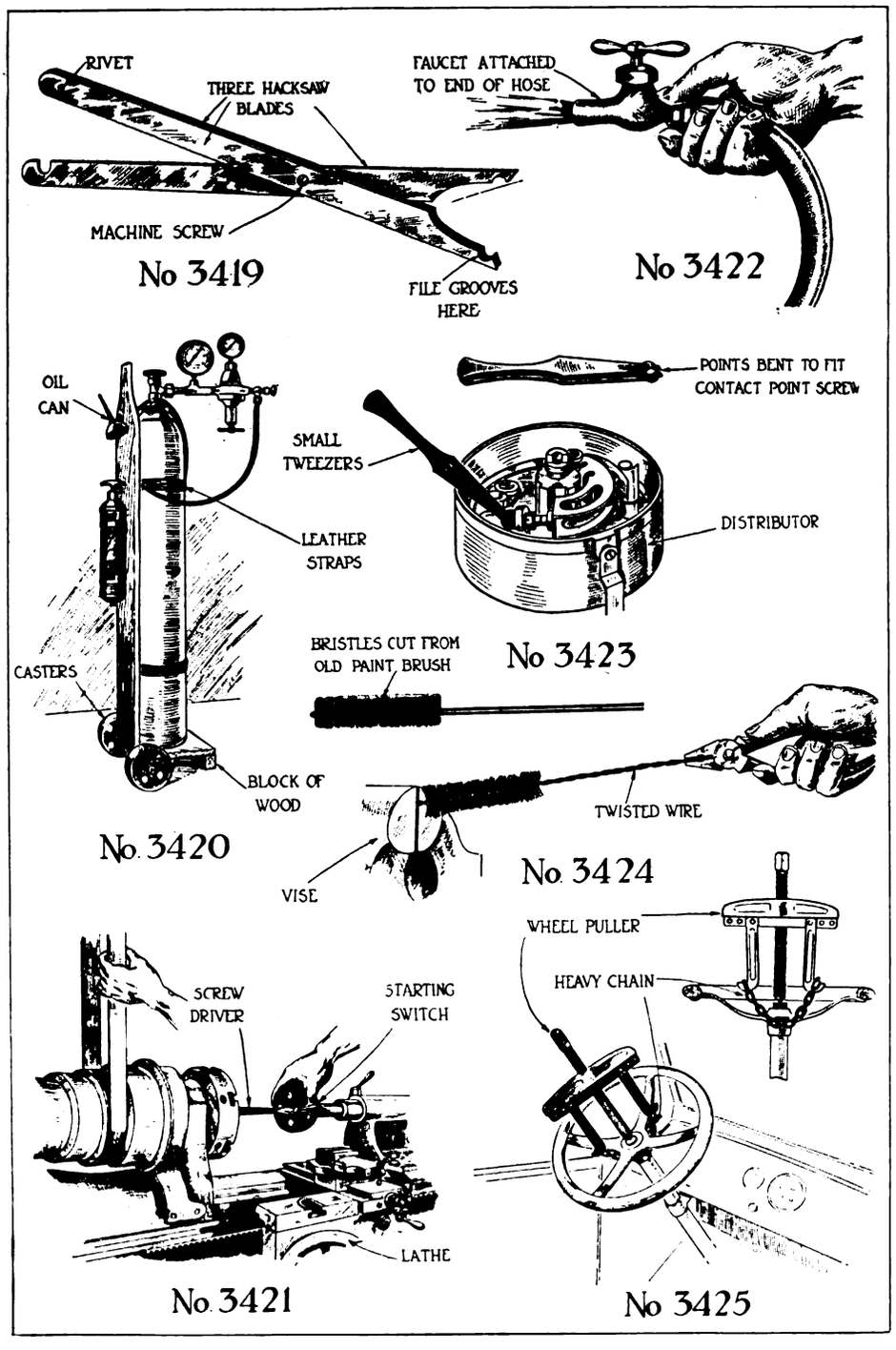
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Repairshop Shortcuts

Will Rogers and the Bankers

WILL ROGERS, famous comedian, entertaining the Bankers' Convention, said he had listened with much interest to Mr. Lamont's speech. He said that he thought it was the best speech Mr. Lamont ever made and the best speech Mr. Morgan ever wrote. They laughed. Will Rogers' business is making people laugh and he knows his business. Of course Mr. Morgan did not write that speech. He never wrote a speech in his life and probably never could write a speech that would be the equal of one of Lamont's. But Lamont is a power in the great Morgan institution and Morgan has a great influence in Lamont's life and activities.

Make your speech through Motor World's Repairshop Shortcut page. We pay a dollar for each one accepted, and we will accept those that are new and practical.



No. 3419—Pick-up Tool for Small Parts—A tool for picking up small screws and washers from a generator or other close places is made from three hack saw blades, which are ground, drilled and riveted together, as shown.—Glenn Earles, J. L. Horney-Roberts Battery Co., Clinton, Ind.

No. 3420—Combined Welding Truck and Stand—A combination truck and stand is fitted with casters and a block of wood, and on the back is mounted an oil can, fire extinguisher and other accessories necessary to welding work.—T. Smith, superintendent, Simplex Auto Co., Long Island City, N. Y.

No. 3421—Removing Screws from Delco Switches—When the screws on Delco switches are hard to unscrew without breaking the slot, the screw may be turned out by inserting a screw driver in the chuck of a lathe and turning the belt by hand. The rear of the switch is center punched to fit the dead center.—C. H. Webb, J. L. Horney-Roberts Battery Co., Clinton, Ind.

No. 3422—A Faucet for the Garage Hose—A faucet is put on the end of the washing hose to prevent waste of water and also to assist in keeping the hose from fraying out. A regular garden hose connection is clamped on and the faucet attached.—John St. Hornow, New York City.

No. 3423—Tweezers for Contact Point Screws—A pair of small tweezers is formed at the end to fit small screws and nuts which are used in the distributor. The tool will hold the screws so that the contact point wrench can be used to adjust the opening.—Robert D. Peebles, Blue Ribbon Garage, Inc., Bridgeport, Conn.

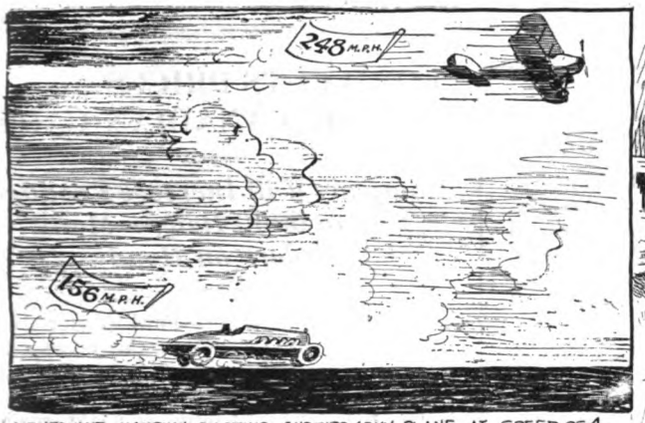
No. 3424—A Brush for Small Spaces—A brush for small spaces like radiator cores, etc., is made from a piece of iron wire, doubled back on itself, the space being filled with bristles from an old paint brush and the wire then twisted.—Robert D. Peebles, Blue Ribbon Garage, Inc., Bridgeport, Conn.

No. 3425—Steering Wheel Puller—A steering wheel puller is made up from a conventional wheel puller with the addition of a chain which goes around the hub of the steering wheel spider. The arms are reversed to catch the chain.—Edward Ruesch, Buffalo, N. Y.

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Along the Automotive Newsway

By Leo Roche



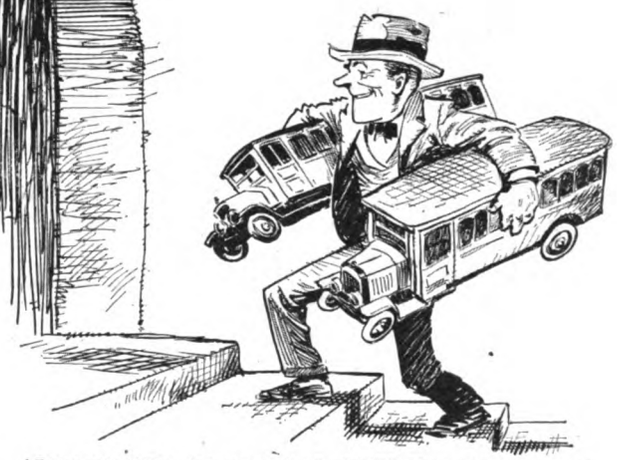
LIEUTENANT MAUGHAN PILOTING CURTISS ARMY PLANE AT SPEED OF 4 MILES PER MINUTE WINS PULITZER SPEED TROPHY. THIS IS ALMOST TWICE AS FAST AS THE GREATEST SPEED EVER MADE BY AUTOMOBILE.



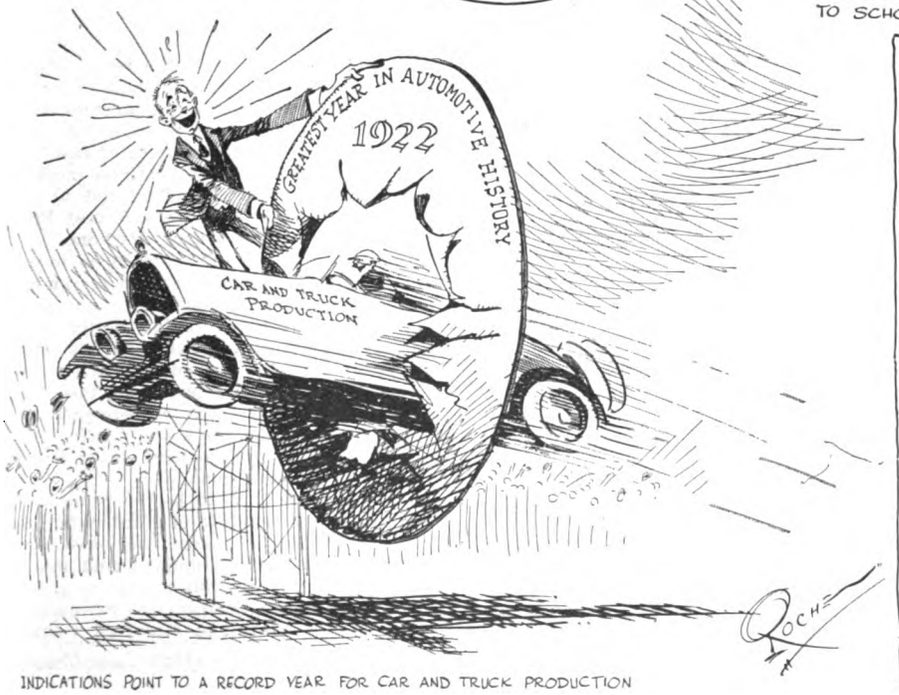
RAILWAY ASSOCIATION WELCOMES MOTOR BUS. — NEWS HEADLINE. NO WONDER, — HIS DOG WOULD BE PRETTY THIN IF IT WAS NT FOR THESE FEEDINGS.



N.A.D.A USES RADIO BROADCASTING STATIONS TO TELL SEVERAL HUNDRED THOUSAND RADIO FANS HOW TO BUY AN AUTOMOBILE.



ABERDEEN, MISS., ROTARY CLUB GIVES TWO LARGE BUSES TO SCHOOLS FOR TRANSPORTING PUPILS TO AND FROM SCHOOL.



INDICATIONS POINT TO A RECORD YEAR FOR CAR AND TRUCK PRODUCTION



PRICE FLUCTUATIONS SEEM TO BE DISTURBING BANKERS.

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Washington to Aid in Snow Removal

WILL OFFER STATES HIGHWAY EQUIPMENT

Prevented by Law from Giving Financial Assistance—Survey Being Made

WASHINGTON, Oct. 24 — Winter travel by automobile in the central and northern states, heretofore hampered by snow covered roads, will be made possible in the future, if plans of the Bureau of Public Roads of the Department of Agriculture can be consummated.

Through the co-operation of the state highway commissions the bureau hopes to utilize surplus war equipment, such as tractors and grading plows, to be employed in the removal of snow and sleet from the main arteries of the public highways to the end that automobiles may have the use of the roads through the greater part, if not all, of the winter.

A canvass of the situation is now being made by the bureau with the state highway commissioners. Under the Federal laws none of the funds appropriated by Congress for Federal aid roads can be employed in maintenance of highways—this being solely up to the state. Once a road is built it is obligatory upon the state to keep it in repair, under a penalty of having all Federal funds withdrawn.

Co-operation Possible

So under the law, while it will not be possible for the Federal Government to aid financially in the snow removal program, the emergency can be met, it is believed, by donating gratis to the states the necessary equipment. It is expected that the states will furnish the labor for the operation of the equipment, and if this can be arranged with the state highway commissions, it is certain that at least a great many of the northern states will be able to maintain automotive highway transportation service, which has heretofore suffered because of the snow-ladened roads.

The bureau of roads already has sufficient equipment of war-surplus material to supply the states for this purpose, provided the states themselves will man and operate it.

The work of making the survey is being carried on under the supervision of H. K. Bishop, Chief of the Division of Construction of the bureau.

Crabtree Succeeds Tisdale

NEW YORK, Oct. 23—William O. Crabtree, formerly representing the Bethlehem and Republic trucks in this city, has succeeded Glen A. Tisdale as New York dealer for Franklin, covering Manhattan and the Bronx. He has been identified with the automobile business for fifteen years, selling passenger cars and trucks in New York, Philadelphia, Red Bank and Princeton, N. J.

Crabtree previously was a director of the Automobile Merchants Association of New York. Recently he has been engaged in the distribution in the United States of American made trucks reimported from the European war zones.

N. A. D. A. WILL HELP IN TAX REPEAL MOVE

ST. LOUIS, Oct. 23—The National Automobile Dealers Association has joined with the National Automobile Chamber of Commerce in an effort to have the discriminatory war excise tax of 1918 and 1921 repealed.

Since Congress recognized in the 1922 revenue bill that taxes upon transportation were unwise by repealing the tax upon railroad transportation, it is thought that the same fair treatment should be accorded the automotive industry.

The N. A. D. A. has issued a letter to all its members urging that they give their united support to the Association and take a definite stand with the next Congress.

The letter asks that each dealer write to his Congressman, Senator and even Congressional candidates urging that the discriminatory taxes be removed. Copies of all letters and replies are asked for by the association, and from information garnered from these sources a campaign of action will be mapped out.

DU PONT WILL BUILD CARS IN WILMINGTON

WILMINGTON, DEL., Oct. 24—Originally established in Wilmington, Du Pont Motors, Inc., now located at Moore, Pa., near Philadelphia, is to be moved back to Wilmington. E. Paul du Pont of this city is president and chief owner of the company, which manufactures the du Pont car. The company expects to occupy a group of buildings, formerly occupied by E. I. du Pont de Nemours & Co., for the company's advertising division. The Moore plant will be gradually moved to Wilmington.

The company was formed by du Pont several years ago to produce high-grade high-speed cars, ranging in price from $3,000 to $4,000. The company is making slight changes in the models of its cars, and production on a normal scale will not be started until these changes have been completed.

FORD CUTS PRICES OF CANADIAN CARS

Company Will Increase Production to 6000 Daily—Many Orders on Hand

DETROIT, Oct. 18—Ford Motor Co. of Canada, Ltd., followed the price cut of the United States company with a reduction ranging from $50 to $85 on all models. The phaeton is $445; roadster, $405; coupe, $695; and sedan, $785. There is a price differential of $85 for self-starter and demountable rim equipment. The truck is $495 and chassis $345. The new prices are the lowest the Canadian car ever has sold for.

Orders covering several months operation were on hand when the new prices on American models were put into effect, according to Ford officials. Production has been running in excess of 5000 cars daily, but this was several hundred daily under retail sales at the former price. With the increased demand expected as a result of the reductions, the company will build production up to 6000 daily.

Edsel Ford Assigns Reasons

DETROIT, Oct. 17—Reductions of $50 on each model of the Ford Motor Co.'s line, effective to-day, are made possible by increased production and the acquisition and operation by the company of many of its supply sources, according to a statement by Edsel B. Ford, president. The new prices represent a cut of almost one-half from prices prevailing in March, 1920.

Ford said:

The revision in prices is the result of the increased volume of business which our company has enjoyed during the present year and also to the fact that we now own and operate many of our own sources of raw material, which enables us to continue increasing the quality of our product and at the same time keep the price so low that Ford cars are within the reach of everyone.

Our production for 1922 already is in excess of 1,000,000, which has been an important factor in bringing down costs, our present daily output is averaging better than 5000 cars and trucks, which means a complete Ford every 5½ seconds of each working day. It is in anticipation of this continued demand that price adjustments are being made in order to keep in effect the policy of selling Ford products at the lowest price consistent with quality.

Quality will continue to be the prime consideration in the building of Ford cars. As our business has increased we have constantly increased our equipment and manufacturing facilities, so that this price reduction merely reflects the progressive methods which come as a result of increased volume.

This reduction is the sixth since March,

(*Continued on page* 41)

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SAYS GARAGE RENTS RETARD CAR SALES

Colin Campbell in Address to Chevrolet Dealers Cites New York as Example

DETROIT, Oct. 20—Lack of garage space was declared by Colin Campbell, general manager of sales of Chevrolet Motor Co., to be a serious menace to the sale of low priced cars in congested Eastern cities, and said this condition was holding back the immediate sale of 100,000 cars in New York City alone. Persons, normally low priced car buyers, cannot afford to pay the $40 and $50 a month garage rent being asked in some places, he said, but they do want cars.

Architects and engineers and civic authorities must begin to take the needs of automobile owners more into consideration in drawing plans for apartment buildings, office buildings, civic structures and highways, he said. Modern apartment buildings should have three to four sub-cellars with ramps to provide for automobile storage if they are to meet tenant requirements. Multiple deck streets are already a crying need in many cities to provide adequately for traffic and car parking, he insisted.

No Saturation Point Near

Campbell remarks on traffic and garage conditions were in refutation of the possibility of a saturation point on automobiles being anywhere near in sight. He addressed Chevrolet dealers of zone No. 1 (Michigan, Indiana and Ohio) at a sales meeting in the Hotel Statler, in which he outlined the business possibilities of the new Chevrolet line. Dealers must awake to their opportunities, he said, and where conditions such as outlined were retarding sales, they must take active part in correcting them.

Bankers attending the meeting with dealer clients were addressed directly by Campbell in a demand for fair treatment for the industry. Armed with statistics from Government bureaus, he showed that the business of the country as represented by bank clearings, had trebled since the inception of the automobile in twenty years, compared to the former fifty-three years. In a like period, he said, American business since 1900 would show an increase of 1000 per cent.

Dealers Must Inspire Confidence

Dealers must justify the confidence of bankers by setting their business in order, he said. Where they have not sufficient capitalization to conduct their business as it should be, they must prepare immediately to right this. Chevrolet demands the representation of the best type of business men in every section of the country, and with such representation there will be no difficulty with finances or in getting a proper share of business.

Three hundred retail sales were made at the week's showing of the Superior models in Detroit, he said, nearly all of which were without exception trade-ins. On trade-ins Campbell urged his dealers to be careful and to make certain they permitted of ready sale. "Remember you are selling, not buying," he said, "make all your sales on that basis. No good dealer will permit himself to be enticed into an unfavorable deal."

The policy of the Chevrolet company will be to conduct all sales through retail dealers, he said, and in this connection it is proceeding to discontinue the last of its factory stores. Seven now remain of the 47 opened under the former regime, and only those in Detroit and New York will be continued. These are in General Motors Buildings and will be more showrooms than salesrooms, he said.

1000 Cars by Nov. 1

K. T. Keller, general manager of production, said the company would be building 1000 cars a day by Nov. 1, and with the completion of new factories in March would be in position to double this. New Fisher body plants will build closed cars exclusively for Chevrolet, he said, assuring dealers of ample quantities in these models. Closed body production the year past totaled 42,000, 28,000 sedans, 5000 coupes and 9000 utility coupes.

Morgan Douglas, sales manager at Flint factory, told of plans the company has for improving dealers' salesrooms and putting them on an efficient basis, especially those in smaller cities. Electric signs, good show windows and attractive surroundings were important aids to business he said, and the company is prepared to show dealers how they may effect these economically. Sixty-two dealer headquarters in different parts of the country have been improved under this plan in the past year alone.

George Frank Lord, advertising manager of the company, said an extensive plan of dealer co-operative and national advertising had been worked out to aid dealers in their sales effort. Just how extensive this is depends on the dealers, he said.

REPLACES TROLLEY CARS WITH BUSES

NEWBURGH, N. Y., Oct. 23—The Orange County Traction Co., of which B. B. Odell, former governor of New York, is the head, has put motor buses into service on two of its branches, replacing six trolley cars with seven buses.

The main line, which runs 12 miles to Walden, still uses trolleys, but on the branches the buses act as feeders to the main line. The new system has been in operation three weeks and has proved a success. The buses are of the type used by the Fifth Avenue Coach Co. of New York, only smaller.

IMPLEMENTS DEMAND GOOD MERCHANDISING

Dealers Show Inclination to Adopt Car Selling Methods to Expedite Recovery

CHICAGO, Oct. 23—After 50 years during which the goods they made were taken away from them without effort, because agriculture was growing and needed the tools wherewith to develop, the implement industry is at last getting some glimmerings of the truth that henceforth farm implements must be merchandised.

This was revealed at the twin conventions held in Chicago last week. One of the two gatherings was the annual convention of the National Association of Farm Equipment Manufacturers, composed of the farm implement manufacturers of the country; the other was the annual convention of the National Federation of Implement Dealers' Associations, composed of delegates from the organized retail implement dealers of the country.

Hall Presents Facts

Guy H. Hall, who is director of the Institute of Progressive Farming, in his address before the manufacturers' convention, not only effectively, but dramatically, presented the facts he had gathered from all elements in the country having to do with influencing the farmer to better methods and with merchandis ing him the wherewithal to improve his methods and left the inescapable inference that all that was needed at the present time or in the immediate future to develop the farmer market was merely to apply up-to-date merchandising methods.

The inklings of the truth that seeped through into the minds of the retailers, as indicated by their resolutions addressed to the manufacturers, and the incontrovertible facts presented by Hall, which must have a profound effect upon both manufacturers and retailers, are the very best augury that the implement industry is waking up, and that by following in the footsteps of the automobile industry it will begin to acquire some new merchandising ideas.

The manufacturers elected J. B. Bartholomew of the Avery Co., Peoria, Ill., president for the coming year, and made Floyd R. Todd, vice-president of Deere & Co., Moline, Ill., chairman of the executive committee for 1923.

The federation elected S. M. Sellers of the Ohio association president for the coming year and gave the vice-presidency to T. M. Whitten of the Mississippi Valley association.

Nash Busy at Milwaukee

MILWAUKEE, Oct. 23—Operating at capacity and with night shifts, the Milwaukee plant of Nash Motors Co. is turning out 75 cars a day, employing more than 1000 men.

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AUTOCAR COMPLETES TWENTY-FIFTH YEAR

Fourth Company in Industry to Round Out Quarter of Century in Manufacturing

NEW YORK, Oct. 23—On Saturday the Autocar Co. of Ardmore, Pa., completed its twenty-fifth year as a producer of motor vehicles, thus becoming the fourth concern in the industry to round out a quarter century of manufacturing. On this honor roll of pioneers are found the names of Haynes, starting in 1895, and Winton, Stanley and Autocar, which began operations 25 years ago and which still are engaged in automobile manufacturing.

There are eleven other concerns which, the records show, have been in business 20 years or more and which include Locomobile, 1899; Stearns, 1899; Packard, 1900; National, 1900; Oldsmobile, 1901; Peerless, 1902; Nash (formerly the Rambler and Jeffery), 1902; Franklin, 1902; Cadillac, 1902; Jackson, 1902, and White, 1902. The present Packard started as the Ohio Auto Co. of Warren, Ohio, in 1899 and became the Packard company in 1903.

Within gunshot of the 20 year class are the Apperson, which started in 1903, following the split-up of the Haynes-Apperson company; the Auburn, 1903; Buick, 1903; Mitchell, 1903; Reo, 1905, and Studebaker, 1904.

Louis S. Clarke founded the Autocar Co. and still is active as vice-president. He first experimented with electric vehicles in 1890 at Pittsburgh, beginning his experiments with the gasoline engine in 1895 and in 1897 combining with William Morgan, also of Pittsburgh, which marked the beginning of the Autocar Co. The concern was incorporated under its present name in 1899, and was moved from Pittsburgh to Ardmore.

Making passenger cars at the start, it featured a two cylinder runabout which was one of the most advanced types of the pioneer days. In 1902 it exhibited at the New York show what is claimed to have been the first shaft driven car built in America. In 1908 the company took up the manufacture of trucks, abandoning the passenger cars. To-day the principal stockholders are the same who started the business, and 90 per cent of the common stockholders are employees.

GARAGEMEN IN WEST HAULING LIVE STOCK

Omaha, Oct. 21—The garage men of the small towns within 100 miles of Omaha are branching out into a larger branch of the industry.

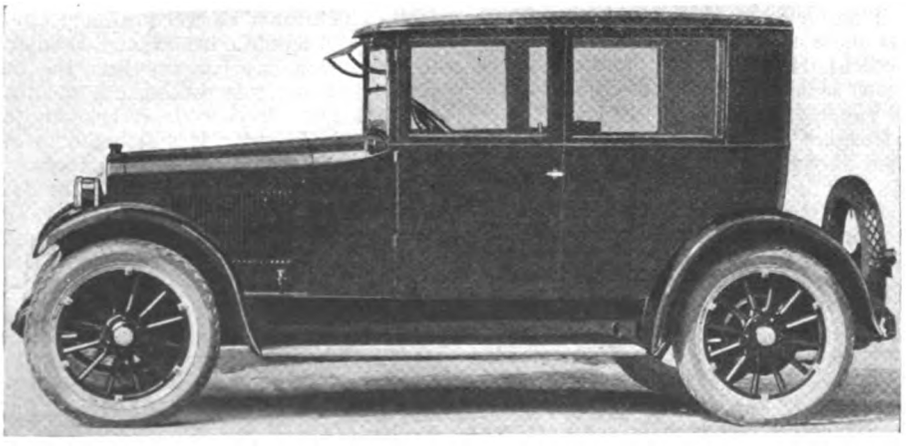
A few of them have installed a small fleet of trucks and with the motto, "From Your Farm to the So. Omaha Market without the Railway," they are doing a good business in live stock hauling.

A record in truck transportation of live stock to the market is being broken every day and it has been said that by the first of the new year, hundreds of garage men in this territory will be hauling live stock to the market.

Pierce-Arrow Moves Up

BUFFALO, Oct. 23—Fall sales of Pierce-Arrow passenger cars are continuing their upward curve, according to announcement made by Myron E. Forbes, vice-president of the Pierce-Arrow Motor Car Co.

Cleveland Brings Out a Two-Door Sedan and Makes Changes in Prices and Equipment



A new two door sedan is added to the Cleveland Six line, the price being $1,295. This replaces the coupe. It carries five passengers and has a trunk platform and barrel type headlamps. The color scheme is gray and the individual front seats tip forward. In addition to this new model, changes have been made in the prices and equipment of the phaeton and four door sedan. The phaeton is now $995 instead of $1,095 and the four door sedan is $1,495 instead of $1,585. In both cases the reduction has been accomplished by a reduction in the amount of additional equipment which may still be had at the former price. All these bodies are Fisher built

ENTHUSIASM FACTOR IN CLOSED CAR WEEK

Brooklyn Shows What Can Be Done—Public Is Educated to Idea

BROOKLYN, Oct. 21—Brooklyn's autumn show, held individually in the salesrooms of dealers as a sequel to closed car week of the past two years, closed to-night with a good record of business done and prospects obtained. The Brooklyn Motor Vehicle Dealers Association, under the direction of Ralph Ebbert, executive secretary, conducted a vigorous promotion campaign for the show, with the result that dealers in virtually all lines reported attendance in their salesrooms considerably ahead of the past two years. Actual sales were held down somewhat by inability of dealers in a good many cases, to promise prompt deliveries.

Salesrooms all along the row, both of members and non-members of the association, were decorated with autumn foliage.

Brooklyn's experience with the individual salesroom show idea indicates that its success or failure depends largely on the enthusiasm which association members put into it. This being Brooklyn's third year with the plan, though it carried a different name in previous years, the public has become pretty well educated to shopping around from salesroom to salesroom on such a special occasion.

This year the association spent between $3,000 and $4,000 advertising the week.

TWO BATTERY MAKERS JOIN ASSOCIATION

CLEVELAND, Oct. 23—The Philadelphia Storage Battery Co. and Vesta Battery Corp. have become members of the Automotive Electric Association.

Philadelphia will be represented in the association by James M. Skinner, vice-president, and W. S. Cranmer, sales manager. Vesta will be represented by F. S. Armstrong, secretary and sales manager.

The storage battery division of the association is making a careful study of battery distribution and service, with the hope of being able to raise the quality of service with consequent benefit to the car owner.

The Cadillac Flat Rates

In Motor World issues of Oct. 4 and Oct. 11 there were some three hundred flat rate operations on the Cadillac car. In the introductory paragraph it was stated that these had been developed by the Cadillac factory. This was an error. The rates were worked out by the Detroit branch of the Cadillac Motor Car Co., the factory not having adopted them, although it is engaged in the formulation of such a list.

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INTEREST BIG ITEM AT DETROIT EXHIBIT

Sales Another Feature of Best Closed Car Show Dealers Have Held

DETROIT, Oct. 23—Automobile interest in Detroit last week centered in the closed car show, held in the Exposition Hall of General Motors Building, under the auspices of the Detroit Automobile Dealers Association.

The attendance ran to capacity each day, the paid admissions approximating 30,000 for the five day show. As an interest producer the show held first rank of any closed car show the association ever held.

While the exhibits were mostly standard production cars, there was a sprinkling of special models to compete for attention. It was in every sense a dress-up show, the cars vying in pretentiousness with the general atmosphere of distinction lent by the industry's most majestic office structure. Decorations in the main were tinted muslins for background with torchiers marking the aisles and spaces between the booths.

Booths Crowded Somewhat

The exhibits were somewhat crowded because of the proportions of the exposition hall, which is 500 ft. long by 60 ft. wide. One space was allowed for each make of car, and there were 36 makes with as many as six models in some lines. Open cars with permanent closed tops were permitted. There was a large sprinkling of cars of the coach and business coupe type, a Chalmers coach at $1,585 being shown for the first time.

Sales at the show were spread over many lines. A Rolls-Royce limousine, which was to have been a special show attraction by the Thompson Auto Co., Detroit distributor, was sold in the dealer's showroom the afternoon before the opening of the show, and as immediate delivery was asked, the feature was lost. Sales in other high priced lines were reported, though most of the buying was in medium and low priced cars. In a large number of cases, sales were to buyers who had not been listed as prospects.

No Cut-away Jobs Shown

There were no cut-away jobs of any description at the show, which was essentially a body display. Colors were mostly standard blacks, blues and maroons. There was no ruling on price tags, but many of the cars carried delivery prices, with a lesser number showing the price at the factory. Whole flocks of salesmen were in attendance so that everyone would be certain of attention and no sales possibilities passed up. In connection with the show many of the dealers featured closed cars in their salesrooms with windows masked.

The manifestation of interest represented by paid admissions gave dealers the most satisfaction, aside from the actual business that was accomplished. When so many persons would pay 50 cents, the established admission price, it was regarded as an indication that there was a large field for closed car sales.

Tickets issued by the association to dealers at half price for distribution to prospective buyers represented only a small percentage of the admission tickets taken in. Practically all admissions were at the full price, and the show will yield a substantial return for the association. There is a likelihood that the decorations will be taken over by the Michigan Automotive Trade Association for use in connection with its circuit shows in the spring.

The question of accepting trade-ins is an acute one for many Detroit dealers at this time, according to H. H. Shuart, manager of the dealers' association, but there are others who have succeeded in keeping stocks low who can afford to do considerable trading. The general used car situation as affecting association members is fairly good, he said, but the recent price cuts and new models in low priced lines make it seem probable that many used cars ranging about $300 will have to be junked.

BUS LINES AND ELECTRIC SYSTEM MAKE OWN APPEALS TO OWNERS OF PROPERTY

Springfield, Mass., Oct. 20.

OWING to the institution of a number of motor bus lines running out of this city, serving suburban territory and linking up other cities, a spirited contest between the street railways and the buses has developed.

A few days ago the street railway company displayed this placard in its cars:

> **Would you build near a jitney line? Think of the increase in value of property near an electric line and what the electric car means to you every day.**

Bus operators have countered by displaying this sign on their vehicles:

> **Don't rent or purchase a home where you are forced to rely entirely on street railway transportation. The motor bus, regulated and controlled by ordinance, offers a service devoid of many of the objectionable features of trolley transportation.**

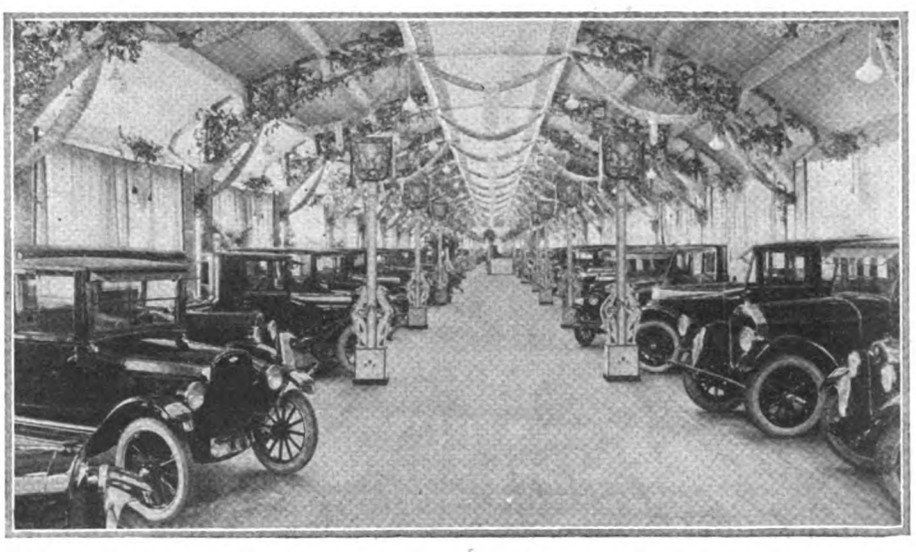
HOLDS FASHION SHOW IN DISPLAYING CAR

CINCINNATI, OHIO, Oct. 21 — Charles Schiller has been appointed by the E. S. Gahagan Co., Cincinnati distributor of Rolls-Royce and Studebaker cars, to have charge of the sale of the Rolls-Royce. The sales agency for this car has just been obtained by the Gahagan company, which held a private showing for its present and prospective customers. A fashion show, staged in conjunction with a Cincinnati apparel company, and nightly band concerts, were features of the event, for which the Gahagan company's showrooms were specially decorated.

The Star automobile has just arrived in Cincinnati and is now on exhibit at the salesrooms of the Cincinnati branch of the Star Motor Car Co. of Ohio, of which Edgar Menderson is manager.

The Lexington Automobile Co., Cincinnati, wholesale distributor of the Lexington in that city, has moved into larger offices in a downtown office building. Offices of the retail distributing company continue at 1002 Gilbert Avenue.

Distinction Lent to Detroit Show



Some of the decorations that were one of the features of this closed car exhibit will probably be used by the Michigan Automotive Trades Association in its show circuit of the State

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CRISP WEATHER HELPS NEW YORK BUSINESS

Closed Cars Form Bulk of Demand—Truck Market Shows Steady Recovery

NEW YORK, Oct. 21—Crisp fall weather has helped passenger car sales in the metropolitan territory to keep going at a high level for this time of the year. The bulk of the demand, naturally, is for closed cars, but owing to the fact that most dealers are short of these models there is better than a normal demand for open cars at this time of the year.

Only dealers in a few lines are getting closed cars in sufficient volume to make immediate deliveries. Railroad embargoes and delays which are in effect throughout the eastern section of the country are aggravating closed car shortage conditions, due to lack of production facilities, and dealers in some of the more popular lines are having to accept orders with delivery dates weeks and in some cases months off.

The used car market has kept pace with that for new cars. Only a minority of dealers hereabouts are overstocked with used cars. As might be expected, the demand for closed used cars is brisk, and there are practically no accumulations of stock in this class.

The truck market is showing gradual but steady recovery. Dealers in the more popular makes report sales running 50 to 100 per cent of what they were a year ago.

Amorous Goes to New York

NEW YORK, Oct. 24—Clinton B. Amorous, manager of the Locomobile Co. of America's Boston branch, and in charge of its New England distribution, has been made manager of the New York Locomobile branch, 16 West 61st Street. Amorous relieves E. A. Travis, general sales manager of the Locomobile company, of the detail of responsibility of the New York branch. Travis lately has been in charge of the New York branch in connection with his duties as general sales manager of the company, with headquarters at the works in Bridgeport, Conn.

Under the new arrangement, Travis will be able to devote his entire time to the duties of general sales manager of the recently reorganized company. W. S. Porter, Chicago branch manager of the Locomobile interests, succeeds Amorous in Boston. Porter, in turn, is succeeded in Chicago by J. Murray Page, who lately has been representing Marmon interests in Chicago and the West.

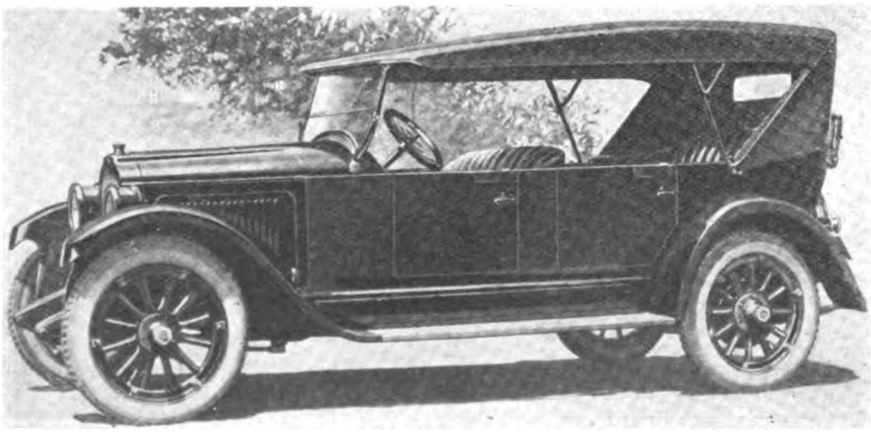
HORSE IS NO LONGER AGRICULTURE SYMBOL

WASHINGTON, Oct. 24—Tradition, which constitutes a large part of official and commercial Washington, has been broken after thirty years.

The purchase of an automobile for the official use of the Secretary of Agriculture is announced. Since the establishment of the Department, it has been an unbroken rule that the Secretary and the assistant secretaries shall use horse-drawn equipment.

Agriculture, it was figured, has heretofore always been linked with the horse, and as a symbol of his office the Secretary of Agriculture has always ridden about Washington in a one or two horse drawn vehicle. For years ten automobiles and a horse-drawn vehicle—all bearing the insignia of their respective Federal departments — have stood about the Executive Mansion on cabinet days.

Willys-Knight Seven Passenger Phaeton, $1,435



Another seven passenger model has been added to the Willys-Knight line, this being a phaeton. This follows closely on the heels of the seven passenger sedan announcement. The phaeton, like the sedan, is known as Model 27 and its chassis characteristics are similar to the five passenger but the wheelbase is 6 in. longer. The tonneau is roomy and the auxiliary seats unfold from a closed compartment in the rear of the driving seats

USED CARS SUFFER BY DEMAND FOR NEW

Milwaukee Reports Problem of Trades Is More Serious—Allowances Small

MILWAUKEE, Oct. 23—Within the memory of the oldest established dealers in Milwaukee there has scarcely been a time when retail sales have been so active as in the month of October, comparing the period with corresponding seasons in the past. In some respects trade is more active than it was in July and August. Dealers in the interior report that they are selling more cars now than during the summer.

The relative briskness of trade is making more serious the problem of used cars. Demand for new cars is predicted just as much upon exchanges as before, and at the same time the disposition of used cars is much more difficult, despite the fact that resale prices are extremely low. Allowances being made by dealers are the smallest on record, and they are offering these cars at commensurately low prices. New car prices appear to be much too attractive to turn the desires of prospective buyers to used cars.

The $50 reduction in Ford prices was pretty well discounted in advance, although surprise was caused by the extent of the cut. Sales since the reduction was announced have increased in a gratifying manner, but hardly at the rate that might be expected with so drastic a reduction. The fact is that people have been buying Ford cars freely and few have been holding off to await the cut. The situation of Ford dealers on this reduction was much better than on the occasion of past cuts, with respect to the stock of cars on hand.

TIME SALE INCREASE REPORTED IN CHICAGO

CHICAGO, Oct. 25—Increase of more than 100 per cent in the volume of business handled by the members of the Central Automobile Financing Association in the first 10 months of this year as compared with the corresponding period last year was shown by the annual report submitted at the association's annual meeting.

In the first 10 months of last year the number of motor vehicles financed was 17,591 and in the first 10 months of this year the number was 39,308, an increase of 21,717. The association now has records of 99,000 motor vehicles financed by firms which are members of the association.

At the annual election Walter E. Heller of Walter E. Heller & Co. was re-elected president, and C. L. Wolf of the Hamilton Investment Co. was re-elected secretary. Other officers chosen were: First vice-president, H. M. Hurst of Monroe Trust Co., Chicago; second vice-president, A. D. Barnes of American Banking Co., Springfield, Ill.; and treasurer, J. D. Purlee of Commercial Acceptance Trust.

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EQUIPMENT BUSINESS MOUNTING IN INDIANA

September Excellent Month, According to Reports of Several Wholesale Houses

INDIANAPOLIS, Oct. 24—Wholesale accessory and equipment trade for Indiana seem to have hit record marks during September, according to several of the large houses of this city.

One concern that operates through Indiana and the whole central region says that September is by far the best month of the year, and that October appears bent on exceeding it. Indiana business generally is well up to the unusual marks established by other territories covered by this house.

Another concern with business largely centered in Indiana says that September is well in advance as a sales producer, and that the records of September, 1921, which was a banner month for last year, have been beaten by at least 20 per cent.

These two reports are indicative of conditions found in all of the important accessory and equipment houses of the wholesale trade in this city. The early part of the season started slowly, but gained in volume as the season advanced until now the accessory trade is well up with the sale of cars, which advanced more than 20 per cent over last year and 40 per cent over car sales in Indiana during 1920.

Some of these wholesale houses report that they are putting on more men in order to handle the new business and to avail themselves of the apparent increasing demand for accessories and equipment in all parts of the State. Vigorous sales campaigns put on earlier in the season by some of the local jobbers have panned out well.

NEW SPORT COUPELET PART OF HAYNES LINE

KOKOMO, IND., Oct. 23—A new Model 55 sport coupelet has been added to the Haynes 1923 line. The price is $2,095. It carries three passengers, has complete sport equipment and is finished in Haynes coach blue. The equipment includes six disk wheels with six cord tires, a trunk on a trunk rack at the rear, nickel plated radiator and headlamps, Moto-Meter, sun visor, etc.

The seat is upholstered in black long grain leather while the remainder of the interior above the belt line is in fabric. There is a compartment at the rear of the seat and a luggage space in the rear deck. A gasoline gage is on the dash and a stop light is part of the regular equipment.

G. M. Parts Taken Over

DETROIT, Oct. 23—The Central Products Co. and the Central Gear Co. of the inter-company parts group of General Motors Corp. have been taken over by the Chevrolet Motor Co.

100 CARS WEEKLY STOLEN IN TEXAS

DALLAS, TEXAS, Oct. 23.—There has been a decided increase in automobile thefts in Texas during the past thirty days, according to reports from insurance companies and theft bureaus.

It appears that cars are being stolen at the rate of more than 100 per week. The majority are sold either at "fences" in two Texas cities or are driven to Juarez, Mexico, and disposed of.

FORD CUTS PRICES OF CANADIAN CARS

(*Continued from page* 36)

1920, and brings the price of the Ford phaeton from $575 to the present low level of $298. Corresponding reductions have been made on all other types. The Ford reduction has been expected in manufacturing circles for some time. Both Chevrolet and Overland in the low priced groups have recently made reductions and the Ford reduction complete the revisions in the former low priced group. The recent Ford financial statement and declaration of price policy by Henry Ford indicated reductions would be forthcoming.

Moon Model Cut in Price

ST. LOUIS, Oct. 21—A reduction of $100 on the six-40 phaeton is announced by the Moon Motor Car Co., effective immediately. The drop was from $1,295 to $1,195. This model is the only one of the line affected.

Twin City Truck Reduced

MINNEAPOLIS, Oct. 23—Minneapolis Steel & Machinery Co. announces the following reductions in the price of Twin City motor trucks:

	Old Price	New Price
2-ton model	$2,750	$2,400
3½-ton model	3,950	3,500

ONLY ONE EQUIPMENT EXHIBIT FOR CHICAGO

CHICAGO, Oct. 23—The open show of automotive equipment which was scheduled to be held at the Chicago Armory the week of Nov. 13, simultaneously with the Automotive Equipment Association's show for its members, has been called off, it was announced to-day by Charles P. Hughes, promoter of the enterprise.

Hughes, formerly secretary of committee of the Automotive Equipment Association, said that lack of support by manufacturers was responsible for his decision to call off the show. A great many jobbers, he said, were very much in favor of such a show as had been planned by Hughes.

CAR VALUE LOOMS BIG, OLDS SERVICEMEN TOLD

A. B. C. Hardy Predicts Startling Improvement in Automobile in Next Five Years

LANSING, Oct. 24—A prediction that the automobile will in the near future be considered a necessity in the life of the people of our country and rank next after food, clothing, housing and the telephone in its importance, was voiced by A. B. C. Hardy, president and general manager of Olds Motor Works, Lansing, Mich., in an address at the annual banquet of service managers, held in connection with the week's convention of these men from all sections of the country.

More than 50 service managers, representing distributors from coast to coast, heard Hardy predict that in the next five years startling developments would take place in the automobile world, due principally to research work now being carried on at the General Motors Laboratories in Dayton, Ohio.

Hardy said:

There is little doubt but that the principal mode of transportation in the future will be the automobile and while to-day it is far more popular than the railroads, in certain respects, the next few years will see an even greater growth in its business.

Speaking of the automobiles of the future, it is impossible for any man to predict just what they will be like but it is safe to say they will be greatly changed due to experiments now being carried on and I feel sure they will be more economical, lighter in weight and more powerful, as well as cheaper.

NEW NASH ROADSTER TAKES PLACE OF OLD

KENOSHA, WIS., Oct. 23—A new Nash roadster on the six-cylinder chassis takes the place of the previous roadster. The price is $1,210, the same as on the old model. The top is ecru silk mohair, and the upholstery is dark gray Spanish leather. The wheels are finished in bright vermillion. A new type ventilator is used on the cowl, the windshield being of the one-piece type. Other refinements include a new steering mechanism, Oil Kip equipment, new barrel type headlamp and parking lamps. Across the front of the chassis side members is a bar to prevent weaving of the frame.

Change Made in Packard

DETROIT, Oct. 25—A change made in the Packard single six coupe permits the carrying of a golf bag and sticks without projecting from the luggage compartment or interfering with passengers. An opening has been cut through to the compartment under the driver's seat. The golf bag slips into this space and extends back into the rear luggage compartment. Cars with this change incorporated are promised for the latter part of October.

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BARLEY MOTOR NAMES TERRITORIAL HEADS

In Addition to District Managers Company Has Representatives at Branches

KALAMAZOO, MICH., Oct. 24—William Elliott Phelps, general sales manager of the Barley Motor Car Co., builder of the Roamer and Barley, is waging a strenuous campaign to secure representatives throughout the United States and Canada.

Ralph E. Meacom, for 15 years identified with the industry, one-time secretary of the Bay State Automobile Association and later serving with the Chandler-Cleveland Motor Car Co. of New England, has been appointed representative of the company in the northeast territory and upper New York State.

Cassius F. Baker, popularly known as "Cash" Baker, and recently with the National Automobile Co., has been named to handle Ohio and Western Pennsylvania.

C. E. Thompson, formerly district manager for the Haynes Automobile Co. and lately of the Packard Motor Car Co. of Kansas City, will represent Barley in the Northeast, traveling Wisconsin, Minnesota, Iowa, Nebraska and Kansas.

G. S. Velie, for the last five years assistant sales director with the Maxwell-Chalmers Corp., will cover Texas and southern States below the Tennessee line.

G. L. Bennett has been named district manager in the metropolitan district of New York City and has jurisdiction over sales in New Jersey and Eastern Pennsylvania.

These district managers work directly under orders from the factory. In addition, the company employs wholesale men in the following branches: New York, Philadelphia, Baltimore, Chicago and San Francisco.



Ernest Burwell

His leadership in Ford circles which placed Spartanburg County (S. C.) in the first place for five consecutive months brought the Ford dealers of the district to Spartanburg for their convention

Booth Heads Bearings Sales

DETROIT, Oct. 24—F. E. Booth has been named sales manager of the motor bearings division of the Hyatt Roller Bearing Co.

FORD DEALERS PLAN CAMPAIGN IN SOUTH

Outline Program for 100 Per Cent Increase in Sales at Carolina Meeting

SPARTANBURG, S. C., Oct. 24—Forty Ford dealers from Western North Carolina and South Carolina met in this city to discuss plans for an intensive sales campaign for the fall and winter season. The meeting was presided over by J. W. Holt, manager of the Charlotte (N. C.) branch.

The convention was brought to Spartanburg by Ernest Burwell, local Ford distributor, who, since coming to this city last March, has led the State of South Carolina in the sale of Ford cars, placing Spartanburg County in the lead by a wide margin.

Holt stated to the convention that the goal for this section would be 3300 Fords for the next six months. This is 100 per cent above the former goal. The increase, he stated, is based on better business conditions and on the fact that during the summer countless orders piled up while the Ford plants were closed for a time on account of coal shortage.

Among those who addressed the convention were J. R. Williamson, chief territory supervisor of the Charlotte branch, the central distributing point for the Carolinas. In the afternoon moving pictures of the three-day Fordson tractor show staged in Charleston in September were shown.

Both States Represented

Among those attending the meeting were:

From North Carolina—J. W. Holt and J. R. Williamson, Charlotte; F. S Wetmur, Hendersonville; W. F. Duckworth, Charlotte; C. H. Klyppelberg, Brevard; A. C. King, Gastonia; W. A. Dixon, Belmont; C. L. Eskridge, Shelby; S. R. Felmet, Canton; J. S. Higdon, Silver; Mr. Mauney, Kings Mountain; R. A. Bolter, Asheville; Mr. Rogers, Hot Springs, Mr. Swift, Waynesville; Mr. Warlick, Rutherfordton.

South Carolina—Ernest Burwell, Spartanburg; W. M. Beatty, Donalds; J. F. Bigbee, Williamston; Mr. Webster, Cowpens; M. Cox, Belton; Mr. Hurlong, Gaffney; Mr. Hatchette, Chesnee; Mr. Jones, Blacksburg; A. R. Meadows, Fountain Inn; Mr. Odell, Liberty; Mr. Herron, Pendleton; Mr. Busick, Greenville; Mr. Carter, Walhalla; Mr. Saddler, Iva; Mr. Neal, Seneca; Mr. Sitton, Pickens; Mr. Smith, Easley; Mr. Thompson, Greenville; Mr. Todd, Anderson; Mr. Wiles, Honea Path.

It was agreed among the Ford men assembled that business conditions in this section are generally better, and that prospects are best in several years for a good fall and winter business.

"Nash Times" Issued

KENOSHA, WIS., Oct. 14—Nash Motors Co. has commenced the publication of a monthly house organ for its dealers, known as the "Nash Times."

135,000 OWNERS ADOPT CARS TO SAVE PAYING HIGH HOUSE RENTALS IN CITY

NEW YORK, Oct. 23—Compiling statistics on the uses to which the motor car is put by its purchasers for the forthcoming conference of the Highway Education Board at Washington, Oct. 26-28, the National Automobile Chamber of Commerce has discovered that in 135,000 instances in 60 cities throughout the country the motor car has been used as a vehicle of relief from high city rentals, the owners of this number of automobiles having moved from the city to the suburbs and depending solely upon their cars for transportation between their offices and homes.

Thus far the investigation is incomplete. The 60 cities from which reports have been received include only three of the chief cities of the country, Baltimore, Detroit and Cleveland. The figures do not include New York, Boston, Philadelphia, Chicago, San Francisco, St. Louis, Los Angeles or other cities of approximately their population. The combined population of the 60 reporting cities is about 8,000,000. If the same ratio is maintained throughout the rest of the United States, not fewer than 500,000 automobiles have been used during the past three years in the fight against high rents.

Baltimore and Detroit are tied for first place in the number of motor cars used primarily to carry workers to and from their work each day. In each case the number is approximately 25,000. Louisville is rated next, in returns compiled thus far, with 20,000. Oak Park, Ill., and Cleveland are rated at 5000 cars each; Toledo at 3500; Tampa, Fla., Dayton, Ohio, Pasadena, Cal., and Casper, Wyo., at 3000 each. Eight cities—Danville, Ill., Waterloo, Iowa, Nashville, Tenn., Winston-Salem, N. C., Tulsa, Okla., Houston, Tex., Richmond, Va., and Bellingham, Wash.—are reported to the Chamber as having 2000 cars each which have been devoted to this purpose.

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DETROIT MAY HALT INTERURBAN SERVICE

If Plan Goes Through, Deliveries Handled by Service Will Be Hampered

DETROIT, Oct. 24—Traffic problems in a number of factories here will be greatly accentuated if the plan of the Detroit Street Railway Commission to bar interurban cars from city streets is carried through. By using the interurban freight service, factories have been able to ship material from branch factories in the district and from northern Ohio on overnight schedule. By railroad the same deliveries would take three or four days.

The railway freight service has also been used to a large extent by factory service departments in making deliveries throughout the area covered by interurban trolley service.

Elimination of the railway service will result in a boost for the truck business, but manufacturers who have been served by the trolleys are loath to give them up. Whole fleets of trucks would have to be bought to replace the cars, and the possibilities of trucks equaling the service are not regarded favorably.

In ruling the interurban cars from Detroit owned lines, the city commission has taken the position that the heavier type car used in interurban service is too heavy for the city rails. The wheels designed for open rail travel are also declared destructive to the type of rail necessary in the city. Furthermore, it has been declared that much of the freight brought over the Detroit rails is shipped from out of the city to destinations outside the city, such as Toledo to Flint, and that city taxpayers should not support such service.

APPROVE PROPOSAL TO SELL LOCOMOBILE

BRIDGEPORT, CONN., Oct. 24—At a hearing before Referee John Keogh, creditors of the Locomobile Co. of America gave unanimous consent to the receiver's proposal to sell the plant and assets of the company at a private sale. Approval of the court is now the only step necessary to wind up the company's affairs.

Elmer Havens, the receiver, has indicated that W. C. Durant's offer of $1,750,000 would be accepted.

Buick Better Than September

DETROIT, Oct. 24—Buick sales for October will exceed the total of 16,842 set up in September, according to President H. H. Bassett. The September total, which includes the output of the Canadian plant, averaged 748 daily. The daily high production mark for the Detroit and Flint plants combined, was set Oct. 12 at 775.

Sales reports from Leishman & Co., Mexican distributor for Buick, show 43 cars delivered at retail within 25 days. Business is continuing to grow, the report adds, and an increased distribution in October is looked for.

WOMEN AS DRIVERS SHOWN AT CHICAGO

CHICAGO, Oct. 24—An automobile driving contest for women was held in connection with the closed car show of the Chicago Automobile Trade Association. Each dealer participating in the show was entitled to select two women drivers of his cars to enter the contest. Each contestant drove a closed car of the 1922 model.

An object of the contest was to demonstrate to the public that the modern automobile can be driven with safety and comfort by the average woman. There were four events in the contest, as follows: a drive around the boulevard system, obeying all city, State and park traffic rules; road control, determined by bringing the car to a line at 25 miles an hour and stopping with the front wheels as nearly as possible on another line 75 feet away; parking at the curb in a space only one and one-half times the length of the car's wheelbase, and backing into a space in a public garage.

New Chevrolet Superior Arrangement of Control Lever



The placing of the emergency brake lever directly in back of the gear lever has resulted in more foot room in the front compartment. The levers are so shaped that they do not interfere with each other or with the instrument board

EASTERN FIRM FORMED FOR THOMART TRUCKS

Will Handle Distribution for New England and Seven Other States

NEWARK, N. J., Oct. 20—Distribution of the Thomart speed truck for the entire eastern portion of the United States has been taken over by Eastern Thomart, Inc., this city.

The new company is headed by William G. Toland, former vice-president of sales for Hare's Motors. Toland has taken with him several of his former Hare's Motors and Packard associates. W. S. Hill, vice-president, was formerly special representative for the Hare organization. William J. Foster, secretary and treasurer, served as transportation engineer for both Hare's Motors and the Packard Motor Car Co. of New York. William Carl Chapman, advertising and sales production manager, was former advertising manager for Hare's Motors and previous to that was advertising manager for the Packard Motors Export Corp.

The new company controls the distribution of the Thomart in all New England, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia and West Virginia.

Dealers have been established at New York, Syracuse, Rochester, Hornell, Newburgh, New York; Newark, Bridgeton, South Amboy, Jersey City, Bayonne and West New York, New Jersey; Hartford, Conn.; and Philadelphia, Erie, Sharon and Beaver Falls, Pa.

This includes the Newark retail branch under the management of W. J. Foster, where a large parts depot is maintained.

An extensive sales and advertising campaign is planned for the near future.

WILMINGTON FACTORY SECURED BY TREXLER

PHILADELPHIA, Oct. 23—Trexler Co. of America, manufacturer of automobile accessories, has taken on more capital, secured a new plant at Wilmington, Del., and will add several new accessories to its line. The capital stock has been increased from $200,000 to $1,500,000, underwritten by George A. Huhn & Son, members of the New York Stock Exchange.

At the same meeting, at which the financial plan was announced, an election of officers took place, resulting as follows: President, H. J. Adair; vice-president, E. J. Flannery; vice-president and director of sales, Walter P. Coghlan; vice-president in charge of manufacturing, W. G. Penfield; secretary, E. J. Flannery, and treasurer, Edward S. Perot, Jr.

The new plant is located in South Wilmington, on the outskirts of the city proper, and during the war was occupied by the Artillery Fuse & Standard Arms Co., making fuses.

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TWO STATES HOLD ANNUAL MEETINGS

CALIFORNIA TO DROP NON-PAYING MEMBERS

H. S. Mason Elected President —Neighborhood Service Station Rapidly Growing

SANTA BARBARA, CAL., Oct. 24—Reorganization through the adoption of a strict policy of better quality in membership even at the expense of quantity was accomplished by the California Automobile Trade Association in its annual convention at the Arlington Hotel here. The by-laws adopted will eliminate automatically the member who fails to pay his dues.

Of a membership of 3000 it was shown that only 1000 are paid up in their dues and the 75 delegates from as many locals voted to drop all who fail to pay.

Officers were elected to serve for one year as follows: H. S. Mason, Los Angeles, president, succeeding George Haberfelde, Bakersfield; vice-presidents for north, Walter Fawcett and George Murphy, and for the south, George Dunton and U. S. Grant.

Robert W. Martland was re-elected secretary-treasurer and manager. The election was made unanimous.

Ray Sherman was made an honorary member of the association by a resolution. Honorary membership also was tendered to Gordon Lee provided he is in a position to accept it without coming into conflict with the wishes of Secretary Hoover.

One of the interesting features brought out by the reports of the various crafts was that the neighborhood service station is rapidly taking the lead in this line throughout California and is taking the service business away from the larger garages and from the dealers.

It was voted unanimously to devote the energies of the association to the checking of fraudulent garage and repair men, to drop instantly any member convicted of fraud in any form and to work at all times to establish confidence in the mind of the public in the members of the association.

September Best With Moon

ST. LOUIS, Oct. 28—Moon Motor Car Co. reports that last month was the most successful September in the company's history and that more cars were sold in that period than in the last five months of 1921. The production schedule for October calls for 1025 cars, and unless there is a hold up on material deliveries it is expected that this schedule will be completed.

Production at the present time is divided equally between closed and open models, but it is stated that if it were possible to secure deliveries on closed car models, production would be 75 per cent closed cars and 25 per cent open.

MISSISSIPPI TOWN WILL HOLD EXHIBIT

CLARKSDALE, MISS., Oct. 21—Plans are being formulated for an extensive automobile show, to be given here on Nov. 2, 3 and 4 in the quarters of the Alcazar garage.

Practically every automobile dealer in Clarksdale will take part in the show, which will be under the auspices of the Clarksdale Associated Retailers and will be the first one of its kind ever given in this section of Mississippi. A parade will precede the opening, and prizes will be given for the best decorated cars.

PORTLAND TAKES LEAD IN ORGANIZING STATE

PORTLAND, ORE., Oct. 24—A. S. Robinson of the Robinson-Smith Co., one of the nine authorized Ford dealers of the city of Portland, was elected president of the Portland Automobile Dealers Association at the annual session of the body held this week. C. L. Boss, head of the C. L. Boss Automobile Co., Hudson and Essex distributor, was elected vice-president. Robinson replaced A. H. Brown, who has served as president during the past year, while Boss succeeds A. C. Stevens.

Other members to serve on the board of directors of the association for the coming year, along with the president and vice-president, are as follows: A. B. Graham, of Braley, Graham & Childs; J. C. Crittenden of the Covey Motor Car Co.; C. G. Irwin, Wentworth & Irwin; H. J. Casey, Talbot & Casey; L. R.

(*Continued on page* 47)

COMMERCIAL CREDIT GETS CONTINENTAL

NEW YORK, Oct. 20—The proposal whereby the Commercial Credit Co. of Baltimore was to acquire control of the Continental Guaranty Corp of New York, has been ratified by the stockholders and the exchange of stock will take place in Baltimore on Oct. 25. While both concerns will retain their identity, after Nov. 1 they will operate under the control of the Baltimore company.

These two finance organizations have been prominent in the handling of automobile credits, and the New York corporation numbers John N. Willys and J. D. Dort among its directors.

HELMICK IS ELECTED WEST VIRGINIA HEAD

Dealers of State Have Shown Greater Co-operation During Past Year

CLARKSBURG, W. VA., Oct. 24—Seventy-five delegates from all parts of the state attended the third annual convention of the West Virginia Automobile Dealers Association, which concluded its sessions here with a banquet at the Waldo Hotel, served the visitors by local dealers.

R. C. Helmick of Clarksburg was elected president, and a vice-president was elected for each congressional district as follows: T. L. Cordray, Fairmont; Wade Garrett, Clarksburg; C. A. Middleburg, Charleston; S. J. Kell, Bluefield; Sherman Dills, Parkersburg, and Bruce Perry, Huntington. George M. Ford of Wheeling was re-elected secretary-treasurer, and the following were elected directors: E. J. McDermott, Wheeling; O. R. Cuppett, Clarksburg; S. J. Kell, Bluefield; Charles A. Middleburg, Charleston.

Among the achievements of the past year, it was pointed out by officers, was the elimination of the "curbstone dealer" from the automobile selling business of the state and the establishment of a practice which makes it mandatory for a dealer to have a recognized place of business.

Business on Higher Plane

Another achievement was the development of a better spirit of co-operation among automobile dealers of the state to the end that the business has been established on a higher plane.

A. R. Kroh, of Chicago, representing the National Automobile Dealers Association, told of organizations and the benefits which accrue to dealers through association and co-operation with other dealers in working out trade problems, suppressing unfair competition and securing equitable legislation which fosters the development of the automobile business.

The association went on record as indorsing suggestions for changes in the automobile laws of West Virginia.

The next meeting will be held in Wheeling the fourth Monday in March, and the next annual meeting in Bluefield the second Monday in December of next year.

Pickens Tuscora Sales Head

DOVER, OHIO, Oct. 23—B. F. Pickens, formerly connected with the Amazon Rubber Co., has been appointed sales manager of the Tuscora Rubber Co. of this city.

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CHANGES IN THE TRADE

H. W. Alexander has the distribution of the Star in Holyoke, Mass.

Miller Rubber Co.'s branch in Iowa is to be moved from Cedar Rapids to Des Moines.

Orr Motor Co., Springfield, Mass., has acquired the Bliss Street Garage as a Nash service station.

Autrey-Gordon Motor Co. of Florence has been appointed dealers for the Star in that portion of Alabama.

D. A. Heindel of Youngstown, Ohio, formerly a Dort dealer, has taken on a Dort distributing contract.

Herbert A. Clark, formerly of the Clark & Breck Co., Springfield, Mass., has joined the organization of R. M. Sauers, Marmon distributor.

State Street Garage, Springfield, Mass., has been taken over by Hampden Motors, Inc., as sales and service quarters for the Gray car.

A. C. Behringer has been appointed as assistant manager and Arthur S. Goodall, advertising manager of the Dorris Motor Car Co., St. Louis.

Detroit Electric Car Co., 2416 Michigan Avenue, Chicago, has been awarded the distributors' franchise in that territory of the Duesenberg company.

Ora P. Stewart, Jackson, Mich.; Daniel Mulconey, Hartford, Conn., and Boulevard East Garage, Guttenberg, N. J., have been appointed Dort dealers.

Bremer-Tully Manufacturing Co., 532 South Canal Street, Chicago, has been incorporated to manufacture and deal in radio and automotive supplies.

Rahr-Nash Co., Manitowoc, Wis., has been organized by William Rahr, W. S. Schroeder and Niels Rahr to act as Nash and LaFayette dealer in Manitowoc county.

Paul Seeds, formerly service manager for the Charles Zimmerman Sons Co., Columbus, has opened an independent Dodge service station in connection with the Civic Center Garage.

W. H. Leach of the Buick factory sales department has resigned to become assistant sales manager of the Pence Automobile Co., Buick distributor for Minneapolis and the northwest.

J. B. Bray, who for a number of years has been service manager of the Grant Motor Car Corp., has resigned and will join the sales force of the Cleveland branch of the Autocar Co.

George E. Adams, who early in the year purchased an interest in the H. K. Smith Co., Ford distributor, Springfield, Mass., has acquired Smith's interest and assumes full control of the business.

Velie & Dort Garage, Kewanee, Ill., W. R. Scott proprietor, and the Fred Martin Garage, have been consolidated. In addition to the Velie and Dort cars, the agency will handle the Packard.

Nichols Auto Repair & Paint Shop, Rhinelander, Wis., has changed its name to Nichols Regrinding Co. It has installed considerable new equipment and henceforth will specialize in gas engine repair.

J. C. Agnew, for several years sales manager for Frank H. Sanders, former Chcago dealer for the Franklin has been appointed assistant sales manager of the Detroit Air Cooled Car Co., Detroit.

Frank Nanscawen and Ed. T. Rippey of Hartford, Wis., have formed a partnership to act as Gray dealer. Rippey is owner of the Rippey Garage and this will be headquarters of the new firm.

James E. Duffell, formerly retail sales manager for the Hanson Motor Co., Atlanta, has established a new Studebaker agency in that city. A new building is to be constructed for the company in West Atlanta.

Kimberly Park Garage, Springfield, Mass., has been bought by T. F. Selzam and placed under the management of Warren McGrannis, for the past six years the service manager at the Sumner Garage in that city.

Roth Co. has been organized in St. Paul to sell tractors and other agricultural implements. Hardware specialties will also be carried. A. H. Roth of Minneapolis, twenty-five years with the trade, is organizer.

H. J. Strack has secured the franchise for the distribution of the Columbia cars in central Iowa. The new firm will be known as the Strack Motor Sales Co. Frank K. Taylor will be associated with the new firm as sales manager.

Anton Koberstein, proprietor of the Gem City Garage, Baraboo, Wis., has admitted as partners Carroll Hackett of Eau Claire and Schuyler Mather of Baraboo. The name of the firm has been changed to Gem City Garage and Filling Station.

Timken Roller Bearing Service & Sales Co. has been chartered in Canton, Ohio, to sell roller bearings and other accessories and also to give service. Incorporators are H. H. Timken, Heman Ely, J. G. Obermier, J. F. Strought and Austin Lynch.

C. G. McDonough, formerly of the Templar Motors Co. in charge of eastern sales and previous to that with the Clydesdale Motor Truck Co. as district sales manager, is now with the Willys-Overland Co. in charge of the taxicab and commercial car sales.

Porter-Minehan Co. has been organized in Atlanta to handle at retail in the Atlanta territory the Hudson and Essex. The company is controlled by Samuel C. Porter, general manager of the J. W. Goldsmith, Jr., Grant Co., and Ralph Minehan of the same company.

St. John Motor Car Co., Appleton, Wis., has been incorporated by W. H. St. John, Geneva St. John and Clarence St. John, to operate a new garage and service station. The same interests have conducted a sales and service business in Green Bay, Wis., for several years.

Thorpe & Knight is the name of a new company organized in Atlanta as state distributor for the Gray Motor Corp. Under the same name the company operated for the past ten years at Miami, Fla., as automotive distributor in Florida, this business having been disposed of.

Joe R. Cook Automobile Co., Davenport, Iowa, has been awarded the agency for Mack trucks in the tri-city territory. J. C. Koeneke, Des Moines, Iowa, representative for the Mack trucks, indicated that the agency will make Davenport the distributing point eventually for its southeastern Iowa and part of western Illinois territory.

Volney S. Beardsley has been appointed eastern district sales manager of the United Motors Products Co. of Grand Rapids, Mich., which is actively in production now of its new one-ton speed model, the Highway Special. Beardsley's headquarters are in Los Angeles. Appointments will be made immediately of dealers in coast cities not already closed, as Beardsley will act only as the factory representative, controlling no retail outlets himself.

Sam C. Mitchell, formerly branch manager of the Cleveland Tractor Co., at St. Louis, has joined the Dort Motor Car Co. as assistant sales manager. Another addition to the Dort sales personnel is William Hufstader, former manager of the convention bureau and the publicity manager of the Flint Chamber of Commerce. W. Harold Kingsley, a newspaper man of long experience, has taken charge of the Dort publicity department. Kingsley returned last month from Paris where he was on the European staff of the Chicago Tribune.

INDIA AND SEIBERLING EXPAND TRUCK LINES

AKRON, Oct. 24—A new double oversize extra-ply flat tread cord truck tire is announced by the India Tire & Rubber Co. The tread has been designed for conformity to road surfaces. The broad, flat face which comes in contact with the road wears very slowly and evenly, and gives greater traction and non-skid qualities. Heavy ribs on both sides of the tread afford additional protection against rut and curbstone wear.

The tread stock has been brought well down over the sidewalls, giving added strength to the carcass. The bead has been extra-heavily reinforced. A special cushion and breaker strip construction is incorporated, which distributes road shocks to all parts of the tire rather than allowing the shocks to be absorbed by just those portions which are struck.

Seiberling Pneumatic

AKRON, Oct. 23—Seiberling Rubber Co. announces a new pneumatic truck tire which is called the All-Tread and which now is in production in the following sizes: 30 x 3½, 32 x 4½, 34 x 4½, 33 x 5, 34 x 5, 35 x 5, 36 x 6, 38 x 7 and 40 x 8. The 30 x 3½ is 3.85 dimension, six ply, for Ford delivery trucks and for use on Ford passenger cars where road conditions are severe.

The feature of this new model is that the tread design is extended down the side walls, the heavy bars running almost to the bead. The tread rubber goes from bead to bead and is extra heavy, of about 4200 lb. per sq. in. tensile strength. There is an extra wide breaker strip, a double thick cushion of rubber between the last few piles, double chafers and double flipper strips, and the carcass is built of long staple Egyptian and Arizona cotton only. The new model is full 10 per cent oversize on the nominal dimension.

William T. Bush Resigns

DETROIT, Oct. 23—William T. Bush, for several years a sales executive of Studebaker and Packard factories and more recently director of sales of the Gray-Dort factory, Canada, has resigned from the latter position, and has returned to Detroit to reside. He has not announced his future plans.

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ASSOCIATION ACTIVITIES

Quincy Drive for Members

QUINCY, ILL., Oct. 23—The Quincy Automobile Trades Association plans an intensive membership drive through Adams, Pike and Hancock counties to add 150 new members to the central organization and affiliate with the Illinois Automobile Trade Association. Lynn M. Shaw, representative of the National Automobile Dealers Association, spoke at the meeting at which the drive was decided upon. Benefits of state organizations were emphasized by him. "Legislation can not be trusted," he warned, "and once a tax goes through, it sticks. A source of revenue is seldom repealed."

Herschel Earhart, Ray Taylor, A. L. Stewart and Ray Lee will be captains of the drive and each will direct a team of ten men.

Quincy will be host to the state association next spring and desires especially to make a good membership showing at that time. Plans for the show to be held then are already under way and A. L. Stewart, C. Lawrence Wells and R. C. Taylor have been appointed by A. P. Nesta, Quincy association president, general show committee. "Unusual jobs" display will be feature of the spring show.

Show Held in Holyoke

HOLYOKE, MASS., Oct. 24—A closed car show under the auspices of the Holyoke Automotive Dealers Association has been held in the new showrooms of the Magna Auto Co. There were fourteen exhibitors, and the entire interior was decorated with autumn leaves and flowers. The exhibits made up a representative display that completely filled the exhibition space. About 5000 persons attended the show, and the management express themselves as well pleased with the sales and interest.

Syracuse Chooses Officers

SYRACUSE, Oct. 21—The Syracuse Automobile Dealers Association has adopted the Boston plan to govern the sale of used cars. Howard H. Smith, secretary of the association, is in Boston studying the plan.

Officers of the association were re-elected at the annual meeting. They are: President, S. J. Silverman; vice-president, Charles C. Hanna; treasurer, Charles W. Bull; directors, B. W. Moyer, George H. Norris, Fred J. O'Neil and H. B. McLellan. McLellan succeeds John W. Lee, jr., resigned.

The association now has a membership of 30, an increase of eight compared with last year.

Gardner Manager in Cincinnati

CINCINNATI, Oct. 19—Harry T. Gardner, who is one of the younger veterans in the business of managing automobile dealer associations, has become general manager of the Cincinnati Automobile Dealers Association. Gardner at one time was executive secretary of the Syracuse, N. Y., association, later holding a similar position with the New York association, which he resigned to enter the automobile sales field. Gardner has instituted a news letter as a feature of the association activities and has begun preliminary work on the show, to be held Feb. 7 to 14.

Cleveland Tire Dealers Elect

CLEVELAND, Oct. 20—The Cleveland Retail Tire Dealers Association has elected the following officers: President A. B. Craft; vice-president, John Jones, and secretary, J. W. Van Den Bosch. They form the board of directors together with R. F. Valentine, retiring president; A. P. Garrett, Arthur Mechanic and Homer Whelpley.

Akron Exhibits Closed Cars

AKRON, OHIO, Oct. 24—Akron's first closed car show and fall automobile style exhibit has been held here with twenty-one dealers exhibiting more than forty models of closed cars. The exhibit was staged under auspices of the Akron Motor Vehicle Association. No open cars, accessories or tires were exhibited.

Edward S. Jordan, president of the Jordan Motor Car Co., addressing members of the vehicle association at the Portage Hotel, predicted a new era of development for the closed car model, and later formally opened the show.

The big armory, which seats over 3000, was elaborately decorated, while a gigantic arch, spanning Bowery Street on Main Street and leading to the armory, was built and kept lighted every night of the exhibit. Frank O'Neil was manager.

Vigilantes in Indianapolis

INDIANAPOLIS, Oct. 24—The Indianapolis Automobile Trade Association has fathered a movement that will result in the appointment of 100 motor vigilantes by the Board of Public Safety and the local police department. Those who serve in the movement will be appointed in secret and will so operate in the endeavor to help law enforcement officials to bring about more complete obedience of the motor vehicle laws and regulations than has been the vogue there.

The plan as worked out by John B Orman, manager of the trade association, will be in operation soon, and appointees supplied with their secret numbers and card blanks for the reporting of the license number of those cars observed breaking the motor laws and traffic regulations. These reports will go to the police department, which will warn the offenders.

The association has reached the conclusion that it is not only to the best interests of owners and drivers to have law enforcement aids but that it is the duty of the trade body to start these things in a purely selfish interest for more business.

Cars have increased 20 per cent this year, repeating Indiana's record for the same advance a year ago. Congestion is increasing on all roads and streets and the speed menace and improper driving must be eliminated if more cars are to be sold.

Louisville Show in November

LOUISVILLE, KY., Oct. 24—A closed car show will be held in Louisville Nov. 20 to 25 under the auspices of the Louisville Automobile Dealers Association. A big advertising campaign will be launched two weeks before the exhibition. As usual, the closed car show in the fall will be staged in the showrooms of the various dealers.

The New Car and Truck Description Index

Giving the date and page number on which they appeared

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Barley Light 6.....Oct. 4, 1922-19
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Buick 1923 Model.....July 26, 1922-14
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Five Pass. Limousine.....Sept. 27, 1922-11
Chandler Town Car.....Sept. 27, 1922-11
Chandler Special Roadster....Oct. 11, 1922-19
Chevrolet Superior.....Oct. 11, 1922-17
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Calendar of Trade Events

CONVENTIONS

Washington .....Oct. 26-28
Second Annual Conference for the Study of Highway Transportation and Highway Engineering Problems under the auspices of the Highway Education Board.

Chicago .....Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

Chicago .....Nov. 14-15
Semi-Annual Convention, Factory Service Managers, under Auspices of the National Automobile Chamber of Commerce.

Harrisburg.....Nov. 20-21
Annual Convention of the Pennsylvania Automotive Association, George G. McFarland, president; L. H. Haberling, secretary and general manager.

Toledo.....Dec. 6-8
Annual Convention of the Ohio Automotive Trades Association.

Chicago .....Jan. 29-31
Annual Meeting, Automotive Electric Service Association, Congress Hotel.

SHOWS

Washington, D. C.....Oct. 21-28
Annual Closed Car Salon held under auspices of the Washington Automobile Trade Association, Convention Hall.

Clarksdale, Miss.....Nov. 2-4
Automobile Show, under the auspices of the Clarksdale Associated Retailers.

Houston.....Nov. 8-18
South Texas Fair.

Jersey City.....Nov. 11-18
Third Annual Show, Fourth Regiment armory, under the auspices of the Hudson County Automobile Trade Association.

Los Angeles.....Nov. 11-19
Automobile Show, Motor Car Dealers Association, Burt Roberts, manager.

Chicago .....Nov. 13-18
Annual Show of Automotive Equipment Association.

Cincinnati .....Nov. 22-29
Second Annual Automobile Accessory and Radio Exposition, Music Hall, under the auspices of the Cincinnati Automotive Trade Association.

New York.....Dec. 3-9
Eighteenth Annual Automobile Salon, Commodore Hotel.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, auspices of the Automobile Body Builders Association.

Cleveland.....Jan. 20-27
Annual Automobile Show, New Public Auditorium, under the Auspices of the Cleveland Automobile Manufacturers and Dealers Association, Herbert Buckman, Manager.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Chicago .....Jan. 27-Feb. 3
Annual Automobile Salon, Drake Hotel.

Ann Arbor, Mich.....Jan. 29-Feb. 3

Minneapolis .....Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Portland, Ore.....February
Annual Automobile Show, under the auspices of the Portland Automobile Dealers Association.

Atlanta .....February
Annual Southern Automobile Show, Atlanta Auditorium, under the auspices of the Atlanta Automobile Association, Virgil W. Shepard, manager.

Troy, N. Y.....Feb. 3-10
Ninth Annual Automobile Show, State Armory, under the auspices of the Troy Used Car Sales Corp., Frank M. Baucus, manager.

Lansing, Mich.....Feb. 5-10

Cincinnati.....Feb. 7-14
Automobile Show, under the auspices of the Cincinnati Automobile Dealers Association, Harry T. Gardner, manager.

Kalamazoo and Flint, Mich.....Feb. 12-17

Grand Rapids and Mt. Clemens, Mich. Feb. 19-24

Louisville, Ky.....Feb. 19-24
Fifteenth Annual Automobile Show, under the auspices of the Louisville Automobile Dealers Association, George T. Holes, secretary.

Brooklyn, N. Y.....Feb. 24-Mar. 3
Annual Automobile Show under auspices of the Brooklyn Motor Vehicle Dealers Association, 23rd Regiment Armory.

Des Moines.....Feb. 25-March 5
Fourteenth Annual Automobile Show, Coliseum, Passenger Cars and Accessories only, under the auspices of the Des Moines Automobile Dealers Association, Dean Schooler and C. G. Van Vliet, managers.

Muskegon, Mich.....Feb. 26-March 3

Syracuse.....Feb. 26-Mar. 3
Annual Automobile Show under auspices of the Syracuse Automobile Dealers Association.

Springfield, Mass.....Feb. 26-March 3
Annual Automobile Show under the auspices of the Springfield Automotive Dealers Association.

Bay City, Mich.....March 5-10

Newark, N. J.....Mar. 10-17
Annual Automobile Show under the auspices of the New Jersey Automobile Exhibition Co., Claude E. Holgate, manager.

Port Huron, Mich.....March 12-17

Battle Creek, Mich.....March 19-24

Alpena, Mich.....April 2-7

CLOSED CAR WEEK

Batle Creek, Mich.....Oct. 23-28

Louisville, Ky.....Nov. 20-25

RACES

Los Angeles.....Nov. 30

San Diego.....January

PORTLAND TAKES LEAD IN ORGANIZING STATE

(*Continued from page* 44)

Fields, Fields Motor Car Co.; S. V. W. Peters, Portland Motor Car Co.; L. R. Therkelsen, Therkelsen Motor Co.

Ralph J. Staehli, secretary of the association, was re-elected for the coming year.

Robinson, in being elected to the presidency, returned to the executive position with the Portland body which he held a year ago, having served as president during the term from the fall of 1920 to the fall of 1921. He is the first man to be elected to the office twice.

Direction of the annual automobile show, formation of a state-wide association embracing all lines of the industry, study of the used car problem and study of proposed legislation affecting the automobile will be the four main problems before the association during the coming year, and the new board of directors is already forming with an idea of taking up all four. The annual show will occur in February, it has been decided, and as the time is still quite far distant definite plans are not yet being taken up.

Formation of a state-wide association framed along the lines of the Washington and California bodies is already well along, the plan having been fostered by the last administration, and a meeting to complete the arrangements is expected to occur this fall. While the Portland dealers' body will be but one of the units composing the state body, as the most important automobile body of the state, the association has naturally taken the lead in the proposed expansion.

Louisville Distributor Dies

LOUISVILLE, KY., Oct. 23—John Alderson, president of the Standard Automobile Co., Louisville distributor for the Cadillac, died at his residence at Buechel of heart disease, following a week's illness. He was sixty-one years old.

HOFFMANN BEARINGS RIGHTS ACQUIRED

NEW YORK, Oct. 24—The Norma Co. of America of Long Island has acquired the American patents and business of the Hoffmann Manufacturing Co. of Chelmsford, Essex, England, maker of Hoffmann roller, ball and thrust bearings. The line of Norma Precision ball bearings now will be supplemented by Hoffmann Precision roller bearings and other bearing products in the Hoffmann line.

The Norma company will erect a new plant for the manufacture of Hoffmann products in America. Meantime, they are being imported and sold under the regular Norma engineering service.

Thomas H. Glenn Dies

BOSTON, Oct. 24—Word has been received here of the death at Dunkirk, N. Y., of Thomas H. Glenn, first manager of the New England branch of the Firestone Tire & Rubber Co. at Boston.

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾-1	$1650a	3½x5	34x5n	34x5n	W
Acason RB	1½	1950	3½x5¼	36x3½	36x6	W
Acason H	2½	2750	4⅜x5¾	36x4k	36x8k	W
Acason L	3½	3450	4⅜x5¾	36x5k	36x10k	W
Acason M	5	4350	5 x6¼	36x6	40x12	W
Ace	1½-1½	2400	3⅝x5	34x3½	34x6	W
Ace	2	2850	4½x5¼	36x4	36x7	W
Ace	2½-3	3400	4½x5¼	36x4	36x8	
Acme	1	....	3½x5	35x5n	35x5n	W
Acme	1½	....	3½x5	34x3½	34x5	W
Acme	2	....	3½x5	34x3½	34x5	W
Acme	3	....	4½x5½	36x4	36x7	W
Acme	3	....	4½x5½	36x4	36x7k	W
Acme	4½	....	4½x5½	36x5	40x10	W
Acme	6½	....	4¾x6	36x6	40x12	W
American	2½	3350	4 x6	36x4k	36x4dk	W
American	4	4275	4½x6	36x5k	36x5dk	W
American	5	4500	4½x6	36x5	36x12	W
Armleder	1	....	3¾x5½	34x3½k	34x6k	W
Armleder	1½	....	3¾x5¾	34x3½k	34x6k	W
Armleder	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder	1½	....	4½x5¾	34x3½k	34x6k	W
Armleder HW-B	2½	....	4¼x5½	36x4k	36x7k	W
Armleder HW-C	2½	....	4½x5¾	36x4k	36x7k	W
Armleder KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder KW-C	3½	....	4½x5½	36x5k	36x5dk	W
*Atlas	1	1195	3¾x5⅛	34x4½n	34x4½n	W
*Atlas	1½-2	1950	3¾ 5¼	36x6n	36x6n	W
Atterbury 20R	1½	2475	3¾x5	34x3½	34x5	W
Atterbury 22C	2½	3375	4⅛x5¼	36x4	36x4d	W
Atterbury 22C	2½	3475	4½x5¼	36x4	36x4d	W
Atterbury 22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury 22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury 8E	5	4975	4¾x6	36x5	40x6d	W
Atterbury 8E	5	5125	4½x6	36x5	40x6	W
Autocar 21UF	1½-2	1950	4¼x4½	34x4k	34x6	D
Autocar 21UG	1½-2	2050	4¼x4½	34x4k	34x6	D
Autocar 27H	2-3	2950	4 x5½	34x5	36x7	D
Autocar 27K	2-3	3375	4 x5½	34x5	36x7k	D
Autocar 26Y	4-6	3950	4¼x5½	34x6	36x12	D
Autocar 26-B	4-6	4100	4¼x5½	34x6	36x12	D
Available H1	1½	2175	4 x5	36x3½k	36x5k	W
Available H2	2	2775	4 x5	36x3½k	36x6k	W
Available H2	2½	3160	4 x5	36x4k	36x8k	W
Available H3	3½	4175	4½x5½	36x5	40x5d	W
Available H5	5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x4s	34x5n	34x5n	I
Beck A Jr.	1½	1285a	3½x5	34x4½n	34x4½n	I
Beck B-30	1½	1350	3¾x5	34x5	36x6	
Beck C-40	2	1550	3¾x5	36x6	36x6	
Beck D-50	2½	1950	4½x5¼	38x7	40x8	
Bell M (Iowa)	1	1495	3⅝x5½	35x5	35x5n	W
Bell E (Iowa)	1½	2100	3¾x5½	34x3½	34x5	I
Bell O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Bessemer G	1	....	3½x5	35x5n	35x5n	I
Bessemer H-2	1½	....	3¾x5	36x3½	36x5	D
Bessemer J-2	2½	....	4½x5¼	36x4	36x4d	D
Bessemer K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem GN	2	1795	4 x3¼	34x4	34x6k	I
Bethlehem GN	3	2495	4 x5¼	36x4k	36x8k	I
Bridgeport A	1½	....	3⅝x5½	34x3½	34x6	W
Bridgeport B	2½	....	4½x5½	36x4	36x4d	W
Bridgeport C	3½	....	4½x6	36x5	36x10	W
Brinton C	2	2500	3¾x5	34x4	34x5	W
Brinton D	3	2975	4½x5¼	36x4	36x7	W
Brockway E	1	....	4 x5	33x5n	33x5n	B
Brockway S-S	1½	....	4 x5	36x4	36x6	W
Brockway S K	1½	....	4½x5¼	36x4	36x6	W
Brockway KR	2½	....	4½x5½	36x4	36x8	W
Brockway K-S	2½	....	4½x5¾	36x4	36x8	W
Brockway RT	3½	....	4¾x6	36x5	36x10	W
Brockway R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway T-4	5	....	4¾x6	36x6	40x6d	W
*Buick	½	945b	3½x4¼	31x4n	31x4n	B
Case	2	....	4¼x5¾	36x6	38x7	I
*Chevrolet	¼	510b	3½x4	30x3½n	30x3½n	B
*Chevrolet G	¾	650	3½x4	31x4n	31x4½n	B
*Chevrolet T	1	1095	3½x5¼	33x4n	35x5n	W
Chicago C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago C3½	3½	....	4½x5½	36x5	36x10	W
Chicago D5	5	....	4½x5½	36x6	40x12	W
Clydesdale 10	¼-1½	1185	3½x5	34x5n	34x5n	B
Clydesdale 10A	¾-1½	1535	3¾x5	34x5n	34x5n	B
Clydesdale 18	¼ 1½	1890	3½x5	34x5	34x5	W
Clydesdale 20	1-1½	2385	3½x5	34x5	34x5k	W
Clydesdale 42	1½-2	2475	3½x5	36x3½	36x6	W
Clydesdale 65X	2½-3	3250	4½x5¼	36x4	36x8	W
Clydesdale 65EX	2½-3	3150	4½x5½	36x4	36x8	W
Clydesdale 90	3½-4½	4100	4½x5½	36x5	36x10	W
Clydesdale 120	5-6	4500	4¾x6	36x6	40x12	W
Comet T	1½	1950	3½x5	34x4	34x4	W
Commerce 9	¾-1½	1150	3½x5	32x4½n	32x4½n	B
Commerce T	¼-1½	1450	3½x5	34x4½n	34x4½n	B
Commerce 10	¼-1½	2500	3½x5	33x5n	33x5n	B
Commerce 12	1½	1695	3¾x5	34x4½	34x4	I
Commerce 12	1½	1800	3½x5	35x5n	35x5n	I
Commerce 16	2	1995	3½x5	34x4	34x6	I
Commerce 16	2	2150	3½x5	35x5n	36x6n	I
Commerce 18	2½	$2150	4½x5¼	36x4	36x7	I
Commerce 18	2½	2495	4½x5¼	36x6n	40x8n	I
Commerce 25	2½	2425	4½x5¼	36x4	36x7	W
Commerce 25	2½	2770	4½x5½	36x6	40x8n	W
Cook 51	2½	3600	4 x5⅛	36x6n	40x8n	W
*Corbitt	¾-1	1250	3½x5	33x5n	33x5n	
Corbitt E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt D-22	1½	2200	3¾x5	34x3½	34x5	W
Corbitt C-22	2	2600	4½x5¼	36x3½	36x7	W
Corbitt B-22	2½	3000	4½x5¼	36x4	36x7	W
Corbitt R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt A-22	3½-4	3800	4½x5½	36x5	36x10	W
Corbitt AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn E	1	1600	3½x5½	35x5n	35x5n	W
Dearborn FX	1½	2300	3¾x5½	34x4	34x5	W
Dearborn F	1½	2180	3¾x5½	34x4	34x5	W
Dearborn 48	2	2590	3¾x5½	34x4½n	34x7	W
Defiance G	1	1525	3¾x5	35x5n	35x5n	B
Defiance D	1½	1845	3¾x5	35x5n	36x6n	I
Defiance E	2	2075	3¾x5	35x5n	38x7n	I
Denby 31	1¼	1485	3¾x5	35x5n	35x5n	B
Denby 33	1½	2145	3¾x5	35x5n	38x7n	I
Denby 35	2½-3	2795	4½x5¼	36x4	36x7	I
Denby 27	4	3895	4½x5½	36x5	36x5d	I
Denby 22D	5	4295	4½x5½	36x6	40x6d	I
Dependable A	¾-1	1650	3¾x5½	34x5n	36x6n	W
Dependable C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable D	2½	2650	4 x5½	34x5	36x6	W
Dependable E	3	2950	4¼x5½	36x4	36x7	W
Diamond T O-3	1-1¼	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T U	2-2½	2650	4 x5¼	36x4	36x7	W
Diamond T K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T S	5	4500	4¾x6	36x6	40x6d	W
Doane	2½	4100b	4¼x5¾	36x5	36x7	C
Doane	3½	5100b	4¾x5¾	36x5	36x5d	C
Doane	6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers	¾	730	3½x4½	32x4n	32x4n	B
Derris K-2	1	2490	4 x5½	33x5n	33x5n	B
Derris K-4	2-2½	3400	4¼x5½	36x4	36x7	W
Derris K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort 103	½	685a	3½x5	31x4n	34x4n	B
Double Drive B	3	4000	4¼x5½	36x6	36x6	W
Duplex A	2	2775	4 x5¼	35x5n	38x7n	W
Duplex E	3½	3500	4¼x5½	36x8	36x8	I
Duty 22	2	1590	3½x5	34x3½	34x5	I
Eagle 101	1½	1875	3⅝x5½	34x5	34x5	I
Eagle 100-2	2	2275	3¾x5½	34x4k	34x7k	I
F. W. D. B	3	4200	4¼x5½	36x6	36x6	B
Fageol 1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol 2½	2½	3900	4½x5¾	34x4	36x7	W
Fageol 3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fargo R	2	1700	3¾x5	36x4	36x6	I
*Federal	1½	1375	3¾x5	—x5n	—x5n	
Federal SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal TE	1½	* 2175	4½x5¼	36x3½	36x5	W
Federal UE	2-2½	2425	4½x5½	36x4	36x7	W
Federal WE	3½-4	3150	4½x5½	36x5	36x5d	W
Federal X2	5-6	4500	4¾x6	36x6	40x6d	W
*Ford TT	1	380	3¾x4	30x3½n	32x4½n	W
Front Drive C	1½	2800	3¾x5½	36x6	36x6	W
G.M.C. K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C. K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K-41T	5†	2450	4 x5½	36x4	36x8	W
G.M.C. K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C. K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C. K-71T	10†	3700	4½x6	36x5	40x12	W
G.M.C. K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C. K-101T	15†	4050	4½x6	36x5	40x14	W
G.M.C. K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W.	1½	1850	3¾x5½	35x5	35x5	I
*Garford 15	1	1590	3⅝x5⅛	34x5n	34x5n	W
Garford 25-B	1½	1990	3¾x5¼	36x3½	36x5	W
Garford 70-H	2½	2750	4¼x5½	36x4	36x8	W
Garford 77- D	4	3750	4½x6	36x5	36x5d	W
Garford 68- D	5	4500	5 x6½	36x6	40x6d	W
Garford 150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary F	1-1½	1775	3¾x5	36x3½	36x5	W
Gary I	2	2450	4 x5½	36x3½	36x6	W
Gary J	2½	2850	4¼x5½	36x4	36x8	W
Gary K	3½	$3790	4½x6	36x5	40x5d	W
Gary M	5	4450	5 x6½	36x6	40x6d	W
Gersix M	1½	3100	4 x5½	36x3½	36x7	W
Gersix K	2½	3500	4½x5½	36x4	36x8	W
Gersix	3½	4500	4½x6	36x5	40x12	W
Gotfredson 20	1	2075	3¾x5½	34x5	34x5	W
Gotfredson 31	1½-2	3000	4 x5¼	36x6	38x7n	W
Gotfredson A	2½	3375	4 x5¼	36x4	36x7	W
Gotfredson B	3½-4	4475	4½x5½	36x5	36x10	W
Gotfredson 100	5-6	5500	5 x6½	36x6	40x14	W
Graham Bros.	1	1265	3⅞x4½	33x4½n	34x5n	B
Graham Bros.	1½	1325	3⅞x4½	33x4½n	36x6n	B
¹Gramm-Pion. 10	1	1245	3½x5	33x5n	33x5n	B
¹Gramm-Pion. 15	1½-2	1750a	3¾x5	36x3½k	36x5k	I
¹Gramm-Pion. 65	1½-2	2250a	3¾x5	36x3½k	36x5	W
¹Gramm-Pion. 20	2-2½	2475a	4½x5¼	36x4k	36x7k	W
¹Gramm-Pion. 30	3	3300a	4¼x5½	36x5k	36x5dk	W
¹Gramm-Pion. 75P	3½	4225a	4½x5½	36x6n	42x9n	W
¹Gramm-Pion. 40	4	3850a	4½x5½	36x5	36x5dk	W
¹Gramm-Pion. 50	5-6	4450a	4¾x6	36x6	40x6dk	W
Hall 1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall 2½	2½	3275	4½x5¼	36x4	36x6	W
Hall 3½	3½	4100	4½x5½	36x5	36x5d	W
Hall 5	5	5100	4½x5½	36x5	40x6d	W
Hall 7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey W OA	2	2650	4¼x5½	34x4	34x7	W
Harvey WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye O	1	1375	3½x5¼	34x5n	34x5n	
Hawkeye K	1½	1645	3½x5½	34x3½k	34x5k	I
Hawkeye M	2	2145	4½x5	36x4k	36x6k	I
Hawkeye N	3½	3700	4½x6¾	36x5k	36x10k	I
Hendrickson O	1½	2200	3⅝x5⅛	36x4n	36x5n	W
Hendrickson N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson M	3½	3000	4¼x5	36x5k	38x5dk	W
Hendrickson K	5	4000	5 x6¼	36x6	40x6	W
Huffman B	1½-2	1795	3¾x5	34x3½	34x6	W
Huffman C	1½-2	1695	3¾x5¼	36x3½	36x6	I
Huffman D	2-3	2895	4¼x5½	36x4	36x7	
Hurlburt A-A	1-1½	1950	3¾x5	34x5n	34x5n	W
Hurlburt B-B	2-2½	2800	4¼x5½	36x4	36x4d	W
Hurlburt C-C	3-3½	3475	4¼x5½	36x5	36x5d	W
Hurlburt D- D	4-4½	4150	4½x6	36x5	36x6d	W
Hurlburt E-E	6-6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa) B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa) G	1½	2040	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.) H1	2½	2940	4½x5¼	36x4	36x7	I
*Indiana 10	1	....	3¾x5½	34x5n	34x5n	B
Indiana 12	1½-2	....	3½x5¼	34x3½k	34x5k	W
Indiana 20	2	....	4½x5½	36x4k	36x7k	W
Indiana 25	2½-3	....	4½x5½	36x4k	36x8k	W
Indiana 35	3½-4	....	4¾x5½	36x5k	36x5dk	W
Indiana 51	5-7	....	5 x6¼	36x5k	40x6dk	W
*International S	1	1250	3½x5	32x4½n	32x4½n	I
International 21	1	1550	3½x5¼	36x3½k	36x3½	I
International 31	1½	1650	3½x5¼	36x3½k	36x5k	I
International 41	2	2100	3½x5¼	36x3½k	36x6k	I
International 52	2½	3500	4½x5	36x6n	36x6dn	I
International 61	3	2400	4½x5	36x4k	36x7k	I
International 62	3	2600	4½x5	36x4	36x7	I
International 101	5	3600	4½x5	36x5	40x12k	I
International 102	5	3800	4½x5	36x5	36x12	I
Jackson 4WD	3½	3850	4½x5½	36x7	36x7	B
K-Z 1	1	1750	3½x5	34x3½	34x5	W
K-Z 1½	1½	2075	3¾x5	36x4	36x6	W
K-Z 2½	2½	2550	4½x5¾	36x4	36x8	W
K-Z 3½	3½	3350	4½x5½	36x5	40x10	W
K-Z 5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo HD	3	3350	4½x6	36x5	36x10	W
Kalamazoo SK	4	3845	4½x6	36x5	36x12	W
Kalamazoo OK	5	4350	4½x6	36x6	40x6d	W
²Kelly-S K-31	1½	2700	3¾x5¼	36x3½	36x6	C
²Kelly-S K-34	1½	2700	3¾x5¼	36x3½	36x6	W
²Kelly-S K-38	2½	2900	3¾x5¼	36x4	36x4d	W
²Kelly-S K-35	2½	2900	3¾x5¼	36x4	36x4d	C
²Kelly-S K-40	3½	3900	4½x6½	36x5	40x5d	C
²Kelly-S K-41	3½	3900	4½x6½	36x5	36x10	I
²Kelly-S K-42	3½	3900	4½x6½	36x5	40x5d	W
²Kelly-S K-50	5	4400	4½x6½	36x6	40x6d	C
²Kelly-S K-60	6	4600	4½x6½	36x6	40x7d	C
²Kelly-S K-61	5-7	4800	4½x6½	36x6	36x7d	I
Kimball AB	2	3675	4 x6	36x4	36x7	W
Kimball AC	2½	3975	4¼x6	36x4	36x8	W
Kimball AK	3	4500	4½x6	36x4	36x10	W
Kimball AE	4	5000	4¾x6	36x5	40x12	W
Kimball AF	5	5500	5 x6	36x6	40x7d	W
*Kissel Express	1	1585	3⅞x5½	34x5n	34x5n	W
Kissel Utility	1½	1975	3⅞x5½	36x3½	36x6	W
Kissel Freighter	2½	2875	4¼x5½	36x4	36x8	W
Kissel H. D.	4	3675	4¼x5½	36x5	36x12	W
Kleiber AA	1	2200	4¼x5¾	34x3½k	34x5k	W
Kleiber A	1½	3100	4½x5¾	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor. †Capacity with semi-trailer.

1—Gramm-Pioneer. 2—Kelly-Springfield.

Passenger car specifications on pages 51 and 52

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5½	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Keebler.....D	1½	2150	3½x5	34x3½	34x5	W
Keebler.....M	2½	3175	4 x5½	36x4	36x7	W
Keebler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Keebler.....F	3½	4170	4½x5½	36x5	36x10	W
Keebler.MT. Trac	5	3275	4 x5½	36x4	36x7	W
Krebs.....23	¾	1300	3¾x5	34x4½	34x4½	B
Krebs.....24	1	1675	3¾x5	34x5	34x5	W
Krebs.....45	1½	2275	4½x5½	36x4	36x7	W
Krebs.....75	2½	2550	4½x5½	36x4	36x8	W
Krebs.....110	3½	3175	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1925	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2100	3½x5	34x5n	34x5	W
Larrabee.....J	1½-2½	2400	3½x5	34x3½gk	34x5k	W
Larrabee.....K	2½-3	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½-3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5-7	4800	4¾x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack...AB D.R.	1½	3450	4 x5	36x4k	36x3½dk	D
Mack...AB Chain	1½	3000	4 x5	36x4k	36x3½dk	C
Mack...AB Chain	2	3300	4½x5	36x4k	36x4dk	C
Mack....AB D.R.	2	3750	4¾x5	36x4k	36x4dk	D
Mack....AB D.R	2½	3850	4¾x5	36x4k	36x4dk	D
Mack....AB Chain	2½	3400	4½x5	36x4k	36x4dk	C
Mack....AC Chain	3½	4950	5 x6	36x5k	40x5dk	C
Mack....AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack....AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack....AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4¾x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Mapleleaf.....**	1½	3000	3¾x5¼	34x5n	36x6n	W
Mapleleaf....AA**	2	3600	4 x5¼	36x4	36x7	W
Mapleleaf....BB**	3	4050	4½x5½	36x4	36x4d	W
Mapleleaf....CC**	4	4800	4½x5½	36x5	36x5d	W
Mapleleaf....DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x6	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4½x5½	34x4	36x8	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3900	4½x6	36x5	40x8	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4¼x5½	34x4	36x7	D
Maxwell.....1½	1½	912	3½x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1½	2000	3½x5	34x3½	36x5	W
Menominee....H	1½	2475	4 x5	36x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4¾x6	36x6	40x12	W
Moline.....10	1½	1985	3½x5	34x5n	36x6n	I
*Moreland...R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-5	4000	4¾x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3¾x5½	34x4	34x5	I
Nash.....3018	2-2½	2150	3¾x5½	34x4k	34x7k	I
Nash.....Quad	2-2½	2750	4½x5½	36x6	36x5k	I
Nash .3018, LWB	2-2½	2200	3¾x5¾	34x4k	34x7k	I
Nash Quad, LWB	2-2½	2800	4½x5½	36x6	36x6	I
Nash.....5018	2½	2250	3¾x5½	34x4k	34x7k	I
4Nelson.....G2	1½	....	4½x5½	36x3½	36x6	W
4Nelson.....G3	2½	....	4½x5½	36x4	36x7	W
4Nelson.....G4	3½	....	4½x5½	36x5	36x5 t	W
4Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	3	3100	4½x5½	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3090	4½x5½	36x4k	36x7k	W
Noble.....AZ1	1¼	1750	3½x5½	34x5	34x5	W
Noble.....B31	1½-2	2395	3¾x5½	36x4	36x7	W
Noble.....D51	2½-3	2795	4½x5½	36x4	36x8	W
Noble.....E71	3½-5	3495	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3¾x5½	36x3½	30x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4½x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4½x5½	34x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E.Spec	1½	2285	3¾x5½	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	36x3½	36x5	W
Ogden.....E	2½	....	4½x5½	36x4	36x8	W
Old Hickory...W	1	$1775	3¾x5	36x3½k	36x4k	W
Old Reliable ...A	1½	2350	4 x5	34x4	36x6	W
Old Reliable ...B	2½	3500	4¼x6	34x4	36x4d	W
Old Reliable ...C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6½	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5½	35x5n	35x5n	I
Olympic.....A	2½	3200	4½x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	2½	3200	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	2485	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	2585	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3485	4 x5⅛	38x7n	38x7n	B
Oshkosh.....BB	2½	3585	4 x5⅛	38x7n	38x7n	B
*Overland.....4	½	425	3½x4	30x3½gn	30x3½gn	B
Packard.....EC	2-3	3100	4¼x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4¼x5½	36x6n	40x8n	W
Packard.....ED	3½-4½	4100	4½x5½	30x5	36x5d	W
Packard.....EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige.....54-20	2½	2420	4¼x5½	34x4	34x8	W
Paige.....51-19	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot...Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot...Lincoln	2	2050	4 x5¼	34x4	36x6	W
Patriot....LS-800	2	2175	4 x5¼			
Patriot .Washgt'n	3	2900	4½x5½	36x5	36x7	W
Pierce-Arrow.....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow.....	3½	4350	4½x6¼	36x5	36x5d	W
Pierce-Arrow.....	5	4850	4½x6¼	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3½x5	36x4	36x6	..
Pittsburgher.....	3	3800	4½x5¼	36x5k	36x8	W
Power.....F	2	3150	4 x5¼	36x5	36x7	W
Power.....C	3½	....	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier.....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4½x5¼	34x4	34x6	W
Rainier.....R-20	2½-3	....	4½x5¼	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R25	3½-5	....	4½x5¼	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	30x6	40x6d	W
Rainier.....R27	6	....	4¾x6	36x6	40x6d	W
Ranger...TK-20-2	1½	2450	3¾x5	36x6n	38x7n	W
*Ree.....F	¾-1½	1185	4½x4½	31x4½gn	31x4½gn	B
Reliance.....10A	1½	2400	4 x5¼	36x3½	36x5	I
Reliance.....20B	2½	3100	4½x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½gn	32x4½gn	I
Republic.....10	1	1395	3¾x5	34x3	34x4	I
Republic..10 Exp	1	1695	3¾x5	34x5n	34x5n	I
Republic.....11X	1½	1795	3¾x5	34x4	34x6	I
Republic.....19	2½	2195	4½x5¼	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rewe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rewe....C.D.W.	2	3300	4 x5	31x4	36x3½d	W
Rewe....G.S.W.	3	4150	4 x6	31x5	36x5d	W
Rewe....G.P.W.	3	5250	3¼x5r	38x7n	42x9n	W
Rewe.....HW	4	4500	4½x6	36x5	36x6d	W
Rewe.....F. W.	5	4850	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4-3½x4	32x4n	32x4n	B
Samson.....25	1¼	....	4-3½x5½	35x5n	35x5n	B
Sanford....W-15	1½-2	2150b	3¾x5	36x3½k	36x5k	..
Sanford.....25	2½-3½	....	4½x5½	36x4	36x4d	W
Sanford.....35	3½-5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5-7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ten	2	3200	4½x5½	36x4	36x7	W
Schacht....3-Ten	3	3800	4½x5½	36x5	36x5d	W
Schacht....4-Ten	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ten	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ten	7	5050	4½x6	36x6	40x7d	W
Schwarts.....A	1	1685	3½x5	34x4½gn	34x4½gn	B
Schwarts.....K	2	3000	3¾x5¼	34x3½	34x7	W
Schwarts.....L	3	3600	4½x5½	36x4	36x8	W
Schwarts.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½-2½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½-2½	3350	4½x5¼	34x5n	38x7n	W
Selden.....50	2½-3½	3250	4½x5¼	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4½x6	36x6	40x12	W
Seneca.....M	½	$ 820	3½x4½	30x3½gn	30x3½gn	B
*Service..... 12	¾	....	3¼x4½	32x4½gn	32x4½gn	B
*Service.....25	1¼	....	3¾x5½	34x5n	34x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4½x5½	35x5n	38x7n	W
Service.....52	3	....	4½x5½	36x4	36x8	W
Service.....72	3½	....	4½x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	1450	3½x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5½	34x4	36x6	W
Signal.....J	2½	2375	4½x5½	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x8d	W
Signal.....R	5	3990	4¾x6	36x6	40x6d	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5½	36x4k	36x8	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x12	W
Standard.....5-K	5-7	4400	4¾x6	36x6	40x14	W
*Star.....	½	610b	3½x4¼	30x3½gn	30x3½gn	B
Sterling.....1½	1½	2885	4 x5¼	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5¾	36x4k	36x6k	W
Sterling.....2½	2½	3290	4¾x5¾	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6½	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6¼	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6½	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6½	36x6	40x7d	C
*Stewart...Utility	¼-1½	1245	3⅝x5⅛	34x4½gn	34x4½gn	I
Stewart.....15	1½-1½	1445	3⅝x5⅝	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3¾x5	34x3½	34x6	I
Stewart.....7	2-2½	2190	4½x5½	34x4	34x7	I
Stewart.....7-X	2½-3	2390	4½x5½	34x4	34x8	I
Stewart.....10	3½-4	3190	4½x5½	36x5	36x10	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x10	I
*Stewart.....	1¼	1245	4-3½x5⅛	34x4½	34x4½	
*Stoughton.....C	¾	1095	3½x5	34x4½gn	34x4½gn	B
Stoughton.....A	1	1790	3¾x5¼	34x5n	34x5n	W
Stoughton.....B	1½	2150	3¾x5¼	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....F	3	3150	4½x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4½x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Thomart.....	1¼	1795	4 x5¼	34x5	34x5	C
Tiffin.....GW	1½	2100	4½x5¼	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5¼	36x4	36x3½d	W
Tiffin.....PW	3½	3600a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4½x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4½x5¼	35x5n	38x7n	W
Tower.....H	2½	2475	4½x5¼	36x4	36x7	W
Tower.....G	3½	3475	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595a	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595a	3¾x5	34x3½k	31x5k	I
Traffic.....	3	1895a	3¾x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½gn	32x4½gn	B
Transport.....25	1½	1495	3¾x5½	34x3½k	34x5k	I
Transport.....35	2	1895a	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5½	36x4k	36x8k	I
Transport.....60	3½	2585	4½x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Trayler.....B	1½	2390	3¾x5½	34x3½	34x5	W
Trayler.....C	2-2½	2850	4 x5½	36x4	36x7	W
Trayler.....D	3-3½	3300	4½x5½	36x4	36x8k	W
Trayler.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3½x5	34x4½gn	34x4½gn	I
Triangle.....A	1½-2	1985	3½x5½	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5½	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5¾	36x4k	36x7k	I
Twin City...B.W.	2	2400	4 x5½	36x6	40x8	I
Twin City...AW.	3½	3500	4½x6	36x5	40x5d	W
5Twin City.....B	3½	....	5½x6	36x6	36x6	I
5Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4¼x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4½x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4¼x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4¼x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
United.....A	1½	2145	3¾x5½	36x3½k	31x5k	W
United.....B	2½	3150	4¼x5½	36x4k	36x7k	W
United.....C	3½	3975	4½x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States..U	1¼	1800	3⅝x5⅛	31x5n	31x5n	B
UnitedStates,NW	1½-2	2375	3¾x5	36x5	36x3½	W
United States..N	1½-2	2175	3¾x5	36x3½k	36x5k	I
United States...R	3	3300	4 x5¼	36x4	36x4d	W
United States...S	4	4075	4½x5½	36x5	36x5d	W
United States...T	5-7	4975	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Velie.....53	2½	2185	4 x5½	36x4k	36x7k	I
Veteran.....M**	1½	2699	3¾x5¼	35x5n	35x5n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Veteran.....P**	2	$3699	4¼x5½	36x4	36x7	W
Veteran.....R**	3	4200	4¼x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	1½	1050	3⅛x4½	31x1n	31x1n	W
*Vim.....50	½-¾	995	4 x5	32x4n	32x4n	B
Walker-JohnsonA	2	2500	3¾x5	34x3½	34x6	W
Walker-JohnsonB	3	3000	4¼x5½	36x4	36x8	W
Walter.....M	2½	3850	4½x5¾	36x4	36x8	D
Walter.....S	5	4850	4½x6¼	36x6	40x6	W
*Watson.....C	1	1465a	3⅝x5½	35x5n	35x5n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2450	4¼x5¼	36x3½k	36x5k	W
Western....L1½	1½	2450	3¼x5	36x3½k	36x5k	W
Western....W2½	2½	3250	4¼x5¼	36x4	36x7	W
Western....L2½	2½	2450	4¼x6	36x4	36x7	W
Western....W3½	3½	4000	4½x6	36x5	40x5d	W
*White.....15	¾	2100	3¾x5½	34x5n	34x5n	B

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
White.....20	2	$3250	3¾x5½	30x4k	36x7k	D
White.....40	3½	4200	4¼x5¼	36x5	40x5d	D
White.....45	5	4500	4¼x5¼	36x6	40x6d	D
White Hick....E	1	1225	3¼x5	34x5n	34x5n	W
White Hick....H	1½	1375	4¼x5	36x3½	36x5	W
White Hick....K	2½	1675	4⅛x5¼	36x4	36x5	W
Wichita.....K	1	1875	4¼x5¼	36x3½	36x4k	W
Wichita.....M	2	2400	4¼x5¼	36x3½k	36x6k	W
Wichita.....RX	3	3200	4⅜x5¾	36x4k	36x8k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl.
d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac—tractor.

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Wichita.....O	4	$3500	4½x6¼	36x5k	36x5k	W
Wilcox.....AA	1	1900	3¼x5½	36x1k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x1	36x5	W
Wilcox.....D	2½	3000	4¼x5	36x4k	36x3½k	W
Wilcox.....E	3½	3950	4½x6	36x5k	36x5k	W
Wilcox.....F	5	4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¼x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4⅛x5¼	36x4	36x7	W
Wilson.....G	3½	3685	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin.....A	1	1750	3¾x5	34x5n	34x5n	W
Wisconsin.....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin.....C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin.....D	3½	3000	4⅜x5¾	36x6n	40x8	W
Wisconsin.....E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin.....F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will.....N	1½	2450	3¼x5	36x3½k	36x6k	W
Witt-Will.....P	2½	2900	4½x5½	36x4k	36x8k	W

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm...	15-25	1185	4	Midw.	4-4½x5½	Gas.	3
Allis-Chalm...	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm.	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork ..2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork ...C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T..	15-30	1900	4	Clim.	4-5 x6½	G,K,D	4
Aultman-T..	22-45	2800	4	Own	4-5½x8	G,K,D	6
Aultman-T..	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Automot. 8-3	12-24	1250	4	Herc.	4-4 x5½	Gas.	2-3
Avery,SR.Cul	5-10	....	4	Own	4-3 x4	G,K	..
Avery .Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery .... B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery	12-20	....	4	Own	4-4½x6	G,K,D	2-3
§Avery	....	....	*	Own	4-4x5½	G,K,D	3-4
Avery	12-25	....	4	Own	2-6½x7	G,K,D	2-3
Avery	14-28	....	4	Own	4-4½x7	G,K,D	3-4
Avery	18-30	....	4	Own	4-5½x6	G,K,D	4-5
Avery	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery	45-85	....	4	Own	4-7¼x8	G,K,D	8-10
Bates Mule .H	15-25	....	4	Midw	4-4½x5½	Gas.	3
Bates Mule, F	18-25	....	*2	Midw	1-4½x5¼	Gas.	3
‡Bates MuleG	25-35	....	*2	Midw	4-4½x6	Gas.	..
Bear.	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
*Beeman Jr.	¾-1½	180	2	B&S	1-2½x2½	Gas.	
¶Beeman...G	2-4	240	4	Own	1-3½x4½	Gas.	
Best	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best	60	....	*2	Own	4-6½x8½	G,K,D	8-9
¶Belens	....	....	4	B & S.	1-2½x2½	G.	..
Bering	5-10	395	4	LeR.	4-3¼x4½	G	..
Bering .1921	....	1850	3	Wauk	4-4¾x5¼	GorK	2
**Bryan.	15-30	....	4	Own	2-4 x5	K.	3
Capital	15-30	1090	2	Own	4-4½x6	Gas.	3
Case	12-20	1050	4	Own	4-4½x5	G,K,D	2-3
Case	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case	22-40	2550	4	Own	4-5½x6½	G,K,D	4-5
Case	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T35	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar 5T	25	....	*2	Own	4-4¼x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur	5-21½	345	2	N Wa)	2-4½x11½	GorK	1
Cletrac.....F	9-16	595	*2	Own	4-3¼x4½	G,K,D	2
Cletrac.....W	12-20	1315	*2	Own	4-4 x5½	G,K,D	2-3
Dakota 4	15-27	1500	3	Dom.	4-4½x6	Gas.	3
Dill .....D	20	2380	4	Cont	6-4½x5½	Gas.	3
Dill .....R.W.	20	2980	4	Midw	4-4½x6	Gas.	3
De-It-All,Baby	1	237	..	Own	1-2½x2¾	Gas.	1
De-It-All, .A	3-6	495	..	Own	1-4½x5	Gas.	1
De-It-All, Jack	6	395	..	Own	1-3¾x3¾	Gas.	1
De-It-All .6	12	495	2	Own	2-3¾x3¾	Gas.	1
Eagle .....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle .....H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B.....AA	12-20	1095	4	Own	4-4½x5	G,K,D	3
Fageol .....D	9-18	1175	4	Lyc.	4-3½x5	Gas.	2
Farm Horse .B	18-30	1885	4	Clim.	4-5 x6½	G,K	1
Farquhar.	15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar.	18-35	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar.	25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch . 4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	$ 395	4	Own	4-4x5	G,K	2
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt,..A	18-36	2150	4	Wauk	4-4¾x6¾	G or K	4
Gray.....	20-36	1975	3	Wauk.	4-4½x3¼	Gas.	4
Gray.....	22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. Western St	20-30	1950	4	Beav	4-4¾x6	K	4
‡Hart-Parr...20	20	865	4	Own	2-5½x6½	K.D.	2
‡Hart-Parr...30	30	1015	4	Own	2-6½x7	K,D	3
‡Hart-Parr.....	....	1395	4	Own	6½x7	K.D.	..
‡Heider.....D	9-16	628	4	Wauk	4-4¼x6	G,K	2
‡Heider.....C	12-20	725	4	Wauk	4-4½x6¾	G,K	3
‡Heider...Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4.	12-25	985	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4	15-30	1885	4	Midw	4-4½x6	Gas	3
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International.	8-16	†670	4	Own	4-4½x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5½x8	G,K,D	4
Kinkade....	1½-3	190	1	Own	1-3 x3	Gas.	....
La Crosse.....	12-24	985	2	Own	2-6 x7	G,K	3
Lausen.....5	12-25	1295	4	Midw	4-4½x6¼	Gas.	3
Lausen.....21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lausen Road	15-30	2000	4	Beav.	4-4¾x6	K	..
Leader.....B	12-18	685	4	Own	2-6 x6½	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn.....H1J	40-	4500	*	Cont	4-4½x5½	Gas	4
Linn.....W	60	5000	*	Wauk	4-5 x6¼	Gas	6
Little Giant, B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant, A	26-35	3300	4	Own	4-5½x6	K	6
Lombard .1922	85-150	8950	*2	Wisc.	6-5½x8¾	Gas.	16
Lombard .1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2¾x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Mod.D	22-41	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD	35-70	3850	4	Own	4-7½x9	G or K	8-9
Mohawk 1922	8-16	650	2	Light	4-3½x4½	K or G	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch	9-18	....	2	Own	4-3½x5	Gas.	2-3
‡Monarch....	20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Moter Macult.	1½	195	2	Own	1-2¾x3½	Gas.	..
NB 1	3-6	375	4	Own	2-3½x4	Gas.	1
Nichols-Shep.	20-42	3650	4	Own	2-8 x10	G or K	3-6
Nichols Shep.	25-50	3900	4	Own	2-9 x12	G or K	4-8
Nichols-Shep.	35-70	3650	4	Own	2-10½x14	G or K	8-12
Nilson Senior..	20-40	1975	5	Wauk	4-5 x6¼	G,K	4
OilPull.....K	12-20	....	4	Own	2-6 x8	K,D	3
OilPull.....H	16-30	....	4	Own	2-7 x8½	K,D	4
OilPull.....G	20-40	....	4	Own	2-8 x10	K,D	5-6
OilPull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar ..K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Pioneer.....G	18-36	....	4	Own	4-5½x6	G,K,D	4
Pioneer.....C	40-75	....	4	Own	4-7 x8	Gas.	10
Plowman....A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable.....	10-20	390	4	Own	2-6 x7	Ker.	2
Russell.....	12-24	1500	4	Own	4-4½x5¾	G or K	2-3
Russell.....	15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson....M	....	445	4	Own	4-4 x5½	G,K	2
Sandusky,...J	10-20	1250	4	Own	4-4½x5½	G,K,D	2
Sandusky...E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
¶Shelby.....	1	150	3	B & S	1-2½x2½	G	..
Shelby.....D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby.....C	9-18	....	4	Wauk	4-3½x5½	G or K	2
Tore Cultivator	6	750	3	LeR	4-3½x4½	Gas.	2
Tore Tractor'22	6-10	495	3	LeR	4-3½x4½	Gas.	2
Townsend	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend	25-50	2500	2	Own	4-8½x10	Ker.	4-8
Traction Meter	40-50	....	4	....	8-3¼x5	Gas.	4-5
Trayler....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar....10	25-40	3750	*2	Wauk	4-5 x6¼	G or K	4
Twin City....	12-20	1200	4	Own	4-4½x6	G,K	3
Twin City....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City....	40-65	4750	4	Own	4-7½x9	G,K	8-10
Uncle Sam C20	12-20	1195	4	Weid.	4-4 x5½	G	2-3
Uncle Sam B19	20-30	1985	4	Benv.	4-4¾x6	G or K	3-4
Uncle Sam D21	20-30	1895	4	Benv.	4-4¾x6	G or K	3-4
Utilitor....501	2½-4	295	4	Own	1-3½x4½	G	1
Utilitor...501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	....	4	Own	4-4½x5¾	G,K	3
Waterloo ...N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore21-22	12-25	1185	4	Wauk	4-4 x5½	G,K	3
Whitney ....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Benv.	4-4½x6	G,K,D	3-4
Wisconsin...E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin...F	20-40	2050	4	Wauk	4-5 x6¼	G or K	4
Wisconsin...H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba....12-20	12-20	2400	*2	Wauk.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4½x6	G,K,D	..
Yuba....23-35	20-35	3900	*2	Wisc.	4-5½x7	G,K,D	6
Yuba....25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba.....	25-40	4750	*2	Yuba	4-5½x7	D	..

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Benv.—Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont.—Continental. Dom.—Domas Evin.—Evinrude Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor. ¶Garden Tractor. **Steam Tractor

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (S.A.E.)	NAME AND MODEL	Carburetor	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle Type and Make	†Gear Ratios
.....	$4500c	$4500	.....	.....	$6500	136	33x5	Cont..	6-3⅝x5¼	31.54	Ambassador.....R	Strom...	West.....	Bosch.....	m-d B-L....	B-L....	f Norwalk..	F Tim...	4.45
$1995c	1785	1850	$1885c	.....	2485	127	33x4½	H-S...	6-3½x5	29.40	American.....D-66	Strom...	G-D.....	A-K.....	s-p B&B....	B & B..	m Hartford..	F Salis..	4.50
.....	1195	.....	.....	$1450c	.....	114	32x4	Cont..	6-3½x4¼	23.44	Anderson...Aluminum 6	.....	West.....	West.....	s-p B&B....	.....	.....	Salis..	....
{1495	1495	1595	{1595c	1995c	1995d	120	33x4	Cont..	6-3⅜x4½	27.34	Anderson.....Series 40	Rayfield.	Remy.....	Remy.....	s-p B&B....	Durst...	f Snead.....	¾F Salis..	4.50
{1785p			{1945c																
.....	2620	2645	.....	3625	3695	130	34x4½	Own..	8-3¼x5	33.80	Apperson.....8-21-S	Johnson.	Bijur.....	Remy.....	m-d Own....	Own....	m Sterl.....	½F Own..	4.25
1575	1475	1545n	{1895n	2275	2345	121	32x4	Cont..	6-3⅜x4½	27.34	Auburn.....6-51	Strom...	Remy.....	Remy.....	s-p B&B....	G-L.....	m Univers...	F Salis..	4.75
			{1995n																
.....	1395	.....	.....	.....	1850d	118	32x4	Cont..	6-3½x4¼	23.44	Barley.....	.....	Delco.....	Delco.....	s-p B&B...	Fuller...	f M&E.....	Col....	....
1800	1800	.....	.....	2400	2500	121	32x4	Cont..	6-3¼x4½	25.35	Bay State.....	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Spicer....	¾F Col...	4.67
2950	2950c	.....	.....	3950	3950	121	32x4	Buda.	4-3⅜x5½	22.50	Biddle.....B1 & B5	Zenith...	G-D.....	Simms....	s-p Warner .	Warner..	m Spicer....	½F Std...	4.50
5000	5000	.....	.....	.....	7000	125	32x4½	Own..	4-4 x5½	25.60	Brewster.....91	Zenith...	USL.....	Bosch....	c Own....	Own....	F Own.....	F Own..	3.92
865	885	725g	.....	1175	{1395	109	31x4	Own..	4-4⅜x4¾	18.23	Buick..1923-34-5-6-7-38	Marvel..	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	¾F Own..	4.66
					{1325														
1175	1195	975g	.....	1935	1985	118	33x4	Own..	6-3⅜x4½	27.34	Buick....1923-41-4-5-47	Marvel..	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	¾F Own..	4.60
.....	.....	1435	{1625a	1895	2195	124	34x4½	Own..	6-3⅜x4½	27.34	Buick.1923-48-9-50-4-55	Marvel..	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	¾F Own..	4.90
			{1675c																
3100	3150	3150	.....	{3875a	4100	132	33x5	Own..	8-3½x5½	31.25	Cadillac.....61	Own....	Delco.....	Delco.....	m-d Own....	Own....	m Spicer....	F Tim...	4.50
				{3925d															
1750	1790	.....	.....	2550	2690	122	32x4½	Cont..	6-3⅜x4½	27.34	Case.....X	Rayfield.	Delco.....	Delco.....	m-d Own....	Own....	f Snead	½F Col...	5.25
.....	2200	2250	.....	2850	3250	129	34x4½	Cont..	6-3⅝x5¼	31.54	Case.....W	Rayfield.	Delco.....	Delco.....	m-d Own....	Own....	f Arvac....	¾F Col...	4.45
1185	1185	.....	.....	1595	2295	117	32x4	Own..	6-3¼x4½	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own....	m Hardy....	½F Adams	5.13
.....	.....	1345	.....	.....	.....	122	32x4	Own..	6-3¼x4½	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own....	m Hardy....	½F Adams	5.13
1495	1495c	1645	1595a	1995c	{2295d	123	33x4	Own..	6-3½x5	29.40	Chandler.....Six	Rayfield.	Bosch.....	Bosch.....	s-p B&B....	Own....	f Own.....	F Own..	4.45
					{2375f														
540	525	425g	.....	{840c	860	102	30x3½	Own..	4-3½x4	21.53	Chevrolet.....Superior	Zenith...	A-L.....	Remy.....	c Own....	Own....	m Own.....	½F Own..	3.66
				{680k															
1085	1095	.....	1260	1495	1585	112	32x4	Own..	6-3⅛x4½	22.50	Cleveland.....41	Strom...	Bosch.....	Bosch.....	s-p Own....	Own....	m Mech.....	¾F Own..	4.45
2685	.....	2685	2685c	3285b	{3285c	127¼	33x5	Nort..	8-3½x4½	39.20	Cole.....890	Johnson.	Delco.....	Delco.....	c North....	North...	m Spicer....	F Col...	4.46
					{3685f														
1475	1475	.....	1475c	1925c	1995d	115	32x4	Cont..	6-3⅜x4½	27.34	Columbia.....Elite	Strom...	A-L.....	A-K.....	s-p B&B....	Durst...	m Spicer....	¾F Tim...	....
995	985	.....	.....	.....	1395d	115	31x4	Cont..	6-3½x4¼	23.44	Columbia.....Light Six	Strom...	A-L.....	A-L.....	s-p B&B....	Durst...	m Spicer....	¾F Tim...	....
.....	1985	3085f	.....	2985d	3085f	125	33x4½	Cont..	6-3½x5½	29.40	Comet.....C-53	Strom...	Wagner..	Wagner..	s-p B&B....	Muncie..	m Arvac....	¾F Col...	4.45
1395	1395	.....	{1495b	2065b	2165d	116	32x4	Falls.	6-3½x4¼	23.44	Courier.....	Till....	Bijur.....	A-K.....	s-p B&B....	Muncie..	f Norwalk.	¾F Col...	5.00
			{1495c																
3000	3000	3000	.....	.....	4500	122½	32x4	Cont..	6-3⅝x5½	31.54	Crawford.....22-6-60	Strom...	West.....	Bosch.....	m-d B-L....	B-L....	Spicer....	½F Tim...	....
.....	.....	.....	3500	.....	.....	135	33x5	Cont..	6-3⅝x5½	31.54	Crawford-Dagmar...6-60	Zenith..	West.....	Bosch.....	m-d B-L....	B-L....	Spicer....	½F Tim...	....
.....	.....	.....	.....	.....	.....	142	33x5	Own..	8-3¾x5	45.00	Cunningham.....V	Strom...	Delco.....	Delco.....	m-d Own....	Own....	f Snead.....	F Tim...	4.23
4350b	4350c	4350	.....	5250	6000	132	33x5	Own..	8-3½x5½	39.20	Daniels.....D-19	Zenith..	Delco.....	Delco.....	m-d Own....	Own....	m Spicer....	F Tim...	....
.....	1295	.....	1495	1795	1795	114	31x4	Cont..	6-3½x4¼	23.44	Davis.....71	Strom...	Delco.....	Delco.....	s-p B&B....	Warner.	m Peters....	½F Tim...	5.10
1595	1595	.....	1695	2095	.....	120	32x4	Cont..	6-3⅜x4½	27.34	Davis.....61-67	Strom...	Delco.....	Delco.....	s-p B&B....	Warner.	m Peters....	¾F Tim...	5.15
1175	1175	1295c	1245	1545	1595	112	32x4	H-S...	4-3½x5	19.60	Dixie Flyer.....H-S-70	Strom...	Dyneto....	Eise.....	s-p B&B....	G-L.....	f Hardy....	F Peru..	4.75
850	880	.....	.....	980h	1195d	114	32x4	Own..	4-3⅞x4½	24.03	Dodge Brothers.....	Stewart..	N.E.....	N.E.....	m-d Own....	Own....	m Own.....	½F Own..	4.16
3350g	3950c	3950	.....	4985c	5750f	132	33x5	Own..	6-4 x5	38.40	Dorris.....6-80	Strom...	West.....	Bosch.....	m-d Own....	Warner..	m Spicer....	F Tim...	4.23
885	885	.....	{1015a	{1265	{1385	108	31x4	D-Ly.	4-3½x5	19.60	Dort.....19-14	Carter...	Bosch.....	Conn.....	m-d Det....	Own....	m Mech.....	¾F Flint..	4.66
			{1015d	{1045k	{1095k														
1275	1275	.....	.....	1650	1975	104	30x3½	Own..	4-2⅝x4½	11.03	Driggs.....	Zenith...	Bosch.....	Bosch.....	s-p Hoos...	Mech...	m Spicer....	¾F Own..	4.75
6500	6500	6750	.....	7800	7800	134	33x5	Own..	8-3⅞x5	26.45	Duesenberg...Straight 8	Strom...	Delco.....	Delco.....	s-p Own....	Own....	f Own.....	½F Own..	4.81
3000	3200	.....	.....	3800	4000	124	32x4½	Own..	4-3½x5½	24.81	Du Pont.....A	Y&T....	West.....	Eise.....	m-d B-L....	B-L....	m Spicer....	Col....	4.50
890	890	.....	.....	1365	1365	109	31x4	Cont..	4-3⅞x4½	24.03	Durant.....A-22	Till....	A-L.....	A-L.....	s-p Own....	Own....	m,f Spicer..	¾F Adams	4.30
1600	1650	.....	.....	2250	2400	123½	32x4½	Anst..	6-3½x4½	25.35	Durant.....B-22	Rayfield.	A-L.....	A-L.....	s-p Anst....	Warner..	m,f Spicer..	½F Tim...	5.15
1485	1095	950g	.....	1305c	1795	112	32x4	Own..	4-3⅛x5½	18.91	Earl.....40	Scoe....	A-L.....	Conn.....	s-p B&B....	Own....	f Own.....	½F Own..	3.66
1095	1095	.....	1095	1315	.....	118	33x4	Lyc..	4-3½x5	19.60	Elcar.....K-4	Strom...	Delco.....	Delco.....	s-p B&B....	Muncie.	m Peters....	¾F Salis..	4.50
1395	1395	.....	1395	1975	2065	118	33x4	Cont..	6-3⅜x4½	27.34	Elcar.....7-R	Strom...	Delco.....	Delco.....	m-d Warner	Warner..	m Spicer....	¾F Salis..	4.50
1125e	1125	.....	1165	1695	1615	118	33x4	Falls.	6-3½x4¼	23.44	Elgin.....K-1	Strom...	West.....	Wagner..	s-p B&B....	Mech...	m Mech.....	¾F Col...	4.66
.....	1045	.....	.....	1145k	{1895	108½	32x4	Own..	4-3⅜x5	18.23	Essex.....	Own....	Bosch.....	Bosch.....	m-d Own....	Own....	m Spicer....	½F Own..	4.66
					{1245k														
269r	298s	235g	.....	530	{595	100	30x3½	Own..	4-3¾x4	22.50	Ford.....T	Own....	Own.....	Own.....	m-d Own....	Own....	m Own.....	½F Own..	3.63
					{725														
3900	3900	.....	.....	4900	4900	132	32x4½	Own..	6-3⅜x5	27.34	Fox.....7F	Zenith...	West.....	Bosch.....	m-d B-L....	B-L....	Spicer....	½F Tim...	4.45
1900	1950	1750g	.....	2750	2850	115	32x4	Own..	6-3½x4	25.35	Franklin.....10	Own....	N.E.....	A-K.....	s-p B&B....	Own....	m Spicer....	½F Own..	4.73
895	895	.....	.....	1095k	1345d	112	32x4	Lyc..	4-3½x5	29.60	Gardner.....T-R & G	Carter...	West.....	West.....	s-p B&B....	Mech...	m Mech.....	¾F Flint..	4.80
1385	1385	.....	.....	1895	1915	116	32x4	Own..	6-3½x4½	23.44	Grant.....	Strom...	Bijur.....	A-K.....	s-p B&B....	Durst...	m Spicer....	¾F Col...	4.66
490	490	.....	.....	.....	760	100	30x3½	Own..	4-3⅝x4	21.03	Gray.....	Scoe....	West.....	West.....	m-d Own....	Detr....	m Mech.....	½F Tim...	3.90
2475	2475c	.....	3250	.....	3475	120	32x4½	Weid..	4-3¾x5½	22.50	H.C.S.....Series 4	Strom...	Delco.....	Delco.....	m-d B-L....	B-L....	m Spicer....	¼F Own..	....
.....	.....	2650	.....	3450	3450	125	32x4½	Own..	4-4½x4½	27.23	Handley-Knight.....	Till....	A-L.....	A-L.....	m-d Warner	Warner.	m Spicer....	½F Tim...	4.90
.....	995	.....	.....	.....	.....	111	31x4	Cont..	6-3½x4¼	25.35	Hanson.....30	Marvel..	Delco.....	Delco.....	s-p B&B....	Detr....	.....	¾F Tim...	....
1595	1595	1795	.....	2475c	2585	121	32x4	Cont.	6-3⅜x4½	27.34	Hanson.....60	Marvel..	Delco.....	Delco.....	s-p B&B....	Detr....	.....	¾F Tim...	....
.....	1345	1345c	.....	1950	1950	115	32x4	H-S...	4-3½x5	19.60	Hatfield.....A-42	Zenith...	Dyneto....	Conn.....	s-p B&B....	G-L.....	m Spicer....	¾F Col...	4.66
2395	2395c	2395	.....	.....	3395	132	33x5	Own..	6-3½x5 11/16	29.40	Haynes.....75	Strom...	L-N.....	King.....	s-p Warner .	Own....	m Univers...	¾F Own..	4.60
1545	1495	.....	{1895a	{2090	{2395	121	32x4½	Own..	6-3½x5	29.40	Haynes.....55	Rayfield.	L-N.....	King.....	s-p Warner .	Own....	m Univers...	½F Own..	4.11
			{1895d	{2195p	{2645p														
.....	2500c	2500	.....	3300c	3600f	126	34x4½	Own..	6-3½x4¼	29.40	Holmes.....Series 4	Strom...	Dyneto....	Eise.....	m-d B-L....	B-L....	m Spicer....	½F Tim...	4.90
.....	1525c	1575	.....	2570c	{1675k	126	34x4½	Own..	6-3½x5	29.40	Hudson.....Super 6	Own....	Bosch.....	Bosch.....	m-d Own....	Own....	m Spicer....	½F Own..	4.45
					{2295														
1395	1395	.....	.....	.....	2295	120	32x4	Cont..	6-3⅜x4½	27.34	Huffman.....	Strom...	Dyneto...	Conn.....	s-p B&B...	Covert...	.....	F Salis..	.....
1150	1150	.....	1025g	{1635	1785	112	32x4	Own..	4-3¼x5½	16.90	Hupmobile.....Series R	Strom...	West.....	A-K.....	m-d Own....	Own....	m Univers...	¾F Own..	4.87
				{1335k															
.....	1485	1685c	.....	2985	2985	121	32x4½	Cont..	6-3¼x4½	25.35	Jackson.....638	Strom...	A-L.....	Remy.....	s-p B&B....	Cov....	f Snead.....	¾F Salis..	4.75
995b	995	.....	1095a	1445c	1465d	112	31x4	Own..	6-3¼x5	25.35	Jewett.....Six	Strom...	Remy.....	A-K.....	m-d Long...	Warner..	m Mech.....	½F Tim...	4.45
1895	1795	.....	.....	2785	2485	120	32x4	Own..	6-3⅞x4¾	26.38	Jordan.....MX	Strom...	Delco.....	Delco.....	s-p Detr....	Detr....	m Spicer....	½F Tim...	4.42
.....	.....	.....	2150c	.....	.....	124	32x4	Own..	6-3⅞x4¾	26.38	Jordan.....H	Strom...	Delco.....	Delco.....	s-p Detr....	Detr....	m Univers...	½F Tim...	4.42
.....	985	.....	.....	.....	1450	111	32x3½	Gray..	4-3½x5	19.60	Kelsey.....4	Scoe....	Bosch.....	Bosch.....	f-d Own....	f-d Own.	.....	Own..	4.50
.....	985	.....	.....	.....	1450	111	32x3½	Gray..	4-3½x5	19.60	Kelsey.....4	Scoe....	Bosch.....	Bosch.....	s-p B&B....	Detr....	Snead....	½F Std...	4.75
.....	1525	.....	.....	.....	2175	118	32x4	Walk'r	6-3½x4½	23.44	Kelsey.....6	Strom...	Bijur.....	Bosch.....	f-d Own....	f-d Own.	.....	Own..	....
5000	5000	5250	.....	5000	6000	130	32x4½	Own..	8-3 x5¼	28.80	Kenworthy.....8-90	.....	.....	.....	.....	.....	.....	.....	.....
1795	1795	.....	1795c	2400	2550	120	32x4½	Own..	8-3 x5	28.80	King.....K	Ball&B .	West.....	A-K.....	s-p Detr....	Own....	f Hardy....	F Col...	4.08
.....	1885	2385	2385c	2975c	3075	124	32x4½	Own..	6-3⅞x5½	26.38	Kissel.....45	Strom...	Remy.....	Remy.....	m-d Warner	Warner.	m Spicer....	F Own..	3.92
1690	1690	1690	1890	2750	2890	121	33x4	Cont..	6-3⅜x4½	27.34	Kline Kar.....6-55-K	Rayfield.	Wagner....	Conn.....	s-p B&B....	G-L.....	f Snead....	½F Std..	4.75

MISCELLANEOUS
a—2 Passenger,
b—3 Passenger,
c—4 Passenger,
d—5 Passenger,
e—6 Passenger,
f—7 Passenger,
g—Chassis Price,
h—All Metal Type,
k—Soft Top Type,
n—Tire Size 32x4½,
p—Sport.
r—Price without starter and demountable rims. Price, complete, $364.
s—Price without starter and demountable rims. Price, complete, $393.
†Standard Phaetons.

ENGINE
Anst—Ansted
Bea—Beaver
Cont—Continental
Curt—Curtiss
D.-Ly—Dort Lycoming
G-B—Grey Beal
H-S—Herschell-Spillman
Lyc-Lycoming
Nort—Northway
Roch—Rochester
Rut-Rutenberg
Supr—Supreme
Walk'r—Walker
Weid—Weidely
Wisc—Wisconsin

CARBURETOR
Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg

GEARSET
f-d—Friction Drive
B-L—Brown-Lipe
Cov—Covert
Detr—Detroit
Durst—Durston
G-L—Grant-Lees
Hoos—Hoosier
Mech—Mechanics
North—Northway

CLUTCH
f-d—Friction drive
c—Cone
m-d—Multiple disc
s-p—Single plate
Anst—Ansted
B & B—Borg & Beck
B-L—Brown-Lipe
Det—Detlaff
Detr.—Detroit

STARTING, LIGHTING IGNITION
A-L—Auto Lite
Bring—Berling
G-D—Gray & Davis
L-N—Leece Neville
N. E.—North East
West—Westinghouse

UNIVERSAL
f—fabric
m—metal
M &E—Merchant & Evans
Mech—Mechanics
Sterl—Sterling
Univers—Universal

REAR AXLE
F—Floating
½F—Semi-Floating
¾F—Three-Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
W-M—Weston-Mott
Tim—Timken

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (S.A.E.)	NAME AND MODEL	Carburetor	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle: Type and Make	†Gear Ratio
$3985	$4090c	$4090	.....	$5500	$5500	132	33x5	Own..	8-3¼x5¼	33.80	LaFayette	Johnson	Delco	Delco	m-d Own	Own	m Own	F Own	4.53
5500	5500	5500	.....	5500	5500	134	32x4½	Own..	6-3¾x5¼	33.75	Leach 999	Rayfield	Delco	Delco	m-d	Own	m,f	Tim	...
1695	1695	1795	$2045d	2345c	2545d	123	32x4½	Anst..	6-3¼x4½	25.35	Lexington 23	Rayfield	G-D	Conn	m-d Anst	Warner	f Snead	¾F Own	5.10
	1995	2095			2145d														
1575	1395	.....	1575	2085	2245	117	32x4	Own..	6-3⅛x5	23.44	Liberty 10-D	Strom	Wagner	Wagner	s-p B&B	Detr	m Spicer	½F Tim	1.80
				1695k															
3800	3800c	3800	.....	4400d	4700d	136	33x5	Own..	8-3⅜x5	36.45	Lincoln	Strom	Delco	Delco	m-d Own	Own	m Spicer	F Tim	1.53
.....	7600c	7600	.....	10500	11000	142	35x5	Own..	6-4½x5½	48.60	Locomobile 48	Ball&B	West	Delco	m-d Own	Own	m Own	F Own	3.50
3385	3185c	3185	.....	3985	4385	136	32x4½	Own..	6-3¾x5⅛	33.75	Marmon 34	Strom	Delco	Delco	m-d Own	Own	m Spicer	¾F Own	3.75
885	885	.....	.....	985	1335	109	31x4	Own..	4-3¾x4½	21.03	Maxwell	Stewart	A-L	Simms	c Own	Own	.....	¾F Own	4.56
				1235															
6300	6300c	6300	.....	7500	7500	140	33x5	Own..	6-4½x6	48.60	McFarlan 1922	Rayfield	West	Split	s-p B&B	B-L	m Peters	F Tim	3.50
3950	3950c	3950c	.....	4850	5250	132	32x4½	Own..	4-3¾x6¾	22.50	Mercer Series 5	Ball&B	West	Lise	m-d Own	Own	m Spicer	F Own	3.87
.....	3750	3750	.....	5000	5000	132	32x4½	Own..	6-3¾x5	33.75	Mercer 6	.....	.....	.....	.....	.....	.....	.....	.....
1895	1895	.....	.....	.....	.....	119	32x4	Cont..	6-3¼x4½	25.35	Merit	Strom	Delco	Delco	s-p B&B	Muncie	f Snead	F Col	4.60
1490b	1590	.....	1850c	2050c	2275d	120	32x4	Own..	6-3½x5	29.40	Mitchell F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4.42
.....	.....	1690	.....	.....	.....	127	32x4½	Own..	6-3½x5	29.40	Mitchell F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4.42
950	950	.....	.....	.....	.....	115	32x4½	Own..	4-3¼x4½	16.90	Monroe 1922-S-9	Zenith	A-L	Conn	m-d Own	Mech	m Univers	¾F Own	5.30
1295	1195	p1445d	1885c	1585c	1695	115	31x4	Cont..	6-3½x4½	23.44	Moon 6-40	Strom	Delco	Delco	s-p B&B	Warner	m Spicer	½F Tim	4.80
1785	1785	1785	1885	2785	2785f	128	33x4½	Cont..	6-3⅝x4½	27.34	Moon 6-58	Strom	Delco	Delco	B&B	B-L	m Spicer	½F Tim	5.09
					2485c														
1210	1240	.....	1395c	.....	2040d	121	33x4	Own..	6-3¼x5	25.35	Nash 691-96-97	Marvel	Delco	Delco	s-p B&B	Own	m Own	½F Own	4.50
.....	.....	1390	1645	1890c	2190f	127	34x4½	Own..	6-3¼x5	25.35	Nash 692-94-95	Marvel	Delco	Delco	s-p B&B	Own	m Own	½F Own	4.50
915	935	.....	.....	1385b	1545d	112	33x4	Own..	4-3⅜x5	18.23	Nash Four 41-4	Schebler	Delco	Delco	s-p B&B	Own	m Own	½F Own	4.88
				1195k	1275k														
2475b	2475c	2375	.....	3250c	3825f	130	32x4½	Own..	6-3½x5¼	29.40	National BB	Rayfield	West	Delco	s-p B&B	B-L	m Arvac	F Col	4.08
		3150		3725c															
2500	2500c	2600c	.....	.....	3500d	128	32x4½	Cont..	6-3¼x4½	25.35	Noma 3C	Claudel	Delco	Delco	s-p B&B	Detr	m Spicer	½F Tim	4.45
3000	3100c	3200c	.....	.....	5500	128	32x4½	Bea..	6-3½x5¼	29.40	Noma 1D	Zenith	Delco	Delco	s-p B&B	Detr	f Spicer	½F Tim	4.45
.....	1035	.....	.....	.....	.....	116	32x3½	Lyc..	4-3½x5	19.60	Norwalk 430-KS	Zenith	Dyneto	Delco	s-p B&B	G-L	m Univers	¾F Col	5.09
975	995	795g	1165c	1445d	1545	115	32x4	Own..	6-2 13/16x4¾	18.99	Oakland 6-44	Marvel	Remy	Remy	c Own	Muncie	m Mech	F Own	4.33
				1185a															
3750c	3750	3850	3750c	4500c	4800f	134	33x5	Cont..	6-3⅝x5¼	31.54	Ogren 6 T D Luxe	Rayfield	Bosch	Bosch	m-d B-L	B-L	m	F Col	4.00
955	975	1350d	1075	1475	1595	115	32x4	Own..	4-3 11/16x5¼	21.86	Oldsmobile 43 A	Zenith	A-L	Remy	s-p B&B	Warner	m Own	¾F Own	4.33
1735c	1850c	1735	.....	.....	.....	122	33x4½	Own..	8-2 7/16x4¾	26.45	Oldsmobile 46	Ball&B	Delco	Delco	c Own	Warner	m Own	¾F Own	4.93
1625p	1375	.....	1675	1875	2025	115	32x4	Own..	8-2 7/16x4½	26.45	Oldsmobile 47	Johnson	Delco	Delco	s-p B&B	Warner	m Spicer	¾F Own	5.10
525	525	.....	425g	795	875	100	30x3½	Own..	4-3⅜x4	18.23	Overland 4	Till	A-L	Conn	s-p B&B	Own	m Own	½F Own	4.50
2485	2485	2250g	.....	3175	3275	126	33x4½	Own..	6-3⅜x5	27.34	Packard Single-Six	Own	A-K	Delco	m-d Own	Own	f Spicer	½F Own	4.30
.....	2350g	2685	.....	.....	3525	133	33x4½	Own..	6-3⅜x5	27.34	Packard Single-Six	Own	A-K	Delco	m-d Own	Own	f Spicer	½F Own	4.66
3850	3850	3850	.....	5240	5400	136	35x5	Own..	12-3x 5	43.20	Packard Twin-Six	Own	Bijur	Delco	m-d Own	Own	m Spicer	½F Own	4.36
1465	1465	1290g	.....	1995	2245	119	32x4	Own..	6-3¼x5	25.35	Paige 6-44	Strom	Remy	A-K	s-p Long	Own	m Univers	¾F Salis	4.75
2495b	.....	2195	2245	3100	3155	131	33x4½	Cont..	6-3¾x5	33.75	Paige 6-66	Rayfield	Remy	A-K	s-p Long	Warner	m Mech	¾F Tim	4.60
.....	1390	1425	.....	2295	2395	120	32x4½	Cont..	6-3⅜x4½	27.34	Paterson 22-6-52	Strom	Delco	Delco	s-p B&B	Durst	m Hartford	½F Std	4.80
.....	2990c	2990	.....	3300a	3990d	128	33x5	Own..	8-3¼x5	33.80	Peerless 23	Ball&B	Delco	Delco	m-d Own	Own	M Spicer	¾F Tim	4.90
				3400c	4090f														
5250	5250c	5250	.....	6800	6900	138	33x5	Own..	6-4 x5½	38.40	Pierce-Arrow	Own	Delco	Delco	m-d Own	Own	m Spicer	½F Own	3.93
					700														
2050	2000	2050	.....	2950	3000	126	32x4½	H-S..	6-3¼x5	25.35	Pilot 6-50	Till	Bijur	Conn	s-p B&B	Muncie	m Hartford	¾F Col	4.43
3150	3100c	3250	.....	4300	5100	126¾	32x4½	Own..	6-3⅜x5½	27.34	Premier 6-D	Johnson	Delco	Delco	s-p B&B	Own	m Spicer	¾F	4.53
1095	1095	.....	.....	1750	1825	117	32x4	Falls..	6-3½x4¼	23.44	Premocar 6-40-A	Strom	Wagner	Wagner	s-p B&B	Mech	m Spicer	¾F	4.66
.....	1665	.....	.....	2385	2475	116	32x4	Own..	4-3¾x5	22.50	R & V Knight R	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	F Salis	4.75
2475	2475c	2475	.....	3015	3105	127	32x4½	Own..	6-3½x4½	29.40	R & V Knight J	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	½F Tim	4.90
1595	1645	1485	1745	2355c	2435f	120	33x4	Own..	6-3⅜x5	24.34	Reo T6 & U6	Rayfield	N.E	N.E	m-d Own	Own	m,f Own	½F Own	4.70
3200	3200	3200	.....	.....	4000	131	32x4½	Dues..	4-4½x6	28.90	ReVere C	Strom	West	Bosch	m-d B-L	B-L	m Spicer	¾F Std	4.00
.....	1485	.....	.....	1885	1985	117	32x4	Own..	6-3 7/16x4¾	23.44	Rickenbacker A	Strom	Simms	A-K	c Own	Own	m Univers	¾F Own	...
2685	2485c	2685	.....	3585	3585	128	32x4½	Cont..	6-3½x5¼	29.40	Roamer 6-54-E	Strom	Bijur	Bosch	s-p G-L	G-L	f Snead	½F Tim	4.88
3785	3485	3650c	3650c	.....	4650c	128	32x4½	Dues..	4-4½x6	28.90	Roamer 4-75-E	Strom	Bijur	Split	m-d B-L	B-L	f Snead	½F Tim	3.77
.....	10900	.....	.....	.....	.....	143½	35x5	Own..	6-4 15/16x4¾	48.60	Rolls-Royce	Own	Bijur	Bijur	c Own	Own	m Own	F Own	3.25
1195	1195	.....	.....	1795	1795	112	32x4	Own..	4-3½x5	19.60	Saxon 125	Strom	Wagner	Wagner	s-p Det	Cov	m Peters	¾F	4.75
1645	1645	.....	.....	2645	2645	118	33x4	Cont..	6-3¼x4½	25.35	Sayers Six DP	Strom	Delco	Delco	s-p B&B	G-L	m Arvac	½F Std	4.75
875	875	.....	.....	.....	.....	108	30x3½	Lyc..	4-3½x5	19.60	Seneca L-2 & O-2	Zenith	A-L	A-L	s-p B&B	G-L	m Univers	F	4.75
1095	1095	.....	.....	.....	.....	112	31x4	Lyc..	4-3½x5	19.60	Seneca 50 & 51	Zenith	A-L	A-L	s-p B&B	G-L	Detroit	F	4.50
980	980	.....	.....	1685	1685	114	32x4	Supr..	4-3⅜x5	18.23	Sperling A	Zenith	Bijur	Dixie	s-p B&B	Warner	m Hartford	¾F Peru	...
2150	.....	2395	2395	2750	3200	127	34x4½	Own..	8-3¼x5	33.80	Standard 98	Zenith	West	Split	s-p B&B	G-L	m Arvac	½F Tim	4.45
2750	2750	2750	2425g	3950c	3985f	130	32x4½	Own..	2-4 x5	.....	Stanley 740	None	Bijur	None	None	None	None	½F Own	1.50
1765	1765	.....	.....	2750	.....	118	33x4	Cont..	6-3¼x4½	25.35	Stanwood Six	Strom	West	A-K	s-p B&B	G-L	m Peters	½F Std	4.50
319r	348s	285g	.....	580	645	102	30x3½	Cont..	4-3⅛x4¼	15.63	Star	Till	A-L	A-L	s-p	.....	Spicer	Tim	4.87
2250	2250	2450	.....	3150	3450	125	34x4½	Own..	4-3¾x5⅝	22.50	Stearns-Knight SKL4	Rayfield	West	A-K	m-d Own	Own	f Climax	½F Own	4.50
2700	2700	2850	.....	3500	3700	130	34x4½	Own..	6-3⅜x5	27.34	Stearns-Knight :6	Rayfield	West	A-K	m-d Own	Own	f Climax	½F Own	4.50
1575	1595c	1625c	.....	2450	2550	122	33x4½	Own..	6-3½x4½	25.35	Stephens 90	Till	A-L	A-L	s-p B&B	Mech	m Mech	½F Tim	4.90
7250	6900c	6800	6900c	8600	8900c	138	35x5	Own..	6-4 7/16x5½	47.27	Stevens-Duryea E	Strom	West	Brlng	m-d Own	Own	m Own	F Own	3.94
			5600g																
975	975	785g	.....	1225	1550	112	32x4	Own..	6-3¼x4½	23.44	Studebaker Light Six	Strom	Wagner	Wagner	s-p Own	Own	f Thermoid	½F Own	4.55
1250	1275	1275c	1000g	1875	2050	119	32x4	Own..	6-3½x5	29.40	Studebaker Special Six	Strom	Wagner	Wagner	s-p Own	Own	m Spicer	½F Own	4.00
1275c																			
1300g	1650	.....	1785	2275	2475	126	33x4½	Own..	6-3 7/16x5	36.04	Studebaker Big Six	Ball&B	Wagner	Wagner	s-p Own	Own	m Spicer	½F Own	3.70
2450	2790e	2640e	2670a	3490	4450	130	32x4½	Own..	4-4 3/16x6	30.63	Stutz KLDH	Strom	Remy	Delco	m-d Warner	Own	m Hartford	½F Own	3.40
	3165c	3015																	
2025	2125	2175c	.....	2650c	2785	118	32x4	Own..	4-3 7/16x5½	18.23	Templar A-445	Strom	Bijur	Simms	s-p B&B	Detr	f Snead	½F Us	4.80
1175	1175	.....	.....	.....	.....	117	33x4	H-S..	4-3½x5	19.60	Tulsa E-1-2-3	Zenith	Dyneto	Conn	s-p B&B	Muncie	m	F Salis	4.80
1275	1275	.....	1305	1785	1785	115	32x4	Own..	6-3⅛x4½	23.44	Velie 58	Strom	West	A-K	s-p Dooley	Durst	m Thiemer	¾F Own	4.86
.....	1990f	1890	.....	.....	2890	125	32x4½	Cont..	6-3½x5¼	29.40	Westcott D-48	Rayfield	Delco	Delco	s-p B&B	B-L	m Peters	½F Tim	4.45
.....	1690	.....	1890	.....	2690	120	32x4	Cont..	6-3¼x4½	35.35	Westcott B-44	Rayfield	Delco	Delco	s-p B&B	Warner	m Peters	½F Col	4.12
2475	2475	.....	.....	3275	3475	121	32x4½	Own..	8-3¼x4	33.80	Wills Sainte Claire A-68	Zenith	Delco	Delco	m-d Own	Own	m Mech	¾F Own	4.65
1235	1235	1375	.....	1795	1950	118	32x4	Own..	4-3⅝x4½	21.03	Willys-Knight 20	Till	A-L	A-L	m-d Own	Own	f Own	¾F Own	4.44
3400	.....	3100	3600	4000	4550	132	33x5▼	Own..	6-3¾x5½	33.75	Winton 40	Rayfield	Delco	Delco	m-d Warner	Warner	f Climax	¾F Tim	4.88

MISCELLANEOUS
a—2 Passenger,
b—3 Passenger,
c—4 Passenger,
d—5 Passenger
e—6 Passenger,
f—7 Passenger
g—Chassis Price,
h—All Metal Type,
k—Soft Top Type,
n—Tire Size 32x4½,
p—Sport.
r—Price without starter and demountable rims. Price, complete, $361.
s—Price without starter and demountable rims. Price, complete, $393.
†Standard Phaetons.

ENGINE
Anst—Ansted
Bea—Beaver
Cont—Continental
Curt—Curtiss
D-Ly—Dort Lycoming
G-B—Grey Beal
H-S—Herschell-Spillman
Lyc—Lycoming
Nort—Northway
Roch—Rochester
Rut—Rutenburg
Supr—Supreme
Walk'r—Walker
Weld—Weldely
Wisc—Wisconsin

CARBURETOR
Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg

GEARSET
f-d—Friction Drive
B-L—Brown-Lipe
Cov—Covert
Detr—Detroit
Durst—Durston
G-L—Grant-Lees
Hoos—Hoosier
Mech—Mechanics
North—Northway

CLUTCH
c—Cone
f-d—Friction drive
m-d—Multiple disc
s-p—Single plate
Anst—Ansted
B & B—Borg & Beck
B-L—Brown-Lipe
Det—Detlaff
Detr.—Detroit

STARTING, LIGHTING IGNITION
A-L—Auto Lite
Brlng—Berling
G-D—Gray & Davis
L-N—Leece Neville
N. E.—North East
West—Westinghouse

UNIVERSAL
f—fabric
m—metal
M&E—Merchant & Evans
Mech—Mechanics
Sterl—Sterling
Univers—Universal

REAR AXLE
F—Floating
½ Floating—Semi-Floating
¾ F—Three-Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
W-M—Weston Mott
Tim—Timken

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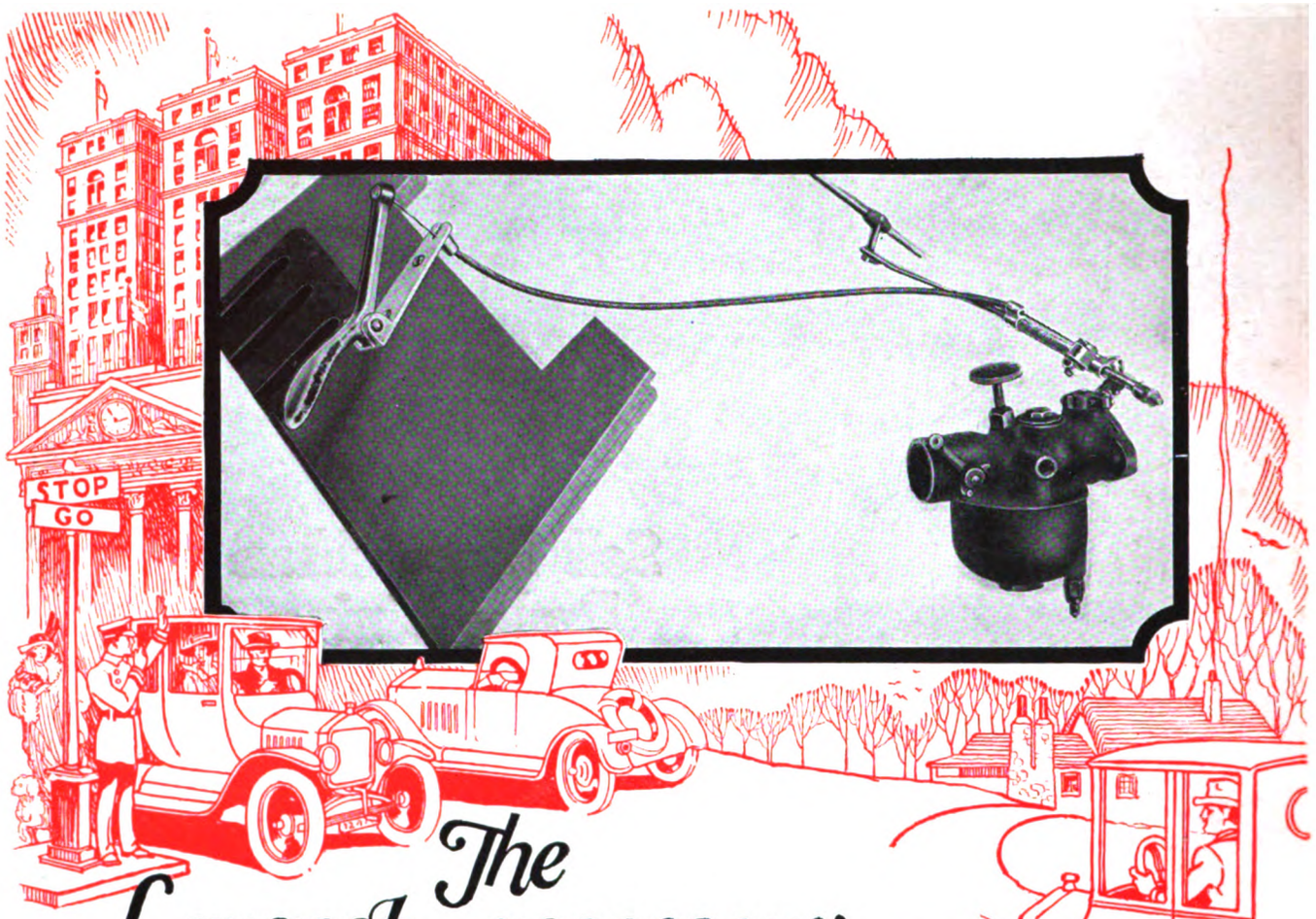
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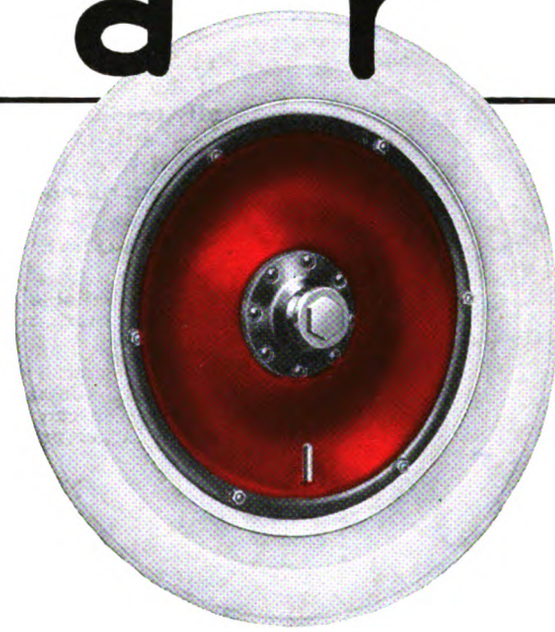
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for FORD CARS

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for
DEALERS, JOBBERS AND GARAGEMEN

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Steel wheels really became a factor in automobile production when Tuarcs made them *practical,* with demountable rims, standard outside valve stems and hubs requiring no changes or extra parts. Tuarcs also permit use of the regular carrier for spares. ¶ Even today, only beauteous Tuarcs have *all* these advantages to help sell cars.

MOTOR WHEEL CORPORATION

Motor Vehicle Wheels Complete—Metal Stampings—Steel Products

LANSING, MICHIGAN

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THE ONLY GROOVE THAT CANNOT CLOG

When the Job's Finished—What?—

When you finish your "jobs" are they followed by a string of complaints from dissatisfied customers?

If you use No-Leak-O Piston Rings you can turn most of these complaints into satisfied customers. No-Leak-O Piston Rings "won't leak because they're sealed with oil."

They are made in one piece—easy to install—quick seating—of finest material—guaranteed against breakage—individually tested for accuracy. A specially cut groove—the patented No-Leak-O "oilSEALing" groove—packs an impassable oil film in between piston and cylinder walls which gives *perfect oil control aud compression in each individual ring.*

No-Leak-O is the *leading* replacement ring; it makes good on every job.

Over 200 reliable jobbers carry No-Leak-O Piston Kings in all standard sizes and *over* sizes.

Write for free booklet, "Know the Facts About Grooved Piston Rings." Let us tell you about our liberal dealer proposition and how our National Advertising can increase your profits. Quick action on your part will mean bigger profits.

NO-LEAK-O PISTON RING COMPANY

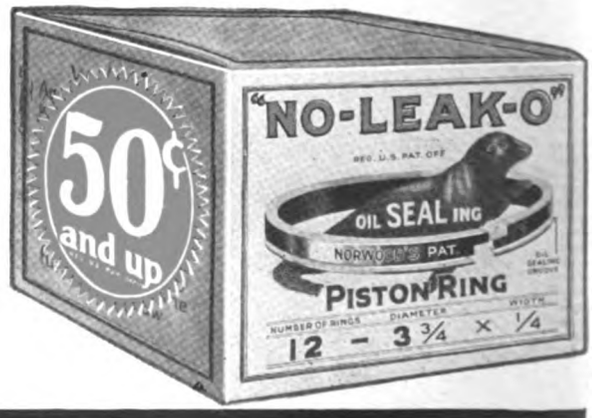
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One design—for all cars—50c and up

Important: In buying piston rings insist on the genuine No-Leak-O with the original "oilSEALing" groove, packed in this standard package bearing the famous ring and seal, our registered trade mark. Beware of imitations.



WON'T LEAK
because they're sealed with Oil

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MOTOR WORLD
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Get More Profit from Gasoline

Many garage owners get no profit from gas because they have no reliable method of "checking" the gas they buy.

They suffer another loss because they have no reliable way of checking sales of gasoline by their employees. These losses are absolutely prevented when you are protected by the Double Checking.

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Visible Gasoline
System

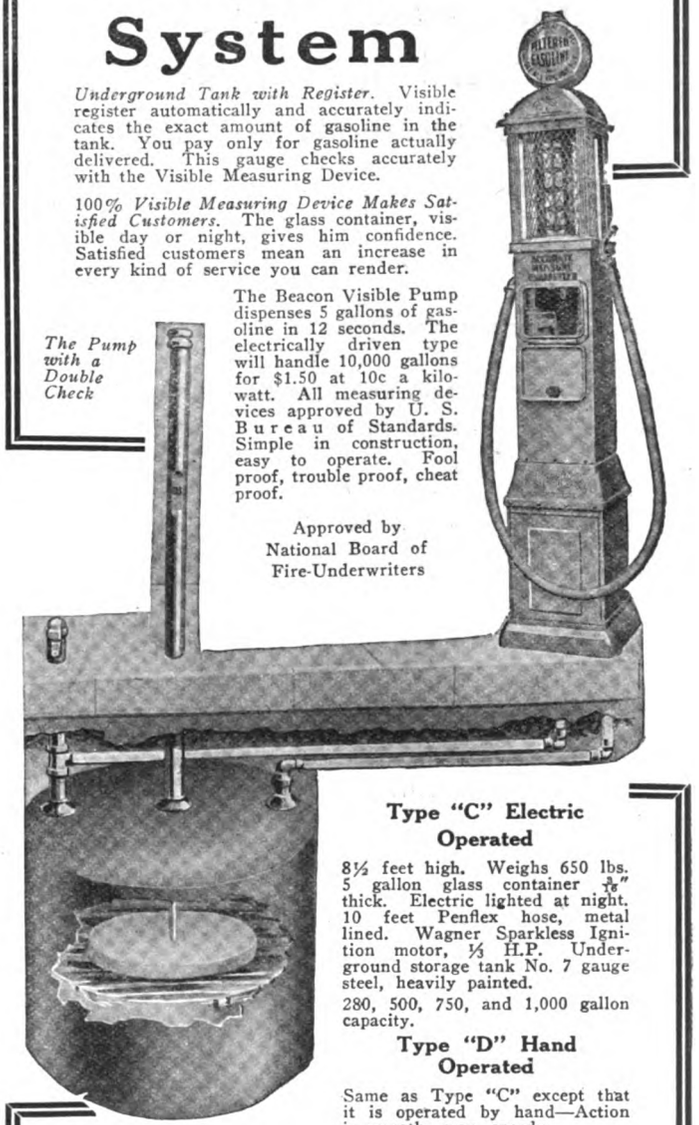
Underground Tank with Register. Visible register automatically and accurately indicates the exact amount of gasoline in the tank. You pay only for gasoline actually delivered. This gauge checks accurately with the Visible Measuring Device.

100% Visible Measuring Device Makes Satisfied Customers. The glass container, visible day or night, gives him confidence. Satisfied customers mean an increase in every kind of service you can render.

The Beacon Visible Pump dispenses 5 gallons of gasoline in 12 seconds. The electrically driven type will handle 10,000 gallons for $1.50 at 10c a kilowatt. All measuring devices approved by U. S. Bureau of Standards. Simple in construction, easy to operate. Fool proof, trouble proof, cheat proof.

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The Pump with a Double Check



Type "C" Electric Operated

8½ feet high. Weighs 650 lbs. 5 gallon glass container ⅛" thick. Electric lighted at night. 10 feet Penflex hose, metal lined. Wagner Sparkless Ignition motor, ½ H.P. Underground storage tank No. 7 gauge steel, heavily painted.

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Incorporated
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(Indianapolis, Ind.)
J. S. McFARLAND

You know and we know that a successful dealership must be based on a right product.

The Oldsmobile product is right! The above letter from one of the largest and oldest automobile selling organizations in Indiana is typical of hundreds of fine tributes paid Oldsmobile Fours and Eights by dealers everywhere.

In addition to an excellent product consisting of two distinct lines, 15 easy-selling models, and a price range of $955 to $2025, Oldsmobile offers the unequalled advantages of the General Motors financing plan.

Put your efforts on a line offering the cars and the franchise which will assure you real prosperity. We have opportunities now in a few territories for aggressive dealers.

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The Oldest Unit of
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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXIII New York, U. S. A., Wednesday, November 1, 1922 No. 5

Well, Show Him In



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How Shall the Industry Pay Its Salesmen?



Some Dealers Say They Have the Problem "Licked"; Others Are Looking for Help—Let's Have an Exchange of Ideas for the Good of the Entire Trade



WHAT are your salesmen looking forward to as winter approaches?

Will they have to run into debt on their drawing accounts to live until spring?

Or will they have a steady income through the months when deliveries are few and far between?

Or, perhaps, will they be getting a bonus about Christmas or New Year's time to pay accumulated debts or put a nest egg in the bank?

Interesting questions, aren't they?

And here are some more:

Are your salesmen working for you or for themselves?

Are they interested exclusively in their own sales or in their sales and your profits?

Whose side do they take when it comes to fixing an allowance on a used car, yours or the prospect's?

Again interesting questions, aren't they?

They are doubly interesting, it might be added, because they arise, all of them, from a single source, from the problem which may be stated in the question, How shall the industry pay its salesmen?

LET'S look at the salesman's side of it first, the human side of the question. Selling requires enthusiasm. Particularly does the kind of selling that is necessary in winter require enthusiasm. It takes a bright, alert, determined salesman, enthusiastic over his car and his job, to sell automobiles for future delivery, which is a big part of every salesman's winter task.

Can a salesman muster the enthusiasm and determination necessary to sell if his mind is disturbed by worry over where the next month's rent is coming from or how the grocer is to be paid; or if he is digging deep into next spring's commissions by taking advances on his drawing account? Isn't there a good reason why every dealer who can possibly finance such a plan should be considering some means of assuring good salesmen a steady income throughout the year? Isn't it due the salesmen of this industry that plans be worked out which will remove the natural temptation to over-spend in boom periods, with the resultant necessity of skimping in dull times to make ends meet? Wouldn't the automobile business approach more rapidly the stability which it must reach some day if some of the uncertainties could be taken out of its salesmen's compensation?

Now for the dealer's side of the case. It will be agreed that the salesman whose income is spread with some uniformity throughout the year, who is not harassed by financial worries, is the more productive and satisfactory employee. But as long as the used car enters into the business there is another important element which may well be considered in connection with methods of paying salesmen in establishments except those where ironclad rules prevent the salesman's influence being exerted in the fixing of used car allowances.

IN a great many dealer organizations where salesmen either make used car allowances or confer with the dealer or a used car department manager about them it is possible to remove the salesman from the customer's to the dealer's side of the transaction by making him interested in profits on sales rather than in sales alone. It may be argued that inasmuch as most dealers base new car commissions on the cash received for the new car—that is, the difference between the new car list price and the used car allowance price—the salesman will be interested in making the allowance as low as possible. He will, generally speaking; but if a difference of $100 in allowance means the making or breaking of the sale it is natural that he would rather drop $5 off his commission than lose the sale. He loses sight of the fact that the dealer drops $95 from his gross profit, which may leave the sale with no net profit at all. Some dealers have made their interest in net profits the salesman's interest also by basing commissions on profits rather than sale prices.

Take the case of a dealer who pays his salesmen on the basis of one-third of the net profit on each transaction. To illustrate his plan it will be tied up with the situation developed in the preceding paragraph. Assume that the net profit on a transaction involving a used car, with the allowance price stated by the dealer or his used car appraiser, is $150. The salesman would get $50. But suppose an additional allowance of $100 is given. The net profit would be cut to $50 and the salesman's compensation would be a third of that or $16.67. He loses $33.33 because of the extra allowance as against $5 under the straight commission plan, and the amount cut off the dealer's revenue is $66.67 instead of $95. This makes the interests of the dealer and his salesman more nearly identical. Isn't it possible that neither would lose, but that the salesman would succeed in persuading his prospect to accept the lower allowance?

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ANOTHER dealer has a sinking fund plan under which his salesmen, who put valuations on used cars, share either in profits or losses incurred in trading. The plan works out like this: Suppose a salesman sells a car listing at $2,000. The factory discount to the dealer is 20 per cent, so the gross profit on this sale would be $400. This gross profit is distributed as follows: $200, or 10 per cent of the list price, is credited to the company; $100, or 5 per cent of the list price, is credited to the salesman's commission account. The remaining $100 is credited to the sinking fund of the salesman making the sale.

If a used car is accepted as part payment on the new car, payment of the $100 credited to the salesman's commission account is deferred until the used car has been sold. A 5 per cent commission on the used car selling price is paid to the salesman who sells it. This commission is charged to the sinking fund account of the salesman who took the used car in trade. Of course when a salesman sells a used car that he traded in himself his commission account is credited with the 5 per cent on the used car selling price.

Any losses incurred in selling a used car are charged to the sinking fund account of the salesman who took it in. If these losses exceed the balance in the salesman's sinking fund account, the excess is charged to his commission account. The commission accounts are settled quarterly. The salesmen have a liberal drawing account.

The sinking fund accounts are settled at the end of the year. Any salesman having a balance in his sinking fund at that time receives one-half of this balance, the other half going to the company. The sinking fund gives the salesman a definite margin to work on in making allowances. So long as he keeps his over-allowance within the limits of this account he gets the customary 5 per cent on the new car sale. Furthermore, by minimizing the losses on his used car deals, he can increase his compensation.

ON the other side of the question, having more direct bearing on the salesman's need for steady remuneration, dealers have worked out numerous plans which may be roughly classed under the headings of salary and commissions, salary and graduated commissions and salary and bonus.

One dealer has a simple plan of paying his men $25 a week and 3 per cent commission on all sales. On $100,000 worth of business the compensation would work out like this:

Salary, 52 weeks	$1,300
Commission on $100,000	3,000
Total salary and commission	$4,300

This salesman earns the equivalent of 4.3 on the sales which he makes.

Another dealer with a good selling car pays his salesmen $40 a week, with a graduated scale of commissions beginning at 1 per cent on the first $25,000 worth of business and increasing 1 per cent with each additional $25,000 until the salesman has done $100,000 in a year, when his commission is 5 per cent. Compensation of the salesman who sells $100,000 worth of cars is as follows:

Salary, 52 weeks	$2,080
Commission, 1% on $25,000	250
Commission, 2% on 25,000	500
Commission, 3% on 25,000	750
Commission, 4% on 25,000	1,000
Total salary and commission	$4,580

This salesman earn 4.58 per cent on his total sales. In addition he is free from seasonal worry, with a stated salary coming in every week and commission payments when he reaches the different periods in gross sales.

A THIRD dealer pays his salesmen a salary figured on their sales, but somewhat below the equivalent of a 5 per cent commission. He has $30, $40 and $50 a week men. A man may be advanced from the $30 to the $40 or from the $40 to the $50 class any time during the year, but if he persistently falls back in sales rating so that logically he would drop into a lower class he is not retained on the staff. When the end of the year comes the $30 a week men get a bonus, bringing their total compensation for the year up to 5 per cent of their sales, while the $40 and $50 men get bonuses, making their earnings slightly over 5 per cent. The bonus, paid in midwinter, is intended to furnish ready funds to bank or to assist the salesman in some kind of extraordinary financing which is necessary occasionally in almost every family.

Dealers who use the salary plan claim that it brings salesmen more effectually under the control of the head of the house. It gets them out of the class of brokers working more or less on their own time. It makes them integral parts of the organization.

Dealers who have profit-sharing and loss-sharing plans of compensating salesmen say that it gives the men a more direct interest in the business, making them ready to fight on the side of the dealer to avoid used car losses.

REGARDING the compensation of salesmen, Frank R. Tate, Dodge Brothers dealer in St. Louis, says: "The automobile industry is the victim of lack of progression, inasmuch as the majority of retail dealers have stuck to the old form of compensation for salesmen ever since its inception. It is now time that the subject should have sane treatment."

What do YOU think? How do YOU pay your salesmen? Will you give the trade the benefit of your progressive ideas and experience? Write to Motor World about them.

Have You a BETTER Plan of Paying Salesmen?

DEALERS throughout the country have shown keen interest in a number of articles printed in Motor World during the summer and fall, describing various methods of compensating automobile salesmen. This interest has prompted Motor World to open its columns for a more extended discussion of this subject which is so vital to the progress of the industry and the prosperity of the men in the trade, both dealers and salesmen.

Have you a method of paying salesmen which varies from the usual straight commission or commission and drawing account plan? Will you write to Motor World, giving the details of your plan and stating the degree of its success. Your story may be of great assistance to a dealer somewhere in the country who is seeking for a way out of difficulties due to an unsatisfactory plan. And you may find a means of making your own plan even better than it is in the story of another dealer who has developed an idea that had not occurred to you.

Motor World will provide liberal space to bring about a countrywide exchange of ideas on this subject. How do YOU pay your salesmen?

Tell the Trade About It—In a Letter to Motor World

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You Can Write Tire Ads with Shears and Paste Pot, but—

It Takes Time and Thought to Prepare the Kind of Copy That Sells, Says This Successful Kansas City Dealer

"YOU'LL excuse me now, please, because it's now 3 o'clock, and I have to have the copy for an advertisement ready by 5."

Two hours to write a tire advertisement! Who ever heard of such a thing!

All a dealer has to do, to prepare copy for any amount of space a tire dealer could possibly buy, is to snatch a sample of company advertising, clip out a phrase or so, attach his name and street number, maybe his telephone number also—and the job is done. Five minutes—ten at most—ought to suffice for writing any tire service station's advertisement.

And here is a tire service man expecting that it will take two hours to write the ad; and furthermore actually having set aside this particular two hours for the job!

Another queer thing about this incident is that it was the president of the tire company who was writing the advertisement!

THIS man, R. E. Robinson, general manager of the Osgood-Robinson Tire Co., had plenty of other things to do, goodness knows. He had just completed the opening of a new tire store and service station in Kansas City, Kansas, the firm having operated in Kansas City, Missouri, for the previous five years. And to show how important it was that he "look after business," instead of bothering with advertising, let's mention that the company had opened its new station in a building erected for its purposes, having taken a ten-year lease on half a block frontage, half for its own present needs.

It had taken the lease, and fitted its station and store up so well partly because it had been given exclusive representation on Goodyear tires in the entire city of Kansas City, Kansas—"a city of more than 100,000 people, with many very large industries. There were therefore many local dealers and tire stations to get acquainted with, so that the company's wholesale distribution might be developed. There were plenty of things to do"—and here was the president of the company writing an ad!

Another odd thing about it—the ad was to accompany one of the Goodyear company ads.

Now, anybody knows that all a tire man has to do, when the company uses space, is to take a little space below the big spread, to let the public know that he handles those tires.

The Osgood-Robinson Tire Co., however, took just about as much space as the Goodyear company took—to be exact, the manufacturer having 11 inches, four columns, and the Osgood-Robinson Tire Co. the rest of the four columns, only eight inches being left.

But—

Robinson has been giving this close and careful attention to advertising for some time. And that is one of the reasons that his company has grown so substantially.

Another reason that the company has grown, is that the same close and careful attention is given to service.

Note carefully the combination of those two subjects of attention:

"Service" and "advertising."

The thought is expended on the advertising in order that the story of the service may be effectively told to prospective customers.

The service is maintained at a high standard, because experience has shown that desirable customers want good service and are willing to pay for it.

The firm has found that the customers believe the Osgood-Robinson service is worth paying more for.

The customers don't quibble about price of Goodyear tires or of the service. The Osgood-Robinson company has never entered the cut price competition, never has advertised to get business on the basis of its low prices for service, because its prices are not particularly low.

And when this company spends money for any service, it is, consistently, willing to go far enough to get the best results. It not only spends the money for the space, or for the printing, but for everything else connected with the means of publicity, to make its use most effective.

It buys substantial space in the newspaper, on occasion, and invests valuable time in preparing the copy.

Its Kansas City, Mo., business has been built largely through direct mail advertising. And on this literature, real money has been spent as well as time in preparation.

Pictures are used on almost every piece of literature; not stock cuts provided by the company, but pictures taken for the purpose, or line drawings made to illustrate the point which the advertisement stresses.

The company spends real money to make its mail advertising effective—and spends more, to get the advertising to the right people. Three different mailing lists are kept on file, to which different kinds of literature—all specially prepared—may be sent. There is one list of truck owners, another list of owners of passenger cars, and a third list which has on it the names of the company's regular customers.

An addressing machine handles these lists.

"We often want to get an announcement, or a particularly good bit of mail advertising, to our customers as promptly as possible," said Robinson. "With the addressing machine, we can get out letters or cards to one or more lists on the same day that we receive the printed matter from our printer."

Still other lists, are used for special purposes. Sometimes a message is to go to owners of a particular kind of car or truck, in which case names are selected from monthly revision of license lists, and envelopes or cards are addressed by typewriter.

"Of course it is a lot of expense and trouble to take care of the lists, and prepare the copy," said Robinson, "but you've got to spend money to make money."

The new establishment in Kansas City, Kansas, as well as the service station and store in Kansas City, Mo. (exclusively on Goodyear solids and cushions for four years) demonstrate that it is well worth Robinson's while to spend two hours writing a newspaper advertisement.

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Putting Local Appeal Into Tire Advertising



HERE are some examples of how the Osgood-Robinson Tire Co., Kansas City, stimulates local interest by writing its own advertising to support national copy. Figures 1 and 5 show ads that appeared on the same page of a newspaper. 1 is factory copy and 5 is the dealer's own ad. Figure 2 shows a folder used by this company in a direct mail effort. Figure 3 shows how the price appeal is combined with a service appeal in a newspaper ad and figure 4 is one of a number of blotter ads that are used as envelope stuffers

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Quality Membership the Aim of Reorganized California Trades

Elimination of Undesirable Members and Increasing of Public Confidence Sought in Plans at Notable Santa Barbara Gathering—Harry S. Mason, Los Angeles, New President

By H. H. DUNN

SANTA BARBARA, Cal., Oct. 18.

THE California Automobile Trade Association, an organization of more than 3000 firms and individuals in the automobile, motor truck, equipment, repair, service and garage branches of the automotive industry, was thoroughly reorganized and put on a new business basis of operation at the annual convention in the Arlington Hotel here Oct. 16 and 17. More than eighty delegates, representing as many local branches of the association took part in the convention, and Bakersfield was selected as the place for the next annual meeting in October, 1923, exact date to be selected later.

Reorganization was accomplished along lines important to both the men of the automotive industry and to all the motorists of California. For the first time in the seven years of the existence of the California Automotive Trade Association, by-laws were adopted forming the basis of the reorganization. These by-laws were written and adopted with the express purpose of:

1—Increasing the confidence of the public in the members of the association, and improving the standards of dealing with the public by these members;

2—The elimination of the undesirable member; the establishment of a membership based on quality, rather than quantity; the removal of the member who does not support and take part in the work of the association, and the taking away of the backing of the association from those men in the industry who do not deal honorably with the public.

IT was brought out that, of the more than 3000 members of the association, hardly more than one thousand were in good standing. Authority was given in the new by-laws for the elimination of these members, and the watchword, "better quality and smaller quantity," in membership, was adopted.

Following the adoption of the by-laws, the following officers were elected, to serve for one year:

Harry S. Mason, Los Angeles, president; George Dunton, of Anaheim, vice-president for the South; U. S. Grant, San Diego, vice-president for the South; George R. Murphy, San Francisco, vice-president for the North; Walter Fawcett, vice-president for the North; Robert W. Martland, secretary-treasurer and manager. These officials succeed George Haberfelde, Bakersfield, president; J. F. Flynn of Sacramento and William L. Hughson, of San Francisco, vice-presidents for the North; and Joseph A. Moore of Pasadena, and Glenn Thomas, of Long Beach, vice-presidents for the South. Bob Martland, secretary-treasurer and manager, doesn't count; his re-election every year is merely a matter of form, which should have been made a regular holiday, just like Saint Patrick's Day, but wasn't, due to pressure of other and newer business.

In resolutions presented by Martland and unanimously adopted, Ray Sherman, former editor of Motor World, and now merchandising director of the Automotive Equipment Association, was made an honorary member of the California Automobile Trade Association, and similar honorary membership was tendered to Gordon Lee, director of the automotive department of the National Chamber of Commerce, provided the acceptance of such membership would not be contrary to the policy of Secretary Hoover.

Leaving Manager Martland and Treasurer Martland out of it, Secretary Martland then delivered to the delegates a brief address which had a great deal of influence on the adoption of the by-laws, to be described later. This address pointed out a majority of the defects in present-day automobile trade associations, and outlined the remedy which had been found best in this particular case.

Reports from the various crafts, which had held divisional meetings, were then called for, and H. C. Brokaw, chairman of the Garage and Repair Craft, presented a report urging the licensing of mechanics, as remedy for the "curbstone" or fly-by-night mechanic, "who," says the report, "is a damaging factor at present combatted only by the co-operation of the automotive associations with the city councils and the police." The bonding of employes also was suggested. The meeting in general seemed to oppose the licensing of mechanics, but to favor the education of mechanics by courses in connection with public schools, either day or night, or in classes to be addressed frequently by factory representatives, and men named for the purpose by the manufacturers of automobiles, trucks and equipment.

The dealers, reporting through George Dunton, chairman, held that the used car problem is one to be worked out by each dealer according to his own location, trade and conditions. The dealers laid plans in their craft meeting to fight legislation inimical to the industry at the coming session of the state legislature, but did not go into details as to the character of the unfriendly legislation expected this winter. There are, however, several schemes to be presented to the legislature which will make the life of the repair man and the dealer somewhat harder than it is at present, and some laws are proposed inimical to the operation of motor truck fleets on the highways. These will be fought, as they come up, by the California Automobile Trade Association.

Report from the secretaries of the various branch associations, dealing largely with their duties to their associations, and their relations to the state

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association, was read by Otis Hymer, secretary of the Bakersfield local, and chairman of the secretaries' meeting.

The battery crafts, which had sent the largest group of delegates to the convention, likewise presented an interesting report, through J. G. Brown, of Los Angeles, chairman. Brown declared that free service had been eliminated in the automotive industry except in the business of the battery man. "All factories," said he, "favor a service charge. San Francisco dealers polled their trade on this question, and the majority of the customers were in favor of a reasonable charge for good service." The plan will be effective Jan. 1.

Small Stations Flourish

In connection with this, the battery men brought out the fact that, in California cities, the neighborhood station is rapidly coming to the front, getting the business away from the larger downtown station, and becoming more and more popular with owners. The elimination of discounts, and the substitution of small charges for watering and cleaning and similar operations was urged by the battery men. Retention of discounts for quantity sales, however, was approved, and it was admitted that repair schedules must be made elastic, to fit conditions which differ with each locality.

The incoming president, Harry S. Mason, of Los Angeles, spoke briefly, supporting Martland's plan for a thorough sifting of the membership, and pledging himself to carry out this plan.

The financial report showed that a number of local branch secretaries were not remitting the State dues promptly to the state secretary, and that much money paid to the local secretaries is used by them in local expenses, while the dues to the state association wait for payment. Some $4,000 was reported as outstanding among the local secretaries, due to the failure of the latter to pay into the state association dues paid by individual members to the local secretary. The financial report was accepted and a motion to employ an auditor and collect the state dues, by civil procedure if necessary, from the delinquent secretaries, or from the boards of directors of the local branches, was adopted when offered by H. C. Brokaw. The opinion of the meeting seemed to be that the fault lies not so much with the local secretaries as with the presidents and boards of directors of the local branches.

The Reorganization Plan

Then came the important business of the convention—the re-organization of the California Automobile Trade Association, through the adoption of its first set of by-laws. Some opposition to some of these by-laws developed, but was voted down and the by-laws eventually were adopted as written by a committee especially appointed at the last annual convention. The local branches were consulted in the assembling of these by-laws, and they represent the majority thought obtainable in California on the subject of automotive trade associations. For this reason, they will be of interest to other associations.

Objects of the association are first stated to be "establishment of a higher plane of commercial integrity for those engaged in the automobile industry, through the application of better business methods, to establish, through cooperation and acquaintance, a greater degree of confidence among the members of the association; and, by concerted action, to merit in larger measure, the confidence of those with whom we deal, by affording them that protection which our association offers, and thereby obtain recognition for those ideals and principles for which the California Automobile Trade Association stands."

Any person, firm or corporation legitimately engaged in any branch of the automotive industry in California is eligible to active membership. Others may be made honorary members through their special achievements in the industry. In districts in which there are no local associations (branches) members may be admitted direct to the State association, but it, primarily, is an association composed of branches, an organization of organizations. Twelve members are necessary for the formation of a branch.

An important article concerns fees and dues, reading in part as follows:

"Each local association shall collect from each member, on January first of each year, $12, said sum to be immediately sent to the State secretary-treasurer-manager as payment of one year's dues to the State association. * * * In the event that a member of a local association pays this $12 as dues to the State association, and resigns from or is dropped by the local association, he is not to receive any rebate from the State association, nor is he entitled to membership card therein or to the insignia of the State association." It is believed that this by-law will materially assist the local association secretaries, not only in collecting the State dues, but in holding together their local organizations.

One annual meeting is to be held each year, in October; the northern division meets once a year, in February, and the southern division once a year, in June. The line between the two divisions is defined as the northern boundary of San Luis Obispo, Kern, Tulare and Inye counties. Representation at these annual meetings, over which there was some argument, was fixed as follows:

"Each local association of 20 members or less, in good standing in the State association, shall be entitled to one delegate. Local associations having 20 or more members in good standing shall be entitled to one delegate for every such 20 members. At any general or divisional or special meeting, of the association, any member may attend and may take part in the discussions which may arise, but only those elected as delegates from their associations may have the right to vote."

They're Both Happy



Because the California Automotive Trade Association promises to attain greater things through the re-organization and planning of the recent convention in Santa Barbara. On the left is George Haberfelde, of Bakersville, retiring president, and on the right Harry A. Mason, of Los Angeles, the new one.

Details of the Plan

The cleaning up of the association is included in Article VII of the by-laws, which reads:

"If any person, firm or corporation, or local association, while he or it is a member of this association:

"(a) Violates any fundamental rule or principle of this association;

"(b) Is convicted of felony or misdemeanor involving moral turpitude, or is finally declared by any court of competent jurisdiction to have committed any fraud; or

"(c) Upon written complaint of any member or local association is found, after investigation, unworthy of membership in this association, then,

"He or it shall be liable to expulsion or suspension from membership in this association by the executive board thereof, after first being given an opportunity to present his defense, and any such expulsion or suspensions from membership may or may not be made public, as determined by the facts in the case."

Section (a) of this article is the one which will enable the State association to finance itself, since it compels the immediate payment of dues, while sections (b) and (c) are expected to improve the relations of the membership to the public, and, consequently, increase the confidence of customers in the insignia of the California State Automobile Association.

At the conclusion of the discussion of the by-laws, and prior to adjournment, Secretary-Treasurer-Manager Martland presented to George Haberfelde, retiring president, a finely engraved silver carafe and tray, as a gift from the association, in token of the esteem in which Mr. Haberfelde's work for the organization is held.

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Built a Park on a Rubbish Heap

Now Business Is Good for This Small Town Dealer and His Fellow Tradesmen



N. E. Hug standing by the welcome sign in Higginsville, Mo., Rest Park, which he built, owns and operates free

WHAT N. E. Hug, filling station manager at Higginsville, Mo. (a town as small as its name might suggest) has done to make his business prosperous and popular, can be done by any car dealer, garage man or accessory retailer in most any small town in America.

Hug had an *idea*. And he worked it out successfully because it involved the hooking up of his business with a public service that had nothing to do with his business.

The *idea* aimed at comfort and pleasure for the people, and especially for the children, of Higginsville.

First let's get the "atmosphere" of the situation at Higginsville. It is a town of less than 3000 people, a coal mining town, with good agricultural territory around it, and a county fair ground. It is an old, old town—and, it must be confessed, rather soiled-looking to the passengers that pass through it on the railroad trains.

N. E. Hug's Vision

A muck-hole, bordered by tumble-down shacks too rickety for use, blotted the south side of the view at the railroad station, this point being also the "edge of town" for motor tourists.

In this town Hug had been managing the E. M. Wilhoit Oil Co. filling station and oil distributing business for twenty years.

And then he had his vision.

A company which had built a filling station near the city trashpile, opposite the depot, went out of business; and Hug, for the oil company, bought the filling station site and station. Then, for himself, with his own money, he bought the rest of the destitute ground that had constituted the perennial eyesore. And on his own ground, still with his own money, he prepared a "Rest Park." He hired men to clean up the site and fill in; then with his own hands he planted flowers and shrubs, painted the lower trunks of the trees, built park seats and a swing, and an arch on which he painted the word "Welcome." He maintains this park himself. And everybody is welcome to it.

During the spring and summer of 1920 and immediately upon his completion of the park, he gave parties here. Most of the parties were for children, and for them he supplied ice cream cones or popcorn or some element of the refreshments; and he sometimes provided the band. But Higginsville now has a band of its own that plays concerts in this park.

Park Brings Prosperity

Higginsville has a city park, but it is a mile away from the business center, on one side of the residence district. Hug's park is at the edge of the business district, and practically in the residence center of the town.

Hug's expenditures have paid him lavishly in pleasure and satisfaction.

They have paid him and the other business men of the town lavishly in dollars and cents. Tourists like to come through Higginsville now; they all have bright recollections of this town because of this park and of the really good things in the town to which they gave attention because the park incited interest.

The traveling public thinks of Higginsville favorably now because of the pleasant scene at the station, and traveling salesmen are inclined to stop off at Higginsville, which means that merchants are being stimulated to better merchandising. The merchants are fixing up their places to live up to the reputation which the filling station "Rest Park" is giving Higginsville. This fall the proprietor of the hotel, across the railroad tracks from the park, is painting his building and remodeling its front, and a white way is to be installed, visible for several blocks to passengers on railroad trains.

A person can't get within 40 miles of Higginsville and mention the town without being told of Hug and his park. And it goes without saying that his oil business, both at the filling station and in the surrounding country, is growing healthily.

"The More Calls I Make, the More Trucks I Sell"

"I'VE found this to be true," said a successful middle Western truck salesman, "that the more calls I make in an effort to sell trucks, the more trucks I sell.

"I've worked the proposition out on a mathematical basis. Ever since I've been in this business I've kept an accurate track of the number of calls made to-day, the number of sales I've made each month and so on. And I've found by actual count that it takes me just about so many calls to sell a truck. We'll say that I have to make five calls before I sell a truck—of course, that isn't the actual number of calls I make before making a sale, but it is an easy figure to work with in illustrating my point.

"Now, if I make only five calls a week, that means I'll sell one truck that week. If I double the amount of calling I do and call on ten people during the course of the week in an effort to sell trucks, I'll sell two trucks, and so on.

"I find that the percentage of calls I have to make to sell trucks holds good most of the time. Of course, there have been months when it was very hard to make sales when I had to make more calls than usual to sell a truck. But the average holds good most of the time.

"Believe me, I've found this proposition to be the best incentive in the world to work. Think what it means to know for a mathematical certainty that when I make a certain number of calls I'll make a certain amount of money! That's why I work so hard all the time."

Isn't there a hint in this for other truck salesmen? Why not adopt for YOUR slogan this phrase: "The more calls I make the more trucks I sell?"

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Poor Contacts

By NEAL G. ADAIR



ABOUT a month after C. J. Reilly, Sennett distributor in the Callawassa territory, had urged Chadwick, his dealer at Oldtown, to build a new drive-in for his service station, Chadwick turned up at the headquarters of C. J. Reilly, Inc., with the announcement that the job was done.

"Yes, sir, we're all set," Chadwick said, with evident pride. "Got as neat an entrance as you'll find anywhere in the State. Customer drives onto a clean concrete floor, runs right alongside an accessory showcase with the service clerk's desk behind it; no chance for him to start wandering around the shop getting madder every minute because somebody doesn't wait on him; service clerk catches him the minute he comes in, most likely before he gets out of his car. And there you are."

"Fine work, Chadwick," Reilly exclaimed. "Sure does look as though you're all set, except—. Got your service clerk yet?" he asked, suddenly switching from compliment to question.

"Get him all right," Chadwick returned. "Told Flannigan, the shop foreman, before I left this morning to pick up a boy that knows a little something about automobiles."

"And about—anything else?" Reilly suggested.

"What else does he need to know?" the Oldtown dealer countered. "We aren't big enough to have a service salesman like you do. Foreman's got to talk with the customer anyway about anything bigger than a simple adjustment. And a boy who knows something about cars can handle these little adjustment jobs and sell some accessories."

"Maybe he can do that," Reilly said, "but can he represent you? Will he be able to establish and maintain the right kind of contact between your customer and Sam Chadwick, Sennett dealer in Oldtown?"

"What do you want for that kind of a job, an Ambassador to England?" Chadwick retorted.

" 'That kind of a job'," Reilly echoed. "Now we've got something to talk about. I thought you had my idea all the way from A to Z when you went ahead and put in this new entrance in place of the grease hole that used to insult your customers. But you only got me half way. What good is the finest automobile in the world without somebody at the wheel? And what can you accomplish with all this equipment for contact with your customers, if you don't have a man capable of making the right kind of contact?"

"But I can't afford — " Chadwick began.

"Of course, you can't afford to put half a man in one of the most important jobs in your business," Reilly interrupted. "You want a man to do a man's work for a man's pay, and you'll get every cent of it back in better satisfied customers, which means more business.

"Chadwick," Reilly continued, "this thing makes me think of the way some mechanics I've had experience with go at a trouble shooting job. They test here and there and everywhere, all over the electrical equipment, and tell themselves what a tough job they are up against. Finally they try the battery connections, which they should have done first, and find the trouble is due to a poor contact.

"We have a lot of that kind of trouble in the automobile business—poor contacts. We lose sales because some salesmen don't truly represent the house to prospects, then we lose re-sales and service business because the fellow at the back door neglects our customers or treats them flippantly or discourteously or even contemptuously sometimes.

"Poor contacts! Here you have a chance, with this new entrance and the equipment for a service clerk, to build up the finest, tightest possible kind of contact with your customers. You talk about picking up a boy for the job. Isn't there enough ignorance in your place now about proper methods of dealing with the public—there is in ours, I admit—without going out deliberately and hiring some more? You can pick up a piece of know-nothingness for fifteen or twenty dollars a week, but what you want to do is to go out and find thirty or thirty-five dollars' worth of sense and ability—ability to sell your service and your stability and reputation to these folks who are going to drive into your shop."

"But how could a man like that earn his keep?" the Oldtown dealer protested.

"Let's look the job over and see," Reilly replied. "Here's your man—this service clerk—sitting at his desk behind the accessory counter. A car comes in. We'll say the driver is a new owner; it's his first visit to your place since he bought his car. The service clerk walks up and meets him when he gets out of the car, perhaps before, and gives this new owner a first impression that is worth a lot to you in future business; the customer gets the idea right away that you are interested in him and his car, that the sale was only the beginning of a long business relationship. Then the clerk finds out what the customer wants, possibly makes a minor adjustment then and there, perhaps looks in his record for the cost of a repair job that is apparent and makes out the order; possibly calls the foreman if the car requires expert inspection beyond his ability. When the owner comes back for his car, if it is left for repairs, the clerk meets him again, collects for the work done and sends the customer on his way. Can you estimate, in dollars, what work like that would be worth to you?

"And that isn't all. From his accessory showcase the clerk can sell items of equipment—and you ought to be selling a good volume of it, adding the bigger profits it yields to the closer profits in automobile sales. He can increase your inspection and adjustment and repair business, too, giving time that a foreman can't always spare to talk with customers about their cars and learning little things that lead the way to profits for you and greater satisfaction for your customers in the operation of their cars.

"You can pick up a boy for the job, Chadwick, no doubt about it. You can crank him up every morning, and he'll grind out about so many words every time a customer drives in, but the words won't always fit the customer or the occasion. You have to realize that this service clerk of yours is going to be you, as far as most of your customers are concerned. He must be able to represent you as you are. An incompetent or a half-competent man or boy won't do."

Chadwick scratched his head. "I worked in Felton's Garage before I opened my own place; remember, C. J.?"

Reilly nodded.

"For awhile I was a trouble shooter," Chadwick continued musingly, "and many a time a poor contact put me in a fine little hole."

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Editorial Notes

What Does It Cost?

THE prevailing low prices of automobiles are among the causes of the prominence being given in the trade to the always old, yet ever new question, "Must discounts be longer?" There are men both in the manufacturing and merchandising fields who contend that if a great many dealers had greater discounts they would give them away in long trades. On the other hand, letters are coming in to Motor World every week from men in the trade who say that with lower prices causing lower profits per unit of sale, the best they can make out of their business is a living—no more than they could earn on salary with no risk of investment. One dealer writes that the cost of doing business in his territory runs from 16 to 20 per cent, sometimes more. Another says that dealers in small towns or big cities, the former with lesser costs and the latter often with larger (distributor) discounts, may be able to make profits, but that "in cities of 50,000 it can't be done."

It may be that, particularly if prices are to be forced still lower, the average automobile merchant must have a longer discount, but how can the fact be determined without taking into consideration the various classes of automobile businesses involved? Is the dealer who says he can't earn more than a bare living just selling cars, or is he getting some of the side profits that can be obtained from automotive equipment and gas and oil sales? Is he operating a service station as a sales promotion branch of his selling organization or is he making profits on repair work? Is he working for himself or for his new car customers when he buys and sells used cars? In other words, can we say definitely that any automobile merchant's business is not a profitable one until we know whether he is taking advantage of the various sources of profit that are open to a business such as his in a locality such as he serves?

The answer to these questions in any mercantile establishment is correct bookkeeping. Books kept on a departmental basis will show a dealer where he is making money and where he is losing it. They will suggest reorganization of some departments, elimination of others, addition of others. They will show a dealer whether he most needs a larger margin between buying and selling prices or better methods of buying and selling. They will emphasize the advantage of rapid turnover with small profit margins over large discounts with slow turnover. In short, books well kept will show business men what they must do to make a profit.

There has been much talk of the necessity of a survey of the cost of running an automobile business. Such a survey, if it could be made to present concrete conclusions, would illuminate the statements and counter-statements so freely made regarding discounts. Such a survey might be the forerunner of a readjustment of wholesale and retail prices of the industry's products. Until it is made, if ever, the question of profits and how to obtain them remains one for the individual business man to solve for himself. He will get nearer a solution and find ways of improving his condition, to an extent at least, without outside aid if he will be as particular about his bookkeeping methods as about the appearance of his salesroom.

What does it cost to run an automobile business? What does it cost to run yours? Do your books tell you? If they don't ——.

"Until Ready"

THE orchestra plays "te-tum, te-tum, te-tum" until the singer gets his collar, necktie and throat adjusted and warbles the opening note of the solo. Can the automotive dealer, in the hazy, lazy days of fall, sell equipment that the car owner will want when winter comes? No? Yes? Read on.

A motorist stopped at an eastern dealer's accessory store just a few days ago—a "spell of weather" had set him thinking about snow and cold—and asked for a radiator cover. There had been a touch of frost in the air the past two mornings and he wanted to avoid engine trouble. The dealer had the radiator cover and put it on in short order, then he practiced some effective "ask 'em to buy." He wanted to know how the customer was "fixed for chains." The customer had none and didn't want them—"until we get some snow." The dealer agreed with him but suggested that sometimes, when snow does come, chain stocks run low and occasionally motorists have to wait until their particular sizes can be obtained on re-order from the jobber. The customer was induced to take the chain as a measure of preparedness.

Another dealer, selling a motorist a windshield cleaner on a rainy fall day, induced the customer to take a winter front for his radiator for the colder weather bound to follow. And so it goes. It is not necessary to wait for winter to do winter business. There are plenty of opportunities to sell winter accessories now to forehanded men and women who are easy to convince that it is better to buy an article before it is needed than to run the chance of having to wait for it when the lack of it causes inconvenience, discomfort or danger.

Motorist—How are the roads to Jericho?
Garageman—Don't know.
And they call it a service station!

Several cities have held "the best closed car show we ever had." Has yours?

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Shorter Discounts a Used Car Remedy?

Quincy Dealer Believes They Would Check the Dealer Who "Plunges" in Used Cars

EDITOR Motor World: It does seem peculiar that a dealer with a long discount plunges just as far in endeavoring to buy a used car as does a dealer with a short discount. Not only that, but we are inclined to believe that he will go considerably further, believing, mistakenly, that inasmuch as he has a long discount he has only to obtain a portion of the price allowed for the used car to make what he calls a profit. He never takes into consideration that the used car is costing him money constantly, not only for space occupied but for actual labor and time put in by someone endeavoring to sell the car. In other words, two sales must be made in order to make one profit, and it seems to us one of the mistakes every dealer makes is to actually penalize a man who has the cash.

A Typical Case

Witness the following case which took place within the past few weeks in this city: A man purchased a used car for $450. Almost immediately after the purchase he took it to another new car dealer and was offered $700 on the car in trade for a new car. This man then went back to the dealer from whom he purchased the used car, stating he wanted to buy a new car from him, but the dealer would not allow him any more for the used car than the price he had just paid. This particular case looked to be about the limit. Because this man had a used car, one dealer was called upon to go into competition with himself in order to sell a new car.

If the factories generally gave shorter discounts, the average dealer who plunges on used cars could not very well cause as much damage as he does now with the long discounts, or they would not last long if they continued their plunging methods. It seems to us the factories could go a long way in obviating the used car difficulty, and we understand some of them are now working very seriously along these lines. They could, no doubt, for obvious reasons, force a dealer to work along regulated channels.

Education Needed

It is our belief that only by education will we eliminate the used car problem, and at this time some few dealers throughout the country who have been big enough to overcome this menace in one way or another have turned it from a source of worry into a source of profit.

And we want again to remark that the National Used Car Conference held at Chicago has in itself caused some mighty good work to be started along the line of eliminating the used car problem.—Morris Adler Co., Quincy, Ill.

Write to Motor World About It

This page every week is devoted to discussions of topics of the trade by Motor World readers. Have you a suggestion to overcome a difficulty or improve some condition within the industry? Write to Motor World about it.

Seeks Larger Discount

Editor Motor World: I am taking the liberty of writing a letter to Motor World, as I have been reading quite a few of the letters that have been written and published in your magazine in regard to the used car situation, and also as to whether the discount on new cars is enough for a dealer to make any money.

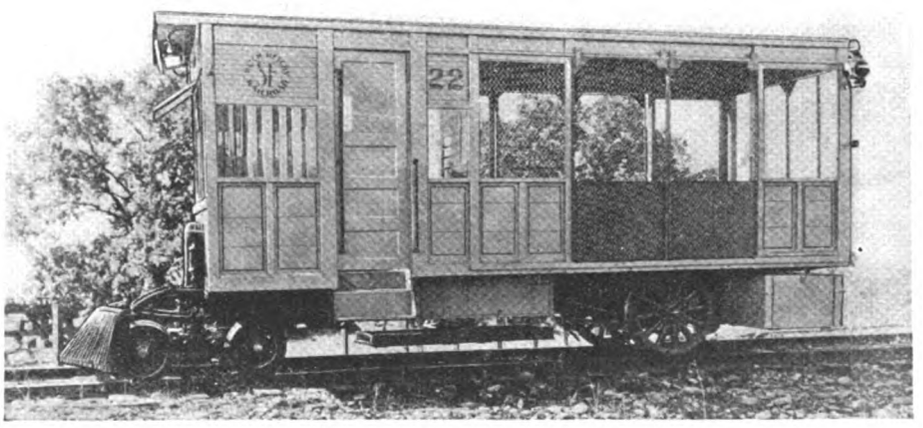
I am not in a position to say what a dealer can or cannot do in a small town, such as 5000 or less, but I will say that it will be impossible for a dealer to make any money in a town such as ——, having a population of 40,000, unless the discount is increased.

Our company has been in business now for ten years, and usually we have been able to make a little money, but I really believe there is not a dealer in this town making money at the present time, other than the Ford people. I do not know what reasons all of these concerns have for not making any money, but I feel I know what our main reason is.

In the first place, it is almost impossible to increase our volume more than it has been in the past twelve months, as the trade-in of used cars limits our business. When we get a stock of about 20 used cars, we discontinue trading until we can get the stock cut down, and it is mighty hard to find many prospective buyers who do not have old cars to trade in, and the more expense created in handling used cars, the less profit we make per new car. The drop in prices on new cars makes quite a difference on 10 or 12 cars at retail per month. We are now making about $135 less per automobile than we did two years ago, which would figure about $1,500 less gross profit on 12 cars. It has been impossible to cut our overhead much, not to exceed $400 or $500 per month. So you can see it is hard to make the monthly statement look right on a basis of this kind.

Anything Motor World can do to help bring about a realization that dealers cannot make money on the present basis, I am sure, will be appreciated by thousands of retail dealers all over the country. There is no line of merchandise on earth that I know of where old merchandise is taken as part payment for new, with the new product on a 20 per cent discount basis.—Rocky Mountain Dealer.

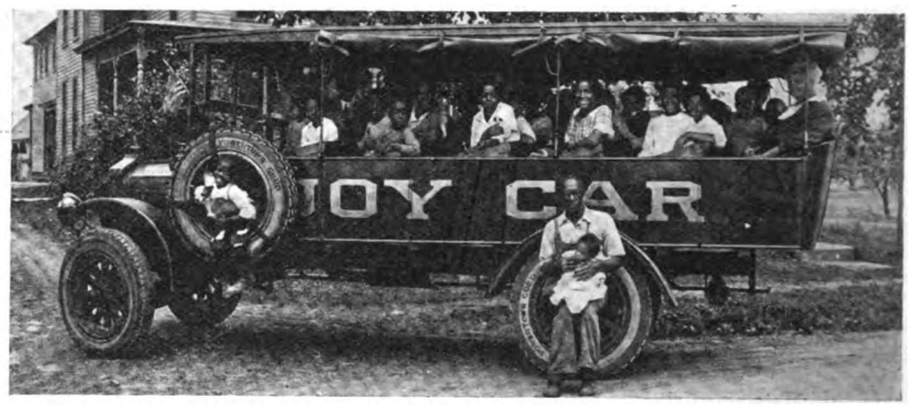
Rail Car Equipped with Turntable



A White rail car being used successfully for carrying freight on a western railway. Note the turntable which is carried under the frame and can be used to turn the car about at any point on the road

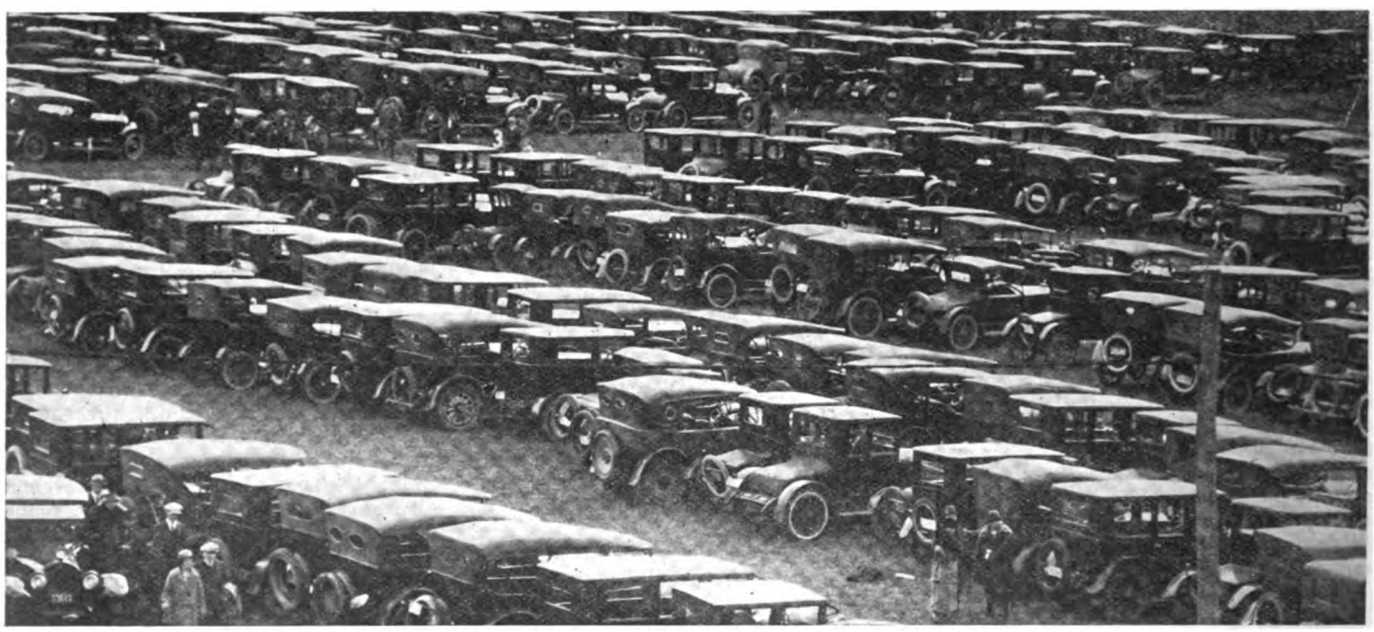
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Interesting Things Automotive



Rochester's Joy Car

Many a daddy of a large family wishes he had a "pleasure truck." Here's one that is used by the Church Extension Society of Rochester to take the children of poor folks on outings. It is a Selden on pneumatics. The joy car is a good idea for any community



At the Iowa-Yale Game

Nearly everybody in the 50,000 who saw Iowa and Yale battle for football honors in the Bowl at New Haven got to the game in automobilees. Here is a view of one corner of the automobile park where thousands of cars stood during the game

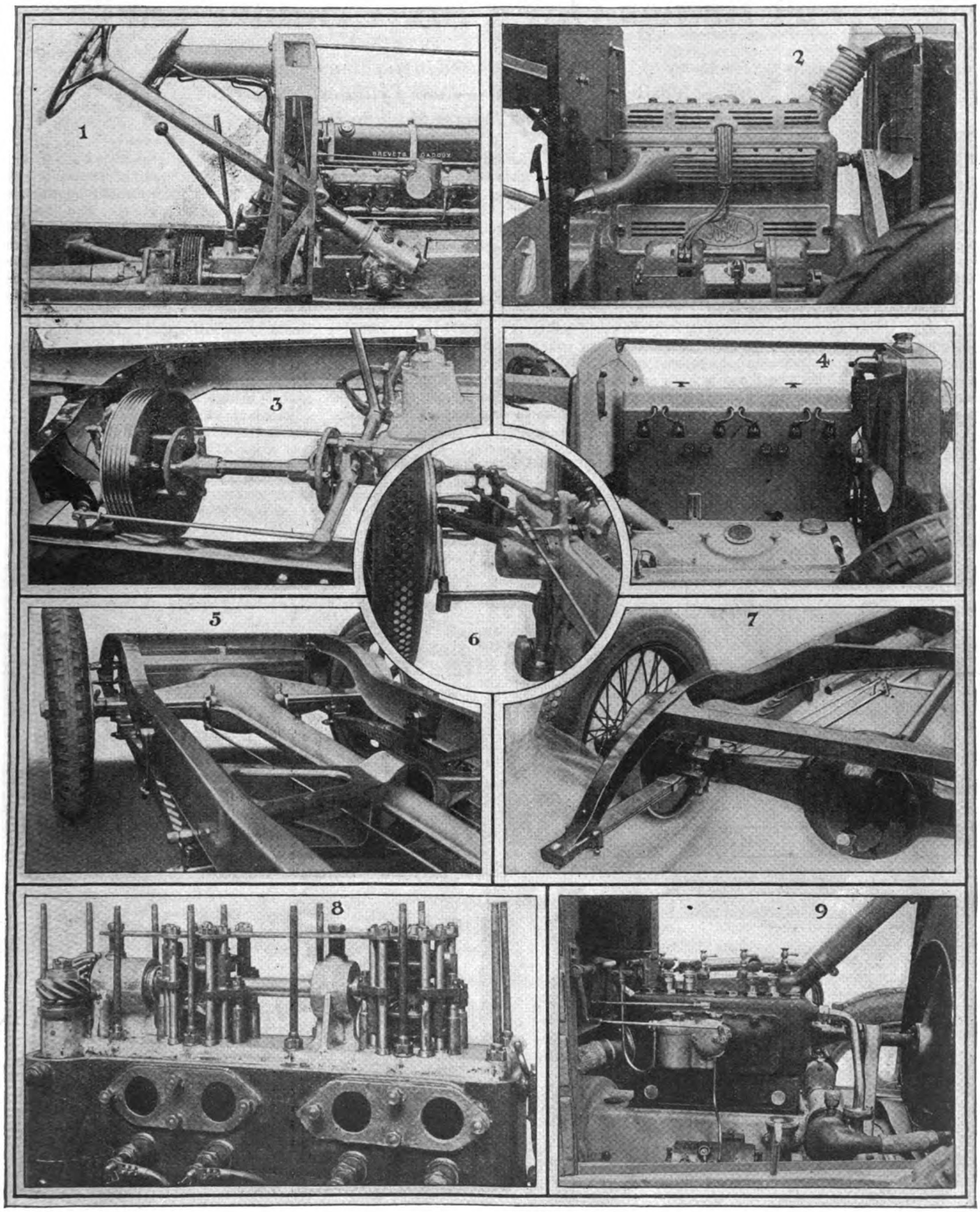


Modern Truck's Grandfather

This Concord coach, built more than fifty years ago, came back to the Abbot-Downing Truck & Body Co. factory for remodeling recently. It saw more than forty years' service in the West. The old coach body is shown on 1½-ton Concord chassis

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Styles from Paris, the Automobile Variety



The Paris automobile show disclosed a number of innovations that, like the long skirts, may or may not take over here. 1—Structural dash on the Omega. 2—A hinged lid covers the F. N. spark plugs. 3—The servo brake on the Chenard-Walcker. 4—The Fiat engine. 5—Cantilever rear suspension on the Fiat six. 6—Combination spring and hydraulic suspension on the Bignan. 7—Two quarter elliptic springs on the Salmson. 8—The Bignan valves are opened and closed mechanically without use of springs. 9—Delahaye water jacket, cover and intake manifold are in one casting

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Dort Brings Out a Six Cylinder Car

Comprises Many of the Same Units Used in the Four—Longer Wheelbase—Modified Falls Engine—Four Cylinder Prices Reduced and Minor Changes Made in Body

THE Dort Motor Car Co., which has previously manufactured only four-cylinder cars, has added a six to its line. The new six, while following fundamentally the lines of the previous Dort cars, differs in a great many respects in exterior appearance. Mechanically, the six is similar to the four, employing a great many standardized units similar to those in the four, but, of course, differing as to engine and in the parts requiring heavier construction, due to the increased stresses of the more powerful engine. The wheelbase is also longer, being 115 in. in the six-cylinder model, as compared with 108 in the four.

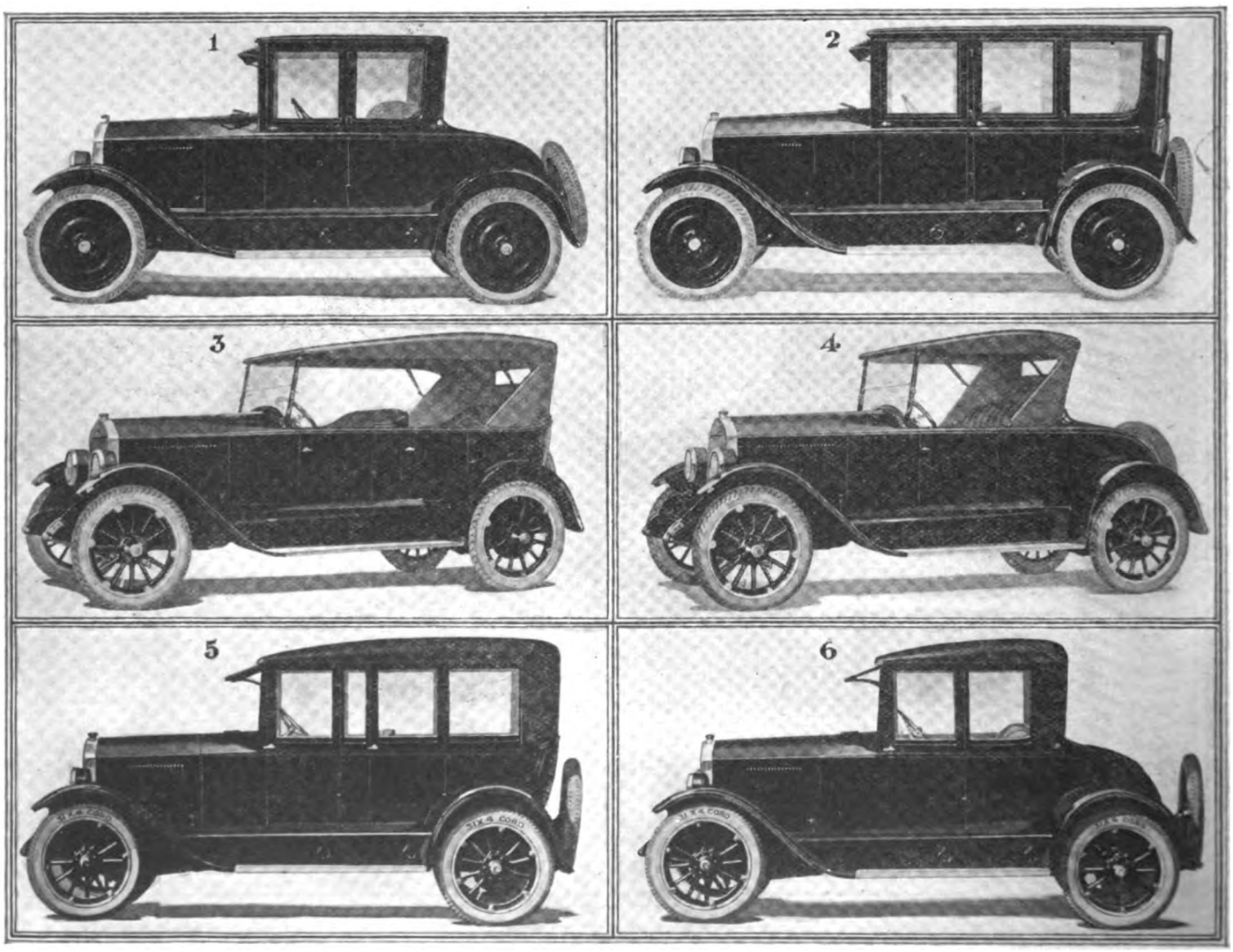
Coincident with the announcement of the Dort Six comes the information that some minor changes have been made in the Four together with a price reduction. New and old prices on the Four are:

Model	New Price	Old Price
Phaeton	$865	$885
Roadster	865	885
Yale sedan	1,070	1,095
Yale coupe	1,020	1,045
Harvard sedan ...	1,370	1,385
Harvard coupe ...	1,240	1,265

The design changes are in the hood and radiator, which have been altered to give the car smoother lines.

The engine in the new six cylinder model is the Falls model T-8000, but which has been modified, however, by design features incorporated by Etienne Planche, Dort designer. The modifications consist in a re-designed intake manifold with a venturi effect, due to a taper in the diameter and easier interior curves, for the purpose of securing superior distribution and carburetion throughout the entire range, particularly at low speeds. The crankshaft also has been increased in diameter to help eliminate periodic vibrations within the speed range of the engine. The engine is a high-speed design, turning over 3000 r.p.m. at 60 m.p.h. car speed. It is

Bodies on the New Dort Six



1—*Harvard coupe*, $1,365. 2—*Harvard sedan*, $1,495. 3—*Phaeton*, $990. 4—*Roadster*, $990. 5—*Yale sedan*, $1,195. 6—*Yale coupe*, $1,145

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an overhead valve type 3⅛ in. bore by 4¼ in. stroke, or 195.06 cu. in. piston displacement. The combustion chamber volume is 21.82 per cent of the total volume, giving a compression pressure of 74 lb. at 300 r.p.m.

The crankshaft in the Dort adaptation of the Falls engine is mounted on three bearings, the dimensions being from front to rear as follows: 2.10 in. by 2-5/32 in.; 2 in. by 2⅛ in.; 3 in. by 2-3/32 in. The lower rod bearings are 1.997 in. in diameter and 1.626 in. in length. These are steel backed and babbitt lined bearings, the babbitts being bonded to tin and the tin bonded to the steel.

Probably the outstanding feature of this particular engine is the fact that it is unique in overhead valve practice in that it has a built-in pressure feed oiling system, which feeds the overhead valve mechanism. Oil is led under pressure through the rocker shaft then through drilled passages through the rocker arm to the top of the push rods. The top of the push rod ends in a cup in which the ball end of the rocker arm operates. Oil flowing under pressure from the rocker arm shaft through the drilled rocker arm comes out through a hole in the ball and into this cup. This keeps the cup and ball continually lubricated and provides a liberal film to cushion the shock. A lead passes down through the push rod to the tappet so that the cam contact is also lubricated. Another feature of the valve action is the employment of the new silicon-chrome alloy, "Silicrome," being the product of the Steel Products Co., Cleveland. The cooling is thermo-siphon through a Fedders radiator.

The engine auxiliaries include Carter carburetor, 1 in. size, American Bosch starting, lighting and ignition in combination with a U. S. L. 6-volt, 90 amp. hr. storage battery. The clutch is a Detlaf. This is a dry disk type with six disks. The transmission gearset is the same unit used in the four and manufactured by the Dort company itself. The drive is taken from this through a Mechanics Machine Co.'s universal joint to a three-quarter floating Flint axle. The drive is taken through the rear springs, and the torque is taken through the third member of the rear axle by means of a yoke at the front end of the tube which encloses the propeller shaft. This is the same construction and same axle as used in the four-cylinder model.

Some notable features of construction which have been adopted recently in this axle are the mounting of the differential between two Hyatt roller bearings in order to secure the advantage of the long line support in these two points and also the mounting of the long series Hyatt roller bearings at the front end of the propeller shaft for alignment of this unit. The rear axle ratio on all body models is 4.66 to 1. The wheels are all 31 by 4 in. equipped with cord tires. Steering is by Gemmer gear.

Six bodies are provided. These are a five-passenger touring car at $990; three-passenger roadster, $990; five-passenger Yale sedan, $1,195; three-passenger Yale coupé, $1,145; five-passenger Harvard sedan, $1,495; three-passenger Harvard coupé, $1,365.

Specifications of the Dort Sixes and Fours

Prices	Six	Four
Roadster	$990	$865
Phaeton	990	865
Yale sedan	1,195	1,070
Harvard sedan	1,495	1,370
Yale coupe	1,145	1,020
Harvard coupe	1,365	1,240
Wheelbase	115 in.	108 in.
Tires	31x4	31x4
Engine	Falls	Lycoming
Cylinders	6—3⅛x4¼	4—3½x5
Rated horsepower	23.44	19.60

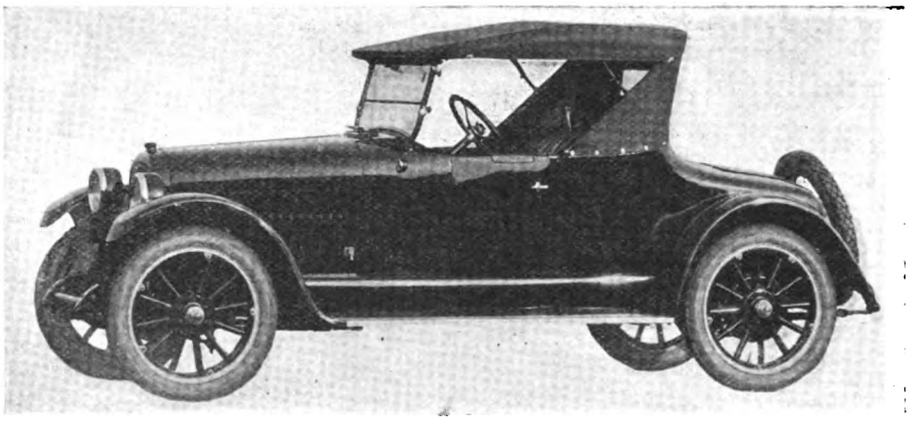
GORDON LEE TO TOUR PART OF MIDDLE WEST

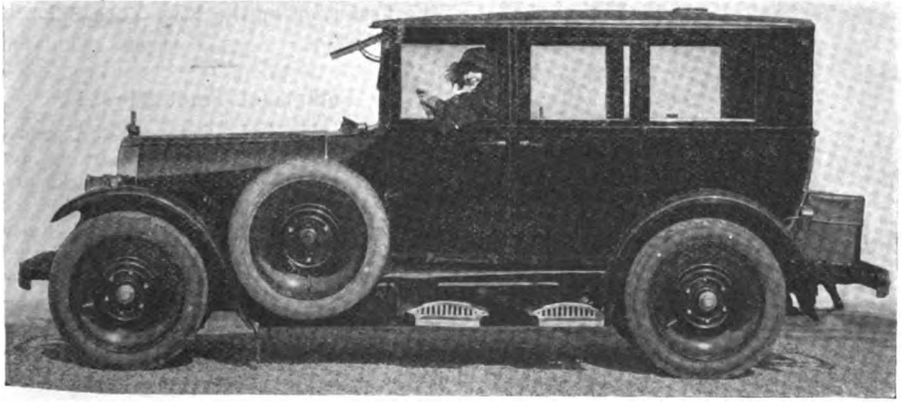
WASHINGTON, Oct. 30—American automobile manufacturers and other business men in the Middle West will be told the trade extension work that is being conducted by the automotive division of the United States Department of Commerce in behalf of the automobile industry by Gordon Lee, chief of the division, who will leave Washington Nov. 1 on a ten-day speaking tour.

His itinerary will be: Nov. 3, an address before the Association of Automotive Equipment Manufacturers, Chicago; Nov. 6, an address before the Toledo automobile fraternity and Chamber of Commerce; Nov. 7, automobile men and Chamber of Commerce of Columbus, and on Nov. 10, the Iowa Automotive Merchants Association, Des Moines.

New Nash Six Roadster, $1,210

An announcement of the coming of this new six roadster was made in the last issue of Motor World. The top is ecru silk mohair and the upholstery is dark gray Spanish leather. The wheels are finished in bright vermillion





New Haynes Model 55 Sport Sedan, $2,695

The newest Haynes model is the Model 55 sport sedan for $2695. The chassis and body are the same as the standard Model 55 but a considerable amount of equipment is added. Six disk wheels with six cord tires, 32 x 4½ in., are standard and other equipment includes a trunk, nickeled bumpers front and rear, adjustable visor, protection bars, individual steps and individual fenders. Finish is in deep maroon

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Rubay to Market a Line of Town Cars

THE Rubay Co., Cleveland, is preparing to introduce a line of small town cars to bear the name Leon Rubay. They are intended especially for city use and are said to follow closely the design of cars used for similar purposes in Europe. The chassis is a French design, but adapted to American conditions by American engineers.

The chassis has a 118 in. wheelbase, intended to facilitate maneuvering in traffic, a small four cylinder, 2¾ x 5¼ in. high speed engine, said to be capable of developing 36 hp. at 3000 r.p.m., single plate clutch running in oil, conventional gearset mounted as a unit with engine, full floating axle with stamped steel housing, four wheel brakes operated by steel ribbons and an aluminum dash. Only closed bodies of Rubay design and construction will be used. These will include a four-passenger coupé, six-passenger sedan, berlin, cabriolet and brougham.

The engine is a clean design, has cylinders with ⅞ in. offset, separate head with integral manifolds, overhead valves and camshaft driven by helical bevel gears and a concealed water pump. Air supply for the Stromberg carbureter is drawn over the exhaust pipe and through the cylinder block. This passage communicates with the crankcase so that a slight vacuum in the latter tends to prevent oil leakage.

The cylinder barrels extend well into the case, and the cylinders are attached with internal studs so that no external connections appear. Lubrication is full force feed through hollow crankshaft and camshaft. The crankshaft of chrome nickel steel is carried on three main bearings. Connecting rods are of forged Lynite, pistons are cast Lynite with three concentric rings.

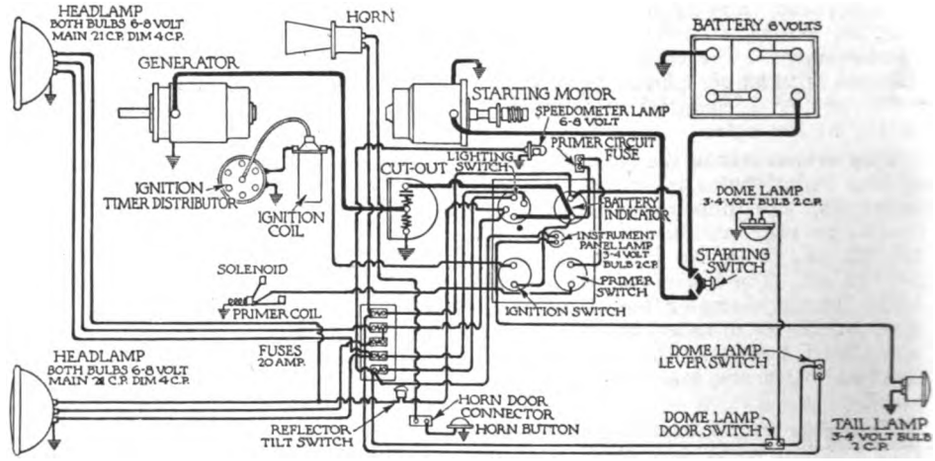
A vacuum tank is carried in a recess in the aluminum dash. Bosch electric units are employed. Starter and generator are supported beside the gearset, the generator having chain drive with eccentric mounting for adjustment.

Brake drums are of aluminum with steel linings for the expanding Thermoid covered aluminum shoes to bear against. Drive and torque are taken by a torque tube. The differential carrier is attached to the rear cover plate. The axle gears give a 5.1 to 1 reduction. Both front and rear wheels are carried on Timken bearings. They are of wood and have Firestone rims.

The front axle is forged with chrome nickel steel. The shafts for operating the front wheel brakes are carried in the channel forming the rear part, the I-section, the cams being in the lower part of the drums. Both sets of brakes are pedal operated, the rear set being also hand operated.

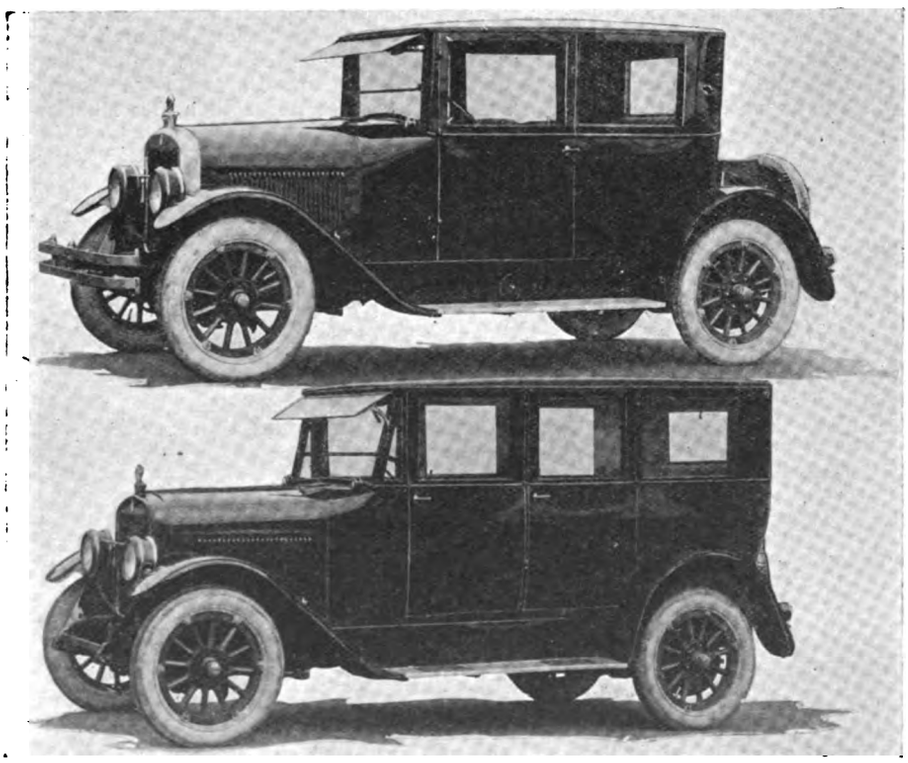
Springs are low and normally flat. A special spring mounting is used, both front and rear. The front end of the front spring is attached to the frame by the conventional eye and bolt. The rear end of the spring is flat and is carried between two hardened rollers mounted in a cast steel spring bracket. The same type of mounting is used for the front end of the rear spring.

It is planned to exhibit the cars for the first time at the New York Salon in December.



Wiring diagram for two unit, 6-volt North East starting, lighting and ignition system on new Franklin Series 10-A

King Sedanette, $1,995 (Top); Sedan, $2,550 (Bottom)



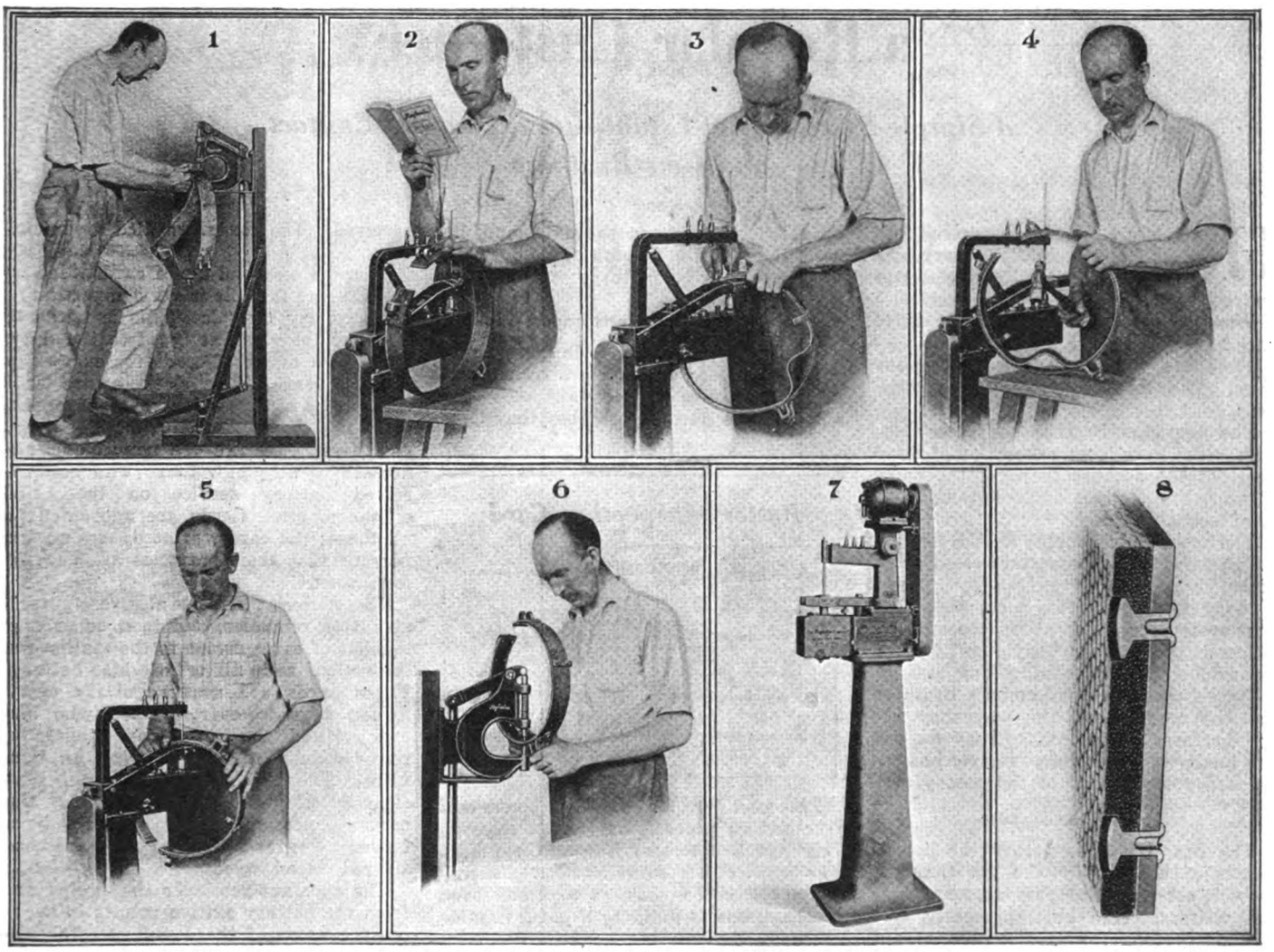
Two new closed bodies have been added to the King line. These are a sedanette and a seven-passenger sedan added on a chassis which is similar in all respects to the standard King chassis, except that it is 124 in. wheelbase instead of 120. Mechanically, the cars are the same as previously with the exception of the adoption of a ball bearing steering thrust bearing in the steering knuckle in place of the plain bearing. The axle is a Columbia, however, as previously. In the fittings, the drum type headlamp has been adopted and parking lights of similar design as the headlamps are also part of the standard equipment. The fender lines have also been altered somewhat to coincide with the exterior lines of the body. The sedanette sells for $1,995 and the seven-passenger sedan for $2,550

Equipment Trade Abroad

WASHINGTON, Oct. 26—A world wide survey of foreign markets for American made automobiles, trucks and accessories, will soon be made by the automotive division of the United States Department of Commerce, co-operating directly with the Motor and Accessory Manufacturers Association, the Automotive Equipment Association and the Association of Automotive Equipment Manufacturers.

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A New Raybestos System for Brake Relinings



Steps in the Application of Brake Lining by the New Raybestos System

1—The old lining is removed from the brake band with the Raybestos riveting machine with a special attachment for punching out rivets. 2—The data book gives the size of lining to be applied. 3—One end of the lining is drilled and countersunk and anchored with a rivet. 4—The loop in the band is flattened. 5—One side of the band is drilled and countersunk. 6—The rivets are applied and headed on one side. 7—The Wright & Corson locating, drilling and countersinking machine. 8—A cross section to show the flat head tubular rivets properly applied with lining countersunk

AN entirely new method of applying brake linings has been developed by the Raybestos Co., Bridgeport, Conn. It consists in removing the old rivets, drilling, countersinking and applying new rivets, all by machine. Two machines are used, one a Raybestos riveting machine which removes the old rivets and heads the new rivets, and the other a Wright & Corson locating, drilling and countersinking machine operated by an electric motor which locates the position for the hole, drills and countersinks the lining in one operation while the lining is in position on the shoe.

This machine consists of a drill head, drilling arm, locating arm and motor support mounted on a pedestal. The motor is ¼ hp. The end of the locating arm is drilled and threaded for a brass bushing reamed to take a ¼ in. steel index or locating rod. The rod is free to move up or down and can be locked in any position. This rod fits into the hole in the band bringing the lining beneath into proper position so that the drill and countersink will penetrate the lining at exactly the right place. The moving parts run in a bath of oil.

The Raybestos riveting machine can be set up on a bench or against the wall. The work may be held with both hands as the plunger is operated by a pedal. A spiral spring returns the plunger.

The other equipment for the system consists of a supply of special hollow brass rivets with flat heads and a Raybestos data book giving sizes of brake linings and a schedule of flat rates for brake lining operations on various cars and trucks. Actual tests conducted in two service stations showed that a Dodge car had the brakes relined and adjusted in 41 minutes, the hand method requiring about 4 hours. A Buick car had the brakes relined and adjusted and a minor repair made to the brake mechanism in 1 hr. 8 min., a job that ordinarily takes 5 to 6 hours by hand methods. Experiments conducted on commercial vehicles that ordinarily require 6 to 7 hours by hand methods showed that the installation could be made in 1½ hours.

The entire equipment, machines, data book, supplies, etc., is being installed on a license basis.

The entire machinery and equipment for applying brake linings by this method is obtainable on a lease basis for the term of one year, with the privilege of renewal each year. It is expected that applications for leases will be selected with regard to proper distribution in territories and the ability of the lessee to handle the work. Payments on the lease will be distributed over the year.

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Making the Free Battery Service User a Regular Customer

A Simple System That Establishes a Pleasant Contact and Gets Business

HOW many motorists drive into your battery station every day to get free inspection, free water or free service?

Who are they? Do they ever come back?

You have these people right in your shop. They are all prospects for business.

The Jennings Brothers, Kansas City, Kan., get a very large proportion of these free patrons because they get the name of every one of them and follow up their brief acquaintance.

The system is as simple as A B C—and as effective as a bung-starter—or as a nickel in the slot.

Many battery service men, observing the system, marvel at it, because it seems as though everybody ought to have been doing the same thing long ago.

Here's the way the Jennings Brothers get the names—and the way they get the business afterward. (They do get the business, for battery volume has increased 200 per cent in the past year!)

Getting the Names

The first job is to secure the list of names of the people who get the free service, some regular patrons, some casual visitors. And note, presently, one of the reasons for getting the names of motorists who drive in for service.

In the service station, on the wall where they can be easily reached, are a dozen boards about five by nine inches, each board having a hole in it, by which it is hung on a nail. On each board is slipped a sheaf of blanks, with the following wording, the blanks being prepared in the office, by typewriter:

Free Battery Inspection Slip

Name of Car .....
Kind of Battery .....
Name .....
Address .....
Rate .....

The blanks can be prepared by typewriter as well as being printed, because ample space must be left for careless writing by patrons.

When the motorist drives in to secure inspection or water, the employee who greets him hands him this board with its places for data and a pencil, asks what he wants, and as he starts to fill this want, asks the patron to write in the information desired. There is no promise or obligation involved in the writing—the name of the car, kind of battery, name and address of patron, and date of the service. Hardly ever does a motorist refuse to write in the data, and, indeed, it gives him something to do while the battery is being inspected or water added.

Data to a Card Index

The slips are taken each evening to the office, where the data are transferred to a card index of the patrons. Very many of the patrons, whether they have ever bought anything at this place or not, are already on the cards as having received service before. If a visitor's name is already on a card, the date of the present service is noted on his card. If there is no card for a visitor, one is made for him.

Every person who drives into the battery service station is recorded on these cards and the date of the service he received. The cards are filed alphabetically.

There is a second file of cards, filed by dates. And this file is very important.

Every day the "date" file is taken in hand by the clerk assigned to the duty. There is a bunch of cards for every day of the month. The clerk, aware that the day is the fifteenth of the month, picks out the cards indicating the third. On these cards are the names and addresses of all the visitors who had received battery service on the third of the month. Cards are addressed to all these; the cards, printed, remind the patrons that their batteries are due for inspection.

The motorist almost always appreciates this reminder, and in a surprising number of cases comes to the station for inspection and filling of his battery. These cards are sent regularly every fifteen days to every person who has ever visited the station, whatever he received in service or repairs, on that visit. The files are, of course, kept cleansed of "dead wood," but only the names of persons who are known to have moved away or sold their cars are considered "dead wood."

The constant reminder thus going out from the battery station results in keeping the name of the Jennings establishment before these car owners. And no obligation to spend money there is indicated—although there is always the pleasant suggestion that the company is able to handle battery troubles.

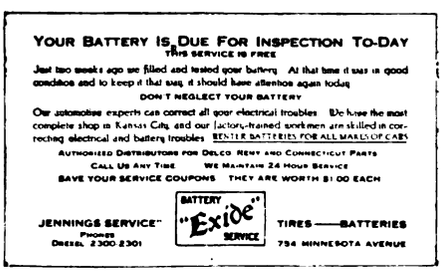
It is the regular, persistent notice to these occasional patrons that makes regular patrons of them. They can't help remembering the name of the station—and they naturally gravitate to that station when they want attention for their batteries.

The regular patrons appreciate the reminder, too.

One came into the station the other day.

"Say, I was glad you sent that notice postcard," he said. "I was going away on a trip to-morrow and had plumb forgotten to think about my batteries."

Battery Inspection Card



This post card is sent to customers and free service users every fifteen days by Jennings Brothers of Kansas City, Kan. The service has established a pleasing contact with car owners and has been instrumental in building a good, regular clientele.

Ideas On Selling and Management

You will find them on this and the opposite page—ideas that will make dollars or save dollars for the

Car Dealer Truck Dealer Equipment and Tire Dealer Tractor Dealer Repairman

Some of our readers are contributors to this section of Motor World. Have you developed a plan that might help some other men? If you have, will you write it out and send it in?

Selling Winter Accessories

WHAT accessories are found on the buses which regularly run between your city and other towns or cities during the winter time? Why not find out what these accessories are and use them as talking points in advertising designed to sell the same accessories to other winter drivers?

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"Bargain Days" Attract Tire Customers

But They Don't Mean Cut Prices Says This Dealer Who Is Selling on the Department Store Plan

THE S. O. S. Tire Service Co. of this city has found a new way to move automobile tires and accessories.

It is using the methods employed in the big department stores bargain days.

Ed Allison, manager of the company, which carries a complete line of standard tires and accessories, said the bargain days would be weekly features at the company's big store.

"Bargain days do not mean cut prices," Allison said. "It is a day when standard merchandise is offered the public at figures slightly above the cost to the merchant. There is nothing shoddy offered by the big department stores on bargain day. Nor is there anything offered by the S. O. S. on its bargain days. We offer our Firestone and Oldfield tires and all the standard makes of accessories at prices slightly above our buying price. The goods move. The customers are pleased and so are we. That's the big idea in our business."

The S. O. S. has had two of these weekly bargain days. It has now adopted the policy of having one every Saturday.

Allison said the real purpose of the bargain days is to get new customers, bring new faces to the store and interest them in tires and accessories carried by the concern. He declared the policy of the S. O. S. of "the customer must be pleased and stay pleased" would result in holding the trade once obtained.

The company said it was surprised at the number of new customers coming to the first two bargain day sales and at the amount of tires and accessories moved. Allison declared the time has come when the automobile public is as interested in a bargain day for tires and accessories, and is as entitled to them, as the housewife is in bargain days at the China ware or cut glass counters or the husband at the shirt or tie counters.

Allison made it plain that the advent of weekly bargain days—one every Saturday—is not a price-slashing affair, but a sale with a purpose—a real business purpose—the same purpose they are held in department stores.

Using Advertisements in Window Display

AN interesting window display for the accessory store can be arranged by clipping from the trade paper all ads of accessories handled by the store and by then pasting these on cardboard and putting them in the window with a sample, in front of each ad, of the accessory mentioned in the ad. Then with this display there should be a large placard reading about like this: "We Sell the Well Established Lines."

Ideas On Selling and Management

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Garage Waiting Room Has Accessory Display

CUSTOMERS waiting to have their cars brought down from the repair shop at the Albertson Motor Co., Dodge dealer in Los Angeles, are invited to sit in comfortable leather rocking chairs in the accessory shop located directly off the service floor. The chairs are so arranged that the customer must face the entire stock of accessories.

Floorman Helps Horn Sales

TO help the sale of electric horns: We have two or three styles of electric horns mounted in the accessory room and when the salesman is talking to a customer, when he sounds the horn in the stockroom, the floor man in the garage goes to all the cars that are stored with these horns and gives each horn a short blow. We have tried this and have made a number of horn sales with this plan.

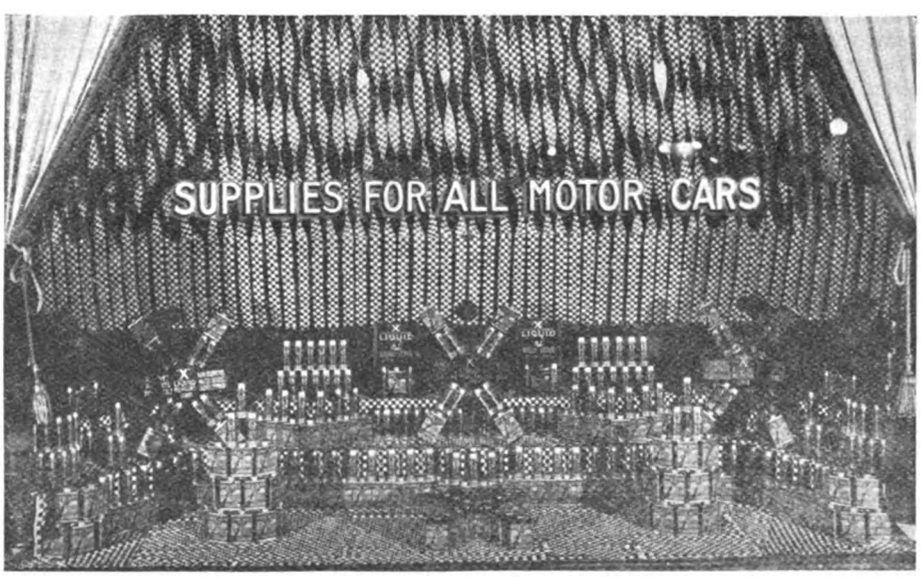
Recent Purchasers Sign in Salesroom

A MIDWESTERN car dealer has a large sign in his show room reading like this: "Recent Purchasers." Under this heading he gives the names and addresses of folks recently buying from him and the model purchased.

An Idea to Help Alcohol Sales This Winter

A CHART prominently displayed in the accessory show windows this fall showing the capacities of radiators on the principal makes of cars and the quantities of alcohol needed in the radiators to keep them from freezing interest every automobile owner and draw more attention to your store, thereby helping your business considerably.

A Striking Accessory Display



Here is an example of how a very striking window was made by producing a background for the display of X-Liquid that harmonized with the containers. Use of special merchandising equipment, supplied by the maker, enhanced the appearance and the selling power of the window

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Owner Must Prove Repairman Lacks Skill

Supreme Court Places Burden In Suit Based on Alleged Negligent Workmanship

THAT there is a burden of showing want of skill on an automobile owner when he sues an automobile repairman for damages for alleged defective repairs was the decision of the Supreme Court of Iowa in the recent case of Pugh vs. Mackie Motors Co., reported in 189 Northwestern Reporter at page 674.

In this case the owner sued for damages alleged to have been caused to his automobile because of negligent repairing on the part of the motor company. The verdict was rendered in favor of the motor company on the trial, whereupon the owner appealed. The Supreme Court, however, affirmed the judgment of the lower court in the motor company's favor.

In May, 1917, the man bringing the suit was the owner of a 1917 model 35B Chalmers car. In June, 1919, contemplating a long trip, he took his car to the repairman and told his service manager that he intended to use the car on the road a lot and that he wanted it looked over and overhauled, and that the company should do whatever was necessary to put the car in shape.

The motor was then taken down in the owner's presence and an explanation was given him as to what was wrong. Certain recommendations were also made as to what repairs were necessary. The owner thereupon said to go ahead, and left the car.

The company, acting under the instructions given it, went ahead and performed labor, inserted new parts, and finally delivered the car and rendered its statement, which was paid.

Several months thereafter the owner again brought the car to the company, and other repairs were made and paid for. The owner then started on his trip and drove to Miami and Dakota, and from the latter place home, in all a distance of about 6500 miles. All this time he made no complaint.

After returning home the owner still made no complaint, but took the car to the company again and had a patent heater installed. A short while later something went wrong with the car and the company suggested that certain other parts be replaced, etc. Thereupon the owner took the car to another repairman and had the work done there. The following summer he started the suit against the repair company.

The court, in deciding against the car owner and in favor of the repairman, pointed out that the suit was based on injuries claimed to have been caused to the car because of the negligence or want of skill and workmanship on the part of the repairman, and said that in a case of that kind the burden of showing negligence or want of skill, etc., is on the party bringing suit—that if he allege that the work was not done in a workmanlike manner—he must prove it before he can recover on such a charge.

The court also drew attention to one of the owner's allegations—the one that the heater did not work properly—and said that the fact that the owner failed to return it or tender it back cast suspicion on the claim. The car owner was therefore held to have failed to make out a good case and the judgment in the repairman's favor was affirmed.

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

Can Car Taken Out of State Be Replevined?

Editor Motor World:—Will you please advise whether a truck sold in Massachusetts on lease, taken to the State of New Hampshire by the lessee and there attached for personal obligations incurred by the lessee, can be replevined by us.—The W. W. Co., Inc., Worcester.

Answer.—The law of New Hampshire provides that property may be replevined by its owner or the person entitled to possession of it on the giving of a bond for double its value. As you did not say what the car was attached for, I can give you no further information. I suggest that you place your claim in the hands of a local New Hampshire attorney at once. If you wish me to, I will be glad to give you the name of a reliable attorney where your debtor is located.

Court Rules on Gasoline Station Liability

That a gasoline station proprietor is not liable for injuries to a boy, who goes on its premises and takes gasoline from its tanks located 125 feet from the street in a vacant lot, caused by his clothing catching on fire from a bonfire, was the recent interesting decision in the case of Flaherty vs. Metropolitan Stations, Inc., reported in 196 New York Supplement at page 2. The court in this case pointed out that even if the gasoline station had violated the law respecting the storage of gasoline, as it was conceded to have done in this case, it would not be responsible.

Dealer Loaning License Plates Responsible for Accidents

The Supreme Judicial Court of Massachusetts in a recent case decided that an automobile is a nuisance on a highway and its operator is a trespasser when he is driving with license plates borrowed from a dealer and that further the dealer may be held liable for accidents because of his having loaned the license plates. In this case a $6,000 judgment against a dealer was therefore affirmed. McDonald vs. Dundar, 136 Northeastern Reporter, pg. 264.

In another case which came before the same court at the same time it was decided that a car bearing borrowed license plate was not legally registered so as to protect one owning and operating it. Same vs. Rawson.

In still another case the same court gave as its opinion that one whose agent rented a car and allowed it to be operated without bearing lawful and proper license plates was liable for injuries sustained by persons injured by the car while it was so driven regardless of the negligence of the driver. Pierce vs. Hutchinson, 136 Northeastern Reporter, pg. 261.

The Supreme Judicial Court of Massachusetts in the case of Zundan vs. Radner recently before it decided that in a personal injury case expert testimony, that a standing automobile could not have started up without the intervention of some person unless it had been permitted to stand with its engine running, was properly admissible. 136 Northeastern Reporter, pg. 387.

Care of Other's Property

That one undertaking the care of property not belonging to him is bound to use that degree of care and skill which the nature of the relationship and the peculiar circumstances of the particular case require and whenever the person having charge of the property fails to use the proper degree of care or follow instructions given him is liable for resultant losses, was the Supreme Court of Kansas decision in the case of Security National Bank vs. McCutcheon reported in 208 Pacific Reporter at page 636.

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PUTTING CHRISTMAS ATMOSPHERE INTO SALESROOM AND WINDOW

Ideas That Will Help You Make a Seasonable Selling Appeal During the Coming Holidays

THE window and salesroom of every automotive dealer can present a strong, seasonable selling message during the coming Christmas holidays. These displays may be as elaborate or as simple as the dealer feels he can afford to make them—but every dealer can and should get into the Christmas atmosphere this year. If the Christmas displays don't sell a car, they at least will leave pleasant impressions with many people which may exert a favorable influence on some prospect's mind weeks after winter's snows stop flying. On the other hand such displays often do appeal to persons who are thinking of making liberal Christmas gifts to members of their families—and some of them DO decide to purchase a car instead of that period model phonograph they had in mind. The Christmas appeal does sell accessories, and it is going to sell more this year than ever before.

Last Christmas a number of automotive dealers found their efforts decidedly worth while. Following are descriptions of some particularly effective Christmas motor car windows:

The Car Gift Suggestion

Davis-Chile, Hutchinson, Kan., made an attractive setting. Snow-white cotton covered the window floor. A structure, about three feet high, built around the two rear sides of the window, was made to represent a stone wall. This wall, which was made of wall-board, was traced with black paint in order to represent stone. White cotton batting covered the wall coping. In the middle of this enclosure stood a sedan car, the wheels and top of which were decorated with the cotton batting. There was a miniature cedar tree beside the car, while a large gilt-edged card on the tree suggested:

"Buy This Car for Your Wife as a Christmas Present."

The Christmas Service Spirit

The Quick-Tire Service, Inc., Indianapolis, demonstrated the helpful Yuletide spirit in a very unselfish manner—a manner which showed that getting business was not everything with them. Newspaper advertising was resorted to to give publicity to the following unusual offer, which was without strings or obligations:



Attractive Christmas Interior

An attractive arrangement of merchandise with appropriate Christmas atmosphere in a section of the accessory shop of Harold L. Arnold, Los Angeles. Window displays that compelled attention from Christmas shoppers, vigorous advertising in the daily papers urging accessories for Christmas gifts, brought a rushing holiday business to this Los Angeles establishment

"HOPEFUL OF BEING HELPFUL"

"Our fleet of automobiles will carry your Christmas gifts to the needy. There will be no charge whatever for our services.

"On Christmas Eve, Christmas Day and Christmas evening, our service cars will be at the disposal of the charitably inclined—be they car owners or not—for the distribution of Christmas cheer to the poor.

"We will gladly carry anything—a child's toy, a pair of warm gloves, a cook stove or a half ton of coal—to any needy person, anywhere, at any hour of the day or night.

"Although our store will remain open over the holidays to receive these delivery requests, we urge you if possible to arrange in advance for our service on Christmas Day.

"We hope to receive many calls; foreknowledge will enable us to plan our work so as to give our utmost contribution to the cause of Yuletide joy.

"If you have something to give to one less fortunate than yourself, but have no definite person in mind, call on us to deliver it to one of the charitable organizations. On behalf of their many dependents they will heartily welcome your contribution.

"And to you all, the wish that has been uttered many years and yet is never old—

"Merry Christmas"

"Quick-Tire Service, Inc., Meridian at North."

Saying It with Tires

N. E. Hett, Kitchener, Ont., Canada, placed an automobile tire against a background of imitation snow. Green mosquito netting was stretched across the back of the tire, while paper letters, pasted on the netting, spelled the words: "Season's Greetings." The lettering was frosted at the top.

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The Alignment of Front and Rear Wheels

Rapid Tire Wear and Difficult Control of the Car Result from Wheels Being Out of Line—Methods of Testing Wheel Alignment and Making the Adjustments

WITH the great increase in the number of cars running on streets and highways, collisions of a minor nature with other vehicles, curbs, posts, etc., become more and more frequent. Most of these bumps apparently cause no damage to the vehicle and the owner thinks little of them. But in many cases the apparently slight jar has been sufficient to throw the wheels out of line to such an extent that the wheel will appear wobbly when the car is running or it will make steering more difficult or cause undue tire wear.

When all four wheels of the car are properly aligned, the wheels have a true rolling motion and the wear on the front tires is almost negligible excepting for the natural cutting caused by sharp objects pressed into the tread. The rear wheels, of course get more wear on account of the natural slip between the tread and the road due to propulsion or braking. With wheels out of line, however, the wheel not only rolls forward, but it has a side slip. In other words the tread of the tire is being pulled crossways across the highway. An interesting table has been prepared by the Weaver Mfg. Co., to show what this side slip amounts to when the wheels are out of line 1 in.

Tire size	Feet of sideslip per mile
30	174
32	165
34	155
36	147
38	137
40	131
42	126

Should a 34-in. tire be run out of line 1 in. for 3400 miles, it would be dragged sideways 100 miles, this being distributed around the circumference of the tire. As the circumference of the tire is a little over 100 in., each inch would be dragged about a mile. From this it can be easily understood why tires wear out so rapidly when the wheels are not in line.

Effects of Misalignment

Fig. 1 shows three views of a front tire out of line. At the left is shown the "plowing" action of a tire when the wheel is out of line. There is a tendency to throw up a furrow of dirt on one side. The other track shows the smooth line left by a tire mounted on a wheel that is in correct alignment. The two views at the right are the "before" and "after" of an interesting experiment with a misaligned wheel. The center view shows the apparatus which consists of a metal plate on a greased floor. A line is marked on the plate and a ruler held by the wrench is placed on the line. After the misaligned wheel has passed over the plate, the plate is twisted and pulled over as shown in the illustration to the right. These three photographs were taken by the Weaver Mfg. Co.

The throwing of wheels out of alignment is generally caused by driving up against curbs or bumping a post. The drop forged parts of the steering mechanism bend and the bend remains. The correction is made by shortening or lengthening the tie rod which has a thread on one end and a threaded clevis which can be turned one way or another.

Front wheels are the ones most likely to be out of line. The test for alignment is made by measuring the distance between the rims at the front of the wheels and then measuring the distance at the back. The distance at the front should be slightly less than at the rear. Manufacturers' recommendations vary from ⅛ to ⅝ in. The distance must never be more at the front than at the rear. If there is lost motion at the king pin bushings or in the tie rod bushings, the reading may not be correct. Lost motion should be taken up before making the measurements.

In many cars it is not possible to take the measurements at the rear of the front wheels on account of the sod pan or crankcase being in the way. It is then necessary to use a special type tram with extensions like a pair of calipers or else use some other method.

Fig. 2 shows a wheelgage which measures the distance directly in inches and has chains so that the instrument can be kept horizontal by allowing the chain

Better Mechanics

Article No. 263

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.

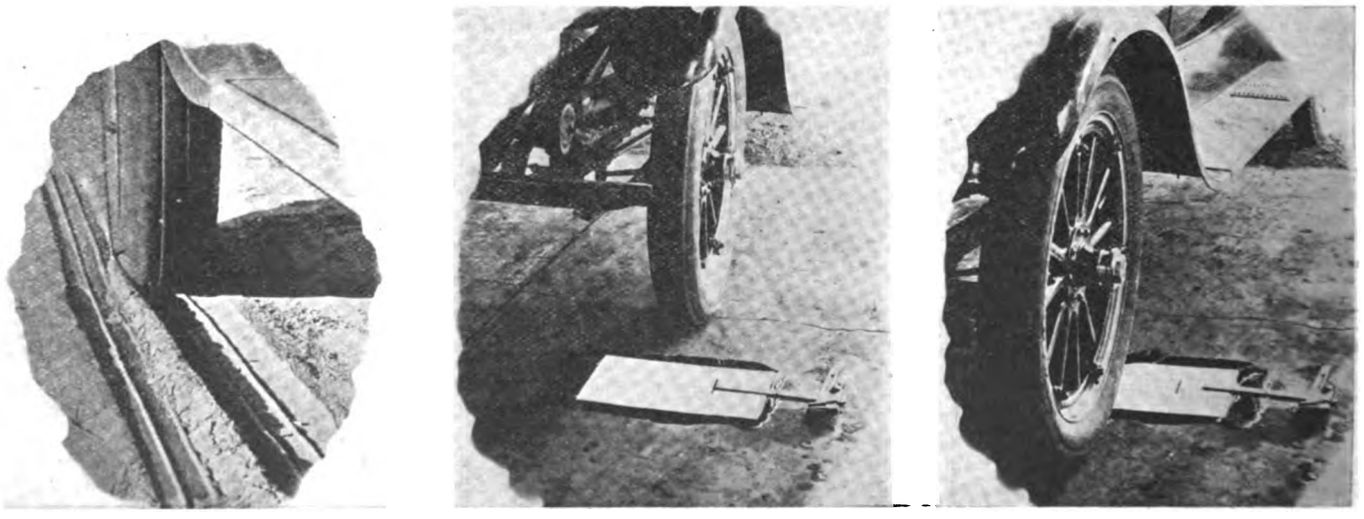


Fig. 1—The effect of a misaligned front wheel. The view at the left shows the ridge of dirt thrown up and the center and right views show how a sheet of metal is removed by the tire.

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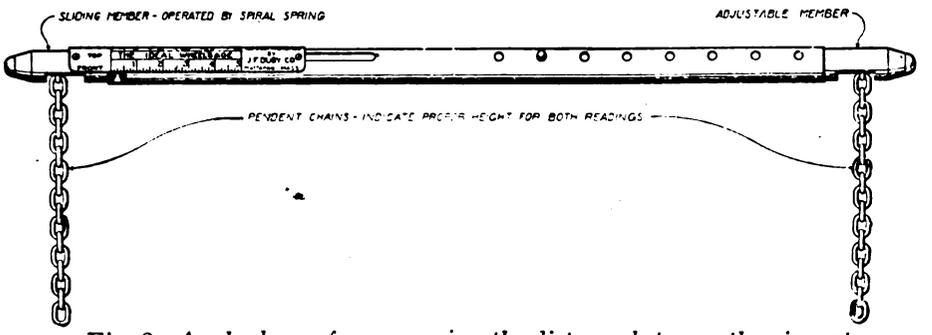


Fig. 2—A wheelgage for measuring the distance between the rims at front and rear

to just touch the floor on each side.

Fig. 3 shows a roller type wheelgage that measures the side slip by merely driving the car across. Hands on the dial indicate the amount of misalignment and the plate is mounted on rollers to allow free action.

Rear Wheel Alignment

The alignment of the rear wheels is not quite so easy to check up. The most usual defect in alignment is a bent axle shaft which causes the wheel to wobble. This can only be corrected by straightening the shaft or replacing it with a new one. On cars with Hotchkiss drive, it sometimes happens through carelessness of the owner that the spring clips holding the axle to the springs will loosen, allowing the axle to move along the spring. This, of course, throws the whole axle out of line in addition to causing strain on other parts. This misalignment can generally be detected by noting the original position of the clips on the spring by paint ridges or grease marks. If this is not possible, then careful measurements can be taken from the rear hubs to the front axle spindle bolts and noting if the distance is the same on both sides. Other indications of the axle being out of square will be a tendency for the car to drift to one side or the other of the road and excessive tire wear. On cars with radius rods at the rear, the axle can be squared up by making the adjustments at the forward end where the adjustment nuts are located.

Major faults such as a bent frame, sagged axle housing or bent axle tube will cause other troubles and will have to be located by inspection of these parts. Where the axle housing is sagged or the tube bent, the differential gears and the ring and pinion gears will probably be thrown out of line, causing a noise or even breakage of the gears.

Wobbly wheels are another cause of excessive tire wear and also wear on other mechanical parts. Some wheels can be trued up in presses, first being swung between centers and chalked to locate the high spot. If the bend is serious, it is generally better to replace the wheel as bending it back again is a tedious process and may in some cases weaken the wheel. Wire wheels are straightened by altering the tension of the spokes. Changing the tension of two or three spokes means truing the wheel all over again, constantly testing for rim position and spoke tension. Wood wheels with steel rims are straightened by bending the rim straight again. This will generally bring the wooden spokes in line again but there is a possibility of loosening one or more spokes so that they develop a squeak. Sometimes this can be fixed by wedging.

Beside the straight-ahead alignment on wheels, there are two other positions that have an important bearing on the proper running of the car. One of these is the camber or outward slant of the front wheels and the other is the castor or forward slant of the king pins.

Fig. 4 shows the camber of a pair of front wheels to bring the contact point of the tire nearly under the center line of the king pin. The dish of the wheel also has something to do with this.

Fig. 5 shows the slant of the king pin to get castor action which means that the wheels trail. A certain amount of castor action makes easier steering.

Lost motion in various parts of the steering gear cause tire wear, difficult steering and in some cases produce "shimmying," although this may be due to faulty design as well as lost motion. The following are places to look for lost motion and the remedies:

1. King pins or spindle bolts and bushings—New bushings or pins or both.
2. Clevis pins and bushings on tie rod —New bushings or pins or both.
3. Front wheel bearings—Adjust bearings.

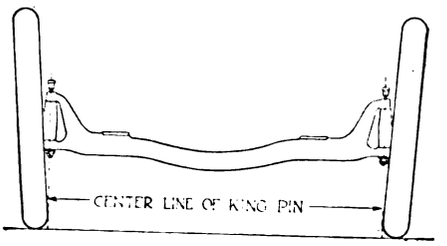


Fig. 4—How front wheels are cambered to bring the turning point nearly under the center line of the king pin

4. Ball sockets on tie rod and drag link—Tighten adjustments.
5. Steering gear—Adjust for wear or replace parts or adjust thrust bearing.
6. Steering column upper bearing—Replace if necessary.
7. Lost motion in locking steering wheels—Remedy depends on construction.

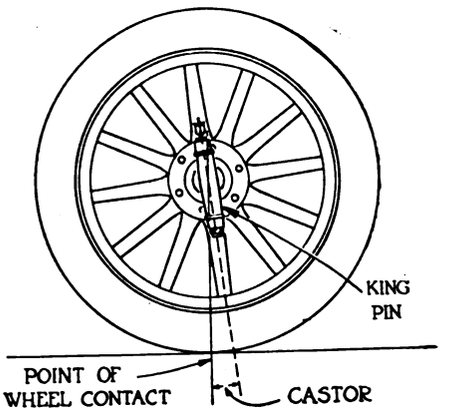


Fig. 5—Diagram showing how the king pin is placed at an angle so that the turning center of the wheel is behind a point on the road intersected by the center line of the king pin

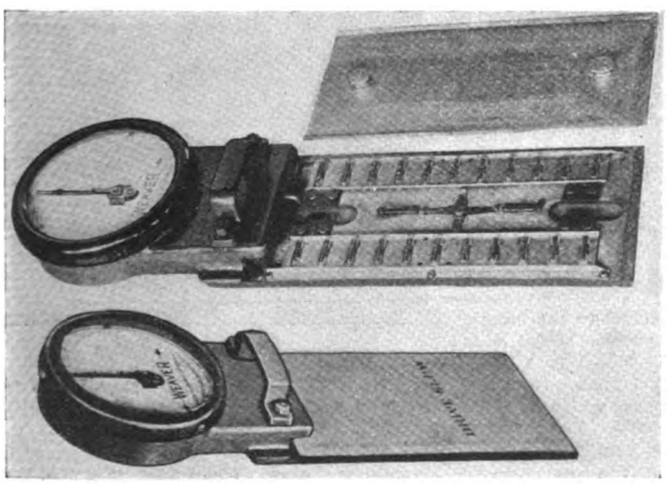


Fig. 3—A wheelgage that measures the slip on a dial by means of two hands

Replacing Ford Rear Axle Housings

The present type Ford rear axle housings are beveled at the point where they join the drive shaft housing, instead of being machined with a shoulder as formerly. When using one of these new type housings for repairs on a car having the malleable type drive shaft roller bearing housing, it will be necessary to replace the roller bearing housing and drive shaft ball bearing, using the present forging type roller bearing housing T-2583-B and present type bearing T-2591-B.

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Equipment to Sell

New Devices for the Car and Truck

Pioneer Car Heater

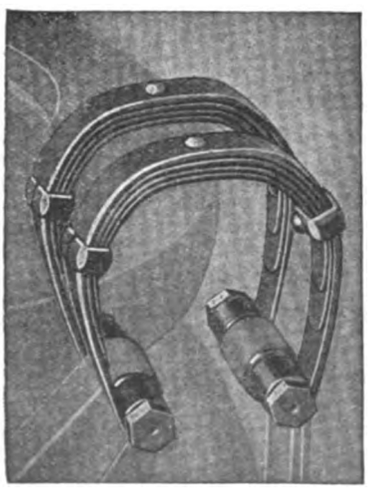
Pioneer Auto Heater Co., Inc.,
Cincinnati, Ohio.
Prices Model GB, $20; Model G, $25; Model GG, $35; Model F, $15.



The heater is so designed that any object which falls on its surface will work its way off on the floor. There is no grating or depressed section to catch dirt. Model GB is 14¼ x 9½ in. Type G is 26½ x 7 in. and type GG is the same size but fitted for twin exhausts. Type F is 10⅝ x 10 in. with a solid aluminum top. The bottom of all of the heaters is made of cast iron to protect the radiating plate from cold air currents under the car and retain heat. A control is supplied for all models, this being of the pedal type.

Eclipse Master Springs

Indiana Parts Co., Richmond, Ind.



The master springs are for all cars using Hotchkiss type drive, such as Studebaker, Dodge, Lincoln, Haynes, Nash and Lexington. The springs take the place of the shackle and there are two for each spring end. The springs are shipped complete with all bolts, ready to attach. Made in two models, No. 1 for cars weighing under 3,000 lbs. and model No. 2 for cars weighing 3,000 lbs. or over.

Presto Cigar Lighter

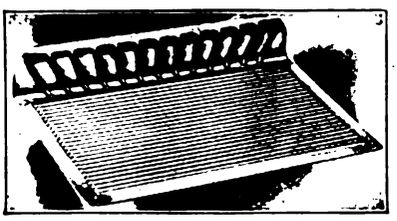
Metal Specialties Mfg. Co.,
338-352 North Kedzie Avenue, Chicago.
Prices $6 to $7, depending on voltage.



This is a cigar lighter which is concealed behind the dash and which automatically rewinds when the cord is returned and automatically lights when the cord is drawn out. The cord is long enough to allow its use by all occupants of the car and a full size lighting element lights any cigar. A safety fuse protects the battery from possible short circuit.

Merit Aluminum Step Mat

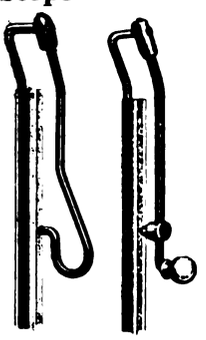
Lowe Motor Supplies Co.,
1721-23 Broadway, New York City.
Price $4 per pair.



The step mats have a corrugated surface and a scuff plate at the rear to protect the runningboard filler. The size is 14 x 8 in. and the steps are packed one pair in a paper carton.

Clear-O-Scope

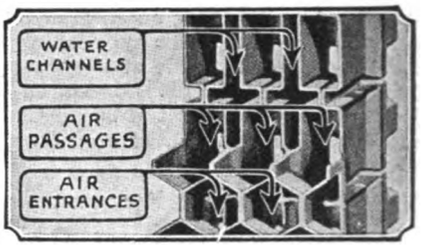
Fernald Mfg. Co.,
Northeast, Pa.
Prices Model A, $1.25; Model B, $1.75.



This windshield cleaner can be used on either open or closed cars and on any type of windshield. It is installed by drilling a 17/64 in. hole through the upper windshield frame in front of the wheel. The wiper arm is run through the hole and attached to the handle arm by means of a set screw. Model A is black enameled finish and Model B is black enamel finish with a nickel knob. Both are complete with inside wipers, which may be had separately for 25 cents. The cleaner member is made of pure gum rubber, presenting two edges, flared at the correct angle between the glass with a shoving action.

Hexcel Radiator for Fords

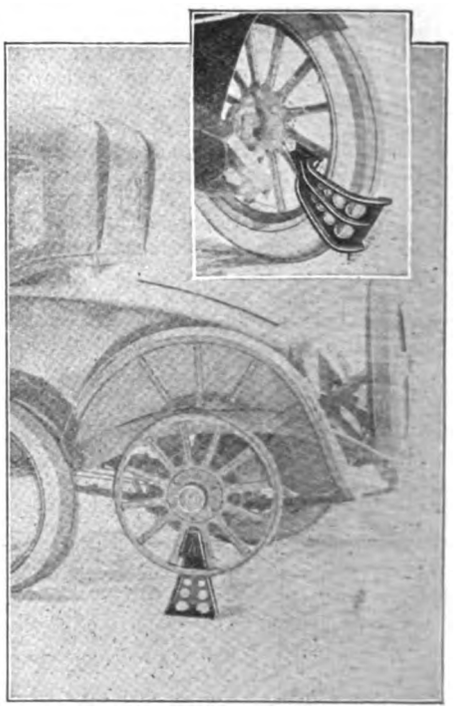
Opitz Mfg. Co., Milwaukee, Wis.
Price $16.



The radiator combines features of the fin and tube type, and the cellular or honeycomb type of radiator. There are over 18,000 knife-edge fins and cooling surfaces, yet the air passages are free and do not tend to clog with dust or mud. It is claimed that a greater volume of air can be moved through the Hexcel radiator than with other constructions. The air entrances and outlets act as a protection to the water channels of which they are a part.

Ospeco Wheel-Jak

Superior Lamp Mfg. Co.,
150 West Fifty-second Street, New York City.
Prices, No. 1, $3.50; No. 2, $4; No. 3, $4.50.

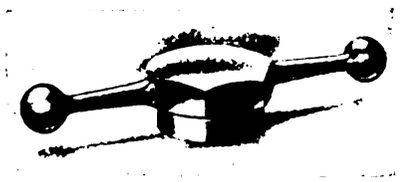


The device combines a wheel jack and a mud hook. The car can be raised in a few seconds with the use of the jack, ready to dismount a tire. The jack can also be used for putting up a car for the winter, or for installing chains. When used as a mud hook it will pull out of snow, mud or sand.

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Gotham Radiator Cap for Ford and Chevrolet Superior

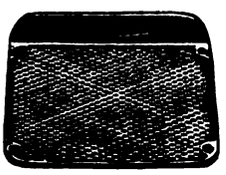
Lowe Motor Supplies Co.,
1721-23 Broadway, New York City.
Price $1.25 for Fords; $1.50 for Chevrolets.



The radiator cap is of hexagonal design with bars and knobs. It is made of bronze, highly nickeled, and polished. Each cap is packed in a carton showing the car that it will fit.

Runningboard Mats for Fords

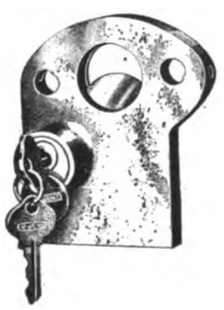
Automatic Heel Co.,
621 Albany Street,
Boston, Mass.



The runningboard mat is 7 x 9 in. polished aluminum. It is the exact size to fit between the raised grooves on the Ford runningboard. A raised back protects the runningboard steel. A strap placed through the hole makes a luggage carrier.

Sure-Lock Car Lock

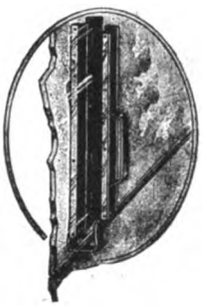
The Sure Lock Mfg. Co.,
107 St. Johns Street,
New Haven, Conn.
Price $8.



The lock consists of a plate with a key-controlled shutter, the plate being placed between the intake manifold and the carbureter. When the shutter is closed and the key withdrawn, it is impossible for any mixture to be drawn in the combustion chamber. The device cannot be removed by taking out the bolts, because the bolts are held in place with headless set screws which require a special key for their removal.

Jiffy Windshield Cleaner

La Vietes Mfg. Co., Inc.,
Station A, New Haven, Conn.
Price $1.50



This is a horizontal motion windshield cleaner for any two-piece windshields. It attaches to the upper half of the glass and can either be left on the windshield or removed when not in use. It is made of aluminum and rubber with a tempered steel spring which is made rustproof. The addition of rubber pegs on either jaw eliminates the possibility of the rubber bending over the edge of the aluminum, thus making it impossible for the rubber to break.

Kil-Shok

York Electric & Machine Co., York, Pa.



The device is for application to the front wheels of Fords, Chevrolets and other makes of light cars and trucks. It is intended to absorb small bumps. There is only one working part, which is built into the spindle, and this is a drop forging. As the front wheel hits the bump, the cranks of the device swing backward.

Piston Ring

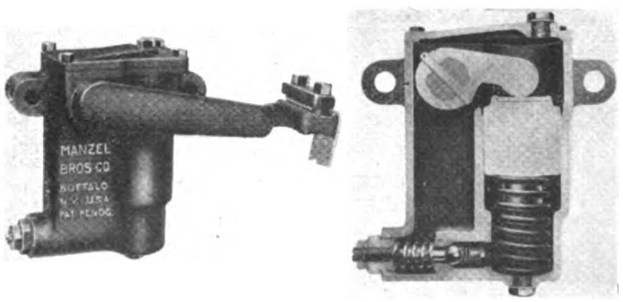
W. M. Mfg. Co.,
180 Main Street,
Manchester,
Conn.
Price 60 cents.



The ring has two grooves, thus giving three oil scraping edges each way. The grooves retain sufficient oil to maintain a seal around the ring. The ring is made in one piece and designed to be used either side up. Made in sizes from 2 to 5 in. in diameter graduated by sixteenths and in widths of 1/16, 1/4, 3/16 and 3/8 in.

Hydraulic Shock Absorber

Manzel Brothers Co., 309-319 Babcock St., Buffalo, N. Y.
Price $90 for Set of Four



The absorber is of the hydraulic type and can be fitted to practically all lengths of cars. It is attached to the frame and connected to the axle by means of a webbed strap and clamp. It does not interfere with the normal compression of the springs, but checks the rebound and side play. Automatic control is maintained by double-acting valves which open and close according to the severity of the shock and control the passage of oil between the inner and outer chambers. The valve action may be regulated according to the weight of the car by increasing or decreasing the size of the valve openings. All working parts are immersed in oil. Installation occupies from four to five hours.

Wedford Savex

Wedler-Shuford Co., St. Louis, Mo.
Price $9.



This is a thermostatic device for regulating the mixture on the Ford carbureter. When the engine is cold, more gasoline is turned on at the needle valve and when the engine is hot the needle valve is turned down, all this being done automatically by expansion and contraction of the exhaust manifold. The position of the needle valve is recorded on a dial on the instrument board. In case of an overheated engine the device will stop the engine completely.

McKay Tire Chain

U. S. Chain & Forging Co., Pittsburgh, Pa.



The chain is subjected to a special hardening process that gives the links both hardness and toughness. The fasteners are of a type which are easily put on or taken off, but which cannot become accidentally unfastened. The tire links are put up in special envelopes.

Noc-Out Priming Extension

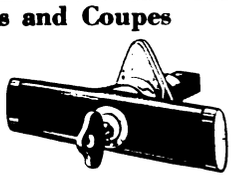
R. T. Mfg. Co., Green Bay, Wis.
Price $1.



The extension is screwed into the spark plug hole and the spark plug is screwed into the top of the extension. A channel around the edge holds a small quantity of gasoline for priming and this is admitted to the combustion chamber by opening the valve at the side of the extension. They are made for 1/2 in., S. A. E. or metric size plugs.

Mount Carmel Lock Handles for Ford Sedans and Coupes

Mount Carmel Mfg. Co.,
Mount Carmel,
Conn.
Price $5 to $6.



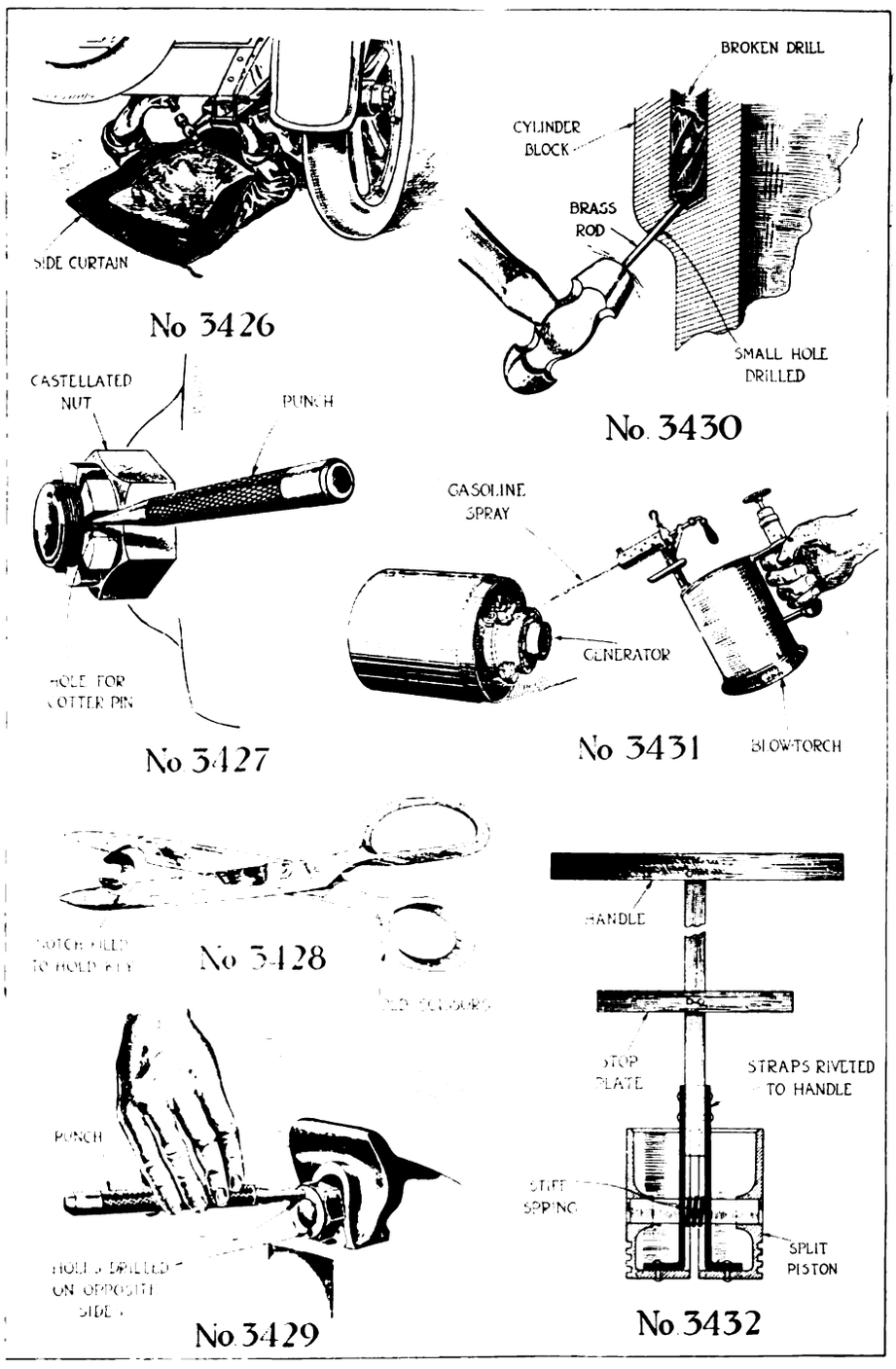
The standard Ford sedans and coupes are not equipped with lock handle doors. These handles are interchangeable with the standard handles and are fitted with keys. The cover plates are locked in position when the door is locked, and the screw heads are always covered. The set consists of one lock handle for the right hand door, one handle without lock, and exactly the same design for left-hand door and one nickel plated lock for inside left hand door. Full nickel plated, any style, complete set $9. Black, hard rubber brass nickel mounted any set, dial complete for $11.

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Repairshop Shortcuts

Reputations

IT is curious that certain trades have reputations. They must have done something to deserve them. Take the plumber, for instance. You can hardly think of a plumber without imagining him sitting smoking his clay pipe, waiting for his helper to bring some tools from the shop. And the old-time garage, sad to relate, had some "rep" too. It was generally thought that if an owner went in to get a spark plug changed the garageman would have his engine all apart by the time you could say Jack Robinson. Maybe the plumber is not as black as he is painted, and we know that the garageman to-day is not soldiering because he has too much real work to do and has to cut time on jobs to get them through.



No. 3426 — Face Protector. — When working under a car where grease, oil or dirt is liable to drop, a touring car side curtain with celluloid window is spread over the mechanic's face. He can see through but will be protected.—Scott S. Bond, Hattiesburg, Miss.

No. 3427—Lining Up Cotter Pin Holes, —If a castle nut will not quite pull up so that the cotter pin will enter freely, a small nail punch driven between the castles and into the hole will generally clear the way and allow the pin to enter. —Scott S. Bond, Hattiesburg, Miss.

No. 3428—A Holder for Horse Shoe Washers.—A pair of scissors filed or ground out the right shape and size makes a good tool for removing or replacing horse shoe washers. When working on close places the points can be cut off.—John W. Barber, St. Cloud, Fla.

No. 3429—Removing Rusted Rim Nuts. —Where nuts are so rusted on the studs that they cannot be turned, two small holes are drilled in opposite sides of the nut and the nut split in half with a punch. The threads on the stud can be chased with a die if necessary.—E. J. McKinney, Proprietor, Blackshear Garage, Blackshear, Ga.

No. 3430—Removing a Broken Drill.— Where a drill has broken in a casting near the outside, a small hole can be drilled at an angle and the pieces driven out with a small piece of brass rod. The rod can be bent as it is driven in.—G. A. Luers, Washington, D. C.

No. 3431—A Gasoline Bath for the Generator.—A blow torch is used for cleaning the parts of a generator. When cold, the torch will throw a fine spray of gasoline through the needle valve with sufficient force to remove grease and oil from the commutator.—Scott S. Bond, Hattiesburg, Miss.

No. 3432—A Cylinder Lapper with Stop Plate.—A cylinder lapper made of a split piston with a spring to keep a tension against the cylinder walls has a stop plate to prevent the piston going down too far into the bore. This is simply a piece fastened across the handle at the proper place.—Herbert H. Holmes, Watervliet, N. Y.

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Along the Automotive Newsway

By Leo Roche



DURANT WILL ADD ANOTHER PLANT WHICH WILL MAKE FIVE FACTORIES FOR THE MANUFACTURE OF STAR CARS



GOVERNMENT WILL CO-OPERATE WITH THREE AUTOMOTIVE ASSOCIATIONS TO MAKE SURVEY OF FOREIGN MARKETS



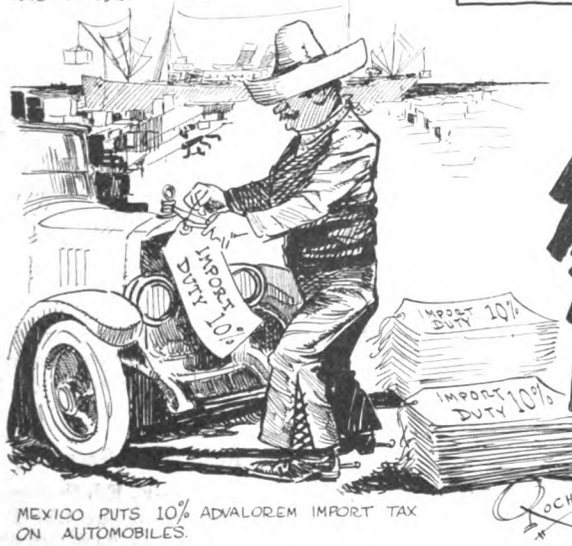
N.A.D.A. WILL ASSIST N.A.C.C. IN EFFORT TO HAVE DISCRIMINATORY WAR EXCISE TAXES OF 1918 AND 1921 REPEALED



HE GETS MORE THAN A "HUNDRED A WEEK"—SO SAYS DALLAS, TEXAS NEWS ITEM.



THREE MANUFACTURERS ARE 25 YEARS OLD.
—"INFANT" INDUSTRY?



MEXICO PUTS 10% ADVALOREM IMPORT TAX ON AUTOMOBILES.



GOVERNMENT PLANS TO OFFER ROAD EQUIPMENT FREE TO STATES TO BE EMPLOYED IN REMOVING SNOW AND KEEPING PUBLIC HIGHWAYS OPEN THROUGH WINTER FOR AUTOMOBILES.

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RAILROAD HEAD URGES WIDER USE OF TRUCKS

Tells Road Conference They Should be Adopted on Certain Branch Lines

WASHINGTON, Oct. 28.—More than 400 educators, engineers attaches of foreign embassies and representatives of the automotive industry attended the Second National Conference on Education for Highway Engineering and Highway Transport which ended here today. It was the most important meeting of the kind ever held in this country and marked a long step in promoting the construction of highways along lines which will do most to serve the entire nation.

Much attention was given by the educators, representing more than 50 schools and colleges, to the important position which will be occupied in the future by motor transport. They realize that many trained men will be needed to direct this branch of transportation along scientific lines.

Brosseau's Program Accepted

There was general acceptance of the program outlined by A. J. Brosseau, president of Mack Trucks, Inc., for the financing of highway construction. It was his contention that the funds for building roads should be a tax upon property as a whole and that maintenance costs should be met by the users of highways, principally operators of motor vehicles. Brosseau declared that if roads were properly built and properly maintained they would not break down. He argued, however, that careful consideration should be given to the needs of the community to be served and that concrete and other highly expensive materials should not be used when the traffic does not warrant.

W. H. Lyford, vice-president of the Chicago & Eastern Railroad, read a paper on "Co-operation versus Competition Between Motor Truck and Railroad Transportation." His conclusions were based upon extensive research. He declared railroads should supplement other service in congested centers by providing cartage for collection and delivery of freight. He asserted also that railroads should abandon unprofitable branch lines and serve the public with motor trucks.

Investigation to Continue

A dozen committees which were appointed to consider various phases of highway and highway transport engineering education will continue their work and it will be several months before their final reports are prepared.

All the delegates to the conference are convinced that motor vehicles will play a tremendous part in the future development of the nation. For that reason they believe all branches of the automotive industry should promote by every means possible the expansion of the highway system.

Looking Ahead

ISSUES of Motor World in the near future will contain accounts of two conventions whose proceedings will have wide interest for the automotive trade.

In Motor World of Nov. 8 there will be a story of the forthcoming annual convention and business exhibit of the Automotive Equipment Association to be held in Chicago Nov. 13-18. This convention brings together 500 manufacturers and jobbers of automotive equipment and their sales and purchasing representatives. It develops many subjects of interest to the retail as well as the wholesale trade.

The issue of Nov. 22 will contain the full report of the convention and show, written by Motor World editors who will be in attendance, and illustrated by specially photographed pictures. It will tell about new merchandise and new merchandising plans of the manufacturers and jobbers.

In the issue of Nov. 22 there will also be a complete report of the convention of factory service managers to be held in Chicago under the auspices of the National Automobile Chamber of Commerce. The factory service managers are thinking and talking about subjects of vital interest to dealers, service managers and garagemen. Make a note to read what they say at their convention.

NEW ROLLS-ROYCE CAR NOT TO BE MADE HERE

SPRINGFIELD, MASS., Oct. 30.—The new 20 hp. Rolls-Royce, now being brought out by Rolls-Royce, Ltd., Derby, England, will not be built in America and is being produced in England solely as an expediency on account of the very high taxation per horsepower on motor cars and the high operating costs in England and on the continent. While the car will cost, if laid down in America, practically the same as the product the company is building in this city, there has been no demand in America for a car of this small power and size, at this high price.

To Build Bodies at Elizabeth

NEW YORK, Oct. 30—Part of Durant's big plant at Elizabeth, N. J., will be utilized for body-building. It will be occupied by the new body-building concern which is being organized by Jay Hayes and Victor Preston, of the Hayes-Ionia Co. of Grand Rapids, Mich. As yet no name has been selected for the company, but it is understood that it is a separate and distinct organization from the Hayes-Ionia Co. While it will not be a part of the Durant organization at the present time, it is thought that it will be taken into the fold later on.

FINISH COMPILATION OF USED CAR MANUAL

Intended to Assist Associations or Groups Working in Co-operative Effort

NEW YORK, Oct. 28—A Manual of Used Car Co-operation, intended to assist dealer associations or groups of dealers desiring to work together for the profitable handling of used cars, will soon be ready for distribution to the trade. The manual is being compiled under the auspices of the National Association of Automobile Show and Association Managers, 239 West 39th Street, New York. It will be made available for dealer association secretaries and others desiring it at a nominal price covering the cost of compilation and publication.

The manual does not make any claim to furnish a panacea for the used car situation. It sets forth the steps that can be taken by a group or association of members in any community to co-operate in establishing definite used car values in that community. In the book will be found the forms necessary to set up and operate the machinery of co-operation with full explanations of how the forms are used.

Compilation of the manual was completed this week at a conference of the compilation committee, including Herbert Buckman, manager of the Cleveland Automobile Manufacturers and Dealers Association; L. B. Sanders, secretary of the Boston Used Car Statistical Bureau, and Neal G. Adair, editor of Motor World and executive secretary of the National Association of Automobile Show and Association Managers.

CHICAGO WEEK SELLS CLOSED CAR MODELS

CHICAGO, Oct. 28 — If interest aroused, attention attracted and prospects gathered, mean anything in the merchandising of automobiles, then the first annual closed car week of the Chicago Automobile Trade Association was a success.

Virtually every dealer who participated in the exhibition is satisfied with the outcome. Attendance, especially in the medium-priced car salesrooms, has been most gratifying and not only sales but salesmen as well benefited by the show as a stimulant. Dealers in outlying districts as well as on "the row" worked hard for success and the effects of the event will, it is thought, be felt until the spring brings the "big tent" affair at the Coliseum.

A big portion of the visitors were owners of open cars and it was from this field that the largest number of sales were made.

Spooner Resigns as Secretary

DETROIT, Nov. 1—F. Ed. Spooner has resigned as secretary of the Old Timers Club. No successor has been appointed.

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NATIONAL TIRE BODY TO HOLD CONVENTION

Dealers Will Meet in Milwaukee in November to Discuss Big Problems

MILWAUKEE, Oct. 30—One of the most important national gatherings of a conspicuous branch of the automotive industries scheduled for the coming month is the annual convention of the National Tire Dealers' Association, which will be held in Milwaukee on Nov. 14-16, with headquarters and sessions in the Hotel Pfister. Due to the fact that the tire trade, wholesale as well as retail, is confronted with problems overshadowing any which have yet arisen, this convention is expected to attract the largest attendance of any of the national conventions held since the association was organized.

The Milwaukee and Wisconsin Tire Dealers' Associations will act as hosts to the convention, and the Federal Rubber Co. of Cudahy, suburb of Milwaukee, will provide educational and entertainment features, which include a tour of inspection of the factories. The program, while not yet completed, provides for a strictly business meeting, with entertainment taking its proper place. The convention will conclude with a banquet on Nov. 16.

Tire Changing Contest

A feature out of the ordinary will be a tire-changing contest against time. Charles W. Paine of Philadelphia, claimant of the world's championship, will defend his title against all comers, more particularly against Karl Mitz of Drayton, N. D., who also claims the world's record and is a specialist in changing Ford size casings.

Officers of the national association are: President, R. F. Valentine, Cleveland; vice-president, Frank Zeman, Chicago; acting secretary, Sam A. Rowe, Milwaukee; treasurer, Thomas F. Whitehead, Chicago; directors, R. R. Wooley, Cincinnati; E. P. Farley, Minneapolis; R. J. Walters, Baltimore, and E. J. Methudy, St. Louis.

PARTS MAKERS DOING SURPRISING BUSINESS

NEW YORK, Oct. 28—Parts makers are doing a surprising business for this time of the year, according to reports from members of the Motor and Accessory Manufacturers Association. This statement is based on September, 1922, which is 62.1 per cent better than September of 1921. Last month sales ran to $37,300,050 as compared with $23,141,891 12 months ago.

Receiver for Kelsey

NEWARK, N. J., Oct. 30—Judge Boudine of the Federal Court of Trenton has appointed Stewart A. Young of Newark receiver for the Kelsey Motor Co. of this city upon application of C. W. Kelsey, vice-president and general manager of the company. Liabilities are placed at $90,000, but the assets are claimed to be five times this. Kelsey asserts that they soon will straighten out matters and that the receiver will be discharged within 90 days. Manufacturing operations will be continued with Kelsey as general manager.

CAR BEING DISPLAYED STOLEN FROM WINDOW

MADISON, WIS., Oct. 30—The very latest in motor car thievery is reported by the Jacobson-Austin Co. A new phaeton, valued at $3,500, was stolen out of the display window between Sunday evening and Monday morning.

The car was recovered at Hebron, Ind., two days later in possession of Theodore Thiel of Columbus, Wis., who is in custody. The theft of the car was not discovered until employees of the Jacobson company came to work Monday morning. The front door of the garage had been unlocked and the phaeton backed out of the window, it being necessary to move several other display cars to get it through the service floor.

It was then driven out of the alley at the rear, almost directly across from the Madison police station. Thiel is held on the charge of operating a car without the consent of the owner. He insists he purchased the car from a stranger. When arrested in Indiana he had in his possession Ohio state license plates.

SHOCK ABSORBER SUIT DECIDED FOR TEMCO

COLUMBUS, Oct. 30—The United States Circuit Court of Appeals has handed down a decision in the suit of the Temco Electric Motor Co. against the K. W. Ignition Co. of Cleveland for infringement of the Thompson patent relating to shock absorbers for Ford automobiles. The case had been appealed from the District Court of the United States for the Northern District of Ohio whose decision was reversed.

The decision carried with it a recovery of nearly $300,000, said to be one of the largest in a patent suit of this sort which has ever been secured. It is stated that 25 or 30 other concerns are also involved in this decision and that some of them already have settled without suit.

A Correction

Owing to an error in composition, the advertisement of the Manley Manufacturing Co. of York, Pa., in Motor World of Oct. 18 gave the price of a garage flood light as $14. The correct list price is $15.

APPERSON TO OBTAIN NEW WORKING FUNDS

Plan of Refinancing Includes Bringing Out of Light Car Next Spring

CHICAGO, Oct. 30.—New capital of $700,000 is to be provided for the Apperson Bros. Automobile Co. of Kokomo, Ind., under a plan of refinancing which contemplates the bringing out next spring of a new light car in addition to the regular 8-cylinder model.

The new finance is to come from an issue of first mortgage gold bonds which will be offered through the firm of A. S. Terrill & Co. of Chicago and New York. The bonds will bear 7 per cent interest and will mature $40,000 annually beginning Oct. 1, 1924, the balance Oct. 1, 1932. The trustees will be the First Trust & Savings Bank of Chicago and George L. Davis, vice-president, Howard National Bank, Kokomo.

Detailed plans for the new light car are not yet ready for announcement. It is understood that the car will conform in every respect to Apperson quality and appearance and probably will be known as the Apperson Junior. It is specifically stated that the standard 8-cylinder Apperson chassis will be continued. The production for next year is estimated at 2500 8-cylinder cars and 4000 of the smaller models.

Current Assets Large

The balance sheet prepared on the basis of the new financing shows that the company's total current assets are $1,863,156 as compared with current liabilities of $606,073, or about three to one. A statement by Edgar L. Apperson, president of the company, says that the result of operation to Sept. 30, 1922, indicates a profit for the year ending Dec. 31 exceeding $300,000. Average annual earnings for the five years, 1916 to 1920, inclusive, are given as $199,238. The loss for the year 1921, after writing off depreciation of inventory, is given as $9,311. The parts business is said to amount to over $300,000 a year.

The purpose of the bond issue, as stated by Apperson, "is to provide for additional models and add to working capital." The bond issue will be secured by a closed first mortgage covering all plants, real estate and fixed assets of the company.

CASE LOWERS PRICES ON TWO CAR MODELS

RACINE, WIS., Oct. 27—J. I. Case Threshing Machine Co. announces price reductions ranging from $70 to $370 on its passenger car models. No change has been made on the Model X phaeton and roadster. The list is as follows:

	Old Price	New Price
Model W, phaeton	$2,200	$1,990
Model W, sedan	3,250	2,975
Model W, coupe	2,850	2,480
Model W. sport	....	1,950
Model X, sedan	2,690	2,575
Model X, suburban coupe	2,550	2,480

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DURANT WILL BUILD ANOTHER STAR PLANT

To Cost Million Dollars and Be Located at Flint—Capacity 8000 Month

NEW YORK, Oct. 30—W. C. Durant has ordered the construction of a fifth factory for the manufacture of Star cars. It will be located at Flint, Mich., will have a capacity of 8000 cars a month and will employ 4000 men.

It is to be a million dollar plant and will be a duplicate of the one now in course of construction for the manufacture of the Flint car. It will afford 51,-640 sq. ft. of floor space and be of concrete and steel construction, brick faced. Contractors have agreed to have the plant completed by May 23.

The main assembly plant will be three stories in height, 80 x 900. There will be three wings, two of them three stories, 80 x 400, the third one story, 257 x 400.

The revised Durant schedule calls for the production of 281,000 Star cars between now and Dec. 31, 1924. Between Jan. 1, 1923, and Jan. 1, 1924, 86,000 will be made at Lansing, 50,000 at Flint, 53,-650 at Elizabeth, 43,000 in California and 32,250 at Leaside, the Canadian plant. It is expected that the four plants now in operation will produce 16,000 cars before the first of the year.

SAYS STATION WAGON IS CAR, NOT TRUCK

NEW YORK, Nov. 1—Affirming a decision recently made by Justice Norman S. Dike in the case of George G. Zabriskie against Walter W. Law, Jr., president of the State Tax Commission, the Appellate Division holds that the common type of automobile, known as the suburban or station wagon, is not a commercial truck but a passenger car, and as such is entitled to the lower license rate collected by the Automobile Bureau.

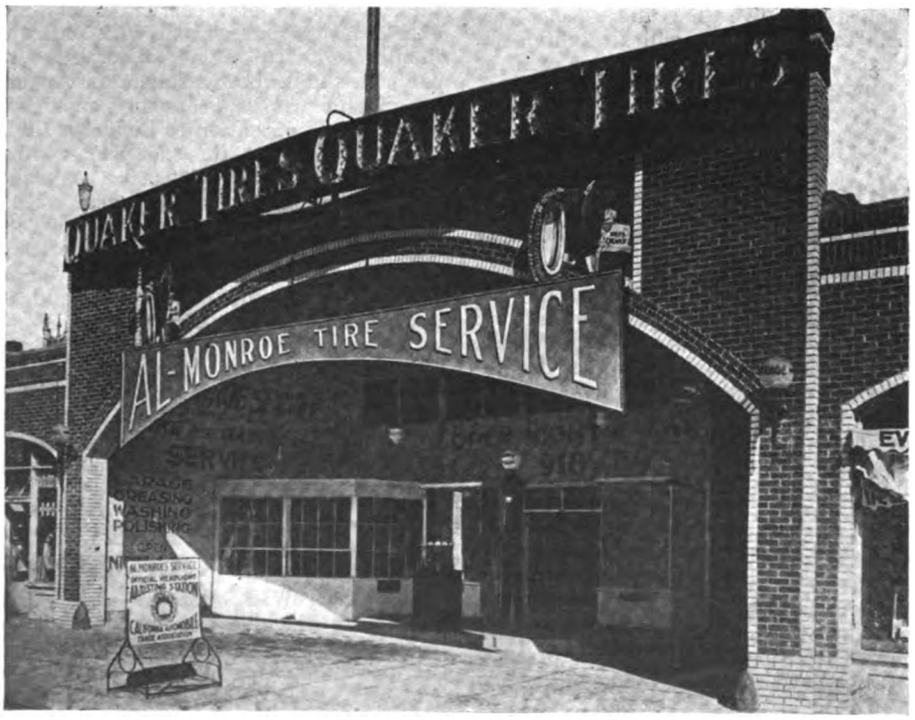
Judge Dike's decision held that station wagons were subject to the personal use of their owners only and were not used for the transportation of passengers or freight for pay, hence were not commercial vehicles.

Ford's September Output

DETROIT, Oct. 30—In September, during which its plants were closed four days, the Ford Motor Co. produced a total of 95,126 cars and trucks in the home and foreign plants, in comparison with 136,132. Of this total the six foreign plants turned out 5369 and Canada 3511.

Including September, Ford's production so far this year totals 925,325.

An Attractive Tire Station Front



A "front" that attracts attention and carries a strong "drive in" appeal—Al Monroe Tire Service of Los Angeles, Cal. One of the features of his business is the amount of work done in the early hours of the morning. His establishment keeps open day and night. It never closes. In order to make the night shift profitable he made a vigorous drive for the tire business of bakery and milk companies, which start their day's activities about three o'clock in the morning. By rendering efficient service at any hour of day or night, he was able to line up a following of healthy proportions

TIRE ABUSES SHOWN BY WARRANTY POSTER

Educating Medium Is Placed in Hands of Dealers by Rubber Association

NEW YORK, Nov. 1—As its first move in a national campaign to establish permanently the Standard Tire Warranty, the Manufacturers Division of the Rubber Association of America is distributing hangers, showing how tires are abused, to the 125,000 tire merchants representing 120 tire manufacturers.

These hangers, which the tire merchants are asked to display prominently in their stores, point out some of the abuses of tires that may be wilful or entirely accidental, and carry the warning that responsibility for such misuse is not assumed by the manufacturer under the terms of the Standard Tire Warranty. They also point out that tires, like the engine or other parts of the car, require a reasonable amount of attention and ask car owners to avoid the more common abuses, in order to secure the best results from tire equipment.

Message to Dealers

In its message to tire dealers accompanying the hanger, the association says:

It is believed that the poster presents a few important facts and suggestions, with helpful illustrations concerning the more common causes of tire trouble which may properly be termed abuses. These facts and photographs, being offered by the tire manufacturing industry as a whole and not handicapped by being identified with the product of any one company, should give the dealer a means of defending his interest when an unjust claim is being pressed by a tire user. The placard is also a medium through which the dealer can educate the car owner to better care of his tires.

If the tire seller directs attention to the message of the placard at the time of a sale, it undoubtedly will prevent some of the controversies which later grow out of unreasonable claims for adjustment of tires which have been willfully or ignorantly abused. That prevention will result for two reasons, at least—one, because directing attention to the poster will have the effect of causing some car owners to care better for their tires, and the other, because it will have served to emphasize to the careless user the announcement in the Standard Warranty that no unmerited consideration will be shown when tires have been abused.

The placard will be followed shortly by distribution to car owners of a pamphlet on the same subject.

Grant Receivership

CLEVELAND, Oct. 28—Joseph Hostetler has been appointed receiver for the Grant Motor Car Co. under a bond of $50,000. The plant will be closed for a short time for inventory, but the receiver acting under his authority will continue to operate it with a view to working out the receivership under the protection of the United States District Court.

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MINNESOTA PROFITS FROM TOURIST TRADE

Income from 500,000 Motorists Visiting State Aggregated $30,000,000

MINNEAPOLIS, Nov. 1—What advertising of its roads and attractions has done for Minnesota is summarized by Ivan A. Copper, executive secretary of the Ten Thousand Lake Association with headquarters in St. Paul. The income from motor tourists is now $30,000,000 a year.

While Minnesota has always had its 10,000 lakes it never began to appreciate them as a tourist attraction until 1917. The association was organized and the first year through publicity brought in $1,500,000 from 40,000 visitors. The year before that the attendance was only 17,000. Finally the state legislature took notice and made an appropriation for the organization. In 1919 145,000 visitors left $6,000,000. In 1920 there were 200,000 visitors, and last year 300,000 of them spent $20,000,000 in the state. Meanwhile the legislature and the towns are spending $40,000 a year, but in 1922 500,000 visitors were lured.

So successful has been the Minnesota plan that Wisconsin and Montana are to copy it in attracting visitors each year.

One feature that backs up the work of the resort association is what is being accomplished by the state highway department. The report of the commissioner, C. M. Babcock, just out, shows that in 16 months there have been 241 miles of road paved, 2246 graveled and 2261 graded. This is in addition to 982 miles of re-shaping and 804 miles of regraveling, and the routine maintenance of 7000 miles of state highways. Although funds available were 25 per cent less than expected in less than 16 months the state nearly trebled mileages of grading and graveling on the trunks and almost financed the paving, now 353 miles.

DUTY PLANT AT ELGIN IS FINALLY ACQUIRED

CHICAGO, Oct. 31—The American Steam Truck Co. has completed negotiations by which it acquires the factory of the Duty Motor Truck Co. at Elgin, Ill. These negotiations have been in progress for several weeks, and for a time it appeared as if they would fail because of the opposition of some members of the Elgin Chamber of Commerce.

The new factory has 25,000 sq. ft. of floor space, and an addition on a five-acre tract adjoining the present factory is planned.

Wilson Directs Chalmers Sales

DETROIT, Nov. 1—Earl B. Wilson has been appointed director of sales of the Chalmers Motor Co. following his resignation from the sales department of the Willys Corp. For several years he was connected with Buick in branch and factory sales work, serving in Chicago, Memphis, Philadelphia and Flint. He entered the sales field first handling farm machinery, serving several years before entering the automobile business.

J. B. Bartholomew



President of the Avery Co., who was elected president of the National Association of Farm Equipment Manufacturers at its annual meeting in Chicago

Multibestos Appoints Miner

WALPOLE, MASS., Nov. 1—E. C. Miner has been named as sales manager of the Multibestos Co.

WILL BUILD DURANT BODIES IN KENTUCKY

Mengel Co. Formed at Louisville, with 30,000 Capacity During First Year

LOUISVILLE, KY., Nov. 1—A $600,000 automobile body manufacturing concern, with the Mengel Co. as the principal stockholder, will begin operations here early in 1923.

It is understood that Durant interests are responsible for the formation of this new company, which will be only one of a half dozen body building concerns that will work on the 300,000 bodies Durant will require in his operations during the next year.

Plans are being made to manufacture 30,000 bodies during the first year and to give employment to 500 men. A five year contract, totalling $20,000,000, has been obtained, it was announced. It is understood that this is a Durant contract.

The new company will be known as the Mengel Body Co. and will be incorporated under the laws of New Jersey, and the initial capital is expected to be increased soon.

Plans for the company were agreed on by R. Frank Monroe of Ludington, Mich., an expert automobile body builder who has been associated with Durant in such work; W. C. Durant, William L. Hoge and Arthur D. Allen of the Mengel company. Allen will be president of the company, and Monroe and Hoge, vice-presidents.

Good Roads in Oregon Chief Factor in Development of Trade There

PORTLAND, ORE., Nov. 1—Automobile men, merchants and business men generally in Oregon agree that there is one factor that has had more to do with development of the State and the expansion of the automobile industry in the State within the last five years than any other, and that is building of hard-surfaced roads. The enormous increase in the number of automobiles and trucks within the State, and the expansion of all lines of the automotive industry, is traced directly to this cause above all others. So enthusiastic are the automobile men in regard to the good roads, in fact, that they have been leaders in the movement to provide money for highway construction through automobile licenses and gasoline taxes, the latter now running two cents per gallon. It is notable, however, that every cent raised in Oregon through these taxes, excepting a small percentage for administration of the motor vehicle division, goes for the construction and maintenance of State and county roads outside the limits of incorporated towns.

Oregon now ranks near the top among the States of the Union in permanent highway construction, in proportion to the population. With scarcely three-quarters of a million people within the State, Oregon has just completed a $50,000,000 road building program and now has over 1000 miles of hard-surfaced pavement outside of incorporated cities and many thousand miles more of gravel or graded road. This latter feature is a factor in Oregon, which is a mountainous State, and grading alone has frequently run to $10,000 per mile and more.

The State highway system now includes a main east and west road across the State, known as the Columbia River Highway, of which 200 miles is paved and 135 miles graveled, and a north and south road across the State, 350 miles in length, and known as the Pacific Highway. This latter is paved the entire distance, excepting for a few short sections totaling a dozen miles or so, where work is under way. This road provides a paved highway from the Washington State line to the California line.

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LOS ANGELES PUBLIC CONFUSED BY PRICES

Some Dealers Quote F. O. B. Factory, Others Switch to Local Delivery

LOS ANGELES, Oct. 30 — Despite recent agitation favorable to advertising prices of motor vehicles for delivery at California points, the majority of dealers continue to quote factory prices. Some have switched over to local delivery prices and as the result the buying public is very much confused. Agitation in favor of advertising local prices is growing and a change quite likely might be brought about if a dozen of the largest distributors in this state should depart from the old custom.

Some dealers who favor quoting local prices have said they believed this would be a good subject for the National Automobile Dealers Association to act upon. It is assumed that if that body acted, the factories would be so impressed that they would abide by dealers' preference and grant them the necessary authority for changing advertising copy. Some dealers maintain they should have the privilege of selling their merchandise as do dealers in other commodities.

They maintain the public knows nothing about the cost of most articles at an Eastern factory point and cares less, but the buyer is concerned as to what his outlay will be. It is cited that the highest quality and most expensive furniture originates in the East. In their national advertising the furniture factories refrain from price quotations. The California merchant advertises the sales price to the buyer and that in the end proves the only factor worthy of consideration.

As the result of the agitation of the advertised prices of automobiles, the dealers themselves are in a quandary as to the course to pursue. When one reads a section of the newspaper devoted to automobile advertising he is interested in the price. Unless a reader knows the location of every factory whose product is advertised and can approximate the freight charges, the advertising becomes a Chinese puzzle.

The question of "handling charge" also enters. Knowing the factory price, the customer asks the cost of the freight and can figure the war tax. In many instances there still remains a discrepancy between the total of these three sums and the actual retail price. The dealer says the difference represents the "handling charge." The latter usually includes what the dealer sets up as an expense covering the sending of a crew to the railroad yards, unloading the cars, and conditioning them. Some factories have required their dealers to eliminate this charge, but the custom continues general.

WOOD NAMED TO HEAD FIFTH AVENUE COACH

NEW YORK, Oct. 30—Frederic T. Wood has been elected president and general manager of the Fifth Avenue Coach Co. and the New York Transportation Co. to fill the vacancies caused by the resignation of President John A. Ritchie and Vice-President and General Manager George A. Green, who have joined the Yellow Cab Manufacturing Co. of Chicago as president and vice-president and general manager, respectively. Wood will fill the dual role, while R. E. Fielder will continue as chief engineer.

RAILROAD SHORTAGE RETARDS DELIVERIES

Shipping of Finished Cars Is As Difficult As Getting Through Material

NEW YORK, Oct. 30—Production continues to be maintained at a high rate in the face of obstacles occasioned by the railroad situation. It is increasingly difficult to get through shipments of materials, despite various means adopted to expedite deliveries. The diversion to other uses of such rail equipment as would be available for automotive manufacturing centers has necessitated a wider use of motor trucks augmented by the employment of boats for shipments from more distant points.

The popularity of the closed car is a dominant factor in the maintenance of high production programs. Some factories are reporting a shortage of bodies for cars of this type, due to the unexpected demand at a season, when in other years there has come a perceptible falling off. Where there has been a curtailment of manufacturing schedules it has been due to the inability to obtain a sufficient body supply rather than to any pronounced decline in sales.

With the freight car shortage situation becoming more serious, the industry is experiencing as great difficulty in shipping its products as in getting its material. Although driveaways are increasing in number they are unable to take care of all the orders in dealers' hands. Manufacturers located at such points as Detroit and Cleveland are making use of boat shipments, to a great extent, to get their products into dealer territories. The Northwest in particular, where there is strong evidence of renewed buying interest, is being fed in this manner, but even there deliveries are behind.

More Dealers Become "One of a Thousand" in National Association Campaign

ST. LOUIS, Nov. 1—C. A. Vane, general manager of the National Automobile Dealers Association, announces the following new members for membership as "One of a Thousand" since the last list was issued in September:

California—P. K. Webster Co., Inc., and Bell & Boyd of Oakland; J. J. Jacobs Motor Co. of Sacramento; Bairs Garage, Chas. Green Co., Harvey M. Harper, A. E. Hermanson, Sales & Service and Lundblade & Jewett, all of Eureka; Harry E. White, Inc., of Glendale; Walter M. Murphy Motors Co. of Los Angeles; Edgar & Hays and Orange County Garage Co. of Santa Ana.

Colorado — James-Nash Motors Co. and Colorado Motor Sales Co. of Denver.

Connecticut — The Arthur L. Clark Co., Inc. of Bridgeport; The New England Motor Sales of Greenwich.

Illinois—Reo Motor Car Co. and Charles Lange & Bros., of Chicago; Guy C. Ferre of Decatur.

Iowa—Repass Automobile Co. of Waterloo.

Massachusetts—J. W. Robinson Co. of Lawrence.

Missouri—Nash Motor Sales Co. of Kansas City; Le Grande Garage of Sedalia.

New Jersey—Elizabeth Automobile Co. of Elizabeth.

Ohio—The Fuller Automobile Co. of Cincinnati.

Oregon—Braley, Graham & Child, Inc., Oldsmobile Co. of Oregon, Talbot & Casey, all of Portland.

Pennsylvania—The Johnstown Automobile Co. of Johnstown; Harper & Harper of Philadelphia; Steel City Automobile Co., and Studebaker Sales Co. of Pittsburgh.

Texas—Amarillo Buick Cadillac Co. and Cullum Motor Co., Inc. of Amarillo.

Utah—Browning Automobile Co. and Grady Motor Co. of Salt Lake City.

Vermont—P. T. Donovan of Burlington.

Washington—Riegel Brothers of Spokane; Charles R. Simpson of Bellingham; Nugent Motors Co. of Everett; Central Agency, W. L. Eaton, Franklin Wicks Co., Great Western Motors, Inc., William L. Hughson Co. and Nute Motor Co., all of Seattle; Schott-Halsey Motor Co. of Yakima.

Wisconsin—East Side Buick Co., Edwards Motor Car Co., Frint Motor Car Co., Koehler-Rahn Auto Co., W. H. Krueger Motor Co. and Nash Sales Co., all of Milwaukee.

DRIGGS AND DIAMOND CONTRACT CANCELLED

NEW YORK, Nov. 1—Deciding to market its own product, the Driggs Ordnance & Manufacturing Corp. has dissolved its contract with the Diamond Taxicab Co., which called for the manufacture of taxicabs to equip the fleets to be put out by the Diamond company. This has resulted in the formation of the Driggs Taxicab Corp., which will manufacture taxicabs in the plant of the Driggs Ordnance corporation at New Haven, Conn. It is planned to turn out 1000 of these cabs in the first year.

A selling organization is being perfected to handle this product. It will be known as the Driggs Taxicab Sales Co., with E. E. Garrison in charge of sales. Its headquarters will be in New York, probably at 19 West 44th Street, the present location of the Driggs Ordnance & Manufacturing Co.

The Driggs taxicab will sell at $1,950 f.o.b. New York, and the selling plan will be based on time payments to the drivers direct.

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PACKARD PAYS EXTRA DIVIDEND ON COMMON

Total Amount Authorized Is 5 Per Cent—Action Due to Increased Business

DETROIT, Nov. 1—Increased prosperity of the company and the favorable outlook for a continuation of good business are the reasons given by the directors of the Packard Motor Car Co. for the declaration of a 2½ per cent extra dividend, in addition to the regular quarterly dividend of 2½ per cent in cash on the company's common stock, of which there is about $11,885,000 outstanding. Both dividends are payable on Oct. 31 to stockholders of record at the close of business Oct. 25. The total payments in the October dividend will aggregate $594,205.

The last previous payment was in October, 1920, at the rate of 10 per cent per annum on stock of the par value of $10 a share.

Packard is enjoying its greatest prosperity, its profits being greater than at any other time in its history, save for a brief time during the war when the manufacture of Liberty engines brought in rich returns. Its profits run from $600,000 to $900,000 a month at present.

The factory reports that it is unable to catch up with orders on its single six. Starting with a production of 800 a month, it has climbed to 1600 and expects to manufacture 2000 single sixes in November.

McCONNELL RESIGNS AS HEAD OF KLAXON

NEW YORK, Oct. 30—D. A. McConnell has resigned the presidency of the Klaxon Co. of Newark, N. J., effective Dec. 31, although his active connection with the company ceased Oct. 15.

With F. Hallett Lovell, Jr., McConnell formed the Lovell-McConnell Manufacturing Co. in 1906 to manufacture the Klaxon horn, which was one of the pioneers in the electric warning field, and which was invented by Dr. Miller Reese Hutchison. In 1916 Lovell retired, following the selling of the Lovell-McConnell interests to United Motors, which in turn transferred the interests to General Motors a couple of years ago.

Lovell retired from business altogether at the time, and McConnell remained with the Klaxon interests as president and general manager until the present.

Neel-Cadillac Club Elects

PHILADELPHIA, Nov. 1—The Neel-Cadillac Club, composed of employees of the Neel-Cadillac Co.'s organization, has been organized with the following officers for the ensuing year: President, Joseph Comly; vice-president, C. Emory Williams; secretary, Miriam Lichty, and treasurer, Hugh McHenry.

The board of directors is composed of the following Neel-Cadillac associates: Harry M. Gilmore, W. J. Neel, W. P. Smith, Miss Miriam Dee and Harry Ettinger.

A program of social activities has been planned for the fall and winter. Chief among these is a Hallowe'en Party, to be held Saturday evening, Nov. 4, also a musical comedy, the date to be announced later.

FORD USING RADIO AT RAIL TERMINALS

DETROIT, Oct. 31—The Ford Motor Co. is using radio communication on its railroad between Dearborn and Springfield, its two main terminals.

Consideration is being given to the practicability of using the radio as a means of communication between the plants and branches of the Ford company, this involving the use of a code or the perfection of tuning so there would be no interruption of service.

CLIMAX TAKES OVER ROTARY TIRE PLANT

COLUMBUS, Nov. 1—The Climax Rubber Co., which has been operating plants at Columbus and Delaware, has taken over the factory of the defunct Rotary Tire Co., just outside of Zanesville, on a lease proposition. The lease was made by I. S. Hoffman, president of the Climax Co., with the Franklin Mortgage Co., of Columbus which took over the property from I. R. Winegarner, the receiver.

The Climax company has taken possession and started operations at the plant. The equipment is sufficient for the manufacture of 500 casings and 500 tubes daily and it is planned to get under full production soon. The plant is one of the best equipped in the state, among the smaller ones, and has a floor space of 50,000 square feet.

JOBBERS IN ATLANTA REPORT BETTER SALES

Wholesale Accessory Business in Southeastern States Increases Monthly

ATLANTA, Oct. 30—Several of the larger automotive equipment jobbers in Atlanta, with salesmen covering the various southeastern States, advise that wholesale accessory business in this district has increased steadily from month to month since early spring, with August, September and October sales about on an equal basis with the best months of 1920, when accessory sales were at the high water mark in this section.

Among the wholesalers who are authority for this statement was E. H. Baughman, vice-president of Ozburn-Alston & Co. of Atlanta, one of the South's largest jobbers and president of the Southeastern Automotive Equipment Association.

Tool, machinery and miscellaneous sales to garages and service stations over the district have been particularly good, with this business probably in greater volume at this time than it has ever been, as an unusually large number of service stations have been established the past three or four months over the Southeast. Gross business in service stations and garages, automobile distributors here advise, is also on a par with the best months of the inflation period immediately after the war.

The outlook is for a steady volume of profitable business all through the winter months.

As to tire sales, distributors here covering southeastern territory advise conditions substantially the same as reported above for accessory and equipment sales, with particularly good business in heavy truck tire sales.

The principal improvement in all sales has been in the smaller towns and communities dependent largely on rural business.

Cashing in on Advertising Value of Service Car



Some dealers are cashing in in a fine way on the advertising value of their service cars. A good example of this is the service car used by the H. O. Harrison Co., San Francisco distributor for Hudson and Essex. The car is enamelled white and kept spotlessly clean. The name of the company and its product, lettered on the side, never fail to attract the eye, when it is on an errand of mercy

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RE-SALE VALUE FACTOR IN BUILDING OF CAR

Edward S. Jordan Tells Purchasing Agents Quality Should Rule Buying

DETROIT, Nov. 1—In urging that manufacturers be governed by quality in purchasing material for cars, Edward S. Jordan, president of the Jordan Motor Car Co., told members of the Purchasing Agents Association of Detroit that the industry has now entered its fifth phase, in which the owner has become the dominant figure and a company, to succeed, must build a car which pleases the owner.

He tied this statement up with the second hand value of the car. Naturally, he said, that car which pleases the owner most is the one which has the greatest second-hand value. He stated that on lists sent out all over the country, asking dealers to put down the list price of each car and alongside it the car which had the greatest relative re-sale value, it was found that the name of twelve manufacturers appeared on the list of all of the dealers. These twelve manufacturers are naturally the most consistently successful in the field, he said.

In illustrating his point he took two cars, A and B, selling for $1,500 each originally. One car, he stated, had a maintenance bill of $100 for the year and a depreciation of $200, making the total cost to the owner $1,800 for the year. The second car had a maintenance bill of $200 for the year and a depreciation of $500, which brought the price of this car to $2,200 to the owner

He used this to illustrate the point that the owner is becoming educated to the fact that the first price of the car is not the only point to consider. The depreciation, or, in other words, the re-sale value, must be taken into consideration when figuring the expenditure for the car. Also, the ability to service the car at low price.

ESTIMATES GASOLINE CONSUMPTION IN 1923

WASHINGTON, Nov. 1—Gasoline consumption for the calendar year of 1923 will be 5,670,000,000 gallons, it is estimated by the American Petroleum Institute. The figure is arrived at by an estimate showing that there will be 13,500,000 gasoline engines in use in 1923, each using an average of 420 gallons of gasoline.

At the present rate of refining methods—one barrel of gasoline secured from each four barrels of crude—the total petroleum requirements of crude oil will be 540,000,000 barrels.

The entire note of Jordan's speech was optimistic, and his predictions pointed to the most prosperous era through which the automobile industry has ever passed. Regarding the well-known saturation point, he stated that this will never be reached until everybody who desires to go from one place to another or to transport goods from one place to another has an automobile. In other words, it is his belief that we can never reach this point.

BOATS USED TO SEND CARS TO NORTHWEST

DETROIT, Nov. 1—The fourth boatload of Buick cars for the Pence Automobile Co., Minneapolis, in the past five weeks has left Detroit. In this shipment 214 cars, all closed, routed by way of Duluth. Boat shipments to the Northwest territory are being used exclusively because of existing railroad conditions. The cars are driven away by dealers on arriving in Duluth. All cars in the shipment were reported to be sold.

W. R. Stephens, sales manager of the Pence company, was in charge of the shipment.

WISCONSIN MAY HAVE $1,000,000 WAREHOUSE

Would Help to Solve Problem of Storage During Slack Period of Winter

MILWAUKEE, Oct. 30—Plans for the organization of a bonded warehousing corporation that will be responsible for the storing of more than $1,000,000 worth of motor vehicles during the winter months are under consideration by the automotive division of the Association of Commerce of Green Bay, Wis. The dealers of Green Bay and vicinity again are confronted by the problem of adequate and controllable warehouse space for new car stocks during the slack selling season from the end of November to the end of March, when the most severe weather of the winter usually comes.

It is planned to lease the main exposition building of the Brown County Fair Grounds as a warehouse. Practically all dealers would become stockholders in the bonded warehousing corporation, which would provide proper guards, insurance and other requirements. The building has 30,000 sq. ft. of floor space, is weatherproof and ideal for storing motor vehicles.

It was erected two years ago at a cost of $18,000 by the automotive division to provide an adequate hall for displaying automotive merchandise. The division is paying for the building out of the profits of the annual county fair motor show. About $5,300 was paid off in 1921 and $4,700 this year, leaving $8,000 to be absorbed by the 1923 and 1924 shows.

ONE OF FOUR MODELS OF STEINMETZ BUILT

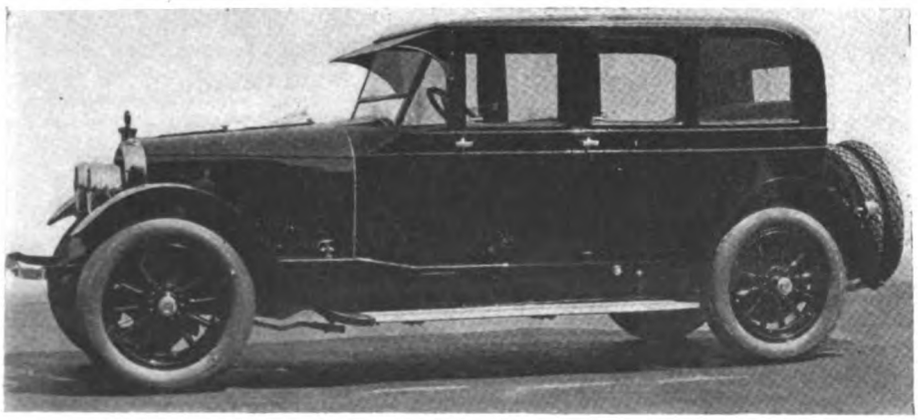
SYRACUSE, N. Y., Oct. 31—Announcement is made by the Thorne Machine Tool Co. of this city of the completion of a new model electric car for the Steinmetz Motor Car Co. of Baltimore. This is the first of four which is to be made for experimental purposes, the experiments to last about a year before production is attempted. The car has been built under the direction of Charles P. Steinmetz.

In producing the model the aim has been to develop an electric driven vehicle weighing under 2000 lbs., with a speed up to 40 m.p.h. and an operating radius of 200 miles. The motor, it is said, will be placed in the rear axle housing.

Packard Honors Harrington

NEW YORK, Oct. 30—Packard executives and department heads held a dinner at the Waldorf-Astoria, to celebrate the twentieth anniversary of A. C. Harrington's connection with the Packard Motor Car Co. Harrington joined Packard in 1902 when the factory was at Warren, Ohio, and now is vice-president of the New York company.

Dorris Bringing Out a Custombuilt Sedan, $6,800



The Dorris Motor Car Co. is fitting a new "custombuilt" sedan to the regular chassis, the price being $6,800. The bodies are made to specification by the Hume Body Corp., Boston, and are finished, painted and upholstered at the Dorris factory. The painting and upholstery is according to the purchaser's selection. The frame construction is hardwood and the metal covering is aluminum. The equipment is very complete

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G. M. C. EXPECTS 1922 TO BE BIGGEST YEAR

Estimates in "Facts and Figures" That Production Will Total 468,355

NEW YORK, Nov. 1—Estimating the last quarter, the car manufacturing units of the General Motors Corp. will sell 468,355 motor vehicles in 1922, which will give it the greatest year in its history. With net sales of $218,859,267 for the first six months of the year, it would seem as if 1922 would top the best year in the history of General Motors—$567,320,603 in 1920.

Stockholders are given this information in "Facts and Figures," prepared by the Department of Financial Publicity of G. M. C. and sent out to-day. There are 70,000 stockholders at the present time, a considerable growth in the last year, for at the end of 1921 there were 66,837 of all classes, while in 1920 there were 36,894; 18,214 in 1919; 4379 in 1918, and 2920 in 1917. Of this total of 70,000 there are 41,144 owning 100 shares or fewer and only 7410 who own more than 100 shares of common.

Common Stock $14 a Share

On June 30, 1922, the book value of the preferred and debenture stocks was over $380 per share; and of the common stock $14 a share.

The booklet says:

Few realize that the combined value of the products sold annually by the General Motors group during the past few years is greater than the annual revenue of any railroad; and, further, is exceeded by few industrial corporations. The net sales for the first six months of 1922 were $218,859,267. The largest year was 1920, when the total was $567,320,603 for the full 12 months. Net sales by years ended Dec. 31 follow:

1922*	$218,859,267
1921	352,527,386
1920	567,320,603
1919	509,676,694
1918	269,796,829
1917**	96,295,740

*Six months ended June 30.
**Five months ended Dec. 31.

The excess of current assets over current liabilities (not working capital) June 30, 1922, was $122,725,264. Cash in banks was $35,527,973; sight drafts, $10,430,382; notes and accounts receivable, $21,899,134; and inventory, $94,166,601. Current liabilities include accounts payable, $22,184,843; taxes, payrolls, etc., $16,979,253; and accrued dividents, $1,068,354.

Over 2,000,000 Cars Built

"Facts and Figures" further states:

General Motors, since 1905, has produced over 2,000,000 passenger cars. Of this number approximately 75 per cent, or more than 1,500,000, were in use on Jan. 1, 1922. According to the National Automobile Chamber of Commerce, there are 9,300,000 passenger automobiles in the United States. To be conservative, at least one out of every seven passenger cars is a General Motors product. Since one out of every seven is a General Motors car, it follows that this group carries approximately one billion passengers annually—approximately, the number of passengers carried by all the steam railroads in this country.

GENERAL MOTORS CORP. SOLD 316,136 CARS AND TRUCKS IN FIRST NINE MONTHS OF YEAR

NEW YORK, Nov. 1—The combined sales by the car and truck divisions of General Motors Corp. in the first quarter of this year totaled 71,039; the second quarter, 135,751, and the third quarter, 109,346. This makes a total for the first nine months of 1922 of 316,136, which exceeds the full 12 months of 1921.

The sales for the year to end Dec. 31, 1922 (last quarter estimated), compared with the actual sales of the three preceding calendar years, follow:

	*1922	1921	1920	1919
Passenger Cars:				
Buick	134,000	83,888	116,213	119,853
Cadillac	22,000	11,130	19,790	19,851
Chevrolet	249,000	75,667	144,502	132,710
Oakland	26,000	12,661	37,244	54,451
Oldsmobile	23,000	20,245	26,241	33,345
Commercial Cars:				
Chevrolet	2,900	1,489	4,938	2,682
GMC trucks	5,600	2,760	5,137	7,730
Oldsmobile	1,500	466	8,383	7,782
Totals:				
Passenger cars	454,000	203,591	343,990	360,210
Commercial cars	10,000	4,715	18,458	18,194
Miscellaneous**	4,355	6,493	30,627	13,334
Grand total	*468,355	214,799	393,075	391,738

*Based upon the actual sales for the first nine months of 1922, together with estimates for the last three months.
**Includes tractors; and also cars and trucks not now manufactured.

MONROE MAY REMOVE PLANT TO LOUISVILLE

LOUISVILLE, Oct. 31—The Monroe Motor Co. of Indianapolis, which recently was reorganized after defending a receivership suit, is negotiating through Attorney Warren T. Godfroy, here, to consolidate with a Louisville manufacturing concern and move to Louisville.

Neither the Fletcher-American National Bank of Indianapolis, which has a controling interest in the property, nor Godfroy would reveal the identity of the company here.

The Monroe company owns no property in Indianapolis, but leases its buildings. According to Godfroy's information, it has $750,000 quick assets and no indebtedness. Godfroy said that he visited the plant and that it is turning out three cars a day.

Ford Sales in Southeast

ATLANTA, Oct. 28—W. B. Fitzgerald, sales manager of the Atlanta branch of the Ford Motor Co., states October sales of this branch well above 4000 cars, with orders in hand from southeastern dealers for better than 5000 cars. November sales, he advises, will be close to 5000, advance orders for November delivery being already above 4000. This is on a par with the best monthly sales records ever made by the company's Atlanta branch.

SERVICE SUGGESTED AS CHRISTMAS GIFT

BALTIMORE, Nov. 1—Encourage your patrons to adopt the Christmas service present on the certificate plan, such as is used by many department stores during the holiday season, is the suggestion of the Black & Decker Manufacturing Co.

It says:

The automotive repair man could sell a Christmas service present in the shape of an order for a carbon cleaning and valve grinding job, a brake relining job, a bearing adjustment job, a clutch overhauling job, etc., for a specified make of car.

Nearly everyone who owns a car has a high percentage of pride of ownership in addition to which the comfort and satisfaction of driving a car that is operating properly is in many cases more desirable than a silk shirt.

It would seem that a person would be especially appreciative if he received an attractive card which authorized him to go to John Jones' garage and have his brakes relined with the compliments of the season from some good friend.

It suggests that these cards could be made up in an attractive style with the usual holly decorations and could be supplemented with hangers in the windows and on the walls of the dealer's place of business, suggesting the idea of buying a Christmas service present and listing some of the most common jobs with the flat rates which have been predetermined for these jobs.

Brennan, Inland Sales Head

ST. LOUIS, Oct. 31—B. G. Brennan has been appointed general sales manager of the Inland Products Co. which has just moved into its new plant.

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G-M TRUCK EXTENDING FACTORY CO-OPERATION

Creates Four New Divisions Under Supervision of Sales Promotion Manager

PONTIAC, MICH., Oct. 30—The General Motors Truck Co. has created four divisions under the sales department to assist truck salesmen in all sections of the country, this step being taken as a means of increasing the co-operation between the factory and the dealer.

The divisions come directly under the supervision of the sales promotion manager and, in turn, are supervised by experts in truck statistics and sales.

The divisions are:

The loose materials division, where dealer and factory problems in the hauling of sand, gravel, ashes, garbage and any other article which can be dumped are worked out.

The bus division, where figures are prepared and problems worked out in the marketing of bus chassis for school work, interurban and city transportation.

The highway engineering division, where demonstration problems and dealers' questions are worked out. A function of this department is to help the dealers and distributors in closing sales, either through the use of literature or by personal factory representation.

The statistical division, where figures are gathered on motor truck registration and many other subjects of help to the dealers.

LAST PAYMENT MADE ON FACTORY BY PAGE

PLAINFIELD, N. J., Oct. 31—Carl H. Page, president of the American Motors Corp., has made the final payment of $5,646.48 on the total purchase price of $200,000 set upon the property by the court at the receiver's sale and the reorganized company of which Page is the head has formally taken over the plant.

Under the re-organization plan put into effect some months ago interests identified with the original company have provided working capital amounting to about $250,000, and it is announced that the balance of the new company's stock will be turned over to a group of Philadelphia brokers under an arrangement that will net the company an additional amount of $250,000 or $500,000 altogether.

Page reports that September was the best month in the company's history and expects the plant will be running on a 1000 car per year basis within the next 60 days.

Oakland Models Oversold

DETROIT, Nov. 1—Thirty per cent of Oakland production in 1923 will be closed cars, according to C. J. Nephler, general sales manager. September was the company's biggest month this year, due to the introduction of its new models, and October production will run higher. The company reports its sport car and two-passenger coupé oversold. The sedan and five-passenger coupé now are in full production. Full working time is assured for the winter months.

W. R. Tracy, assistant sales manager, back from a trip through the Middle West, reports business in industrial centers holding up in good shape.

CARAVAN TO EXPLORE REGIONS OF SAHARA

NEW YORK, Oct. 28—Approved by the French Government, which will send official observers, an automobile caravan is being organized by Andre Citroen, French automobile manufacturer, for an exploration of the Sahara desert, according to a copyrighted cablegram to the New York Tribune.

Citroen has built the cars, which really are moving fortresses, being armored and equipped with the well known caterpillar tread, as were the tanks in the war. This protection is necessary because of the bandits who infest the desert. The expedition, which will start about Dec. 1, will be divided into three sections. The first will carry machine guns, mounted in armored cars; the second, the food supply, sufficient for a year, and the third, the gasoline, water and spare parts.

The desert trip will be through country unknown to white men, and it is believed will produce scientific results of interest, and it is hoped by the scientists will disclose ruins of prehistoric cities.

TIMKEN WILL CENTER ON NIBLESS BEARING

DETROIT, Oct. 30—The Timken Roller Bearing Co. has recently announced its intention of converting its entire production facilities to the manufacture of the nibless bearing, known as the V-type, which has been made in increasing quantities for the past five years. This type has more rollers than the original type with a riveted cage and a correspondingly greater capacity—25 to 40 per cent greater, it is said.

The cage employed is formed from considerably heavier stock than the A-type cage formerly used, but has the same section as the E-type cage used with single-head rollers. The V-type cage gives a simple and rigid structure with reasonable weight. The bridges used between the rollers are cold-forged to give the desired contour.

The combination of the nibless roller with the new cage gives a compact bearing having maximum capacity with minimum weight. Millions of these bearings have been produced and are understood to be giving satisfactory service, but it has required considerable time to change the tooling equipment over to suit it to the manufacture of the new product. Many sizes of the V-type bearing are now in production.

COUNTIES CAN LEVY TAXES IN ALABAMA

Appeals Court Says It Cannot Be Held as Form of Double Taxation

BIRMINGHAM, ALA., Nov. 1—The court of appeals of the State of Alabama has held that under the present laws the counties have the right to levy special county licenses against trucks and automobiles which are operated on the public highways, and that they still held the same rights and powers under the Goode law of 1915 that they held prior to the enactment of the automobile license law of 1919. The license law of 1919 provides a means for the retirement of the State highway bonds by levying assessments against motor cars and trucks.

The court of appeals held that the imposition of a special license tax against motor trucks by the counties was not a violation of that provision of the constitution which prohibits double taxation Alabama Supreme Court decisions were quoted to sustain the ruling of the court. Judge William H. Sanford wrote the opinion, and it was concurred in by the presiding judge, C. R. Bricken, and Judge Henry P. Merritt.

LOCOMOBILE PROPERTY FORMALLY TRANSFERRED

NEW YORK, Oct. 30—By order of Referee Keogh the property of the Locomobile Co. of America at Bridgeport, Conn., has been formally transferred by the trustee to the new Locomobile Co. of America, a New York corporation controlled by W. C. Durant. The new interests are going ahead on the policy decided upon when Durant first took over Locomobile.

The schedule calls for the manufacture of 800 cars during the 1923 season, and 1000 men will be employed at the Bridgeport plant. No new models will be added nor will there be any price changes. The sales organization will be strengthened in all parts of the country, and new district representatives added in those sections where the conditions demand them. The first one of these new appointments is that of the H. D. Shawkey Motor Co. of Pittsburgh, which also has the Durant in that territory.

Rickenbacker in Turin

DETROIT, Oct. 28—E. V. Rickenbacker, vice-president and director of sales of the Rickenbacker Motor Co., is now at Turin, Italy, visiting the Fiat plant, builder of the car which won the last French Grand Prix.

After a visit to Germany to inspect the automobile and aircraft manufacturing plants, Rickenbacker attended the Paris show and from there went to Italy. He will return to America by way of England.

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ASSOCIATION ACTIVITIES

Boston Dealers Meet

BOSTON, Oct. 30—The Boston Automobile Dealers Association held a meeting and dinner at the Kenmore Hotel which is to be a forerunner of others that will begin to put the association more in the limelight and have it take an important place in the affairs of New England. The keynote of the meeting was cooperation. While the main theme was a discussion of the used car problems other matters were touched upon.

President J. H. MacAlman called the meeting to order and outlined some of the problems encountered by motor car dealers. He introduced J. W. Bowman as the first speaker. Bowman in the last year has spent a great deal of time and study upon dealers' troubles and has given unsparingly of his efforts to make the Used Car Statistical Bureau a success. It is possible that he may be drafted by the association to specialize upon a campaign of building up an organization whose scope will not confine itself to Boston, or in fact to Massachusetts, but spread throughout New England. He spoke convincingly about the needs of cooperation.

L. B. Sanders, secretary of the Used Car Statistical Bureau, told of his trip to Chicago and how the Boston Plan was received.

Joseph S. Donovan, speaking for the general committee, stated that the result so far attained by the Boston dealers showed that stability had displaced chaos.

There was a general discussion which lasted for a couple of hours. When the meeting ended it was agreed that frequent meetings would be beneficial, and more of them will be held throughout the winter. There is talk now of seeing to it that the motor industry, through the dealers' association, is given representation upon the board of directors of such bodies as the Boston Chamber of Commerce, so that when anything inimical to motoring comes up these other organizations can be brought into line to lend a helping hand.

"Night in Bohemia"

PHILADELPHIA, Nov. 1—For its first fall meeting, the Motor Truck Association of Philadelphia held a "Night in Bohemia," at the Adelphia Hotel. Speeches were curtailed and a vaudeville and musical show was provided by Chairman R. Arthur Bittong. President Thomas Quirk presided.

F. H. Williams, chairman of the legislative committee, reported that important data with regard to the license fee question would be laid before the association at its next meeting. In discussing the used truck problem, Williams stated that he though it was an individual matter for each distributer to determine for himself and stated his disbelief in any general rule of practice for the trade.

Walter Y. Anthony, former president of the association, also spoke and expressed the opinion that the used car plan in operation in the Philadelphia Automobile Trade Association probably would work out better in the passenger car field than it would in the field of trucks.

E. J. Cattell, former City Statistician, but now connected with the local Chamber of Commerce, made one of his characteristic addresses, stating that the question of transportation, especially with regard to trucks, would do more to save Europe than any other factor

He sounded a warning note with regard to careless driving of trucks and passenger cars on the highways, asserting that the abuse of the speed laws is reflecting on all users of commercial and passenger cars and that this abuse soon would have to be stopped, or such vehicles would be legislated off the highways.

Early Start on Atlanta Show

ATLANTA, Nov. 1—Preparations for the 1923 Southern Automobile Show, which will be held in the Atlanta Auditorium the middle of next February, were started the latter part of October. Virgil W. Shepard will again be general manager of the show, which will be held, as usual, under the personal direction of the Atlanta Automobile Association. Floor space will be greatly enlarged, as several companies were unable to get in for the 1922 show. The association is getting an early start in an effort to make the 1923 Atlanta show one of the largest that has ever been held in the southern territory.

It has also been announced by the Atlanta association that during the winter months the organization will bend its efforts to carry out a complete educational campaign for the benefit of the members, which include most of the automobile and accessory dealers in Atlanta. Service, salesmanship and the used car problem are the three principal factors to be taken up at each meeting of the organization this winter.

Riley Elected in Kansas City

KANSAS CITY, Oct. 30—The Kansas City Motor Car Dealers' Association held its annual election at a meeting that indicated a fine degree of the cooperative spirit and good feeling. Nelson S. Riley, who had served the organization as president several years ago, when he was branch manager for the Studebaker Corp. here, was elected president. He is now president and general manager of the Studebaker-Riley Co., retail distributor of Studebaker cars in Kansas City.

Sam W. Ramsay of the Midwest Oldsmobile Co., also formerly an active member and officer of the association, was elected vice-president.

Directors elected were: A. L. Ellwood, Ellwood Motors; W. H. Morgan, Nash Sales Co.; A. P. TenBrook, Oakland Motor Car Co.; Arthur Bunker, Bird-Sykes-Bunker Motor Co.; Geo. W. Cox, Willys-Overland branch; W. C. Howard, Howard Motors, Inc., and E. P. Moriarty, Moriarty Motor Co.

Tents for Los Angeles Show

LOS ANGELES, Oct. 27—The first automobile show to be held in Los Angeles for two years is scheduled to open Nov. 11 and continue until Nov. 19. Because of the lack of adequate housing facilities four large tents with board floors wll be used for the purpose. Exhibitors will pay $1 per square foot for the space and membership in the Motor Car Dealers Association is necessary to obtain space for car or truck exhibitors.

A section of one tent will be devoted to accessories.

Because of opposition on the part of truck dealers, the truck exhibit will not be segregated but space assigned in each tent for commercial vehicles. The objection was based upon the point that in a segregated display comparatively few visitors to the show would inspect the trucks, and in order to give them an even break in the attendance the new plan was decided upon.

Illinois Acts on Tax Repeal

PEORIA, ILL., Oct. 28—The Illinois Automobile Trade Association has taken active steps to co-operate with the National Automobile Chamber of Commerce and the National Automobile Dealers Association in the campaign for the removal of the Federal excise war taxes on automobiles and automotive products.

A letter has gone out from the office of the association to all members requesting them to communicate with the candidates for Congress in their respective dictricts and determine their attitude on the repeal of these taxes.

Will Build Car at Show

CINCINNATI, Oct. 30—John J. Behle, general manager of the Cincinnati Automotive Trades Association, announces that an automobile is to be built of parts and accessories on display at the Automotive Accessory and Radio Exposition to be given by the association in Cincinnati Nov. 22 to 29. One-eighth of the car will be built each day. The purpose of the plan is to demonstrate, according to Behle, that the exhibitors will have on display everything needed for an automobile. The completed car will be donated to a local charitable organization, to be selected later.

Harry T. Gardner of Syracuse, N. Y., has been installed in the position of manager of the Cincinnati Automobile Dealers Association, left vacant by the death of Harry K. Shockley. Gardner is already making plans for the next Cincinnati automobile show, which will be held the middle of February.

A determination to rid the storage battery business of profiteering was reached by the Cincinnati Battery Service Association meeting recently. Charles Ratterman, head of the Ratterman Motor Service Co., made the principal address of the evening, emphasizing the value of organization. He has made a summary of the State laws relating to automobiles, which he informed his hearers will be placed before the next session of the State Legislature.

Charlotte Show in February

CHARLOTTE, N. C., Oct. 31—The Charlotte Automotive Trades Association has decided on Feb. 5 to 10 as the dates for the automobile show, which it was decided some time ago to stage the coming winter. The show will be held in the Made-In-Carolinas Exposition Building. The building is a mammoth structure with two floors and will give the automobile association more than twice the space it ever had for an exhibit.

There is ample space for cars, a large assembly room for concerts, and excellent lighting facilities. Heretofore the local show has never been able to take care of all the applicants for space.

Baltimore Adopts Boston Plan

BALTIMORE, Oct. 28—Thirty-six members of the Baltimore Automobile Trade Association have decided to adopt a co-operative used car plan similar to that used in Boston and a number of other cities.

The dealers made their decision after listening to an address by L. B. Sanders, secretary of the Boston Used Car Statistical Bureau, who told of the successful operation of the Boston plan.

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CHANGES IN THE TRADE

Detroit Ball Bearing Co. has moved to 3958 Cass Avenue, Detroit.

Hansen Auto Supply Co., dealing in accessories, is a new St. Paul concern.

E. O. Merchant Co., Minneapolis, has been appointed northwestern distributor for Transport Trucks

E. Stevenson and **W. G. Coe** have opened an establishment for the sale of used cars in Cincinnati.

E. W. Arrasmith, formerly Oakland dealer in Kansas City, has opened a Chevrolet agency and service station in that city.

Warren Given Co., St. Paul, has been made community distributor for the Buick. The company handles also the Milburn and Rauch-Lang cars.

Tri-State Motor Sales Co., Maxwell-Chalmers distributor in Memphis, has appointed **Opie C. Stephenson** manager of its used car department.

Signal Truck Corp. has established a direct factory sales and service station in Indianapolis with J. T. Crossland, a veteran Signal salesman, in charge.

J. Q. Friend has been appointed territory representative for Traffic trucks, operating under the Philadelphia branch of the **Traffic Motor Truck Corp.** of St. Louis.

Dale Bros., Minneapolis, 12 years in business, has been appointed authorized dealer by the **Pence Automobile Co.,** Buick wholesaler, and will carry Buick and G. M. C. parts.

Franklin Automobile Co. announces the following new dealers: **Sydney J. Morris,** Laramie, Wyo.; **Zeb C. Cummings,** Tarboro, N. C.; **Pratt Motor & Implement Co.,** Newbern, N. C.

O. W. Olson, St. Paul, has been named Garford truck agent and will open a sales and service station as the **Northwestern Garford Co.** Olson formerly was with the **St. Paul White Co.**

Teddy Rowe, new district manager for the **Everyday Piston Ring Co., Inc.,** East Rochester, N. Y., has been put in charge for the company in Minnesota and the Dakotas, with headquarters in Minneapolis.

Dunham-McCumber Motor Co., Fond du Lac, Wis., has been incorporated to succeed to the partnership business of **H. E. Dunham** and **B. E. McCumber,** proprietors of the Nash sales and service station for several years.

Charles P. Hughes, formerly secretary of committees of the Automotive Equipment Association, has become connected with the **Frank Miller Co.** of Brooklyn, N. Y., as a sales representative in the Chicago territory.

W. W. Mitchell, manager of the Atlanta branch of the **Ford Motor Co.,** advises that **Samuel Murray,** with the branch for several years, has been named assistant manager. He was formerly purchasing agent and head of the sales department.

Nathaniel Leverone, has resigned as secretary and treasurer of the **Hill Pump Valve Co.,** Chicago, to become secretary of the **Advance Lamp Works** of Chicago. For a number of years Leverone has been a leader in the Automotive Equipment Association.

Western Auto Supply Co., with headquarters and a retail accessory and parts store in Kansas City, is opening a second retail store there. The company now has 67 stores. **Don W. Davis** is president of the company; **W. J. Boshell** has been made manager of the second Kansas City store.

George W. Nelson, president of the St. **Paul White Co.,** has been appointed to distribute Federal trucks in Minnesota and northwestern Wisconsin. **H. E. Casselton** is salesmanager. The White line is to be distributed hereafter from the Twin City branch just completed in Minneapolis.

Louis C. Gill has been made resident manager in Minneapolis for the **Joy Bros. Motor Car Co.** of St. Paul, Packard distributor. He has been handling the wholesale business in Minnesota and Wisconsin for the company. He had been special tire representative for the **B. F. Goodrich Rubber Co.** in Chicago.

Harper-Shourt Motor Co., Minneapolis, has been named by **Torbert-McGregor, Inc.,** as downtown salesagent for the Durant and Star cars. **C. W. Harper** for many years has been head of the Harper garages and has taken as partner **A. J. Shourt.** A general garage and service business will be conducted.

W. J. Keefe, president of the **Overland-Waterloo Co.,** Waterloo, Iowa, has completed arrangements in Des Moines to establish distributing center for northeastern Iowa deliveries of Overland and Willys-Knight cars in Waterloo. **R. J. Clemons,** president of the Iowa company, recently inspected the territory and approved the establishment of the center.

C. E. Fifer has been appointed factory representative of the **Reo Automobile Co.,** with headquarters in Greensboro, N. C. Fifer will have charge of the territory embracing all of North Carolina, Virginia, South Carolina and Maryland. He formerly resided in that city, being connected with the American Southern Motors Co. He was also at one time connected with the Motor Co. at Winston-Salem, N. C.

Rahr-Nash Motor Co. of Manitowoc, Wis., which has been incorporated to act as Nash and LaFayette dealer in Manitowoc county, has taken over the **Hagen Motor Car Co.** garage and service building as headquarters. The principals in the new company are **William** and **Niels Rahr** and **William S. Schrader.** The Rahr interests will continue in the present location the business of the **Rahr Auto Grinding Co.,** established several months ago.

Peerless Motor Car Co. announces the following dealers: **Peerless Motor Sales Co. of New Jersey,** Hackensack, for Bergen County; **Fogarty & Woodburn,** Newburgh, N. Y.; **American Auto Co.,** New Brunswick, N. J.; **Harry A. Goff,** Central Valley and Highland Falls, N. Y., for Orange County; **Hemstreet Bros.,** Monticello, N. Y.; **James Gibson,** Cornwall-on-Hudson; **Henry Burgainder,** Monroe, N. Y.; **Samuel H. Grossman,** Harrison, N. J.

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Nash 5 Pass. Sedan.....Sept. 6, 1922-19
Nash Six
Four Door Sedan.....Sept. 27, 1922-11
Nash Six Sport Phaeton.....Oct. 11, 1922-19
Nash Six Roadster.....Nov. 1, 1922-23
Oakland Five Pass. Coupe..Sept. 27, 1922-11
Oakland Four Door Sedan..Sept. 27, 1922-11
Oakland Closed Bodies.....Oct. 4, 1922-20
Oldsmobile Brougham.....Aug. 30, 1922-43
Oldsmobile Light Eight.....July 19, 1922-26
Oldsmobile Light 8 Roadster..Oct. 11, 1922-18
Oldsmobile New Body.....July 26, 1922-17
Oldsmobile
Two Door Brougham.....Sept. 27, 1922-11
Oldsmobile .....Oct. 4, 1922-20
Packard New Single Six.....May 3, 1922-23
Packard Limousine-Sedan
Single Six.....Sept. 27, 1922-11
Packard Limousine-Sedan
Single Six.....Oct. 4, 1922-21
Packard Coupe.....Sept. 27, 1922-11
Peerless .....Aug. 23, 1922-18
Reo Phaeton.....Aug. 9, 1922-31
Reo Model C Sedan.....Sept. 27, 1922-11
Reo Model C Coupe.....Sept. 27, 1922-11
Star .....June 21, 1922-30
Star Details .....June 28, 1922-28
Star .....Mar. 15, 1922-14
Stearns-Knight Six.....July 12, 1922-29
Stephens Two Door Sedan..Sept. 27, 1922-11
Stutz 1922 Model.....April 5, 1922-32
Velie Brougham.....Oct. 4, 1922-42
Westcott 7 Pass. Phaeton...Aug. 9, 1922-30
Willys Knight
Seven Pass. Sedan.....Sept. 27, 1922-11
Model 27 Sedan.....Oct. 4, 1922-21
Model 27 7 Pass Phaeton..Oct. 25, 1922-40
Wills Sainte Claire
Brougham .....Aug. 30, 1922-42

TRUCKS

Commerce Special Delivery..Sept. 20, 1922-27
Federal Express Chassis.....July 19, 1922-26
Indiana One Ton Speed.....Aug. 30, 1922-26
Standard Model 75.....July 5, 1922-43
Stewart Utility Wagon.....July 12, 1922-30
Vim Speed Truck.....Aug. 30, 1922-24

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Calendar of Trade Events

CONVENTIONS

Des Moines.....Nov. 10
Annual Convention of the Iowa Automotive Merchants Association.

Chicago.....Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

Chicago.....Nov. 14-15
Semi-Annual Convention, Factory Service Managers, under Auspices of the National Automobile Chamber of Commerce.

Milwaukee.....Nov. 14-16
Third Annual Convention of the National Tire Dealers Association, Hotel Pfister.

Harrisburg.....Nov. 20-21
Annual Convention of the Pennsylvania Automotive Association, George G. McFarland, president; L. H. Haberling, secretary and general manager.

Toledo.....Dec. 6-8
Annual Convention of the Ohio Automotive Trades Association.

Chicago.....Jan. 29-31
Annual Meeting, Automotive Electric Service Association, Congress Hotel.

SHOWS

Clarksdale, Miss.....Nov. 2-4
Automobile Show, under the auspices of the Clarksdale Associated Retailers.

Indianapolis.....Nov. 6-10
Closed Car Show, Cadle Tabernacle, under the auspices of the Indianapolis Automobile Trade Association, John B. Orman, manager.

Houston.....Nov. 8-18
South Texas Fair.

Jersey City.....Nov. 11-18
Third Annual Show, Fourth Regiment armory, under the auspices of the Hudson County Automobile Trade Association.

Los Angeles.....Nov. 11-19
Automobile Show, Motor Car Dealers Association, Burt Roberts, manager.

Chicago.....Nov. 13-18
Annual Show of Automotive Equipment Association.

Cincinnati.....Nov. 22-29
Second Annual Automobile Accessory and Radio Exposition, Music Hall, under the auspices of the Cincinnati Automotive Trade Association.

Bridgeton, N. J.....Nov. 25-Dec. 2
First Closed Car Show, Martin Dye Building, under the auspices of the Bridgeton Automobile Dealers Association, J. W. Acton, manager.

New York.....Dec. 3-9
Eighteenth Annual Automobile Salon, Commodore Hotel.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, auspices of the Automobile Body Builders Association.

Cleveland.....Jan. 20-27
Annual Automobile Show, New Public Auditorium, under the Auspices of the Cleveland Automobile Manufacturers and Dealers Association, Herbert Buckman, Manager.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Salon, Drake Hotel.

Ann Arbor, Mich.....Jan. 29-Feb. 3

Minneapolis.....Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Portland, Ore.....February
Annual Automobile Show, under the auspices of the Portland Automobile Dealers Association.

Atlanta.....February
Annual Southern Automobile Show, Atlanta Auditorium, under the auspices of the Atlanta Automobile Association, Virgil W. Shepard, manager.

Troy, N. Y.....Feb. 3-10
Ninth Annual Automobile Show, State Armory, under the auspices of the Troy Used Car Sales Corp., Frank M. Baucus, manager.

Charlotte, N. C.....Feb. 5-10
Annual Automobile Show, Made-in-Carolinas Exposition Building, under the auspices of the Charlotte Automotive Trade Association.

Lansing, Mich.....Feb. 5-10

Cincinnati.....Feb. 7-14
Automobile Show, under the auspices of the Cincinnati Automobile Dealers Association, Harry T. Gardner, manager.

Kalamazoo and Flint, Mich.....Feb. 12-17

Grand Rapids and Mt. Clemens, Mich.
Feb. 19-24

Louisville, Ky.....Feb. 19-24
Fifteenth Annual Automobile Show, under the auspices of the Louisville Automobile Dealers Association, George T. Holes, secretary.

Brooklyn, N. Y.....Feb. 24-Mar. 3
Annual Automobile Show under auspices of the Brooklyn Motor Vehicle Dealers Association, 23rd Regiment Armory.

Des Moines.....Feb. 25-March 5
Fourteenth Annual Automobile Show, Coliseum, Passenger Cars and Accessories only, under the auspices of the Des Moines Automobile Dealers Association, Dean Schooler and C. G. Van Vliet, managers.

Muskegon, Mich.....Feb. 26-March 3

Syracuse.....Feb. 26-Mar. 3
Annual Automobile Show under auspices of the Syracuse Automobile Dealers Association.

Springfield, Mass.....Feb. 26-March 3
Annual Automobile Show under the auspices of the Springfield Automotive Dealers Association.

Bay City, Mich.....March 5-10

Newark, N. J.....Mar. 10-17
Annual Automobile Show under the auspices of the New Jersey Automobile Exhibition Co., Claude E. Holgate, manager.

Port Huron, Mich.....March 12-17

Battle Creek, Mich.....March 19-24

Alpena, Mich.....April 2-7

CLOSED CAR WEEK

Louisville, Ky.....Nov. 20-25

RACES

Los Angeles.....Nov. 30

San Diego.....January

OUTPUT OF 9 MONTHS PLACED AT 1,875,227

WASHINGTON, Oct. 30—Figures received by the Department of Commerce through the Bureau of the Census place total production of passengers cars in September at 186,562, compared with 249,225 in August, and of motor trucks at 18,843 as against 24,200 in August. While the September production is the lowest since March, it is considerably above the figures for September, 1921, when 144,669 passenger cars and 13,648 motor trucks were produced.

The following table gives the total output for each of the last nine months. With a few exceptions the reports each month are from identical firms and include approximately 90 passenger car and 80 motor truck manufacturers. September figures are subject to slight revision when all reports have been received by the Department.

1922	Passenger cars	Trucks	Total
Jan.	81,693	9,416	91,109
Feb.	109,171	13,195	122,366
March	152,959	19,761	172,720
April	197,216	22,342	219,558
May	232,431	23,788	256,219
June	263,027	25,984	289,011
July	224,057	21,357	245,414
Aug.	249,225	24,200	273,425
Sept.	186,562	18,843	205,405
Grand Total	1,696,341	178,885	1,875,227

Roy D. Chapin Returns Home

NEW YORK, Oct. 28—Roy D. Chapin, president of the Hudson Motor Car Co., was one of the passengers on the Majestic, returning from a 10 weeks' business trip in France and England. As a result of the trip Chapin announces the establishment of a general European depot in London for the distribution of Hudson and Essex cars.

CLEVELAND DEALERS TAKE ON NEW LINES

CLEVELAND, Oct. 26—Automobile row here received its biggest shake-up of the year when distribution of the Hudson, Essex, Chandler and Olds was placed in new hands.

The Stuyvesant Motor Co., which in 1920 built a $1,500,000 sales and service plant to handle the Hudson and Essex cars, has relinquished those two cars and has taken over the Chandler six from the Simmons Motor Co.

The R. J. Schmunk Co. has taken over the distribution of the Hudson and Essex models. Schmunk was for many years sales manager for the Peerless Motor Car Co. He left that company when R. H. Collins of Detroit acquired control of the majority of the stock.

The Simmons Motor Co. has taken over the distribution of the Oldsmobile from the Ohio Oldsmobile Co.

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason.....A	¾-1	$1650a	3¾x5	34x5n	34x5n	W
Acason.....RB	1½	1950	3¼x5¼	36x3½	36x6	W
Acason.....H	2½	2750	4⅜x5¼	36x4k	36x8k	W
Acason.....L	3½	3450	4⅜x5¼	36x5k	36x10k	W
Acason.....M	5	4350	5 x3¼	36x6	40x12	W
Ace.....30	1½-1¾	2400	3⅝x5	34x3½	34x6	W
Ace.....40	2	2850	4⅛x5¼	36x4	36x7	W
Ace.....60	2½-3	3400	4⅛x5¼	36x4	36x8	
Acme.....2J	1	....	3¼x5	35x5n	35x5n	W
Acme.....3J	1½	....	3¾x5	34x3½	34x5	W
Acme.....4J	2	....	3¾x5	34x3½	34x5	W
Acme.....6J	3	....	4⅛x5¼	36x4	36x7	W
Acme 6JL	3	....	4½x5½	36x4	36x7k	W
Acme.....9J	4½	....	4½x5½	36x5	40x10	W
Acme.....12S	6½	....	4¾x6	36x6	40x12	W
American.....2J	2½	3350	4 x6	36x4k	36x4dk	W
American.....4J	4	4275	4½x6	36x5k	36x5dk	W
American.....5J	5	4500	4½x6	36x5	36x12	W
Armleder.....2J	1	....	3¼x5¼	34x3½	34x6k	W
Armleder.....21	1½	....	3¾x5¼	34x3½	34x6k	W
Armleder....40-B	1½	....	4¾x5½	36x3½	34x6k	W
Armleder....40-C	1½	....	4½x5¼	34x3½	34x6k	W
Armleder..HW-B	2½	....	4½x5½	36x4k	36x7k	W
Armleder..HW-C	2½	....	4½x5¼	36x4k	36x7k	W
Armleder..KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder..KW-C	3½	....	4½x5½	36x5k	36x5dk	W
*Atlas.....22	1	1195	3¾x5⅛	34x4½gn	34x4½gn	W
*Atlas.....44	1½-2	1950	3¼ 5⅛	36x6n	36x6n	W
Atterbury....22R	1½	2175	3¾x5	34x3½	34x5	W
Atterbury....22C	2½	3375	4⅛x5¼	36x4	36x4d	W
Atterbury....22C	2½	3475	4⅛x5¼	36x4	36x4d	W
Atterbury....22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury....22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury.....8E	5	4975	4¾x6	36x5	40x6d	W
Atterbury.....8E	5	5125	4¾x6	36x5	40x6	W
Autocar.....21JR	1½-2	1950	3¾x5½	34x4k	34x6	D
Autocar.....21UG	1½-2	2350	4¼x5½	34x4k	34x6	D
Autocar.....27H	2-3	2950	4 x5½	34x5	36x7	D
Autocar.....27K	2-3	3075	4 x5½	34x5	36x7k	D
Autocar.....26Y	4-6	3650	4½x5½	34x6	36x12	D
Autocar.....26-B	4-6	4100	4¾x5½	34x6	36x12	D
Available....H1½	1½	2175	4 x5	36x3½k	36x5k	W
Available.....H2	2	2775	4 x5	35x3½k	36x6k	W
Available....H2½	2½	3160	4 x5	36x4k	36x8k	W
Available....H3½	3½	4175	4½x5½	36x5	40x5d	W
Available.....H5	5	5375	5 x6	36x6	40x12	W
*Avery.....	1	....	3 x4s	34x5n	34x5n	I
Beck.....A Jr.	1¼	1285a	3½x5	34x4½gn	34x4½gn	I
Beck.....B-30	1½	1450	3¼x5	31x5	36x6	
Beck.....C-40	2	1550	3¾x5	36x4k	36x6k	W
Beck.....D-50	2½	1950	4¼x5¼	38x7	40x8	
Bell.....M (Iowa)	1	1195	3¼x5⅛	35x5	35x5n	W
Bell.....E (Iowa)	1½	2100	3¾x5¼	34x3½	34x5	I
Bell.....O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Bessemer.....G	1	....	3½x5	35x5n	35x5n	I
Bessemer....H-2	1½	....	3¼x5	36x3½	36x5	D
Bessemer....J-2	2½	....	4¼x5¼	36x4	36x4d	D
Bessemer....K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem....KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem....GN	2	1795	4 x5¼	34x4	34x6k	I
Bethlehem....GN	3	2105	4 x5¼	36x4k	36x8k	I
Bridgeport.....A	1½	....	3¾x5⅛	34x3½	34x6	W
Bridgeport.....B	2½	....	4½x5½	36x4	36x4d	W
Bridgeport.....C	3½	....	4½x5	36x5	36x10	W
Brinton.....C	2	2500	3¾x5	34x4	34x5	W
Brinton.....D	3	2975	4¼x5¼	36x4	36x7	W
Brockway.....E	1	....	4 x5	33x5n	33x5n	B
Brockway.....S-5	1½	....	4 x5	36x4	36x6	W
Brockway.....SK	1½	....	4½x5¼	36x4	36x6	W
Brockway.....KR	2½	....	4½x5½	36x4	36x8	W
Brockway.....K-5	2½	....	4¼x5¼	36x4	36x8	W
Brockway.....RT	3½	....	4¾x6	36x5	36x10	W
Brockway.....R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway.....T-4	5	....	4¾x6	36x6	40x6d	W
*Buick.....	½	945b	3½x4¼	31x4n	31x4n	B
Case.....	2	....	4¼x5¾	36x6	38x7	I
*Chevrolet.....	¼	510b	3½x4	30x3½gn	30x3½gn	B
*Chevrolet.....G	¾	650	3½x4	34x4n	34x4½gn	B
*Chevrolet.....T	1	1065	3¾x5¼	33x4n	35x5n	W
Chicago.....C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago.....C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago.....C3½	3½	....	4½x5½	36x5	36x10	W
Chicago.....D5	5	....	4½x5½	36x6	40x12	W
Clydesdale.....10	¾-1½	1185	3¼x5	34x5n	34x5n	B
Clydesdale.....17	¾-1½	1545	3¾x5	34x5n	34x5n	B
Clydesdale.....18	¾-1½	1810	3¾x5	34x5	34x5	W
Clydesdale.....22	1-1½	2285	3¾x5	34x5	34x5k	W
Clydesdale.....42	1½-2½	2475	3¾x5	36x3½	36x6	W
Clydesdale.....65EX	2½-3	3250	4¼x5¼	36x4	36x8	W
Clydesdale.....65	2½-3	3450	4½x5½	36x4	36x8	W
Clydesdale.....99	3½-4	4100	4½x5½	36x5	36x10	W
Clydesdale.....120	5-6	4500	4¾x6	36x6	40x12	W
Comet.....T	1½	1450	3¾x5	34x4	34x4	W
Commerce.....9	¾-1	1150	3¼x5	32x4½gn	32x4½gn	B
Commerce.....T	¾-1	1450	3¼x5	34x4½gn	34x4½gn	B
Commerce.....10	¾-1½	2500	3¾x5	33x5n	33x5n	B
Commerce.....12	1½	1645	3¾x5	34x3½	34x4	I
Commerce.....12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce.....16	2	1995	3¾x5	34x4	34x6	I
Commerce.....16	2	2150	3¾x5	35x5n	36x6n	I
Commerce.....18	2½	$2150	4½x5¼	36x4	36x7	I
Commerce.....18	2½	2495	4½x5¼	36x6n	40x8n	I
Commerce.....25	2½	2425	4½x5¼	36x4	36x7	W
Commerce.....25	2½	2770	4½x5¼	36x6	40x8n	W
Cook.....51	2½	3600	4 x5⅛	36x6n	40x8n	W
*Corbitt.....	¾-1	1250	3½x5	33x5n	33x5n	
Corbitt.....E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt.....D-22	1½	2200	3¾x5	34x3½	34x5	W
Corbitt.....C-22	2	2600	4½x5¼	36x3½	36x7	W
Corbitt.....B-22	2½	3000	4¼x5¼	36x4	36x7	W
Corbitt.....R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt.....A-22	3½-4	3800	4½x5½	36x5	36x10	W
Corbitt.....AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder....AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder.....B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder.....D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder.....C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder.....F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder.....E	5	4250	4½x6	36x5t	40x6dk	W
Dearborn.....E	1	1600	3⅝x5⅛	35x5n	35x5n	W
Dearborn....FX	1½	2300	3¾x5⅛	34x4	34x5	W
Dearborn.....F	1½	2180	3¾x5⅛	34x4	34x5	W
Dearborn.....43	2	2590	3¾x5⅛	34x4½gn	34x7	W
Defiance.....G	1	1525	3¼x5	35x5n	35x5n	B
Defiance.....D	1½	1845	3¾x5	35x5n	36x6n	I
Defiance.....E	2	2075	3¾x5	35x5n	38x7n	I
Denby.....31	1¼	1485	3¾x5	35x5n	35x5n	B
Denby.....33	1½	2145	3¾x5	35x5n	38x7n	I
Denby.....35	2½-3	2795	4¼x5¼	36x4	36x7	I
Denby.....27	4	3895	4½x5½	36x5	36x5d	I
Denby.....210	5	4295	4½x5½	36x6	40x6d	I
Dependable....A	¾-1	1650	3⅝x5⅛	34x5n	36x6n	W
Dependable....C	2	2350	3¼x5¼	34x3½	34x5	W
Dependable....D	2½	2650	4 x5½	34x5	36x6	W
Dependable....E	3	2950	4½x5½	36x4	36x7	W
Diamond T...O-3	1-1¼	1975	3¾x5¼	36x3½gn	36x4n	W
Diamond T.....T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T.....U	2-2½	2650	4 x5¼	36x4	36x7	W
Diamond T.....K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T....EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T.....S	5	4500	4¾x6	36x6	40x6d	W
Deane.....	2½	4100b	4¼x5¾	36x5	36x7	C
Deane.....	3½	5100b	4⅜x5¾	36x5	36x5d	C
Deane.....	6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers.	¾	730	3⅞x4½	32x4n	32x4n	B
Derris.....K-2	1	2490	4 x5½	33x5n	33x5n	B
Derris.....K-4	2-2½	3400	4¼x5½	36x4	36x7	W
Derris.....K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort.....103	½	685a	3½x5	31x4n	34x4n	B
Double Drive..B	3	4000	4¼x5½	36x6	36x6	W
Duplex.....A	2	2775	4 x5¼	35x5n	38x7n	B
Duplex.....E	3½	3500	4¼x5½	36x8	36x8	I
Duty.....22	2	1590	3½x5	34x3½	34x5	I
Eagle.....101	1½	1875	3⅝x5⅛	34x5	34x5	I
Eagle.....100-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D.....B	3	4200	4⅜x5½	36x6	36x6	B
Fageol.....1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol.....2½	2½	3900	4⅜x5¾	34x4	36x7	W
Fageol.....3½	3½	5000	4½x5¾	36x5k	40x5dk	W
Fageol.....5	5	5700	4½x5¾	36x6	40x6d	W
Fargo.....R	2	1700	3¾x5	36x4	36x6	I
*Federal.....	1½	1375	3¾x5	—x5n	—x5n	
Federal.....SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal.....TE	1½	2175	4¼x5½	36x3½	36x5	W
Federal.....US	2-2½	2125	4¼x5¼	36x4	36x7	W
Federal.....WE	3½-4	3150	4½x5½	36x5	36x5d	W
Federal.....X2	5-6	4500	4¾x6	36x6	40x6d	W
*Ford.....	½	380	3¾x4	30x3½gn	32x4½gn	W
Front Drive....C	1½	2800	3¾x5½	36x6	36x6	W
G.M.C.....K16	1	1295	3½x5½	31x5n	34x5n	B
G.M.C.....K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C.....K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C.....K-41T	5†	2150	4 x5½	36x4	36x8	W
G.M.C.....K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C.....K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C.....K-71T	10†	3700	4½x6	36x5	40x12	W
G.M.C.....K-191A	5	3350	4½x6	36x5	40x6d	W
G.M.C.....K-191T	15†	4050	4½x6	36x5	40x14	W
G.M.C.....K-191B	5	4050	4½x6	36x5	40x6d	W
G.W.W.....	1½	1850	3¾x5½	35x5	35x5	I
*Garford.....15	1	1590	3⅝x5⅛	34x5n	34x5n	W
Garford.....25-B	1½	1990	3¾x5½	36x3½	36x5	W
Garford.....7)-H	2½	2750	4¼x5½	36x4	36x8	W
Garford.....77-D	4	3750	4½x6	36x5	36x5d	W
Garford.....68-D	5	4500	5 x6½	36x6	40x6d	W
Garford.....153-A	7½	5200	5 x6½	36x6	40x7d	C
Gary.....F	1-1½	1775	3¾x5	36x3½	36x5	W
Gary.....I	2	2450	4 x5½	36x3½	36x6	W
Gary.....J	2½	2850	4¼x5½	36x4	36x8	W
Gary.....K	3½	$3790	4½x6	36x5	40x5d	W
Gary.....M	5	4450	5 x6½	36x6	40x6d	W
Gersix.....M	1½	3100	4 x5½	36x3½	36x7	W
Gersix.....K	2½	3500	4½x5½	36x4	36x8	W
Gersix.....	3½	4500	4½x6	36x5	40x12	W
Gotfredsen....20	1	2075	3¾x5½	34x5	34x5	W
Gotfredsen....31	1½-2	3000	4 x5¼	36x6	38x7n	W
Gotfredsen.....A	2½	3375	4 x5¼	36x4	36x7	W
Gotfredsen.....B	3½-4	4475	4½x5½	36x5	36x10	W
Gotfredsen...100	5-6	5500	5 x6½	36x6	40x14	W
Graham Bros....	1	1265	3⅞x4½	33x4½gn	34x5n	B
Graham Bros....	1½	1325	3⅞x4½	33x4½gn	36x6n	B
1Gramm-Pion..10	1	1245	3½x5	33x5n	33x5n	B
1Gramm-Pion..15	1½-2	1750a	3¾x5	36x3½k	36x5k	I
1Gramm-Pion..65	1½-2	2250a	3¾x5	36x3½k	36x5	W
1Gramm-Pion..20	2-2½	2475a	4½x5¼	36x4k	36x7k	W
1Gramm-Pion..30	3	3300a	4¼x5½	36x5k	36x5dk	W
1Gramm-Pion.75P	3½	4225a	4½x5½	36x6n	42x9n	W
1Gramm-Pion..40	4	3850a	4½x5½	36x5	36x5dk	W
1Gramm-Pion..50	5-6	4450a	4¾x6	36x6	40x6dk	W
Hall.....1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall.....2½	2½	3275	4½x5¼	36x4	36x6	W
Hall.....3½	3½	4100	4½x5½	36x5	36x5d	W
Hall.....5	5	5100	4½x5½	36x5	40x6d	W
Hall.....7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey....W OA	2	2650	4¼x5½	34x4	34x7	W
Harvey....WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey....W HA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye.....O	1	1375	3⅝x5½	34x5n	34x5n	
Hawkeye.....K	1½	1645	3¾x5½	34x3½k	34x5k	I
Hawkeye.....M	2	2145	4¼x5	36x4k	36x6k	I
Hawkeye.....N	3½	3700	4½x6¾	36x5k	36x10k	I
Hendrickson...O	1½	2200	3⅝x5⅛	36x4n	36x5n	W
Hendrickson...N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson...M	3½	3000	4½x5	36x5k	36x5dk	W
Hendrickson...K	5	4000	5 x6¼	36x6	40x6	W
Huffman.....B	1½-2	1795	3¾x5	34x3½	34x6	W
Huffman.....C	1½-2	1695	3¾x5½	36x3½	36x6	I
Huffman.....D	2-3	2895	4¼x5½	36x4	36x7	
Hurlburt....A-A	1-1½	1950	3¾x5	34x5n	34x5n	W
Hurlburt....B-B	2-2½	2800	4¼x5½	36x4	36x4d	W
Hurlburt....C-C	3-3½	3475	4¼x5½	36x5	36x5d	W
Hurlburt....D-D	4-4½	4150	4½x6	36x5	36x6d	W
Hurlburt....E-E	6-6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa) B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa) G	1½	2040	3¾x5½	34x3½	34x5	I
Indep'd't(Ia.)..HI	2½	2940	4¼x5½	36x4	36x7	I
*Indiana.....10	1	....	3⅝x5½	34x5n	34x5n	B
Indiana.....12	1½-2	....	3⅝x5½	34x3½k	34x5k	W
Indiana.....20	2	....	4¼x5½	36x4k	36x7k	W
Indiana.....25	2½-3	....	4⅜x5½	36x4k	36x8k	W
Indiana.....35	3½-4	....	4⅜x5½	36x5k	36x5dk	W
Indiana.....51	5-7	....	5 x6¼	36x5k	40x6dk	W
*International...S	1	1250	3½x5	34x4½gn	32x4½gn	I
International...21	1	1550	3½x5½	36x3½k	36x3½	I
International...31	1½	1650	3½x5½	36x3½k	36x5k	I
International...41	2	2100	3½x5¾	36x3½k	36x6k	I
International...52	2½	3500	4¼x5	36x6n	36x6dn	I
International...61	3	2400	4¼x5	36x4k	36x7k	I
International..67	3	2600	4¼x5	36x4	36x7	I
International..101	5	3600	4¼x5	36x5	40x12k	I
International..102	5	3800	4½x5	36x5	36x12	I
Jackson....4W D	3½	3850	4½x5½	36x7	36x7	B
K-Z.....1	1	1750	3½x5	34x3½	34x5	W
K-Z.....1½	1½	2075	3¾x5	36x4	36x6	W
K-Z.....2½	2½	2550	4¼x5¼	36x4	36x8	W
K-Z.....3½	3½	3350	4½x5½	36x5	40x10	W
K-Z.....5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo....T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo....G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo....LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo....NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo....HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo....SK	4	3845	4¼x6	36x5	36x12	W
Kalamazoo....OK	5	4350	4½x6	36x6	40x6d	W
2Kelly-S.....K-31	1½	2700	3¾x5½	36x3½	36x6	C
2Kelly-S.....K-34	1½	2700	3¾x5¼	36x3½	36x6	W
2Kelly-S.....K-38	2½	2900	3¾x5¼	36x4	36x4d	W
2Kelly-S.....K-35	2½	2900	3¾x5½	36x4	36x4d	C
2Kelly-S.....K-40	3½	3900	4½x6½	36x5	40x5d	C
2Kelly-S.....K-41	3½	3900	4½x6½	36x5	36x10	I
2Kelly-S.....K-42	3½	3900	4½x6½	36x5	40x5d	W
2Kelly-S.....K-50	5	4400	4½x6½	36x6	40x6d	C
2Kelly-S.....K-60	6	4600	4½x8½	36x6	40x7d	C
2Kelly-S.....K-61	5-7	4800	4½x6½	36x6	36x7d	I
Kimball.....AB	2	3675	4 x6	36x4	36x7	W
Kimball.....AC	2½	3975	4¼x6	36x4	36x8	W
Kimball.....AK	3	4500	4½x6	36x4	36x10	W
Kimball.....AE	4	5000	4¾x6	36x5	40x12	W
Kimball.....AF	5	5500	5 x6	36x6	40x7d	W
*Kissel...Express	1	1585	3⅞x5½	34x5n	34x5n	W
Kissel...Utility	1½	1975	3⅞x5½	36x3½	36x6	W
Kissel...Freighter	2½	2875	4¼x5½	36x4	36x6	W
Kissel....H. D.	4	3675	4¼x5½	36x5	36x12	W
Kleiber.....AA	1	2200	4¼x5¼	34x3½k	34x5k	W
Kleiber.....A	1½	3100	4½x5¼	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor. †Capacity with semi-trailer.

1—Gramm-Pioneer. 2—Kelly Springfield.

Passenger Car Specifications on pages 51 and 52

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5½	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....D	1½	2150	3½x5	34x3½	34x5	W
Koehler.....M	2½	3175	4 x5½	36x4	36x7	W
Koehler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Koehler.....F	3½	4470	4½x5½	36x5	36x10	W
Koehler,MT. Trac	5	3275	4 x5½	36x4	36x7	W
Krebs.....23	¾	1360	3½x5	34x4½	34x4½	B
Krebs.....24	1	1675	3½x5	34x5	34x5	W
Krebs.....45	1½	2275	4½x5¼	36x4	36x7	W
Krebs.....75	2½	2550	4½x5½	36x4	36x8	W
Krebs.....110	3½	3175	4½x5½	36x5	40x10	W
Larrabee.....X-2	1	1925	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2100	3½x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3½x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½-3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5-7	4800	4¾x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	10x7	40x14	I
Mack...AB D.R.	1½	3450	4 x5	36x4k	36x3½dk	D
Mack...AB Chain	1½	3000	4 x5	36x4k	36x3½dk	C
Mack...AB Chain	2	3300	4½x5	36x4k	36x4dk	C
Mack....AB D.R.	2	3750	4½x5	36x4k	36x4dk	D
Mack....AB D.R.	2½	3850	4½x5	36x4k	36x4dk	D
Mack...AB Chain	2½	3400	4½x5	36x4k	36x4dk	C
Mack...AC Chain	3½	4950	5 x6	36x5k	40x5dk	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4¾x6	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Maplesleaf.....**	1½	3000	3¾x5¼	34x5n	36x6n	W
Maplesleaf...AA**	2	3600	4 x5¼	36x4	36x7	W
Maplesleaf...BB**	3	4050	4¼x5½	36x4	36x4d	W
Maplesleaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Maplesleaf...DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x6	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4½x5½	34x4	36x8	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x8	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	W
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3½x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1½	2000	3¾x5	34x3½	36x5	W
Menominee....H	1½	2175	4 x5	36x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4¾x6	36x6	40x12	W
Moline.....10	1½	1985	3½x5	34x5n	36x6n	I
*Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-5	4600	4¾x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3¾x5½	34x4	34x5	1
Nash.....3018	2-2½	2150	3¾x5½	34x4k	34x7k	1
Nash.....Quad.	2-2½	2750	4½x5½	36x6	36x5k	1
Nash..3018, LWB	2-2½	2200	3¾x5¾	34x4k	34x7k	1
Nash..Quad. LWB	2-2½	2800	4½x5½	36x6	36x6	1
Nash.....5018	2½	2250	3¾x5½	34x4k	34x7k	1
*Nelson.....G2	1½	....	4½x5½	36x3½	36x6	W
*Nelson.....G3	2½	....	4½x5½	36x4	36x7	W
*Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
*Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5½	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5½	36x4k	36x7k	W
Noble.....A21	1¼	1750	3½x5½	34x5	34x5	W
Noble.....B31	1½-2	2395	3¾x5½	36x4	36x7	W
Noble.....D51	2½-3	2795	4½x5½	36x4	36x8	W
Noble.....E71	3½-5	3495	4¾x6	36x5	36x10	W
Noble.....B30	1½	....	3¾x5½	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4½x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4½x5¼	34x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E Spec	1½	2285	3¾x5¼	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	36x3½	36x5	W
Ogden.....E	2½	....	4½x5¼	36x4	36x8	W

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Old Hickory...W	1	$1775	3¾x5	36x3½k	36x4k	W
Old Reliable...A	1½	2350	4 x5	34x4	36x6	W
Old Reliable ...B	2½	3500	4¼x6	34x4	36x4d	W
Old Reliable...C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6½	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5½	35x5n	35x5n	I
Olympic.....A	2½	3200	4¼x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	2½	3200	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	2485	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	2585	3½xn	36x6n	36x6n	B
Oshkosh.....B	2½	3485	4 x5¼	38x7n	38x7n	B
Oshkosh.....BB	2½	3585	4 x5½	38x7n	38x7n	B
*Overland.....4	½	425	3½x4	30x3½n	30x3½n	B
Packard.....EC	2-3	3100	4¼x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4¼x5½	36x6n	40x8n	W
Packard.....ED	3½-4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige.....54-20	2½	2420	4¼x5½	34x4	34x8	W
Paige.....51-18	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot...Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot...Lincoln	2	2050	4 x5½	34x4	34x6	W
Patriot....LS-800	2	2175	4 x5¼			
Patriot ,Washgt'n	3	2900	4½x5½	36x5	36x7	W
Pierce-Arrow....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3½x5	36x4	36x6	..
Pittsburgher.....	3	3800	4½x5¼	36x5k	36x8	W
Power.....F	2	3150	4 x5¼	36x5	36x7	W
Power.....C	3½	....	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier.....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4¼x5½	34x4	34x6	W
Rainier.....R-20	2½-3	....	4½x5½	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R25	3½-5	....	4½x5¼	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	36x6	40x6d	W
Rainier.....R27	6	....	4¾x6	36x6	40x6d	W
Ranger..TK-20-2	1½	1450	3¾x5	36x6n	38x7n	W
*Reo.....F	¾-1½	1185	4¼x4½	34x4½n	34x4½n	B
Reliance.....10A	1½	2100	4 x5½	36x3½	36x5	I
Reliance.....20B	2½	3100	4½x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3½x5	34x3	34x4	I
Republic..10 Exp	1	1695	3¾x5	34x5n	34x5n	I
Republic.....11X	1½	1795	3½x5	34x4	34x6	I
Republic.....19	2½	2195	4½x5½	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rewe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rewe....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rewe....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rewe....G.P.W.	3	5250	3¼x5r	38x7n	42x9n	W
Rewe.....HW	4	4500	4¼x6	36x5	36x6d	W
Rewe.....F. W.	5	4850	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4-3½x4	32x4n	32x4n	B
Samson.....25	1¼	....	4-3½x5½	35x5n	35x5n	B
Sanford....W-15	1½-2	2150b	3¾x5	36x3½k	36x5k	..
Sanford.....25	2½-3½	....	4½x5½	36x4	36x4d	W
Sanford.....35	3½-5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5-7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ton	3	3800	4¼x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5½	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½-2½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½-2½	3350	4½x5½	34x5	38x7n	W
Selden.....50	2½-3½	3250	4½x5½	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4¾x6	36x6	40x12	W

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Seneca.....M	½	$ 820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3½x4½	32x4½n	32x4½n	B
*Service.....25	1½	....	3¾x5½	34x5n	34x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4½x5½	35x5n	38x7n	W
Service.....52	3	....	4½x5½	36x4	36x8	W
Service.....72	3½	....	4½x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	1450	3½x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5¼	34x4	36x6	W
Signal.....J	2½	2375	4½x5¼	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x8d	W
Signal.....R	5	3900	4¾x6	36x6	40x6d	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5¼	36x4k	36x8	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x12	W
Standard.....5-K	5-7	4400	4¾x6	36x6	40x14	W
*Star.....	½	610b	3½x4¼	30x3½n	30x3½n	B
Sterling.....1½	1½	2585	4 x5¼	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5¼	36x4k	36x6k	W
Sterling.....2½	2½	3290	4½x5¼	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6½	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6½	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6½	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6½	36x6	40x7d	C
*Stewart...Utility	½-1½	1245	3½x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3½x5½	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3¾x5	34x3½	34x6	I
Stewart.....7-X	2½-3	2390	4¼x5½	34x4	34x8	I
Stewart....10-X	3½-4	3190	4½x6	36x5	36x10	I
*Stewart.....	1¾	1245	4-3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1095	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3¾x5½	34x5n	34x5n	W
Stoughton.....B	1½	2150	3¾x5½	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....F	3	3150	4¼x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4¼x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Thomart.....	1¼	1795	4 x5½	34x5	34x5	(
Tiffin.....GW	1½	2100	4½x5½	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5½	36x4	36x3½d	W
Tiffin.....PW	3½	3600a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4½x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4½x5½	35x5n	38x7n	W
Tower.....H	2½	2475	4½x5½	36x4	36x7	W
Tower.....G	3½	3475	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595a	3½x5	35x5n	35x5n	I
Traffic.....C	2	1595a	3½x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3½x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5½	34x3½k	34x5k	I
Transport.....35	2	1885a	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5½	36x4k	36x8k	I
Transport.....60	3½	2585	4½x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Trayler.....B	1½	2390	3¾x5½	34x3½	34x5	W
Trayler.....C	2-2½	2850	4 x5½	36x4	36x7	W
Trayler.....D	3-3½	3300	4½x5½	36x4	36x8k	W
Trayler.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3½x5	34x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3½x5½	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5½	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5¼	36x4k	36x7k	I
Twin City...B.W.	2	2400	4 x5½	36x6	40x8	I
Twin City...A W.	3½	3500	4½x6	36x5	40x5d	W
*Twin City.....B	3½	....	5½x6	36x6	36x6	I
*Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4½x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4½x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4½x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4½x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
United.....A	1½	2145	3¾x5½	36x3½k	34x5k	W
United.....B	2½	3150	4½x5½	36x4k	36x7k	W
United.....C	3½	3975	4½x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States .U	1½	1800	3½x5½	34x5n	34x5n	B
UnitedStates,NW	1½-2	2375	3¾x5	36x5	36x3½	W
United States...N	1½-2	2175	3¾x5	36x3½k	36x5k	I
United States...R	3	3300	4 x5½	36x4	36x4d	W
United States...S	4	4075	4½x5½	36x5	36x5d	W
United States...T	5-7	4975	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Velie.....53	2½	2185	4 x5½	36x4k	36x7k	I
Veteran.....M**	1½	2699	3¾x5½	35x5n	35x5n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Veteran.....P**	2	$3699	4¼x5½	36x4	36x7	W
Veteran.....R**	3	4200	4¼x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	½	1050	3½x4½	31x4n	31x4n	W
*Vim.....50	½-¾	995	4 x5	32x4n	32x4n	B
Walker-JohnsonA	2	2500	3¾x5	34x3½	34x6	W
Walker-JohnsonB	3	3000	4½x5½	36x4	36x8	W
Walter.....M	2½	3850	4½x5¾	36x4	36x8	D
Walter.....S	5	4850	4½x6¼	36x6	40x6-l	W
*Watson.....C	1	1465a	3¾x5½	35x5n	35x5n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2450	4¼x5¼	36x3½k	36x5k	W
Western....L1½	1½	2450	3¾x5	36x3½k	36x5k	W
Western....W2½	2½	3250	4½x5¼	36x4	36x7	W
Western....L2½	2½	2450	4¼x6	36x4	36x7	W
Western....W3½	3½	4000	4½x6	36x5	40x5-l	W
*White.....15	¾	2400	3¾x5½	34x5n	34x5n	B
White.....2B	2	$3250	3¾x5½	36x4k	36x7k	D
White.....4B	3½	4200	3¾x5½	36x5	40x5d	D
White.....4S	5	4500	4¼x5¾	36x6	40x6d	D
White Hick....E	1	1225	3¾x5	34x5n	34x5n	W
White Hick....H	1½	1375	3¾x5	36x3½	36x5	W
White Hick....K	2½	1675	4¼x5½	36x4	36x5	W
Wichita.....K	1	1875	4¼x5½	36x3½	36x4k	W
Wichita.....M	2	2400	4¼x5½	36x3½k	36x6k	W
Wichita.....RX	3	3200	4¾x5¾	36x4k	36x8k	W
Wichita.....O	4	$3500	4½x6¼	36x5k	36x5k	W
Wilcox.....AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4¼x5	36x4k	36x3½k	W
Wilcox.....E	3½	3950	4¼x6	36x5k	36x5k	W
Wilcox.....F	5	4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¾x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4½x5¼	36x4	36x7	W
Wilson.....G	3½	3685	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin.....A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin.....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin.....C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin.....D	3½	3000	4¾x5¾	36x6n	40x8	W
Wisconsin.....E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin.....F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will.....N	1½	2450	3¾x5	36x3½k	36x6k	W
Witt-Will.....P	2½	2900	4¼x5½	36x4k	36x8k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm...	15-25	1185	4	Midw.	4-4½x5½	Gas.	3
Allis-Chalm...	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm..	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork...2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork.....C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T,...	15-30	1900	4	Clim.	4-5 x6½	G,K,D	4
Aultman-T....	22-45	2800	4	Own	4-5½x8	G,K,D	6
Aultman-T....	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Autocar, B-3	12-24	1250	4	Here.	4-4 x5½	Gas.	2-3
Avery,SR.Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery ..Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4½x6	G,K,D	2-3
Avery.....	....	....	*	Own	4-4x5½	G,K,D	3-4
Avery.....	12-25	....	4	Own	2-6½x7	G,K,D	2-3
Avery.....	14-28	....	4	Own	4-4½x7	G,K,D	3-4
Avery.....	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7½x8	G,K,D	8-10
Bates Mule.H	15-25	....	4	Milw	4-4½x5½	Gas.	3
Bates Mule..F	18-25	....	*2	Milw	4-4½x8½	Gas.	3
‡Bates MuleG	25-35	....	*2	Milw	4-4½x6	Gas.	..
Bear.....	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beaman Jr..	¾-1½	180	2	B&S	1-2½x2½	Gas.	....
¶Beaman...G	2-4	240	4	Own	1-3½x4½	Gas.	....
Best.....	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best.....	60	....	*2	Own	4-6½x8½	G,K,D	8-9
¶Beloeil	....	....	4	B & S.	1-2½x2½	G.	..
Bering.....	5-10	395	4	LeR.	4-3½x4½	G	..
Bering...1921	....	1850	3	Wauk	4-4¾x5¾	GorK	2
**Bryan.....	15-30	....	4	Own	2-4 x5	K.	3
Capital.....	15-30	1000	2	Own	4-4¾x6	Gas.	3
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	2-3
Case.....	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case.....	22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case.....	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T3S	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar .5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur.....	5-2½	345	2	N Way	2-4½x4½	GorK	1
Cletrac.....F	9-16	695	*2	Own	4-3¼x4½	G,K,D	2
Cletrac.....W	12-20	1315	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Dill.....D	20	2280	4	Cont.	4-4½x5½	Gas.	3
Dill.....R.W.	20	2980	4	Midw.	4-4½x6	Gas.	3
De-It-All,Baby	1	227	..	Own	1-2¾x2¾	Gas.	1
De-It-All.....A	3-6	495	..	Own	1-4½x5	Gas.	1
De-It-All, Jack	6	395	..	Own	1-3½x3¼	Gas.	1
De-It-All....6	12	495	2	Own	2-3½x3½	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B.....AA	12-20	1095	4	Own	4-4½x5	G,K,D	3
Fageol.....D	9-18	1175	4	Lyc.	4-3½x5	Gas.	2
Farm Horse.B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Farquhar.....	15-25	....	4	Buda	4-4½x6	G,K,D	3-4
Farquhar.....	18-35	....	4	Own	4-6 x8	G,K,D	4-5
Farquhar.....	25-50	....	4	Own	4-7 x8	G,K,D	6-7
Fitch...4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	$ 395	4	Own	4-4x5	G,K	2
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt,..A	18-36	2150	4	Wauk	4-4¾x6¾	G or K	4
Gray.....	20-36	1975	3	Wauk.	4-4½x6½	Gas.	4
Gray.....	22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. Western St	20-30	1950	4	Beav.	4-4½x6	K	4
Hart-Parr...20	20	865	4	Own	2-5½x6½	K,D.	2
Hart-Parr...30	30	1045	4	Own	2-6½x7	K,D.	3
‡Hart-Parr...	....	1395	4	Own	6½x7	K,D.	..
Heider.....D	9-16	628	4	Wauk	4-4½x5½	G,K	2
Heider.....C	12-20	725	4	Wauk	4-4½x6¾	G,K	3
Heider...Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4.	12-25	985	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4	15-30	1885	4	Midw.	4-4½x6	Gas	3
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International.	8-16	†670	4	Own	4-4½x5	G,K,D	2
Internatl.Titan	10-20	†790	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5½x8	G,K,D	4
¶Kinkade.....	1½-3	190	1	Own	1-3 x3	Gas.	....
La Crosse.....	12-24	985	2	Own	2-6 x7	G,K	3
Lauson.....S	12-25	1295	4	Midw	4-4½x5½	Gas.	3
Lauson.....21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lauson Road	15-30	2000	4	Beav.	4-4¾x6	K	....
Leader.....B	12-18	685	4	Own	2-6 x6¼	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn.....H4J	40-	4500	*	Cont.	4-4½x5½	Gas	4
Linn.....W	60	5000	*	Wauk	4-5 x6¼	Gas	6
Little Giant, B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant, A	26-35	3300	4	Own	4-5½x6	K	6
Lombard.1922	85-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2¾x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Mod.D	22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD	35-70	3850	4	Own	4-7½x9	G or K	8-9
Mohawk .1922	8-16	650	2	Light	4-3½x4½	K or G	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch..	9-18	....	2	Own	4-3½x5	Gas.	2-3
‡Monarch.....	20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Moter Macalt,	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	375	4	Own	2-3¾x4	Gas.	1
Nichols-Shep.	20-42	2650	4	Own	2-8 x10	G or K	3-6
Nichols Shep.	25-50	3000	4	Own	2-9 x12	G or K	4-8
Nichols-Shep.	35-70	3650	4	Own	2-10½x14	G or K	8-12
Nilson Senior..	20-40	1975	5	Wauk	4-5 x6¼	G,K	4
Oil Pull.....K	12-20	....	4	Own	2-6 x8	K,D	3
Oil Pull.....H	16-30	....	4	Own	2-7 x8½	K,D	4
Oil Pull.....G	20-40	....	4	Own	2-8 x10	K,D	5-6
Oil Pull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar ..K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Pioneer.....G	18-36	....	4	Own	4-5½x6	G,K,D	4
Pioneer.. ..C	40-75	....	4	Own	4-7 x8	Gas.	10
Plowman....A	15-30	1295	4	Buda	4-4½x6	G,K	2-4
Reliable.....	10-20	890	4	Own	2-6 x7	Ker.	2
Russell.....	12-24	1500	4	Own	4-4½x5½	G or K	2-3
Russell.....	15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson....M	....	445	4	Own	4-4 x5½	G,K	2
Sandusky,...J	10-20	1250	4	Own	4-4½x5½	G,K,D	2
Sandusky...E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
¶Shelby.....	1	150	3	B & S	1-2½x2½	G	..
Shelby.....D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby.....C	9-18	....	4	Wauk	4-3¾x5¼	G or K	2
Tore Cultivator	6	750	3	LeR	4-3½x4½	Gas.	2
ToreTractor'22	6-10	495	3	LeR	4-3½x4½	Gas.	2
Townsend.....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend.....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend.....	25-50	2500	2	Own	4-8½x10	Ker.	4-5
Traction Meter	40-50	....	4	....	8-3½x5	Gas.	4-5
Trayler....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar...10	25-40	3750	*2	Wauk	4-5 x6½	G or K	4
Twin City.....	12-20	1200	4	Own	4-4½x6	G,K	3
Twin City.....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City.....	40-65	4750	4	Own	4-7½x9	G,K	8-10
Uncle Sam C20	12-20	1195	4	Wrkl.	4-4 x5½	G	2-3
Uncle Sam B19	20-30	1985	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam D21	20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utilitor....501	2¼-4	295	4	Own	1-3½x4½	G	1
Utilitor....501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	....	4	Own	4-4¼x5¾	G,K	3
Waterloo....N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore21-22	12-25	1185	4	Wauk	4-4 x5½	G,K	3
Whitney....D	9-18	595	4	Own	2-5½x6½	Gas.	3
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin...E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin...F	20-40	2050	4	Wauk	4-5 x6¼	G or K	4
Wisconsin...H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba....12-20	12-20	2400	*2	Wauk.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4½x6	G,K,D	..
Yuba....20-35	20-35	3900	*2	Wisc.	4-5½x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5½x7	G,K,D	..
‡Yuba.....	25-40	4750	*2	Yuba	4-5½x7	D	..

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav. —Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont. —Continental. Dom.—Domas Evin.—Evinrude. Here.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Ner.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows §Track Runner. ‡Industrial Tractor. ¶Garden Tractor. **Steam Tractor

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (S.A.E.)	NAME AND MODEL	Carburetor	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle Type and Make	†Gear Ratios
.....	$4500c	$4500	.....	.....	$6500	136	33x5	Cont..	6-3⅝x5¼	31.54	Ambassador.....R	Strom...	West.....	Bosch.....	m-d B-L....	B-L....	f Norwalk..	F Tim...	4.45
$1995c	1785	1850	$1885c	.....	2485	127	33x4½	H-S...	6-3½x5	29.40	American.....D-66	Strom...	G-D.....	A-K.....	s-p B&B....	B & B..	m Hartford..	F Salis..	4.50
.....	1195	.....	.....	$1450c	.....	114	32x4	Cont..	6-3½x4½	23.44	Anderson...Aluminum 6	.....	West.....	West.....	s-p B&B....	.....	.....	Salis..	.....
{1495 {1785p	1495	1595	{1595c {1945c	1995c	1995d	120	33x4	Cont..	6-3⅝x4½	27.34	Anderson.....Series 40	Rayfield.	Remy.....	Remy.....	s-p B&B....	Durst...	f Snead.....	¾F Salis..	4.50
.....	2620	2645	.....	3625	3695	130	34x4½	Own..	8-3½x5	33.80	Apperson.....8-21-S	Johnson.	Bijur.....	Remy.....	m-d Own....	Own....	m Sterl.....	½F Own..	4.25
1575	1475	1545n	{1895n {1995n	2275	2345	121	32x4	Cont..	6-3½x4½	27.34	Auburn.....6-51	Strom...	Remy.....	Remy.....	s-p B&B....	G-L.....	m Universl..	F Salis..	4.75
.....	1395	.....	.....	.....	1850d	118	32x4	Cont..	6-3⅛x4¼	23.44	Barley.....	.....	Deloo.....	Deloo.....	s-p B&B....	Fuller...	f M&E.....	Col.....	.....
1800	1800	.....	.....	2400	2500	121	32x4	Cont..	6-3¼x4½	25.35	Bay State.....	Strom...	Deloo.....	Deloo.....	s-p B&B....	Warner..	m Spicer....	¾F Col...	4.67
2950	2950c	.....	.....	3950	3950	121	32x4	Buda.	4-3¾x5½	22.50	Biddle.....B1 & B5	Zenith...	G-D.....	Simms....	s-p Warner.	Warner..	m Spicer....	½F Std...	4.50
5000	5000	.....	.....	.....	7000	125	32x4½	Own..	4-4 x5½	25.60	Brewster.....91	Zenith...	UBL.....	Bosch.....	c Own....	Own....	F Own.....	F Own..	3.92
865	885	725g	.....	1175	{1395 {1325	109	31x4	Own..	4-4½x4¾	18.23	Buick..1923-34-S-6-7-36	Marvel..	Deloo.....	Deloo.....	m-d Own....	Own....	m Own.....	¾F Own..	4.66
1175	1195	975g	.....	1935	1985	118	33x4	Own..	6-3⅝x4½	27.34	Buick....1923-41-4-5-47	Marvel..	Deloo.....	Deloo.....	m-d Own....	Own....	m Own.....	¾F Own..	4.60
.....	.....	1435	{1625a {1675c	1895	2195	124	34x4½	Own..	6-3½x4½	27.34	Buick.1923-48-9-50-4-55	Marvel..	Deloo.....	Deloo.....	m-d Own....	Own....	m Own.....	¾F Own..	4.90
3100	3150	3150	.....	{3875a {3925d	4100	132	33x5	Own..	8-3½x5⅛	31.25	Cadillac.....61	Own....	Deloo.....	Deloo.....	m-d Own....	Own....	m Spicer....	F Tim...	4.50
1750	1790	.....	.....	2480	2575	122	32x4½	Cont..	6-3⅝x4½	27.34	Case.....X	Rayfield.	Deloo.....	Deloo.....	m-d Own....	Own....	f Snead.....	½F Col...	5.25
.....	1990	2250	1950	2480	2975	129	34x4½	Cont..	6-3⅝x5¼	31.54	Case.....W	Rayfield.	Deloo.....	Deloo.....	m-d Own....	Own....	f Arvac.....	¾F Col...	4.45
1185	1185	.....	.....	1595	2295	117	32x4	Own..	6-3½x4½	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own....	m Hardy.....	½F Adams	5.13
.....	.....	1345	.....	.....	.....	122	32x4	Own..	6-3½x4½	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own....	m Hardy.....	½F Adams	5.13
1495	1495c	1645	1595a	1995c	{2295d {2375f	123	33x4	Own..	6-3½x5	29.40	Chandler.....Six	Rayfield.	Bosch.....	Bosch.....	s-p B&B....	Own....	f Own.....	F Own..	4.45
510	525	425g	.....	{ 840c { 680k	860	102	30x3½	Own..	4-3½x4	21.53	Chevrolet.....Superior	Zenith...	A-L.....	Remy.....	c Own....	Own....	m Own.....	½F Own..	3.66
1085	1095	.....	1260	1495	1585	112	32x4	Own..	6-3½x4½	22.50	Cleveland.....41	Strom...	Bosch.....	Bosch.....	s-p Own....	Own....	m Mech.....	¾F Own..	4.45
2685	.....	2685	2685c	3285b	{3285c {3685f	127¼	33x5	Nort..	8-3½x4½	39.20	Cole.....890	Johnson.	Delco.....	Delco.....	c North...	North...	m Spicer....	F Col...	4.46
1475	1475	.....	1475c	1925c	1995d	115	32x4	Cont..	6-3⅜x4½	27.34	Columbia.....Elite	Strom...	A-L.....	A-K.....	s-p B&B....	Durst...	m Spicer....	¾F Tim...	.....
995	985	.....	.....	.....	1395d	115	31x4	Cont..	6-3½x4¼	23.44	Columbia.....Light Six	Strom...	A-L.....	A-L.....	s-p B&B....	Durst...	m Spicer....	¾F Tim...	.....
.....	1985	3085f	.....	2985d	3085f	125	33x4½	Cont..	6-3½x5¼	29.40	Cornet.....C-53	Strom...	Wagner..	Wagner..	s-p B&B....	Muncie..	m Arvac.....	¾F Col...	4.45
1395	1395	.....	{1495b {1495c	2065b	2165d	116	32x4	Falls.	6-3½x4¼	23.44	Courier.....	Till.....	Bijur.....	A-K.....	s-p B&B....	Muncie..	f Norwalk..	¾F Col...	5.00
3000	3000	3000	.....	.....	4500	122½	32x4	Cont..	6-3⅝x5¼	31.54	Crawford.....22-6-60	Strom...	West.....	Bosch.....	m-d B-L....	B-L.....	Spicer.....	½F Tim...	.....
.....	.....	.....	3500	.....	.....	135	33x5	Cont..	6-3⅝x5¼	31.54	Crawford-Dagmar...6-60	Zenith...	West.....	Bosch.....	m-d B-L....	B-L.....	Spicer.....	½F Tim...	.....
.....	.....	.....	.....	.....	.....	142	33x5	Own..	8-3¾x5	45.00	Cunningham.....V	Strom...	Deloo.....	Deloo.....	m-d Own....	Own....	f Snead.....	F Tim...	4.23
4350b	4350c	4350	.....	5250	6000	132	33x5	Own..	8-3½x5¼	39.20	Daniels.....D-19	Zenith...	Deloo.....	Deloo.....	m-d Own....	Own....	m Spicer....	F Tim...	.....
.....	1295	.....	1495	1795	1795	114	31x4	Cont..	6-3½x4¼	23.44	Davis.....71	Strom...	Deloo.....	Deloo.....	s-p B&B....	Warner..	m Peters....	½F Tim...	5.10
1595	1595	.....	1695	2095	.....	120	32x4	Cont..	6-3⅝x4½	27.34	Davis.....61-67	Strom...	Deloo.....	Deloo.....	s-p B&B....	Warner..	m Peters....	¾F Tim...	5.15
1175	1175	1295c	1245	1545	1595	112	32x4	H-S...	4-3½x5	19.60	Dixie Flyer.....H-S-70	Strom...	Dyneto....	Eise.....	s-p B&B....	G-L.....	f Hardy.....	F Peru..	4.75
850	880	.....	.....	980b	1195d	114	32x4	Own..	4-3¼x4½	24.03	Dodge Brothers.....	Stewart..	N.E.....	N.E.....	m-d Own....	Own....	m Own.....	½F Own..	4.16
3350g	3950c	3950	.....	4985c	5750f	132	33x5	Own..	6-4 x5	38.40	Derris.....6-80	Strom...	West.....	Bosch.....	m-d Own....	Warner..	m Spicer....	F Tim...	4.23
865	865	.....	{1015a {1015d	{1240 {1020k	{1370 {1070k	108	31x4	D-Ly.	4-3½x5	19.60	Dort.....19-14	Carter...	Bosch.....	Conn.....	m-d Det....	Own....	m Mech.....	¾F Flint..	4.66
1275	1275	.....	.....	1650	1975	104	30x3½	Own..	4-2⅝x4½	11.03	Driggs.....	Zenith...	Bosch.....	Bosch.....	s-p Hooe....	Mech....	m Spicer....	¾F Own..	4.75
6500	6500	6750	.....	7800	7800	134	33x5	Own..	8-2½x5	26.45	Duesenberg...Straight 8	Strom...	Deloo.....	Deloo.....	s-p Own....	Own....	f Own.....	½F Own..	4.81
3000	3200	.....	.....	3800	4000	124	32x4½	Own..	4-3½x5½	24.81	Du Pont.....A	Y&T....	West.....	Eise.....	m-d B-L....	B-L.....	m Spicer....	Col.....	4.50
890	890	.....	.....	1365	1365	109	31x4	Cont..	4-3¼x4¼	24.03	Durant.....A-22	Till.....	A-L.....	A-L.....	s-p Own....	Own....	m,f Spicer..	¾F Adams	4.30
1600	1650	.....	.....	2250	2400	123½	32x4½	Anst.	6-3½x4½	25.35	Durant.....B-22	Rayfield.	A-L.....	A-L.....	s-p Anst....	Warner..	m,f Spicer..	½F Tim...	5.15
1485	1095	950g	.....	1395c	1795	112	32x4	Own..	4-3⅜x5¼	18.91	Earl.....40	Scoe....	A-L.....	Conn.....	s-p B&B....	Own....	f Own.....	½F Own..	3.66
1095	1095	.....	1095	1345	.....	118	33x4	Lyc...	4-3½x5	19.60	Elcar.....K-4	Strom...	Deloo.....	Deloo.....	s-p B&B....	Muncie..	m Peters....	¾F Salis..	4.50
1395	1395	.....	1395	1975	2065	118	33x4	Cont..	6-3⅝x4½	27.34	Elcar.....7-R	Strom...	Deloo.....	Deloo.....	m-d Warner	Warner..	m Spicer....	¾F Salis..	4.50
1125c	1125	.....	1165	1695	1615	118	33x4	Falls.	6-3½x4¼	23.44	Elgin.....K-1	Strom...	West.....	Wagner..	s-p B&B....	Mech....	m Mech.....	¾F Col...	4.66
.....	1045	.....	.....	1145k	{1895 {1245k	108½	32x4	Own..	4-3½x5	18.23	Essex.....	Own....	Bosch.....	Bosch.....	m-d Own....	Own....	m Spicer....	½F Own..	4.66
269r	298s	235g	.....	530	{595 {725	100	30x3½	Own..	4-3¾x4	22.50	Ford.....T	Own....	Own.....	Own.....	m-d Own....	Own....	m Own.....	½F Own..	3.63
3900	3900	.....	.....	4900	4900	132	32x4½	Own..	6-3⅝x5	27.34	Fox.....7F	Zenith...	West.....	Bosch.....	m-d B-L....	B-L.....	Spicer.....	½F Tim...	4.45
1900	1950	1750g	.....	2750	2850	115	32x4	Own..	6-3½x4	25.35	Franklin.....10	Own....	N.E.....	A-K.....	s-p B&B....	Own....	m Spicer....	½F Own..	4.73
895	895	.....	.....	1095k	1345d	112	32x4	Lyc...	4-3½x5	29.60	Gardner.....T-R & G	Carter...	West.....	West.....	s-p B&B....	Mech....	m Mech.....	¾F Flint..	4.80
1385	1385	.....	.....	1895	1945	116	32x4	Own..	6-3½x4½	23.44	Grant.....	Strom...	Bijur.....	A-K.....	s-p B&B....	Durst...	m Spicer....	¾F Col...	4.66
490	490	.....	.....	.....	760	100	30x3½	Own..	4-3½x4	21.03	Gray.....	Scoe....	West.....	West.....	m-d Own....	Detr....	m Mech.....	½F Tim...	3.90
2475	2475e	.....	3250	.....	3475	120	32x4½	Weid.	4-3¾x5½	22.50	H.C.S.....Series 4	Strom...	Deloo.....	Deloo.....	m-d B-L....	B-L.....	m Spicer....	¾F Own..	.....
.....	.....	2650	.....	3450	3450	125	32x4½	Own..	4-4½x4½	27.23	Handley-Knight.....	Till.....	A-L.....	A-L.....	m-d Warner	Warner..	m Spicer....	½F Tim...	4.90
.....	995	.....	.....	.....	.....	114	31x4	Cont..	6-3½x4¼	25.35	Hansen.....30	Marvel..	Deloo.....	Deloo.....	s-p B&B....	Detr....	.....	¾F Tim...	.....
1595	1595	1795	.....	2475c	2585	121	32x4	Cont..	6-3⅜x4½	27.34	Hansen.....60	Marvel..	Deloo.....	Deloo.....	s-p B&B....	Detr....	.....	¾F Tim...	.....
.....	1345	1345c	.....	1950	1950	115	32x4	H-S...	4-3½x5	19.60	Hatfield.....A-42	Zenith...	Dyneto....	Conn.....	s-p B&B....	G-L.....	m Spicer....	½F Col...	4.66
2395	2395c	2395	.....	3095d	3395	132	33x5	Own..	6-3½x5½	29.40	Haynes.....75	Strom...	L-N.....	King.....	s-p Warner	Own....	m Univers...	¾F Own..	4.60
1545	1495	.....	{1895a {1895d	{2090b {2135p	{2395d {2695p	121	32x4½	Own..	6-3½x5	29.40	Haynes.....55	Rayfield.	L-N.....	King.....	s-p Warner	Own....	m Univers...	½F Own..	4.11
.....	2500c	2500	.....	3300c	3600f	126	34x4½	Own..	6-3½x4¼	29.40	Helmes.....Series 4	Strom...	Dyneto....	Eise.....	m-d B-L....	B-L.....	m Spicer....	½F Tim...	4.90
.....	1525c	1575	.....	2570c	{1675k {2295	126	34x4½	Own..	6-3½x5	29.40	Hudson.....Super 6	Own....	Bosch.....	Bosch.....	m-d Own....	Own....	m Spicer....	½F Own..	4.45
1395	1395	.....	.....	.....	2295	120	32x4	Cont..	6-3⅜x4½	27.34	Huffman.....	Strom...	Dyneto....	Conn.....	s-p B&B....	Covert....	.....	F Salis..	.....
1150	1150	.....	1025g	{1635 {1335k	1785	112	32x4	Own..	4-3½x5½	16.90	Hupmobile.....Series R	Strom...	West.....	A-K.....	m-d Own....	Own....	m Univers...	¾F Own..	4.87
.....	1485	1685c	.....	2985	2985	121	32x4½	Cont..	6-3¼x4½	25.35	Jackson.....638	Strom...	A-L.....	Remy.....	s-p B&B....	Cov....	f Snead.....	¾F Salis..	4.75
995b	995	.....	1095a	1445c	1465d	112	31x4	Own..	6-3½x5	25.35	Jewett.....Six	Strom...	Remy.....	A-K.....	m-d Long....	Warner..	m Mech.....	¾F Tim...	4.45
1895	1795	.....	.....	2785	2485	120	32x4	Own..	6-3⅛x4¾	26.38	Jordan.....MX	Strom...	Deloo.....	Deloo.....	s-p Detr....	Detr....	m Spicer....	½F Tim...	4.42
.....	.....	.....	2150c	.....	.....	124	32x4	Own..	6-3⅛x4¾	26.38	Jordan.....H	Strom...	Deloo.....	Deloo.....	s-p Detr....	Detr....	m Univers...	½F Tim...	4.42
.....	985	.....	.....	.....	1450	111	32x3½	Gray..	4-3½x5	19.60	Kelsey.....4	Scoe....	Bosch.....	Bosch.....	f-d Own....	f-d Own..	.....	Own..	4.50
.....	985	.....	.....	.....	1450	111	32x3½	Gray..	4-3½x5	19.60	Kelsey.....4	Scoe....	Bosch.....	Bosch.....	s-p B&B....	Detr....	Snead.....	½F Std...	4.75
.....	1525	.....	.....	.....	2175	118	32x4	Walk'r	6-3½x4½	23.44	Kelsey.....6	Strom...	Bijur.....	Bosch.....	f-d Own....	f-d Own..	.....	Own..	.....
5000	5000	5250	.....	5000	6000	130	32x4½	Own..	8-3 x5¼	28.80	Kenworthy.....8-90	.....	.....	.....	.....	.....	.....	.....	.....
1795	1795	.....	1795c	2400	2550	120	32x4½	Own..	8-3 x5	28.80	King.....K	Ball&B .	West.....	A-K.....	s-p Detr....	Own....	f Hardy.....	F Col...	4.08
.....	1885	2385	2385c	2975c	3075	124	32x4½	Own..	6-3⅜x5½	26.38	Kissel.....45	Strom...	Remy.....	Remy.....	m-d Warner	Warner..	m Spicer....	F Own..	3.92
1690	1690	1690	1890	2750	2890	121	33x4	Cont..	6-3⅝x4½	27.34	Kline Kar.....6-55-K	Rayfield.	Wagner...	Conn.....	s-p B&B....	G-L.....	f Snead.....	½F Std...	4.75

MISCELLANEOUS

a—2 Passenger,
b—3 Passenger,
c—4 Passenger,
d—5 Passenger,
e—6 Passenger,
f—7 Passenger,
g—Chassis Price,
h—All Metal Type,
k—Soft Top Type,
n—Tire Size 32x4½,
p—Sport.
r—Price without starter and demountable rims. Price, complete, $364.
s—Price without starter and demountable rims. Price, complete, $393.
†Standard Phaetons.

ENGINE

Anst—Ansted
Bea—Beaver
Cont—Continental
Curt—Curtiss
D.-Ly—Dort Lycoming
G-B—Grey Beal
H-S—Herschell-Spillman
Lyc-Lycoming
Nort—Northway
Roch—Rochester
Rut-Rutenberg
Supr—Supreme
Walk'r—Walker
Weid—Weidely
Wisc—Wisconsin

CARBURETOR

Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg

GEARSET

f-d—Friction Drive
B-L—Brown-Lipe
Cov—Covert
Detr—Detroit
Durst—Durston
G-L—Grant-Lees
Hooe—Hoosier
Mech—Mechanics
North—Northway

CLUTCH

f-d—Friction drive
c—Cone
m-d—Multiple disc
s-p—Single plate
Anst—Ansted
B & B—Borg & Beck
B-L—Brown-Lipe
Det—Detlaff
Detr.—Detroit

STARTING, LIGHTING IGNITION

A-L—Auto Lite
Bring—Berling
G-D—Gray & Davis
L-N—Leece Neville
N. E.—North East
West—Westinghouse

UNIVERSAL

f—fabric
m—metal
M & E—Merchant & Evans
Mech—Mechanics
Sterl—Sterling
Univers—Universal

REAR AXLE

F—Floating
½F—Semi-Floating
¾F—Three-Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
W-M—Weston-Mott
Tim—Timken

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (S.A.E.)	NAME AND MODEL	Carburetor	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle: Type and Make	†Gear Ratio
$3985	$4090e	$4090	.....	$5500	$5500	132	33x5	Own..	8-3 1/4x5 1/4	33.80	LaFayette	Johnson	Delco	Delco	m-d Own	Own	m Own	F Own	4.56
5500	5500	5500	.....	5500	5500	134	32x4 1/2	Own..	6-3 3/4x5 1/4	33.75	Leach.....999	Rayfield	Delco	Delco	m-d	Own	m,f	Tim	.....
1695	(1695 (1995	(1795 (2095	$2045d	2345c	(2545d (2145d	123	32x4 1/2	Anst..	6-3 1/2x4 1/2	25.35	Lexington.....23	Rayfield	G-D	Conn	m-d Anst	Warner	f Snead	3/4F Own	5.10
1575	1395	.....	1575	(2085 (1695k	2245	117	32x4	Own..	6-3 1/2x5	23.44	Liberty.....10-D	Strom	Wagner	Wagner	s-p B&B	Detr	m Spicer	1/2F Tim	4.80
3800	3800c	3800	.....	4400d	4700d	136	33x5	Own..	8-3 3/4x5	36.45	Lincoln	Strom	Delco	Delco	m-d Own	Own	m Spicer	F Tim	4.56
.....	7600c	7600	.....	10500	11000	142	35x5	Own..	6-4 1/2x5 1/2	48.60	Locomobile.....48	Ball&B	West	Delco	m-d Own	Own	m Own	F Own	3.50
3385	3185c	3185	.....	3985	4385	136	32x4 1/2	Own..	6-3 3/4x5 1/2	33.75	Marmon.....34	Strom	Delco	Delco	m-d Own	Own	m Spicer	3/4F Own	3.75
885	885	.....	.....	(985 (1235	1335	109	31x4	Own..	4-3 5/8x4 1/2	21.03	Maxwell.....	Stewart	A-L	Simms	c Own	Own	.....	3/4F Own	4.56
6300	6300c	6300	.....	7500	7500	140	33x5	Own..	6-4 1/2x6	48.60	McFarlan.....1922	Rayfield	West	Split	s-p B&B	B-L	m Peters	F Tim	3.50
3950	3950c	3950c	.....	4850	5250	132	32x4 1/2	Own..	4-3 3/4x6 3/4	22.50	Mercer.....Series 5	Ball&B	West	Lisc	m-d Own	Own	m Spicer	F Own	3.87
.....	3750	3750	.....	5000	5000	132	32x4 1/2	Own..	6-3 3/4x5	33.75	Mercer.....6	.....	.....	.....	.....	.....	.....	.....	.....
1895	1895	.....	.....	.....	.....	119	32x4	Cont..	6-3 1/4x4 1/2	25.35	Merit	Strom	Delco	Delco	s-p B&B	Muncie	f Snead	F Col	4.60
1490b	1590	.....	1850c	2050c	2275d	120	32x4	Own..	6-3 1/2x5	29.40	Mitchell.....F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4.42
.....	.....	1690	.....	.....	.....	127	32x4 1/2	Own..	6-3 1/2x5	29.40	Mitchell.....F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4.42
950	950	.....	.....	.....	.....	115	32x4 1/2	Own..	4-3 1/4x4 1/2	16.90	Monroe.....1922-S-9	Zenith	A-L	Conn	m-d Own	Mech	m Univers	3/4F Own	5.30
1295	1195	p1445d	1885c	1585c	1695	115	31x4	Cont..	6-3 3/8x4 1/2	23.41	Moon.....6-40	Strom	Delco	Delco	s-p B&B	Warner	m Spicer	1/2F Tim	4.80
1785	1785	1785	1885	2785	(2785f (2485c	128	33x4 1/2	Cont..	6-3 3/4x4 1/2	27.31	Moon.....6-58	Strom	Delco	Delco	.....	B&B	B-L	1/2F Tim	5.00
1210	1240	.....	1395c	.....	2040d	121	33x4	Own..	6-3 1/4x5	25.35	Nash.....691-96-97	Marvel	Delco	Delco	s-p B&B	Own	m Own	1/2F Own	4.50
.....	.....	1390	1645	1890c	2190f	127	34x4 1/2	Own..	6-3 1/4x5	25.35	Nash.....692-94-95	Marvel	Delco	Delco	s-p B&B	Own	m Own	1/2F Own	4.50
915	935	.....	.....	(1385b (1195k	(1545d (1275k	112	33x4	Own..	4-3 3/8x5	18.23	Nash Four.....41-4	Schebler	Delco	Delco	s-p B&B	Own	m Own	1/2F Own	4.88
2475b	2475c	(2375 (3150	.....	(3250c (3725c	3825f	130	32x4 1/2	Own..	6-3 1/2x5 1/2	29.40	National.....BB	Rayfield	West	Delco	s-p B&B	B-L	m Arvac	F Col	4.06
2500	2500e	2600c	.....	.....	3500d	128	32x4 1/2	Cont..	6-3 1/4x4 1/2	25.35	Noma.....3C	Claudel	Delco	Delco	s-p B&B	Detr	m Spicer	1/2F Tim	4.45
3000	3100c	3200c	.....	.....	5500	128	32x4 1/2	Bea..	6-3 1/2x5 1/4	29.40	Noma.....1D	Zenith	Delco	Delco	s-p B&B	Detr	f Spicer	1/2F Tim	4.45
.....	1035	.....	.....	.....	.....	116	32x3 1/2	Lyc..	4-3 1/2x5	19.60	Norwalk.....430-KS	Zenith	Dyneto	Delco	s-p B&B	G-L	m Univers	3/4F Col	5.00
975	995	795g	1165c	(1445d (1185a	1545	115	32x4	Own..	6-2 1/2x3 3/4	18.99	Oakland.....6-44	Marvel	Remy	Remy	c Own	Muncie	m Mech	F Own	4.22
3750c	3750	3850	3750c	4500c	4800f	134	33x5	Cont..	6-3 5/8x5 1/4	31.51	Ogren.....6 T D Luxe	Rayfield	Bosch	Bosch	m-d B-L	B-L	m	F Col	4.09
955	975	1350d	1075	1475	1595	115	32x4	Own..	4-3 1/8x5 1/4	21.86	Oldsmobile.....43 A	Zenith	A-L	Remy	s-p B&B	Warner	m Own	3/4F Own	4.33
1735c	1850e	1735	.....	.....	.....	122	33x4 1/2	Own..	8-2 7/8x4 3/4	26.45	Oldsmobile.....46	Ball&B	Delco	Delco	c Own	Warner	m Own	3/4F Own	4.93
1625g	1375	.....	1675	1875	2025	115	32x4	Own..	8-2 7/8x4 1/2	26.45	Oldsmobile.....47	Johnson	Delco	Delco	s-p B&R	Warner	m Spicer	3/4F Own	5.10
525	525	.....	425g	795	875	100	30x3 1/2	Own..	4-3 3/4x4	18.23	Overland.....4	Till	A-L	Conn	s-p B&B	Own	m Own	1/2F Own	4.50
2485	2485	2250g	.....	3175	3275	126	33x4 1/2	Own..	6-3 3/8x5	27.34	Packard.....Single-Six	Own	A-K	Delco	m-d Own	Own	f Spicer	1/2F Own	4.30
.....	2350g	2685	.....	.....	3525	133	33x4 1/2	Own..	6-3 3/8x5	27.34	Packard.....Single-Six	Own	A-K	Delco	m-d Own	Own	f Spicer	1/2F Own	4.69
3850	3850	3850	.....	5240	5400	136	35x5	Own..	12-3x 5	43.20	Packard.....Twin-Six	Own	Bijur	Delco	m-d Own	Own	m Spicer	1/2F Own	4.36
1165	1465	1290g	.....	1995	2245	119	32x4	Own..	6-3 1/4x5	25.35	Paige.....6-44	Strom	Remy	A-K	s-p Long	Own	m Univers	3/4F Sales	4.75
2495b	.....	2195	2245	3100	3155	131	33x4 1/2	Cont..	6-3 3/8x5	33.75	Paige.....6-66	Rayfield	Remy	A-K	s-p Long	Warner	m Mech	3/4F Tim	4.60
.....	1390	1425	.....	2295	2395	120	32x4 1/2	Cont..	6-3 3/8x4 1/2	27.34	Paterson.....22-6-52	Strom	Delco	Delco	s-p B&B	Durst	m Hartford	1/2F Std	4.50
.....	2990c	2990	.....	(3300a (3400c	(3990d (4090f	128	33x5	Own..	8-3 1/4x5	33.80	Peerless.....23	Ball&B	Delco	Delco	m-d Own	Own	M Spicer	3/4F Tim	4.90
5250	5250c	5250	.....	6800	6900 (700	138	33x5	Own..	6-4 x5 1/2	38.40	Pierce-Arrow.....	Own	Delco	Delco	m-d Own	Own	m Spicer	1/2F Own	3.93
2050	2000	2050	.....	2950	3000	126	32x4 1/2	H-S..	6-3 1/4x5	25.35	Pilot.....6-50	Till	Bijur	Conn	s-p B&B	Muncie	m Hartford	3/4F Col	4.33
3150	3100c	3250	.....	4300	5100	126 3/4	32x4 1/2	Own..	6-3 3/8x5 1/2	27.34	Premier.....6-D	Johnson	Delco	Delco	s-p B&B	Own	m Spicer	3/4F	4.56
1095	1095	.....	.....	1750	1825	117	32x4	Falls.	6-3 1/8x4 1/4	23.44	Premocar.....6-40-A	Strom	Wagner	Wagner	s-p B&B	Mech	m Spicer	3/4F	4.06
.....	1665	.....	.....	2385	2475	116	32x4	Own..	4-3 3/4x5	22.50	R & V Knight.....R	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	F Sales	4.75
2475	2475c	2475	.....	3015	3105	127	32x4 1/2	Own..	6-3 1/2x4 1/2	29.40	R & V Knight.....J	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	1/2F Tim	4.90
1595	1645	1485	1745	2355c	2435f	120	33x4	Own..	6-3 1/8x5	24.34	Reo.....T6 & U6	Rayfield	N.E	N.E	m-d Own	Own	m,f Own	1/2F Own	4.70
3200	3200	3200	.....	.....	4000	131	32x4 1/2	Dues.	4-4 1/2x6	28.90	ReVere.....C	Strom	West	Bosch	m-d B-L	B-L	m Spicer	3/4F Std	4.00
.....	1485	.....	1885	1985	1985	117	32x4	Own..	6-3 1/8x4 3/4	23.44	Rickenbacker.....A	Strom	Simms	A-K	c Own	Own	m Univers	3/4F Own	.....
2685	2485e	2685	.....	3585	3585	128	32x4 1/2	Cont..	6-3 1/2x5 1/4	29.40	Roamer.....6-54-E	Strom	Bijur	Bosch	s-p G-L	G-L	f Snead	1/2F Tim	4.88
3785	3485	3650c	3650c	.....	4650c	128	32x4 1/2	Dues.	4-4 1/4x6	28.90	Roamer.....4-75-E	Strom	Bijur	Split	m-d B-L	B-L	f Snead	1/2F Tim	3.77
.....	10900	.....	.....	.....	.....	143 1/2	35x5	Own..	6-4 1/2x4 3/4	48.60	Rolls-Royce.....	Own	Bijur	Bijur	c Own	Own	m Own	F Own	3.25
1195	1195	.....	.....	1795	1795	112	32x4	Own..	4-3 1/2x5	19.60	Saxon.....125	Strom	Wagner	Wagner	s-p Det	Cov	m Peters	3/4F	4.75
1645	1645	.....	.....	2645	2645	118	33x4	Cont..	6-3 1/4x4 1/2	25.35	Sayers Six.....DP	Strom	Delco	Delco	s-p B&B	G-L	m Arvac	1/2F Std	4.75
875	875	.....	.....	.....	.....	108	30x3 1/2	Lyc..	4-3 1/2x5	19.60	Seneca.....L-2 & O-2	Zenith	A-L	A-L	s-p B&B	G-L	m Univers	F	4.75
1095	1095	.....	.....	.....	.....	112	31x4	Lyc..	4-3 1/2x5	19.60	Seneca.....50 & 51	Zenith	A-L	A-L	s-p B&R	G-L	Detroit	F	4.50
980	980	.....	.....	1685	1685	114	32x4	Supr.	4-3 3/8x5	18.23	Sperling.....A	Zenith	Bijur	Dixie	s-p B&B	Warner	m Hartford	3/4F Peru	.....
2150	.....	2395	2395	2750	3200	127	34x4 1/2	Own..	8-3 1/4x5	33.80	Standard.....98	Zenith	West	Split	s-p B&B	G-L	m Arvac	1/2F Tim	4.45
2750	2750	2750	2425g	3950c	3985f	130	32x4 1/2	Own..	2-4 x5	.....	Stanley.....740	None	Bijur	None	None	None	None	1/2F Own	1.50
1765	1765	.....	.....	2750	.....	118	33x4	Cont..	6-3 1/4x4 1/2	25.35	Stanwood Six.....	Strom	West	A-K	s-p B&B	G-L	m Peters	1/2F Std	4.50
319r	348s	285g	.....	580	615	102	30x3 1/2	Cont..	4-3 1/8x4 1/4	15.63	Star.....	Till	A-L	A-L	s-p	.....	Spicer	Tim	4.87
2250	2250	2450	.....	3150	3450	125	34x4 1/2	Own..	4-3 3/4x5 5/8	22.50	Stearns-Knight....SKL4	Rayfield	West	A-K	m-d Own	Own	f Climax	1/2F Own	4.50
2700	2700	2850	.....	3500	3700	130	34x4 1/2	Own..	6-3 3/8x5	27.34	Stearns-Knight.....6	Rayfield	West	A-K	m-d Own	Own	f Climax	1/2F Own	4.50
1575	1595c	1625c	.....	2450	2550	122	33x4 1/2	Own..	6-3 1/4x4 1/2	25.35	Stephens.....90	Till	A-L	A-L	s-p B&B	Mech	m Mech	1/2F Tim	4.90
7250	6900c	6800	(6900c (5600g	8600	8900c	138	35x5	Own..	6-4 1/2x5 1/2	47.27	Stevens-Duryea.....E	Strom	West	Brlng	m-d Own	Own	m Own	F Own	3.94
975	975	785g	.....	1225	1550	112	32x4	Own..	6-3 1/8x4 1/2	23.44	Studebaker....Light Six	Strom	Wagner	Wagner	s-p Own	Own	f Thermoid	1/2F Own	4.55
(1250 (1275c	1275	1275c	1000g	1875	2050	119	32x4	Own..	6-3 1/2x5	29.40	Studebaker..Special Six	Strom	Wagner	Wagner	s-p Own	Own	m Spicer	1/2F Own	4.09
1300g	1650	.....	1785	2275	2475	126	33x4 1/2	Own..	6-3 7/8x5	36.01	Studebaker.....Big Six	Ball&B	Wagner	Wagner	s-p Own	Own	m Spicer	1/2F Own	3.70
2450	(2790c (3165c	(2640e (3015	2670a	3490	4450	130	32x4 1/2	Own..	4-4 3/8x6	30.63	Stutz.....KLDH	Strom	Remy	Delco	m-d Warner	Own	m Hartford	1/2F Own	3.50
2025	2125	2175c	.....	2650c	2785	118	32x4	Own..	4-3 3/8x5 1/2	18.23	Templar.....A-445	Strom	Bijur	Simms	s-p B&B	Detr	f Snead	1/2F Us	4.40
1175	1175	.....	.....	.....	.....	117	33x4	H-S..	4-3 1/2x5	19.60	Tulsa.....E-1-2-3	Zenith	Dyneto	Conn	s-p B&B	Muncie	m	F Sales	4.50
1275	1275	.....	1305	1785	1785	115	32x4	Own	6-3 1/8x4 1/2	23.41	Velie.....58	Strom	West	A-K	s-p Dooley	Durst	m Thiemer	3/4F Own	4.66
.....	1900f	1990	.....	.....	2890	125	32x4 1/2	Cont.	6-3 1/2x5 1/4	29.40	Westcott.....D-48	Rayfield	Delco	Delco	s-p B&B	B-L	m Peters	1/2F Tim	4.45
.....	1690	.....	1890	.....	2690	120	32x4	Cont.	6-3 1/4x4 1/2	35.35	Westcott.....B-44	Rayfield	Delco	Delco	s-p B&B	Warner	m Peters	1/2F Col	4.33
2475	2475	.....	.....	3275	3475	121	32x4 1/2	Own..	8-3 1/4x4	33.80	Wills Sainte Claire..A-68	Zenith	Delco	Delco	m-d Own	Own	m Mech	3/4F Own	4.45
1235	1235	1375	.....	1795	1950	118	32x4	Own.	4-3 5/8x4 1/2	21.03	Willys-Knight.....20	Till	A-L	A-L	m-d Own	Own	f Own	3/4F Own	4.44
3400	.....	3400	3600	4000	4550	132	33x5	Own..	6-3 3/8x5 1/4	33.75	Winton.....40	Rayfield	Delco	Delco	m-d Warner	Warner	f Climax	3/4F Tim	4.06

MISCELLANEOUS
a—2 Passenger,
b—3 Passenger,
c—4 Passenger,
d—5 Passenger
e—6 Passenger,
f—7 Passenger
g—Chassis Price,
h—All Metal Type,
k—Soft Top Type,
n—Tire Size 32x4 1/2,
p—Sport.
r—Price without starter and demountable rims. Price, complete, $414.
s—Price without starter and demountable rims. Price, complete, $443.
†Standard Phaetons.

ENGINE
Anst—Ansted
Bea—Beaver
Cont—Continental
Curt—Curtiss
D-Ly—Dort Lycoming
G-B—Grey Beal
H-S—Herschell-Spillman
Lyc—Lycoming
Nort—Northway
Roch—Rochester
Rut—Rutenberg
Supr—Supreme
Walk'r—Walker
Weid—Weidely
Wisc—Wisconsin

CARBURETOR
Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg

GEARSET
f-d—Friction Drive
B-L—Brown-Lipe
Cov—Covert
Detr—Detroit
Durst—Durston
G-L—Grant-Lees
Hoos—Hoosier
Mech—Mechanics
North—Northway

CLUTCH
c—Cone
f-d—Friction drive
m-d—Multiple disc
s-p—Single plate
Anst—Ansted
B & B—Borg & Beck
B-L—Brown-Lipe
Det—Detlaff
Detr.—Detroit

STARTING, LIGHTING IGNITION
A-L—Auto Lite
Bring—Berling
G-D—Gray & Davis
L-N—Leece Neville
N. E.—North East
West—Westinghouse

UNIVERSAL
f—fabric
m—metal
M&E—Merchant & Evans
Mech—Mechanics
Sterl—Sterling
Univers—Universal

REAR AXLE
F—Floating
1/2 Floating—Semi-Floating
3/4 F—Three-Quarter Floating
Col—Columbia
Sales—Salisbury
Std—Standard
W-M—Weston-Mott
Tim—Timken

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Lexington

MINUTE MAN SIX

Royal Coach

$2145

[plus War Tax—f. o. b. Factory]

Setting a new mark for high-grade coach building at a low price is an uncommon achievement, yet this is what the Royal Coach is doing. The Royal Coach body is covered entirely with metal so that the high finish will be enduring. The best coach-building traditions are followed in every detail of the framing. There is no skimping anywhere! Subtract the price of the five-passenger Touring Car from the price of the Royal Coach and you will be startled at the slight difference. And you will be even more impressed after you examine the Royal Coach and see how much that difference in price buys—but you must see it! See this wonderful five-passenger Royal Coach today!

Profitable Line for Dealers

Two-passenger Roadster, $1695; five-passenger Touring Car, $1695; seven-passenger Touring Car, $1795; five-passenger Lark, $2045; five-passenger California Top, $1995; seven-passenger California Top, $2095; five-passenger Royal Coach, $2145; four-passenger Coupe, $2345; five-passenger Sedan [with two taxi seats] $2545; four-passenger Brougham, $2645

Wire or disc wheels $100 extra—except on Lark
[plus War Tax—f. o. b. Factory]

LEXINGTON MOTOR COMPANY
CONNERSVILLE INDIANA USA
Subsidiary United States Automotive Corporation

---

fifteenth year of Lexington success

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"No Extras to Buy"

is a powerful selling appeal for the New, 1923

HAYNES 55 SPORT SERIES

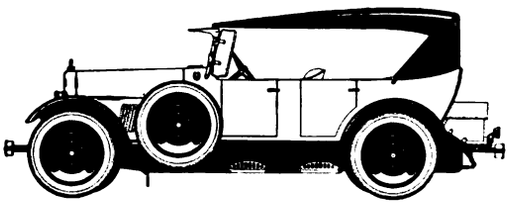
ALL that experience can suggest and the heart can desire in a sport model, will be found in the lavish completeness of equipage which distinguishes this newest offering of Haynes foresight.

It is distinctly what the motoring public wants. Any true sport model should possess such accessories as six disc wheels, six cord tires and tubes, sun visor, trunk and protection bars in rear, as well as the smartness of individual fenders and individual aluminum steps, and the convenience of handsome windshield wings on open models.

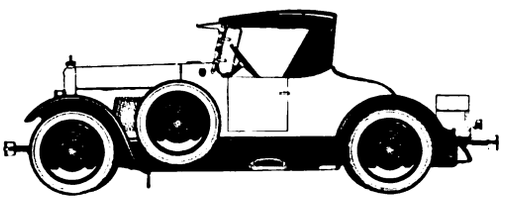
You find all these essential features on the new 1923 Haynes 55 Sport Touring Car —on a graceful body of rich maroon, with Spanish leather upholstery, and an accurately tailored top. The famous Haynes-built six-cylinder motor supplies the dependable performance and power which assure perfect motoring satisfaction.

With such a series to supplement the standard 1923 Haynes 55 and 75 models, the open territory available to good dealers becomes doubly valuable.

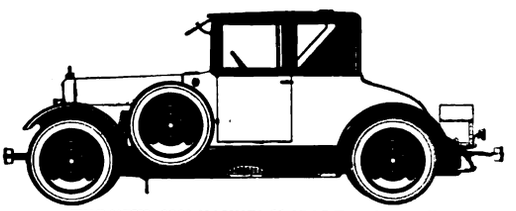
Are you qualified to represent the Haynes? Write, telephone or telegraph for an appointment — confidential if you desire. Address Dept. 1152.



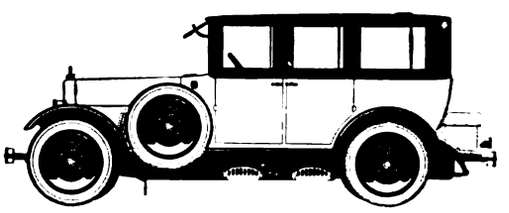
THE NEW, 1923 HAYNES 55 SPORT TOURING CAR, 5 PASSENGERS



THE NEW, 1923 HAYNES 55 SPORT ROADSTER, 2 PASSENGERS



THE NEW, 1923 HAYNES 55 SPORT COUPELET 3 PASSENGERS



THE NEW, 1923 HAYNES 55 SPORT SEDAN, 5 PASSENGERS

THE HAYNES AUTOMOBILE COMPANY, *Kokomo, Indiana*

EXPORT OFFICE: 1715 Broadway, New York City, U.S.A.

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Volume LXXIII
Number 6

PUBLISHED WEEKLY AT 239 WEST 39th STREET
NEW YORK, NOVEMBER 8, 1922

Thirty-five cents a copy
Three dollars a year

A Prophecy

Hundreds of good dealers now selling good cars in the $1,000 class will eventually sell the Jordan also.

I'll guarantee to prove to you that you can make more money on twenty Jordans than you have ever made on fifty sales in the $1,000 field.

Will you let me do it?

Edward C. Jordan

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The modern sky-scraper is the development of the building progress of the last decade, a progress entirely due to comprehensive specialization in every field of construction.

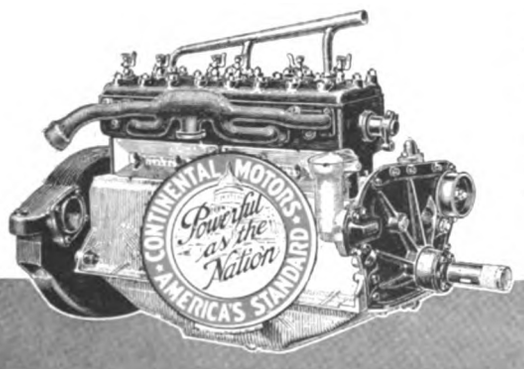
The SPECIALIZED car is recognized as standard

Just as the progress of the last decade has developed these cathedrals of commerce—the modern sky-scrapers—the automotive progress of the last twenty years has developed the SPECIALIZED car.

Just as the skyscraper rises under the labors of scores of great specialist-organizations, the SPECIALIZED car is the result of the co-ordinated efforts of car builders and the leading manufacturers of specialized units—motor, transmission, universal joints, axles, clutch, etc.

SPECIALIZED cars are in constant demand and stay sold on the strength of the car's reputation and the added reputations of the manufacturers of their performing units; on their standing with the car-buying public; and on the uninterrupted performance assured by parts-distributing stations throughout the world.

See that your car is a SPECIALIZED car and that upon the crankcase of the motor is that sure sign of motor specialization—the Continental Red Seal.



CONTINENTAL MOTORS CORPORATION

Offices: Detroit, U. S. A. *Factories: Detroit and Muskegon*

Largest Exclusive Motor Manufacturers in the World

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MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

Reg. U. S. Pat. Off.

239 West 39th St., New York City Phone Bryant 8760

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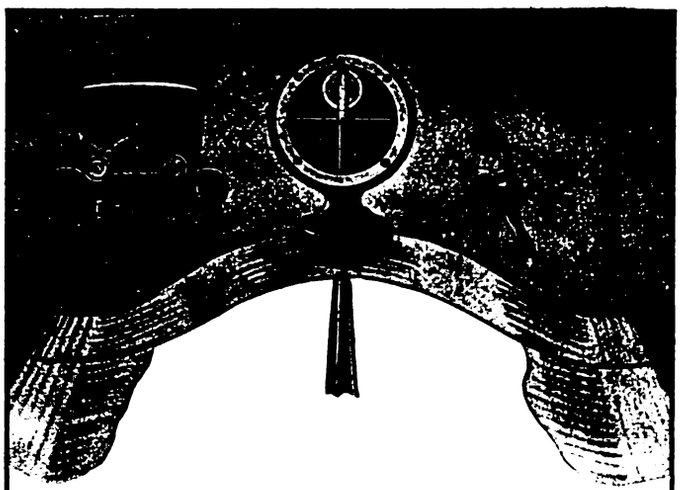
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Giving the User What He Wants and Drawing a Handsome Profit Yourself

The car owner wants a fan belt that runs at smooth, even tension and keeps the motor cool.

He wants a belt that won't snap, break or tear apart on motor acceleration—or stretch.

Hundreds of garage and accessory dealers are meeting this want with the Goodrich Fan Belt and turning a handsome profit.

Stock and push this better fan belt now. Easily applied—small investment.

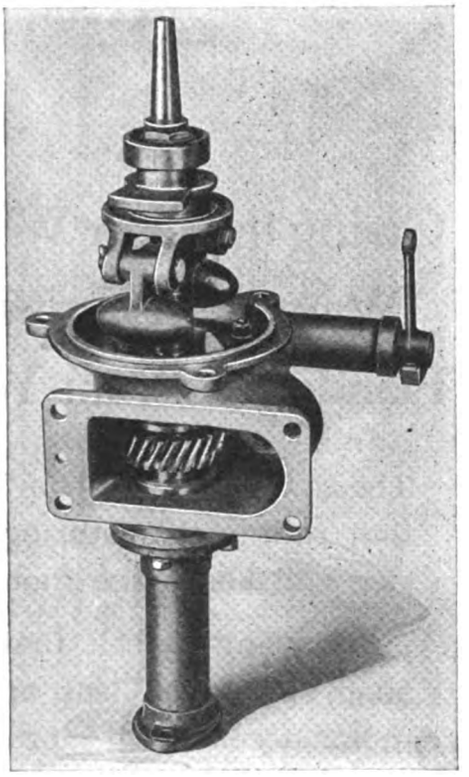
THE B. F. GOODRICH RUBBER COMPANY
Akron, Ohio

GOODRICH
Fan Belts

"BEST IN THE LONG RUN"

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The Centrifugal Governor



is a unique feature effecting the control, and economy of operation, of the Rolls-Royce Motor Car. When the Governor lever on the quadrant is set to any given position it automatically controls the maximum speed at which the engine will develop power (without the use of the accelerator pedal.)

Thus, when the car is running at speeds higher than that for which the Governor is set, the throttle will close, when the accelerator pedal is released, but, at lower speeds it will remain open

When the car descends a hill, at, say 20 miles an hour, with the Governor lever set at 15 miles an hour, the throttle is held automatically closed so long as the speed exceeds 15 miles an hour. This results in a marked saving of fuel and avoids popping in the exhaust when descending hills. This is one of the features which contribute to the unusual economy of Rolls-Royce cars, enabling them to do from 11 to 14 miles to the gallon of gasoline.

ROLLS-ROYCE

No Rolls-Royce has ever worn out

When starting from rest there is no need under any conditions to race the Rolls-Royce engine, because, as soon as the clutch is let in, and power demanded from the engine, the throttle is automatically opened wide by the Centrifugal Governor and the engine caused to develop its maximum power and speed at which it is set.

Write for "The Story of Rolls-Royce—Its Design, Workmanship and Materials"

ROLLS-ROYCE
SPRINGFIELD, MASSACHUSETTS

Visitors Are Always Welcome at the Works

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXIII New York, U. S. A., Wednesday, November 8, 1922 No. 6

When the A. E. A. Opens Its Convention and Show—



THE MERCHANDISING DEPARTMENT WILL TELL ABOUT ITS MEETINGS AND TRAVELS TO PROMOTE SALES

MANUFACTURERS AND JOBBERS WILL PLAN TO BACK UP DEALERS BETTER THAN EVER BEFORE IN SALES PROMOTION WORK

JOBBERS WILL INSPECT MANUFACTURERS' PRODUCTS TO MAKE UP THEIR NEXT SEASON'S LINES

AND MANUFACTURERS WILL GET A CLOSER SLANT ON THE SALES POSSIBILITIES OF WINTER AND 1923.

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Equipment Makers and Jobbers Looking Into 1923

Convention and Show Will Bring 500 A. E. A. Members and Their Men to Chicago to Work for Bigger Business for Manufacturing, Jobbing and Retailing Divisions of the Trade

By NEAL G. ADAIR

MORE than 500 manufacturers of automotive equipment, with several hundred of their sales and purchasing representatives, will meet in Chicago next week to talk business. They will talk particularly about fall and winter business and generally about business for 1923. Exhibits of many of the industry's products will support the conversation.

The gathering is the annual convention and business exhibit of the Automotive Equipment Association. The place is the Coliseum, in the Windy City, and the dates are Nov. 13 to 18.

Just as the convention will not bring together all of the manufacturers and jobbers of the equipment field, so the exhibit will not show all the products of the industry, but both the convention and the exhibit, because of their representative character, will carry widespread interest for the trade. Manufacturers, wholesalers and retailers all over the country will have their eyes on Chicago while this great assemblage is in session.

The business exhibit this year will be exclusively for members and their representatives. It is a closed show, the first the association has ever held. Non-member manufacturers, jobbers and their representatives who have attended past exhibits as guests on invitations from members will not be present. The closed show is the product of the feeling of some jobbers that the privilege of viewing the exhibits and conferring with the manufacturers should not be extended to jobbers who take no part in the support of the association; in part also it is a result of the expressed sentiment of some manufacturers that they have all they can do, during a week's show, to talk with member jobbers and their buyers.

The closed show rule is not popular, however, with a great many members in both the manufacturers' and jobbers' ranks and it is virtually certain to come up for discussion with strong probability that the arrangement will be modified for future exhibits.

The convention will bring together 502 members, about evenly divided between manufacturers and jobbers. The exhibits will show the products of 213 manufacturers, the largest number to exhibit in the history of the association.

Beginning Monday, Nov. 13, the convention will be in session for five days and the exhibit, beginning at the same time, will be open six days. The plan which worked out so successfully last year, holding convention sessions in the morning and requiring attendance of delegates at the exhibit in the afternoon, will be continued.

The convention and the show taken together constitute a great agency of research into immediate and future business possibilities in the automotive equipment field. The business exhibit will present to the jobbers a striking array of the industry's merchandise, with suggested methods of selling it. Particular emphasis will be placed on new developments in the manufacturing and merchandising field. For the manufacturer the exhibit will present an opportunity for concentrated study of the coming season's and the coming year's possibilities of sales through the jobbing field. During the course of the week most of the manufacturers and their representatives will talk with a large number of jobbers and their buyers, getting an estimate of probable business in addition to placing some immediate orders. Last year there were slightly under 200 exhibits in the show. The raising of the total this year to 213 shows the keen interest of the manufacturers in this opportunity to show their goods and talk about them before an audience drawn exclusively from the wholesale distribution field.

The exhibit is expected to assist in clearing up to some extent many of the prevailing uncertainties in the automotive equipment field. Preconvention reports from some districts show equipment business, in volume at least, and in some cases in dollars and cents, running ahead of last year, while from some other large territories tonnage volume of business done is not up to last year's standard and money volume is far below. Manufacturers seeking indications of what business they may reasonably expect during the fall, winter and coming year, and jobbers in the process of deciding upon their lines for the coming season, alike

You Will Want to Read—

The account of the opening of the A. E. A. convention and business exhibit, in Motor World of Nov. 15.

The full report of the convention and exhibit in Motor World of the following week, Nov. 22.

Motor World editors will be in attendance at the convention and will spend many hours at the exhibit so that they can interpret for the trade the developments of importance alike to the manufacturing, wholesale and retail field.

Whether you go the convention or stay at home you will want to read the story. Look for the facts and sidelights in the next two issues of Motor World.

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will have an opportunity to sound sentiment and opinion at this assemblage.

In the convention itself it is expected that the outstanding feature will be a report of the merchandising movement and an outline of its plans up until the time of the summer convention. Ray W. Sherman, merchandising director of the association, will come into the convention fresh from a trip of many thousand miles up and down the Pacific coast, and his observations on this and other recent tours, as well as plans of the merchandising committee for the winter and spring, will have a prominent place on the program.

One of these statistically inclined persons would have a wonderful time juggling some of the figures that have to do with the work of the merchandising movement. As the trade generally knows, the merchandising work revolves around two motion pictures which have been shown all over the country, the "Ask 'em to Buy" film presenting methods of selling automotive equipment at retail, and the "Shop Profits" movie, suggesting the use of system and adequate machinery and tools in the building of automotive service business. There are 28 of the "Ask 'em to Buy" films and 14 "Shop Profits" pictures in use in the sales promotion work of manufacturers and jobbers throughout the United States and Canada.

There is the first taste of the figures mentioned, but only a taste. Since the campaign started on Aug. 1, 1921, 684 merchandising meetings have been held, with nearly 60,000 people in attendance. Dealers and garagemen made up the bulk of the audiences but others were formed exclusively or in part of jobber salesmen and other representatives of jobbing and manufacturing houses. Sherman and his assistant, Edward S. O'Donnell, have traveled 75,000 miles in the work of holding sales promotion meetings and showing the films, and many other thousands of miles have been covered by jobbers and manufacturers' representatives and others who have conducted meetings without the assistance of representatives from A. E. A. headquarters.

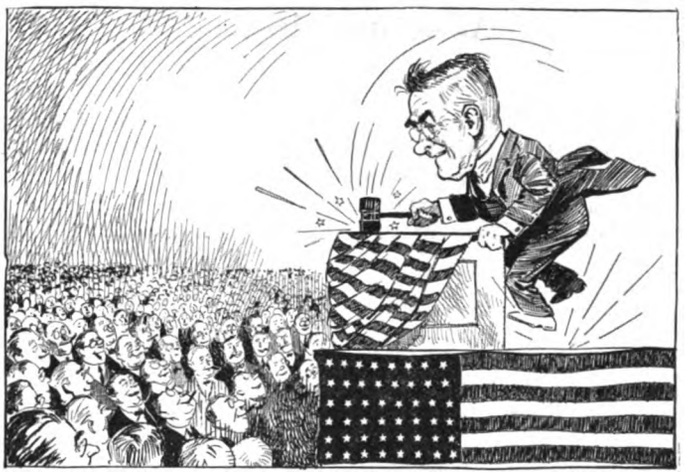
More figures: The little book, "A Greater Business," printed companion of the "Ask 'em to Buy" film, has been distributed to 25,000 people in the trade, and the "Shop Profits" book has been put in the hands of 15,000 dealers and garagemen.

The A. E. A. authorized the merchandising movement at the summer meeting of 1921, voting $40,000 for the work at that time and continuing it with another appropriation of $60,000 at the mid-year meeting last June. The object of both the "Ask 'em to Buy" and "Shop Profits" phases of the movement is to indicate to the retailer the most effective methods of increasing profits by building up accessory sales and by the use of correct selling, record keeping and production methods.

Aside from the merchandising campaign, the convention will take up measures of co-operation between manufacturers and jobbers in furthering their own and the interests of retailers. There will be reports on the work of the traffic bureau, which every year collects considerable sums in over-charges for members. The convention will also hear reports of the year's work of the Universal Catalog committee and the standardization committee, which have compiled, published and distributed the Universal Catalog, describing products of manufacturer members, and the Standardization Handbook, which contains standard and recommended practices covering manufacturing and distribution methods.

Aside from the actual business of the convention and exhibit sessions, the A. E. A. meeting will bring manufacturers and jobbers together in informal and social gatherings, which have always been a strong feature of the meetings of this association. These meetings have been going on now for seven years, starting with the formation of the National Association of Automobile Accessory Jobbers, which later took in manufacturers as associate members, finally becoming the Automotive Equipment Association, and three years ago putting manufacturers on an active membership basis, which is the present status of the association.

The A. E. A. is one of the strong national associations in the equipment field, having members in Canada as well as the United States. Other associations in this branch of the industry include the Motor and Accessory Manufacturers Association and the Association of Automotive Equipment Manufacturers. The M. and A. M. A., as its name indicates, includes many engine and unit parts manufacturers as well as manufacturers of replacement equipment and accessories. The Association of Automotive Equipment Manufacturers, with a nucleus of Chicago members, has been building strength throughout the country until now it has upwards of 100 members. It is confined to makers of products within the equipment field. It has no jobber members and intends to function exclusively as a manufacturers' organization. Some of its members, like some of the members of the M. and A. M. A., belong also to the A. E. A. For the present the three associations, in different degrees of importance, are holding the center of the stage in the equipment industry.



When the Gavel Falls—

WHEN Commissioner William M. Webster calls the Automotive Equipment Association to order in Chicago one of the most important meetings of the year in the automotive industry will be under way.

The program is summarized as follows:

Monday, Nov. 13

10 a. m.—Opening of convention. Address of Howard M. Dine, president of the A. E. A., Canton, O., Commissioner's report.

2 p. m.—Opening of business exhibit.

Tuesday, Wednesday, Thursday, Friday

9:30 a. m.—Business exhibit opens, remaining open all day.

10 a. m.—Manufacturers' divisional meeting Tuesday, jobbers' divisional meeting Wednesday, general convention sessions Thursday and Friday.

Saturday

9:30 a. m.—Business exhibit opens, remaining open all day.

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213 Manufacturers to Show Products at Chicago

Space Reservations Indicate A. E. A. Show Will Be Largest in Association History

TWO hundred and thirteen manufacturer members of the Automotive Equipment Association have taken space for the fourth annual business exhibit of the association, to be held at the Coliseum in Chicago, Nov. 13-18. The exhibit will be open Monday afternoon, Nov. 13, and all day the rest of the week. Following the successful experiment of last year delegates, who are required under the association rules to attend all convention sessions, will be obliged also to be present in the exhibition hall from 2 to 4 p. m. on Tuesday, Wednesday, Thursday and Friday.

The list of exhibitors follows:

A

Acheson Graphite Co., Niagara Falls.
Advance Automobile Accessories Corp., Chicago.
Air Reduction Sales Co., New York.
A. C. Spark Plug Co., Flint, Mich.
Ajax Auto Parts Co., Racine, Wis.
Albertson & Company, Sioux City, Iowa.
Allen Auto Specialty Co., New York.
Alvord Reamer & Tool Co., Millersburg, Pa.
American Chain Co., Bridgeport, Conn.
American Bureau of Engineering, Inc., Chicago.
American Hammered Piston Ring Co., Baltimore.
American Bosch Magneto Corp., Springfield, Mass.
Apex Electric Mfg. Co., Chicago.
Appleton Electric Co., Chicago.
Anderson Co., South Bend, Ind.
Atlas Specialty Mfg. Co., Chicago.
Atwater-Kent Mfg. Co., Philadelphia.
Automotive Products Corp., Hazleton, Pa.
Automotive Equipment Association (Merchandising Department), Chicago.
Automotive Journal Publishing Co., Pawtucket, R. I.
Au-To Compressor Co., Wilmington, Ohio.

B

Barcalo Manufacturing Co., Buffalo.
Barber Asphalt Company, Philadelphia.
Badger Manufacturing Corp., Milwaukee.
Benzer Corporation, Brooklyn, N. Y.
Biflex Products Company, Waukegan, Ill.
Black & Decker Mfg. Co., Baltimore.
Borg & Beck Mfg. Co., Chicago.
Bonney Forge & Tool Works, Allentown, Pa.
Bridgeport Brass Co., Bridgeport, Conn.
Brunner Mfg. Co., Utica, N. Y.
Buckeye Brass & Mfg. Co., Cleveland.
Buffalo Forge Company, Buffalo.
Burd High Compression Ring Co., Rockford, Ill.
Bussmann Mfg. Co., St. Louis.

C

Carr-Fastener Co., Boston.
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Carswell-Hammond Mfg. Co., Boone, Ia.
Carborundum Company, The, Niagara Falls.
Canadian National Carbon Co., Ltd., Toronto, Canada.
Central Brass & Fixture Co., Springfield, O.
Chilton Company, The, Philadelphia.
Champion Spark Plug Co., Toledo, Ohio.
Champion Blower & Forge Co., Lancaster, Pa.
Class Journal Co., New York, Chicago.
Clover Mfg. Co., Norwalk, Conn.
Clayton & Lambert Mfg. Co., Detroit.
Connecticut Telephone & Electric Co., Meriden, Conn.
Cooper Mfg. Company, Marshalltown, Iowa.
Columbus-McKinnon Chain Co., Columbus, O.
Columbus Varnish Co., Columbus, O.
Corcoran Mfg. Co., The, Cincinnati, O.
Continental Piston Ring Co., Memphis, Tenn.
Crescent Tool Co., Jamestown, N. Y.
Crawford Manufacturing Co., Richmond, Va.
Curtis Pneumatic Machinery Co., St. Louis.

D

Davies-Young Soap Co., Dayton, O.
Double-Fabric Tire Co., Auburn, Ind.
Dover Stamping & Mfg. Co., Cambridge, Mass.
Douglas-Dahlin Co., Kansas City.
Duluth Show Case Co., Duluth, Minn.
Durkee-Atwood Co., Minneapolis.

E

E. A. Laboratories, Inc., Brooklyn, N. Y.
Edelmann & Co., E., Chicago.
Edison Lamp Works of General Electric Co., Harrison, N. J.
Elite Mfg. Co., Ashland, O.
Electric Machine Corp., Indianapolis.

F

Farran-Kinney Co., Chicago.
Federal Miniature Lamp Division of General Electric Co., Chicago.
Fibre Finishing Co., Boston.
Fitzgerald Manufacturing Co., Torrington, Conn.
Foreman, W. D., Chicago.
Franklin Machine & Tool Co., Springfield, Mass.
Fulton Company, The, Milwaukee, Wis.

G

Gates Rubber Co., Denver.
General Asbestos & Rubber Co., Charleston, S. C.
Gemco Manufacturing Co., Milwaukee.
General Automotive Corp., Chicago.
Gilfillan Bros., Inc., Los Angeles.
Gilmer Co., L. H., Tacony, Pa.
Giant Grip Mfg. Co., Oshkosh, Wis.
Globe Machine & Stamping Co., Cleveland, O.
Globe Mfg. Co., Battle Creek, Mich.
Goodrich-Lenhart Mfg. Co., Hamburg, Pa.
Graton & Knight Mfg. Co., Worcester, Mass.
Greb Company, The, Boston.

H

Hall-Thompson Co., Hartford, Conn.
Halladay Co., L. P., Decatur, Ill.
Hastings Manufacturing Co., Hastings, Mich.
Hayes Wheel Co., Jackson, Mich.
Hart-Bell Manufacturing Co., Poughkeepsie, N. Y.
Harvey Spring & Forging Co., Racine, Wis.
Hill Pump Valve Co., Chicago.

I

Illinois Brass Mfg. Co., Chicago.
Imperial Brass Mfg. Co., Chicago.
Indiana Lamp Co., Connersville, Ind.
Indianapolis Pump & Tube Co., Indianapolis.
Ironsides Company, Columbus, O.

J

Jefferson Electric Mfg. Co., Chicago.
Jobber Topics, Chicago.
Johns-Manville Co., New York.
Johnston Mfg. Co., William R., Chicago.
Judd & Leland Mfg. Co., Clifton Springs, N. Y.

K

K-D Lamp Co., Cincinnati, O.
Kant Rust Products Corp., Rahway, N. J.
Kales Stamping Co., Detroit.
Kellogg Mfg. Co., Rochester, N. Y.
Kennedy Mfg. Co., Van Wert, O.
Keystone Reamer & Tool Co., Millersburg, Pa.
King Sewing Machine Co., Buffalo.
Klaxon Co., Newark, N. J.

L

Lake Erie Metal Products Co., Cleveland.
Laminated Shim Co., Inc., New York.
Las-Stik Patch Mfg. Co., Hamilton, O.
Lawson Company, F. H., Cincinnati, O.
LeCompte Company, The, Newark, N. J.

M

Macbeth-Evans Glass Co., Pittsburgh, Pa.
Mayo-Skinner Mfg. Co., Chicago.
Mann Co., F. W., Milford, Mass.
Marquette Mfg. Co., Inc., St. Paul, Minn.
Manley Manufacturing Co., York, Pa.
McCulloch Mfg. Co., Boston.
McCord Mfg. Co., Detroit.
McQuay-Norris Mfg. Co., St. Louis.
Metal Specialties Mfg. Co., Chicago.

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Metal Stamping Co., Long Island City, N. Y.
Mid-West Mfg. Co., Minneapolis.
Milwaukee Motor Products, Inc., Milwaukee.
Mossberg Company, Frank, Attleboro, Mass.
Motor Specialties Co., Waltham, Mass.
Monroe Auto Equipment Mfg. Co., Monroe, Mich.
Moon Bros. Mfg. Co., St. Louis.
Mosler Metal Products Corp., Mt. Vernon, N. Y.
Moto-Meter Co., Inc., Long Island City, N. Y.
Modine Mfg. Co., Racine, Wis.
Mutual Wheel Co., Moline, Ill.
Multibestos Company, Walpole, Mass.

N

National Standard Company, Niles, Mich.
National Carbon Co., Long Island City, N. Y.
New England Tube & Stamping Co., Inc., West Haven, Conn.
Nelson Mfg. Co., A., Chicago.
New Era Spring & Specialty Co., Grand Rapids, Mich.
No-Leak-O Piston Ring Co., Baltimore.
Northwestern Chemical Co., Marietta, O.
Nu-Back Mfg. Co., St. Louis.

O

Ohio Pattern Works & Foundry Co., Cincinnati.

P

Packard Electric Co., Warren, O.
Pennsylvania Piston Ring Co., Cleveland.
Perkins-Campbell Co., Cincinnati.
Petry Co., Inc., N. A., Philadelphia.
Perfection Heater & Mfg. Co., Cleveland.
Piston Ring Co., The, Muskegon, Mich.
Piel Company, G., Long Island City, N. Y.
Polson Rubber Co., Cleveland.
Pouvailsmith Corp., Poughkeepsie, N. Y.
Pratt Mfg. Co., Wm. E., Chicago.
Presto-Felt Co., The, Chicago.
Protexall Company, Abingdon, Ill.
Pyrene Mfg. Company, Newark, N. J.

R

Raybestos Company, The, Bridgeport, Conn.
Rajah Auto Supply Co., Bloomfield, N. J.
Reliance Mfg. Co., The, Massillon, O.
Rees Manufacturing Co., Pittsburgh, Pa.
Rose Mfg. Co., Frank, Hastings, Neb.
Roth Mfg. Co., G. A., Hastings, Neb.
Rossendale-Reddaway Belting & Hose Co., New York.
Rollaway Motor Co., Toledo, O.
Romort Mfg. Co., Oakfield, Wis.
Russell Manufacturing Co., Middletown, Conn.

S

S. & M. Lamp Co., Los Angeles, Cal.
Shaler Company, C. A., Waupun, Wis.
Smith & Hemenway, Inc., Irvington, N. J.
South Bend Lathe Works, South Bend, Ind.
Sparks-Withington Co., Jackson, Mich.
Spencer-Smith Machine Co., Howell, Mich.
Splitdorf Electrical Co., Newark, N. J.
Spencer Mfg. Co., Spencer, O.
Stewart Mfg. Corp., F. W., Chicago.
Stone Mfg. Co., Chicago.
Storm Mfg. Co., Minneapolis.
Stevens & Company, New York.
Sterling Mfg. Co., Cleveland.
Standley Mfg. Co., Boone, Iowa.

T

Templeton, Kenly & Co., Ltd., Chicago.
Temco Electric Motor Co., Leipsic, O.
Thompson-Neaylon Mfg. Co., Chicago.
Thomas Auto Top Co., Muncie, Ind.
Thermoid Rubber Co., Trenton, N. J.
Tingley Co., Chas. O., Rahway, N. J.
Trico Products Corp., Buffalo.
Trexler Company, Philadelphia, Pa.
Trade Press Publishing Co., Milwaukee, Wis.
Turner Brass Works, Sycamore, Ill.
Tuthill Spring Co., Chicago.

U

Universal Tool Co., Garwood, N. J.
United States Air Compressor Co., Cleveland.
United States Asbestos Co., Manheim, Pa.

V

Van Cleef Brothers, Chicago.
Victor Mfg. & Gasket Co., Chicago.
Voorhees Rubber Mfg. Co., Jersey City, N. J.

W

Warner-Patterson Co., Chicago.
Walden-Worcester, Inc., Worcester, Mass.
Wakefield Brass Co., F. W., Vermilion, O.
Walker Mfg. Co., Racine, Wis.
Weaver Mfg. Co., Springfield, Ill.
Weidenhoff Products, Chicago.
Westinghouse Lamp Co., New York.
Webster Electric Co., Racine, Wis.
White Brass Castings Co., Chicago.
Whitehouse Mfg. Co., E. A., Newark, N. J.
Wire Wheel Corp. of America, Buffalo, N. Y.
Wright Mfg Co., Lisbon, O.

X

"X" Laboratories, New York.

How Some Jobbers Are Cooperating in the Merchandising Plan

MANY jobbers have been particularly successful in carrying the "Ask 'em to Buy" idea to the retail merchants and through them to the public. Their plans have been widely varied in detail and have approached the subject from different angles, but in most instances where the activities have been aggressively followed up they have developed stronger markets and better dealers.

On this and the following pages are some descriptions of the outstanding features of a few jobber activities in co-operation with the central merchandising plan. Many other jobbers have worked out plans that are equally as effective.

Putting a Winter Punch Into a Selling Campaign

A SEASONABLE "Ask 'em to Buy" campaign featuring holiday suggestions for motorists has been inaugurated on an extensive plan by the Beck & Corbitt Iron Co., St. Louis jobber, through the November issue of the *Accelerator*, a supplement to the regular catalogue published monthly to speed up dealers business.

This is to be followed by the December number which will be a special "Dealers Retail Christmas Number" devoted exclusively to "Gift Items," and the retail price only will be shown with the article listed. A separate dealers net price list will be included in the back of the book. The descriptions of the goods shown will be written to best advantage for retail use and the cover copy will be especially designed to attract Christmas shoppers.

"This arrangement," said A. R. Rooch, sales manager of the Beck & Corbitt Iron Co., "will enable our customers to sell their trade from *The Accelerator* without revealing their costs. In this way it will be very serviceable to them for Christmas merchandising.

"The decision to list only the retail prices along with each item in the Chrismas number was made after we had received hundreds of answers to our questionnaire sent out as a "flyer" with the October issue of *The Accelerator* requesting the dealer to state his preference on a coupon printed on the flyer. Not only did the majority of the dealers prefer the change but many of them sent in orders for hundreds of extra copies to be used by them to circulate among the automobile owners in their respective territory.

"We, therefore, intend to get out as many copies of the December *Accelerator* as required by our customers, at a cost to them of 10 cents each. The covers will be so arranged that the dealer will be able to have his name printed on them."

In addition to the *Accelerator* the company furnishes a colored Xmas display card free for window or showcase use. The card is 11 x 14 in.—6-ply cardboard in 3 colors—suggesting 16 ideal Christmas gifts, with a Christmas border. One card is included with each order of goods shipped since Nov. 6.

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House Organ Makes Timely Selling Suggestions

Dealers Helps for Christmas Merchandising



SIZE 11X14 INCHES—4 PLY CARD BOARD IN 3 COLORS. SUGGESTS SIXTEEN IDEAL GIFT ITEMS. CHRISTMAS BORDER

DISPLAY CARD FREE

Silent Christmas Salesman

These cards will be furnished to our customers without charge, to help them promote their Christmas sales.

As a convenient means of distribution we will include one with each order shipped beginning Monday, November 6th.

FOR WINDOW OR SHOW CASE

ARTICLES SHOWN ON CARD ARE FULLY LISTED IN THIS ISSUE

THIS WILL HELP YOUR HOLIDAY SALES

SPECIAL

CHRISTMAS WRAPPING PAPER & TWINE



AT COST

We have purchased a quantity of special holly design wrapping paper—craft stock—printed by rotogravure process in two colors which we will

MERCHANDISING PLANS THAT WILL CATCH *the* CHRISTMAS SHOPPER



WINDOW DISPLAYS IMPORTANT.

Well trimmed windows are a very important factor in creating a Christmas mosphere and impressing upon the mind the passer-by the appropriateness of tomotive gifts for Christmas. A Christs window is very easily set up and need be at all expensive. A very satisfactory effect can be obtained by setting a Christmas tree in the center of the dow, covering the floor with white or paper upon which can be laid those les which the dealer believes to be suitable and the whole display can corated with tinsel and dusted with tion snow that can be secured for ation purposes. Stop signals, visors, other highly colored articles lend lves readily to such displays. Show play card we furnish (see page 1) ently in your window. These card. o be displayed effectively in your

be satisfied if they buy one present, ask em to buy another for some other friend. If you don't, the customer will merely go to another store and buy it. Keep the purchase within your store, for that's where it counts in your cash register.

GOOD CANVASSING IDEA

Calling at the homes of customers and suggesting to the women of the family that they give "something for the car" as Christmas gifts will bring good results.

SOLICIT BY MAIL

Good results can be obtained by sending a form letter to the wives of car owners, calling their attention to the many appropriate automotive gifts that will be greatly appreciated by relatives and friends owning cars. This plan brought big returns for a number of live dealers last year. If you have a mailing list, (you should

NOVEMBER IS HERE!

Get Ready for Christmas Sales



Display and Push Winter Goods

NOW

November is the month of two fold opportunity for the Automotive Equipment Dealer

With the approach of cold weather, comes the time to realize profits on the motorist's needs for winter necessities. The dealer who would make the winter months a "live" season instead of the before "dead" season, must begin NOW to get his house in order. He should provide to have his stock in before Jack Frost arrives in earnest—his seasonable goods well displayed and his plans laid for an aggressive "Ask 'Em to Buy" appeal to the motor car public, based on display and personal selling.

Every motorist who stops at your place of business Mr. Dealer is a likely purchaser of one or more of the many useful articles of equipment that will add comfort and economy to his car in winter. Are you going to be prepared to get the extra business with the worthwhile profit that goes with it?

This issue of the Accelerator shows a good selection of staple cold weather items—serviceable articles, that the average car owner will be glad to buy if they are shown to him and their merits explained. On pages 2 to 5 we outline a number of successful merchandising plans that will produce a quick and profitable turn over on winter goods, for any dealer who puts them to use

And then comes December, the big "pre harvesting" month for retail merchant all lines of business.

Only within the last year or two, has Automotive Equipment Industry awak to the tremendous possibilities Chris offers for the sale of its merchandise past, jobber and retailer alike, reg December as a poor month and accept falling off of their business for that pe a necessary evil. They sat quietly by the dealers in all other lines of busine earning big profits by Christmas m dising.

This year will record a different sto industry is awake to the big sellin tunity, and live dealers will cash i Christmas buying spirit. Whether ness is a garage or an accesso whether it is a battery shop or whether you have a car agency o pair shop, you can realize big pro coming Christmas season, if you effort to do so. Look over the pages for useful suggestions tha you plan your campaign.

Above all—don't delay. Have in, your displays arranged and plans ready by December 1st.



WINTER SELLING PLANS THAT WILL PAY DIVIDENDS

Selected from Motor World Winter Business Number

WINDOW AND INTERIOR DISPLAYS

1—Feature each week one or a related group of winter leaders and surround them with a few staple items as reminders. The WINTER LEADER should dominate the window. But it should be more than displayed. It should be SOLD as a winter necessity with signs, cutouts, catalogs, etc. Suppose the winter leader this week is a windshield wiper. One might be mounted on a windshield in the center of the window, the glass covered with Bon Ami or some other white substance to show the sweep of the wiper. A neatly lettered card mounted on the windshield or in the window, in front of it would carry the selling message—tell the public why motorists NEED windshield wipers in winter. Make the display SELL the featured article.

2—Make timely special displays. On stormy mornings feature some particular items such as skid-chains, windshield wiper or radiator hood. In white paint on the side of the window glass where it will not obscure the view of its contents, print—SPECIAL—Windshield Wiper ... (Price)

3—A wall case or display counter showing well displayed seasonable items, near the door where customers going in and out will see them will make sales for the garage or service station.

MAIL ADVERTISING HELPS

1—Keep the mailing list up-to-date. The best mailing list is one which contains the names of all people who have purchased previously. These names may be gotten and added to the list by providing that the name and address and name of car owned be required for and written on the sales check when it is being made out. The duplicates then go to the person in charge of the mailing list to be added to it. Classification of the mailing list according to car ownership is sometimes of practical assistance when its surwarrants.

2—Have letters typed or pamphlets printed presenting certain accessories as winter necessities and attach to these descriptive factory literature.

3—Have postcards printed presenting newly stocked items and send them out as required. Postcard efforts of this nature are usually most effective if they contain a short, trite message and a picture of the article. Suppose the article to be sold is a radiator cover. A cut of the cover one quarter to one-half the size of the postcard probably would be supplied by the jobber or manufacturer on request. In fairly large type under it or over it might be printed the name of the particular item and its retail price. The selling message might be as follows: "Are You Wasting Power this Winter?" Heat is essential for the efficient operation of your engine. Protect it with a well fitted radiator cover and relieve your nerves and your battery of the strain of starting a cold engine. We have just received a brand new stock of Radiator Covers. Come in and let us fit one to your car." Don't waste power this winter!"

Selling literature can be made stronger this winter if it always—Tells the motorist WHY he needs a particular accessory this winter—Tells him that you SELL just the item to meet that necessity—Asks him to BUY it FROM YOU.

SELLING IDEAS THAT WILL MAKE SALES

1—Ask people to buy winter accessories, mentioning particularly the WINTER LEADERS, and telling why these items OUGHT TO BE ON EVERY CAR this winter.

2—Make a practice of mentioning at least one WINTER LEADER to every customer who comes in to buy something else. Mention new goods particularly saving. "Have you seen the new ... yet?" etc., and proceed to tell its virtues as a winter accessory.

3—When the weather is inclement mention particularly some item that MIGHT be needed by the motorist on account of the weather condition of that day. People buy when necessity presses.

4—Put on a sales contest for employees with prizes for winners or pay small commissions on gross sales ER LEADERS and point out the necessity for them this winter.

5—Use the telephone. Make a selected list of customers and phone them telling them about your WINTER LEADERS and point out the necessity for them this winter.

6—A good plan for garages and service stations is to supply employees with "Accessory Prospect Report Forms" which provide a space for car owner's name, make of car, etc. and show a list of winter necessities. Have them look over all cars that come in and check on the blank, the items of equipment the cars lack. Then canvass the customer either by letter or through an alert salesman for possible accessory and equipment sales. The owner will usually buy, if he is shown that the article he needs will add comfort and safety to winter motoring.

ABOVE are shown four pages from the November issue of The Accelerator, published monthly and distributed among its dealers and salesmen by the Beck & Corbitt Iron Co., St. Louis automotive equipment jobber. This issue was bristling with practical winter selling suggestions and particularly with Christmas merchandising ideas. Note how this jobber is cooperating with its dealers by furnishing display cards, fancy wrapping paper and twine and other Christmas selling properties at cost. The page shown in the lower right corner is a reproduction of winter equipment selling plans from the Winter Business Number of Motor World, Oct. 18, 1922.

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Christmas wrapping paper and twine at cost also are offered the dealer. The paper is printed in red and green while the twine comes in assorted colors.

The company's salesmen are now following up the November *Accelerator* with a personal call upon each dealer throughout Missouri, Illinois and the Southwest with additional winter merchandising plans which were outlined at a special sales conference held at the company plant Monday, Nov. 6.

Each salesman has been requested to co-operate with the dealer and to assist him in every way possible to make the winter months a live selling season.

The plan outlined to catch the Christmas shopper consists of well trimmed windows with the Christmas idea prevailing throughout, direct selling, or "Ask 'em to Buy" automotive presents, canvassing the homes of automobile owners, soliciting by mail, sending the wives of car owners a suggestive list of suitable automotive gifts, and using the telephone to solicit orders.

Some of the items suggested which are adapted for the motorists at this time of the year are anti-skid tire chains, radiator and hood covers, radiator shutters, anti-freeze solution, heaters, electric hand warmers, robes, primers, electric engine heaters, top recovering, bumpers, Moto-Meters, windshield cleaners, windshield wings, dome lights and other useful and necessary accessories.

Sales Meetings and Films Stir Southern Dealers to Action



Spreading the Gospel of "Ask 'em to Buy"

More than 200 meetings in the last forty weeks, usually attended by ninety per cent of the dealers invited and with an aggregate attendance roughly estimated at 28,000 men actively interested in selling, have been one of the means of educating and inspiring dealers used with gratifying results by the Osborn-Abston Co., Memphis jobber. The company also operates a large branch in Atlanta

"DEALERS who were making $100 and $200 on automotive equipment are now making $1,000 and more. Accounts that were formerly c.o.d. have become open accounts, with the dealer discounting his bills."

These are concrete results of a merchandising campaign that has been aggressively conducted by the Osborn-Abston Co., Memphis jobber. This campaign, in its general scope, has embraced most of the suggestions that have been developed by the merchandising activities of the Automotive Equipment Association, and includes as an important feature the showing of the films: "Ask 'Em to Buy" and "Shop Profits."

Shortly after the merchandising work was started by the A. E. A. this firm selected George E. Brusch of the sales organization to show the films and deliver lectures to dealer meetings. Up to the present time he has been busy every week and has shown the "Ask 'Em to Buy" film in practically every town in the Memphis territory, averaging five to seven meetings weekly.

A week before these meetings the salesmen make arrangements for them, for the hotel or picture theater in which the film is to be shown and take care of the details. Written invitations are sent to the dealers telling about the work, asking them to be present and giving the time and place the show is to be held.

The sales department, two or three days before each event sends postal cards as a second reminder. Brusch manages to get into each meeting town, meet the dealers personally and give them whatever merchandising assistance he can, including suggestions for window displays, stock arrangement, advertising, sales solicitation, etc.

Brusch makes no attempt to sell on these trips. Besides the film there are refreshments, and if there is no dealer organization in the town an attempt is made to establish one at the meeting, or at least get the dealers thinking seriously on the subject.

No advertising for the jobber is allowed to get into the meeting. It is planned purely as a co-operative step, extending a helping hand wherever the opportunity arises. The selling is taken care of only by the territory salesman, after the meeting has been held.

Since the beginning of this program of meetings Brusch has spoken to about 28,000 people interested in selling automotive equipment and tires in more than 200 meetings. He has held an average of five meetings weekly during the time.

The close cooperation of the salesmen in the territories visited by Brusch has contributed considerably to the success of the project. Not alone in the missionary work necessary to insure a good meeting have they been valuable, but particularly in following up the meetings by calls upon the dealers in which they helped translate the inspiration gained by the dealers at the meetings into actual selling effort in the stores and garages.

In addition to the meetings this firm gets out timely literature. One of the latest efforts is a Christmas poster for the dealer which suggests the purchase of automotive equipment for Christmas gifts.

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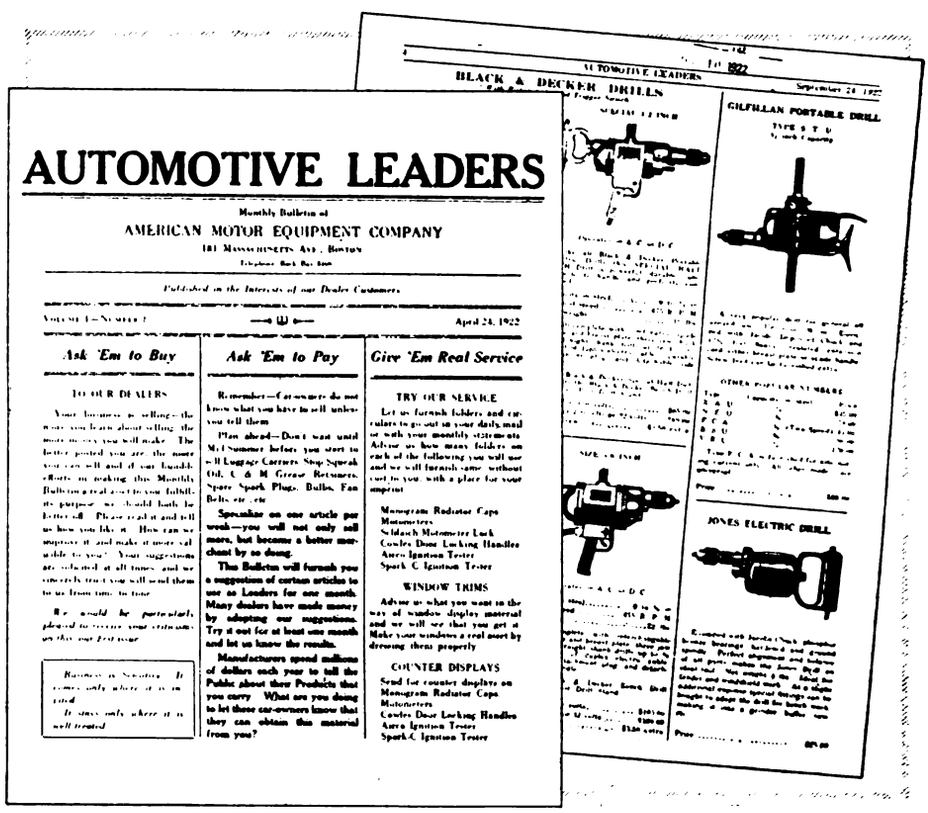
Selling Ideas and Leaders Suggested in Bulletins

A MONTHLY four page bulletin which carries in each issue a timely merchandising idea and suggests weekly leaders is a feature of the merchandising service extended to its dealers by the American Motor Equipment Co., Boston jobber.

These bulletins, entitled "Automotive Leaders" feature prominently the slogans "Ask 'Em to Buy," "Ask 'Em to Pay," "Give 'Em Real Service" and in each there are short, interesting articles which present some practical method of translating these slogans into action in the dealer establishment. The first page of each bulletin is devoted to these articles. On the double page spreads formed by pages two and three are presented each month a few suggested "leaders." These leaders are selected because of their particular timeliness as objects of merchandising effort. Among them are some of the items of equipment that are all year round sellers, but they are presented with special suggestions for selling them with a timely appeal. The last page of the bulletin is devoted to the presentation of some item of shop equipment.

After reading these bulletins the dealer is expected to display them prominently on a bulletin board so that the salesmen in his store or garage may refer to them and constantly have before them the items they are going to push that month.

Another activity that has been helpful to this jobber in spreading the merchandising gospel is the distribution of a number of handbooks of "desirable comforts and conveniences for the motor car." In this booklet, there is grouped a compact, workable, salable list of the items almost universally of interest to both the new car and used car purchaser.


AUTOMOTIVE LEADERS

Monthly Bulletin of
AMERICAN MOTOR EQUIPMENT COMPANY
181 Massachusetts Ave., Boston

Published in the Interests of our Dealer Customers

April 24, 1922

Ask 'Em to Buy

TO OUR DEALERS

Ask 'Em to Pay

Remember—Customers do not know what you have to sell unless you tell them

Plan ahead—Don't wait until Mid-Summer before you start to sell Luggage Carriers, Stop Signal, Oil, C. & M. Grease Retainers, Spare Spark Plugs, Bulbs, Fan Belts, etc., etc.

Specialize on one article per week—you will not only sell more, but become a better merchant by so doing.

The Bulletin will furnish you a suggestion of certain articles to use as Leaders for one month. Many dealers have made money by adopting our suggestions. Try it out for at least one month and let us know the results.

Manufacturers spend millions of dollars each year to tell the Public about their Products that you carry. What are you doing to let these car-owners know that they can obtain this material from you?

Give 'Em Real Service

TRY OUR SERVICE

WINDOW TRIMS

COUNTER DISPLAYS

Monogram Radiator Caps
Motometers
Schlauch Motometer Lock
Cowles Door Locking Handles
Auto Ignition Tester
Spark-C Ignition Tester

BLACK & DECKER DRILLS

GILFILLAN PORTABLE DRILL

JONES ELECTRIC DRILL

Monthly Bulletin Carries Timely Selling

Here are two pages from the monthly bulletin of the American Motor Equipment Co., Boston jobber, in which a point is made to suggest a timely selling idea or two each month and in addition to this present each month a few "leaders" which are recommended for special selling attention during that period

A Pair of Equipment Selling Ideas

THE Blackstone Motor Co., Inc., Maxwell-Chalmers dealer in Binghamton, N. Y., uses an interesting card in reaching buyers of new cars with an equipment selling appeal. With a few obvious changes the card might be used profitably by many dealers.

On the face of the card is the following message: "In going over our records we find we have a number of deliveries to make within the next two months. In order to serve all of our customers without delay, we would suggest that you notify us as to about the time you expect to take delivery, and if you want any extra equipment installed, a list of which is printed on the back of this card.

"This extra equipment is manufactured by reliable accessory houses who make a specialty of equipping Maxwell cars. We offer this equipment at particularly attractive prices installed on your car. Extra equipment to be paid for at time of delivery. Please fill out and return."

The reverse side of the card contains a list of equipment with prices, including tire tube and cover, stop signal, Moto-Meter, spotlight, side windshield, five gallons oil, chains, tire chains, grease, pressure gage, body polish, nickel polish, theft lock, extra spark plugs, bumper, door pads. At the bottom of the list is the following message, to be signed by the new car purchaser and returned to the dealer: "Please arrange to make delivery on my car on or about ..... with above equipment (indicated with X). Name ....., Address .....

THE entire shop and office force of the C. & A. Auto Supply Co., equipment and tire dealer in Pittsburg, Kan., was organized into two competing teams and a contest in "Asking 'Em to Buy" was held. The contest covered a period of 30 days and developed a keen rivalry and aggressive selling effort on the part of all the employees which resulted in an increase of tire sales from $900 to $3,500.

There is a winter selling suggestion for many other equipment and tire dealers. A sales contest may be just the thing that is needed to prevent the inertia that creeps in some sales forces in winter. Why not make things hop in the store this winter with monthly sales contests, in which suitable prizes are given to the leader at the end of each month.

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Traveling Service Man Builds Good Will for Distributor

Educating Dealers and Owners in the Care of Cars Proves a Profitable Investment

By W. W. BARNETT
Oldsmobile Distributor, Denver

IN traveling over the territory myself and in listening to the reports of my wholesale salesmen, I came to the conclusion that the dealers out through the territory needed assistance along mechanical lines and needed it badly.

I knew that the cars we had sold were good and that they would give good service if given proper care and attention and realized that the owners must be educated so as to get the best results in the use of their cars.

The dealers' demonstrating cars were not kept in the shape they should be—were not developing the power and the speed they should—were not as quiet as they should be—all due to lack of attention and thought.

ON my return from a trip to Wyoming, where I visited a number of our dealers, I decided to put a man on the job to be known as the wholesale traveling service man. I studied the men in my own organization here in Denver to find a man that was fitted for the position, and finally, after very serious thought and consideration, selected Arthur Hurt, a man working as a mechanic in the service department.

Knowing that he would come in touch with possibly dissatisfied car owners—possibly with discouraged dealers—possibly with difficult mechanical problems to solve—the man had to be one capable of meeting the car owners themselves in a pleasing manner. He had to be one capable of cheering up and "pepping" up the dealer himself, and a good "trouble shooter," as we have all learned to express that ability of a mechanic to locate trouble.

In addition to all of this, he had to be a man who was willing to take off his coat and get into the actual work of adjusting and repairing automobiles—fixing up the customers' cars—working on the dealers' demonstrating cars, instructing the dealers' service men, showing them carburetor adjustments, bearing adjustments, etc.

I feel confident that at a time when the distributor's dealer organization was likely to become wobbly, likely to become discouraged through lack of sales or for many reasons—or might think, "Well, if I sold some other make of car I might do better," the giving to my dealers of this assistance has tended to hold my dealer organization almost intact and has enabled them to do more and better business than they would have done.

Here in Denver it was impossible to keep in touch with the hundreds of Oldsmobiles out in the territory and only through actual visits to the various dealers and meeting through the dealer the car owner himself, could we learn of the occasional one that might be having trouble due to using of poor oil, misuse, neglect or actual ignorance.

In many cases the wholesale traveling service man has transformed a dissatisfied owner to a real booster, which we all know is the greatest asset any automobile agency can possess. The mere fact that we were interested enough in him and his car to send a man from Denver to look it over and make adjustments and suggestions was bound to please many car owners, and the results of a few hours' work made in nearly every instance a booster of him.

After several months of this service I am confident that it was a very wise move and have received letters, telegrams and telephone messages from Oldsmobile owners and dealers throughout the territory, expressing their appreciation of the wonderful service rendered.

It costs money, but has been worth it.



W. W. Barnett

His traveling service man preserves good will of dealers and owners

Eleven Things to Make a Tire Business Better

IN the analysis made of a tire dealer's place of business which was not doing very well, eleven reasons were discovered showing why trade was poor. Here are the remedies outlined to help him to better business. They may be worth something as suggestions to you:

1. Reduce tire stock to practically one line.
2. Cut down operating expense—salesman, bookkeeper, office supplies to just what is needed to care for trade. Cut out salesman's car and possibly proprietor's car.
3. Tear down all old signs and clean up entire establishment.
4. Display only signs which have real meanings.
5. Paint front end of store—inside and out.
6. Tear down partition of "private office" and instead, build a railing around desk space.
7. Install some sort of a background—a railing and curtain or beaverboard for window display.
8. Make tire rack space smaller and install more shelving for other goods.
9. Contract with newspaper for small ad—one column by two inches, preferred position, to appear in the daily newspaper two or three times a week.
10. Send out 12 letters per year to selected list of car owners.
11. Contact with as many of this list as possible by telephone.—*The Goodyear News.*

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Give Away Profits to Make Sales? —Not on Your Life!

H. A. Testard, New Orleans Hudson-Essex Dstributor, Tells Some Merchandising Policies That Have Made Him a Successful Dealer

LOCATE in the business district. Do not give away anything to help sell your cars. Never let your customer get a false idea of what he is buying and keep in touch with those who drive your cars to get prospects.

These are the salient points of policy pursued by H. A. Testard, distributor of the Hudson and the Essex in New Orleans and one of the veteran dealers in that city. Testard adds that frequent rather than large newspaper advertisements get the business and that he has never paid more for a used car than he could get for it. He places the greatest emphasis on selling cars and accessories as un-associated transactions and does not permit his salesmen to present extras to their cutomers. This is part of his policy of convincing every buyer of a car that he is receiving the same treatment as others get.

"I SOLD bicycles before the days of the automobile and for some time after," says Testard, "and so far as it has been physically possible I have pursued the same policies during all my business career.

"First, I have always had my business as close to the center of the commercial and financial district as possible. This has forced me to be satisfied with much smaller space that I could get for the same investment or the same rent farther away. When a potential buyer has become deeply interested in a car, he will usually go any distance to inspect models. The first thing, however, is to interest him and I have found it easier to have a man or woman call at a convenient location in the business district. My present location, which I bought some time ago, is five blocks from the retail merchants' center, Canal Street, four blocks from the center of the banking district and less than that from the two larger hotels.

"While many able dealers disagree with me in this and have spent large sums farther away from the business center, I have never had any reason to doubt that my judgment in the matter of location is good.

"The next policy I have pursued is of as great or greater importance. That is that every customer's dollar is the same dollar to me. Mine is a one price house. I give away no extras nor do I permit my salesmen to give accessories to customers and pay for them themselves. I do not believe in eating into my profits by giving anything away, so everything I have in the place is sold for money.

"The fact that I have sold cars to the same persons for years is evidence that refusal to give anything away is a good policy. *It convinces the customer that he is getting his money's worth in the car.* It further convinces him that he is being treated the same as all other buyers, which I have found to be the basis of many sales.

"No man has ever made a greater effort than I have to see to it that the man who buys a car from me not only understands exactly what I have sold him, in and on the car itself and in service. I do not permit a customer to take his car with the impression that I intend to maintain it, regardless of accidents or careless driving, for any length of time, not even one day. When he receives the car from me, it is in the best possible condition. He is provided with all the information necessary for its proper handling. He knows just what the guarantee is and just what service in the way of adjustments and tuning up are sold with the car. This is, after all, only a phase of the 'one price' policy in that the customer always knows exactly what he buys and knows also that no other customer is getting something different for the same money.

"In addition to the routine work of the salesmen as conducted in every dealer's establishment, I make it a practice to write people I have sold to inquire whether they know of anyone else who might buy a car. I have been doing this for years and it pays. Most of the replies come by telephone, though I always inclose a stamped and addressed envelope.

"I have never overlooked the value of newspaper advertising, nor have I ever gone in for great spreads of space at one time. On the contrary, I have always favored frequent adver-

Plain Common Sense

THERE is nothing thrilling or unusual in the methods of merchandising that have made the business of H. A. Testard, New Orleans Hudson-Essex dealer, a successful concern. There seldom is in the growth and prosperity of a lasting business.

But—like many other dealer enterprises—there is the indication of a clear conception of the fundamentals of good merchandising and the application of those fundamentals every day in the year.

Testard lists among the fundamentals of a successful dealership:

1—Locate in the business district.
2—Do not give away anything to help sales.
3—Never mislead a customer.
4—Use owner good will to find prospects.

Much is heard these days about giving away something to sell—in the used car phase of the business, and in other parts of the business. Testard has some definite thoughts on the subject. This story expresses some of them.

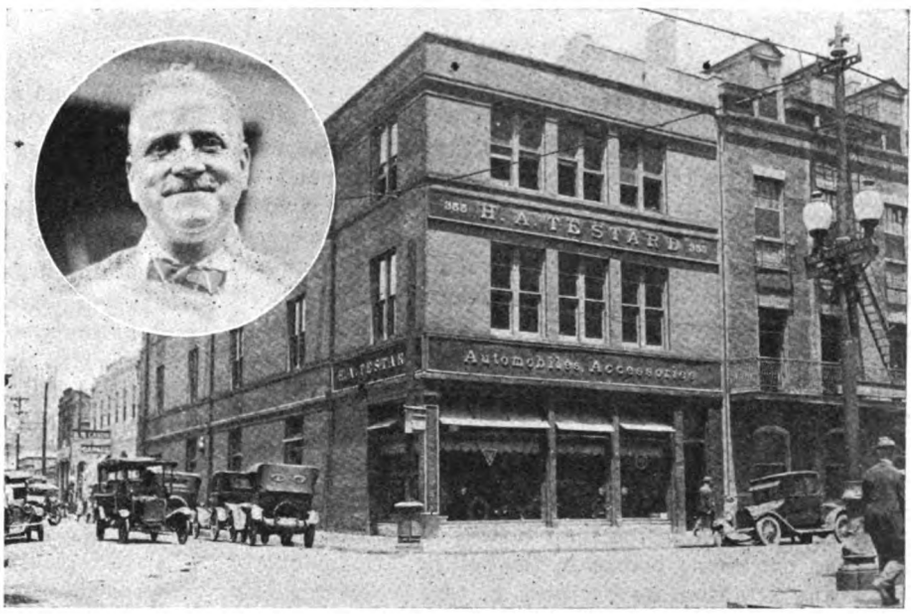
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tisements of fair size in good locations in the papers. Big space and freakish displays of type and cuts have their value for certain purposes, such as attracting attention to something new or putting on a 'drive,' but I have never conducted a 'drive' and do not need that kind of advertising. *I keep the names of the cars I sell and my name before the newspapers by constant repetition rather than an occasional shout.*

"I have never yet allowed more on a used car than I could sell it for. Many a dealer has given away his profits by allowing too much on used cars. That is what made the used car such a serious problem in the business. It has never been much of a problem with me, as I have consistently kept on the safe side and I have never failed to tell a customer that that is where I intended to keep. *Every prospective customer, if properly approached, will appreciate the fact that the dealer is in business to make money out of the distribution of cars and not simply to distribute cars.* Dealers in pianos had the same experience with the used piano that we have had with the used automobile. They have solved the problem just as I solved it, and just as many other sensible dealers are solving it. That is, by offering what the used article is worth and standing like rock against any argument for further allowance.

"My advice to every dealer, and every prospective dealer, is to refuse to part with any of his proper profits for the purpose of making a quick sale. Get good cars and a good, central location and employ salesmen who are in sympathy with the policies I have outlined and if there is a possibility of success in the field it will develop into achievement."

He Doesn't Give Away His Profits Here



Above are pictures of H. A. Testard, Hudson-Essex distributor in New Orleans, and his place of business. Testard has built a good business by applying some sound merchandising principles, not the least of which is that the dealer is entitled to a fair profit and should not give it away to make sales. He tells an interesting story of the success elements in his business

3 Profit Producing Ideas for the Automotive Equipment Dealer

W. H. WHITE, manager of the equipment department of the Central Ford Agency, Seattle, Wash., discovered in cheese cloth a substantial source of profit and a puller for sales of other products. In taking stock of his department he discovered several bolts of cheese cloth which had been in stock a long time. There was no record of a sale of any of this material over several months.

White decided to move the cheese cloth. It was cut into three-yard lengths, neatly folded into a small compact package, wrapped with orange crepe paper held in place by rubber bands. The white ends of the cheese cloth were allowed to stick out. It made an attractive and interest compelling package. These were piled in a window, with a neat price card, each package priced at 20 cents.

No record was kept of the time, but the cheese cloth in this package sold out so readily and speedily that White was prompted to buy some more and see if the charm still worked. It did. Now he buys cheese cloth in bales and as many bales at a time as records show they formerly bought bolts. The buying price by bales and in larger quantities is substantially less than to buy in bolts. The retail profits are about 40 per cent greater than they were when stock was bought by bolt. And the retail price is less than the same grade of cheese cloth can be purchased for in the same lengths in the dry goods stores.

The increased profit and sale is the primary value of this "cheese cloth idea." The secondary value has been the sale of body polishes. The cheese cloth packages now are stacked on a table, on which is also a display of body polishes and cleaners. This table forms one of the most interest compelling displays of the entire store room. The orange color of the paper around the cheese cloth does the trick.

"I only wish that I could dig up another idea, once a year, just as good as that one," says White.

THERE was a charity ball in a middle western town recently and one enterprising accessory merchant arranged with the managers of the affair to install about ten of his spotlights around the hall. He wired up these spotlights so they could be operated during the dance. Then he advertised quite extensively that his spotlights were to be used in this way. This gave him a lot of unique publicity which helped him sell more spotlights to the people interested in the affair, as they were anxious to reciprocate for the help he had given them in making the dance a big success.

HERE'S one way to build confidence of the customer in the battery service manager:

"We keep readings of batteries while on charge," said Harry Jennings of Jennings Brothers, Kansas City, Kansas. "If there are indications of a weak cell, we tell the customer, when he comes for the battery, that such and such a cell will give him trouble in so many days. The cell goes bad; the customer comes in and admits that we hit it right. This customer is sure, even after one experience of this kind, that we know batteries, and that we are telling him the truth. He can see that we are watching closely for the protection of his interest. And the confidence built for us cannot be estimated."

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Editorial Notes

Education on Selling

WHEREVER one goes in the industry these days he hears talk of the need of more salesmen than are now available thoroughly informed in automotive subjects and in the finer points of the processes of selling. One distributor said recently that he could place in his dealer organization all the real salesmen he could get. Another said if he could find a way to finance such a plan, possibly with factory assistance, he suggested, he would develop a school in which men could develop or improve themselves for automobile sales positions both in his own and his dealers' organizations.

There is no question but keener competition is putting salesmen to the test as never before. Some of the stars of former days are losing their lustre. New men or men who had not shone before in the selling firmament are attracting attention as business getters. Few big city organizations have all the capable salesmen they need. In the smaller dealerships the lack of employees with selling ability is even greater.

Some manufacturers have undertaken schools of salesmanship for sales executives of their dealer organizations and a few with limited numbers of dealers have found a way to pass on to retail salesmen opportunities for intensive sales study, generally for brief periods. The question now arises, must manufacturers and perhaps distributors who are going to retain or gain secure positions in the competition of the future develop means of enabling great numbers of retail salesmen to improve their ability to convince prospective buyers? Is education of dealer organizations to become a new function of the factory branch and distributor?

Apparently more must be done than in the past to foster knowledge and ability to present it in the country-wide ranks of men who are selling the industry's products to the public. One of the pressing problems of the industry is to discover how to do it.

That Christmas Gift

IT is encouraging to note the activity of a number of manufacturers and quite a good many jobbers of automotive equipment in promoting sales of something-for-the-car for Christmas gifts. Several manufacturers have made up paper over-covers in holiday colors for the containers of their products. The dealer can throw the jackets away and sell the article in its regular package after Christmas. Several jobbers supporting the efforts of their salesmen with effective printed matter—some of it taken from the pages of Motor World—are pointing out the profit possibilities in Christmas gift merchandising.

There is no arguing that there are abundant possibilities. "That Christmas present, what shall it be?" thousands of voices will be asking a month from now and the wise dealer or garageman will answer with display, advertising and aggressive selling of articles that are not only useful and appealing but that will be received as "something different" in many households where the car is a prized possession. By this time the manufacturer has had to complete his preparations for holiday business. There is still time for jobbers and retailers to get into the Christmas picture.

Giving Away Profits

SOME years ago the automobile industry was exercised over guarantees and free service. After much thunder and lightning the manufacturers got together and formulated the so-called "Standard Warranty," which definitely stated that the manufacturer would stand behind his product for a period of 90 days from the date of sale and replace any defective parts. The manufacturer did not agree to pay for the labor of taking the defective part out and putting the new one in, or for the cost of shipping any parts involved in the replacement transaction. The car owner, ostensibly, but the dealer, actually, bore the burden of these costs.

However, much good was accomplished by the general acceptance of the standard warranty plan and some of the frenzied competition of earlier days was eliminated.

Lately there has sprung up in many parts of the country a new form of competition. This is a guarantee of a long period of free service, sometimes covering a year. Apparently in most cases the cost of maintaining the free service for the specified period of time is carried by the dealer. It represents a definite charge to be added to the cost of selling each vehicle.

In too many cases dealers' salesmen are putting this feature right up at the front in a sales talk, expanding on the advantages of running a car for a year "at no service cost" and neglecting to bring to the attention of the prospect the design and construction features of the car.

Naturally such a sales policy pursued by two or three dealers in a town of moderate size materially affects the sales of other dealers and forces them either to operate on a similar policy or to offset this form of competition in some other way.

It seems incredible that dealers who have been through this form of competition should fall into it again. It means nothing more or less than cutting the price, giving the owner labor and parts for nothing. This has to come out of the dealer's profits.

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Why a Used Car Plan Failed

One of the Co-operating Dealers Says It Was Due to Lack of Understanding of Overhead and Profit—Again Urges Survey of Costs

EDITOR Motor World:—As president of the —— Automobile Dealers Association, I spent a great deal of time and study on plans of handling used cars three years ago. For several months we had an agreement among ourselves to base all trade-ins on the Chicago Automobile Trade Association report as reflected by the report of sales from this zone, subtracting from this figure the estimated cost of conditioning and also the percentage of profit that we aim to make. We had no penalties and relied solely on the honor of each member to work out the problem from a merchandiser's standpoint in each trade involved.

This is as simple a plan as I have heard of and ought to work, if any plan would. But it failed like nearly all of them do, not so much because men are inclined to be dishonest, but more because the merchandising problem of selling new cars by trading in old ones involves a problem of profit and overhead that most men in our line of business do not fully understand. I think that this is the main reason why these plans do not work better.

For instance, it costs more money to sell a used car than it does a new one. Manifestly, then, the mark-up on the used car must be greater than the new car discount. That is, if it requires 25 per cent discount on the selling price of a new car to enable the dealer to make money, then to take care of additional costs incident to the sale of an old car, the mark-up must, we'll say, be, not 25 per cent of the selling price, but 30 per cent.

Now notice that all merchandise discounts are figured on selling price. For instance, we buy a monkey wrench for 75 cents and sell it for a dollar. Our discount is 25 per cent—not 33 1/3.

Take the case of a $500 automobile which has been reconditioned and is ready for the resale price. How many dealers in the country are there who would contend that adding $150 and selling the car at $650 would give them 30 per cent profit? Nearly all of them would. Now here's the point—we are dealing on such a narrow margin in the automobile business that mistakes of this kind wipe out not only the profit on the used car, but some of the profits on the new. Finally no one ever knows what a used car will sell for, and the mark-up is more or less problematical. We may try for a 30 per cent mark-up, but before the year is over we almost always find that there is a considerable amount of used car merchandise in stock which must be marked down, which completely changes the complexion of the picture.

Write to Motor World About It

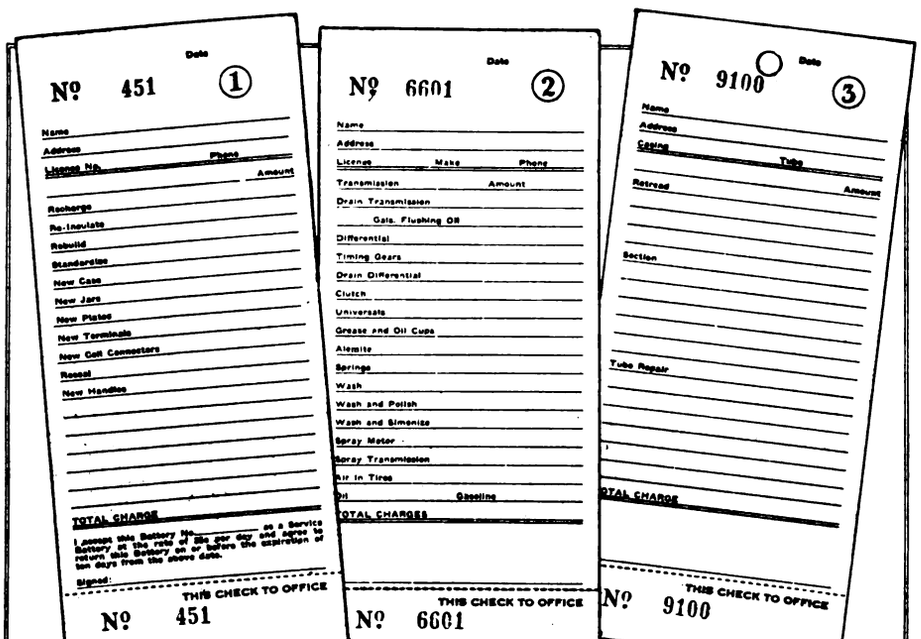
This page every week is devoted to discussions of topics of the trade by Motor World readers. Have you a suggestion to overcome a difficulty or improve some condition within the industry? Write to Motor World about it.

Now you and I are perfectly well aware that all merchants figure on marking down a portion of their stock to complete the year's turn-over. It has to be done, and this mark-down is figured in the mark-up when the merchandise is received and placed on sale. From what I have been able to learn, good department store merchandisers figure on making six per cent net on gross sales over a period of years. Automobile merchandisers have made only half that showing during the best years that our industry has ever seen.

To my mind this shows that automobile men do not understand their problem, and the only way this problem can be made intelligible is by a survey of costs and an interpretation of these costs by analyses similar to those in use in modern mercantile stores. — Western Dealer.

(This is the second letter from this dealer favoring a survey of selling costs.)

A Simple Set of Forms



A SIMPLE and yet a very thorough system of forms for its battery, tire repair and greasing and washing departments has been evolved by the Al Monroe Shop, of Los Angeles. The forms used are perforated in two places. The main portion of the form goes to the department where the work is to be done, a small check goes to the office and another check to the customer. At the end of the business day, the office checks are compared with the reports from the various departments to see that no jobs have been waylaid. The customer's check contains Monroe's address on the reverse side.

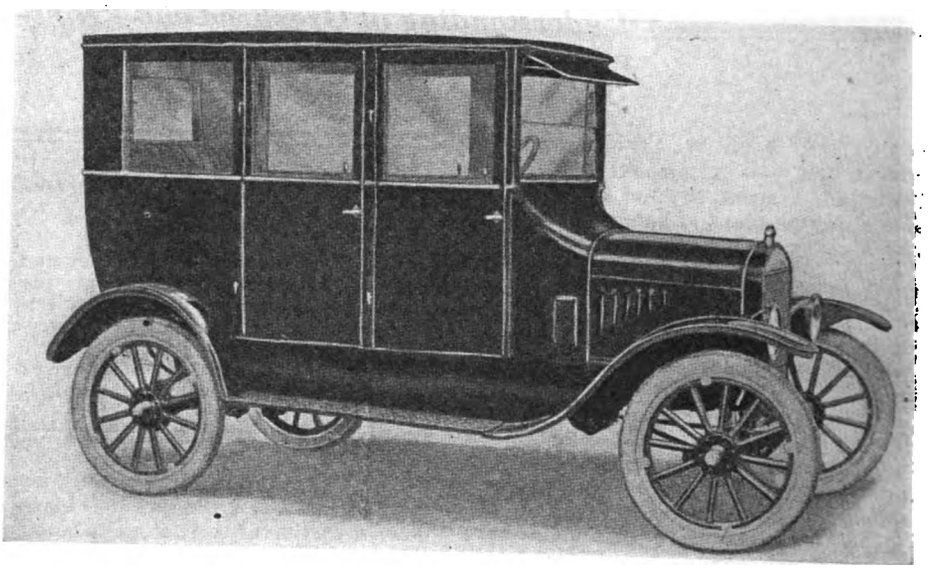
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Some Interesting New Products Announced

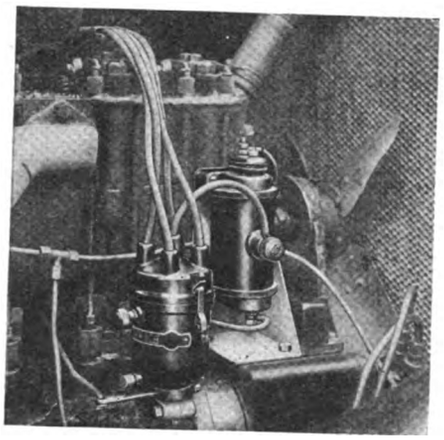
The Miami Steel Trailer

A TRAILER of all-steel construction with the exception of the wheels and tires, for commercial hauling and industrial work with a Fordson tractor, has been brought out by The Miami Trailer Co., Troy, Ohio. The trailer has a rounded load capacity of 2 yards, provision for mounting a separate flared top box of ½ yard or 1 yard extra capacity for transporting materials of a total load of 2½ tons, but of a greater volume than 2 cubic yards. The body is of 10 gage steel, reinforced with angle arms and designed with the rear bottom dump door so that the sides of the opening may be controlled either to dump the entire load in one spot or to spread the contents 60 in. wide to any depth required. The entire load dumps back of the axle and behind the wheels of the trailer, and the load is practically balanced on the axle, sufficient weight being placed on the drawbar to prevent wear on the hitch connection. An automatic hitch bolts on the rear housing of the tractor, and the tractor is backed up to the end of the trailer drawbar and the coupling is completed without pins or cotter sheets. Only a slight upward pull on the drawbar is necessary to disconnect the trailer from the tractor.

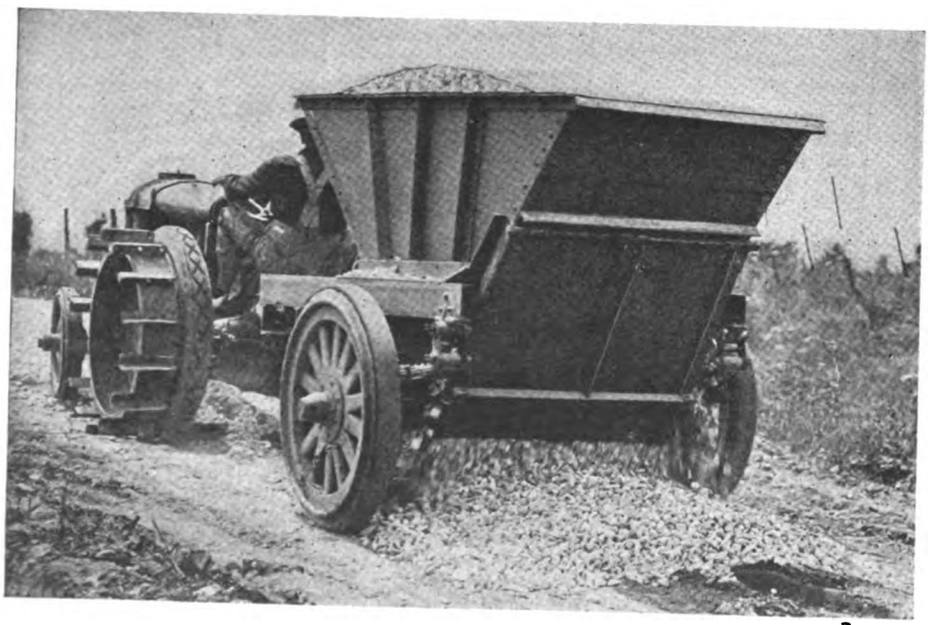
The turning radius of the trailer is the same as that of the Fordson tractor, and the unit can be backed into any position or can be turned around on the sub-base of a road. The total weight is 1960 lb., and the price, complete with hitch, is $385.



Colonial body for Fords



Bosch battery ignition for Chevrolet



The Miami steel trailer

Colonial Body for Fords

THE Colonial Body Co., Waltham, Mass., has brought out a new model four-door sedan body for Fords, known as the Colonial Beauty. A new feature is the counter-balanced door window lifter of the type used in larger cars. A metal molding around the windshield holds a tube of rubber so that the windshield touches it only lightly, but prevents rain from coming in. This can be operated with one hand.

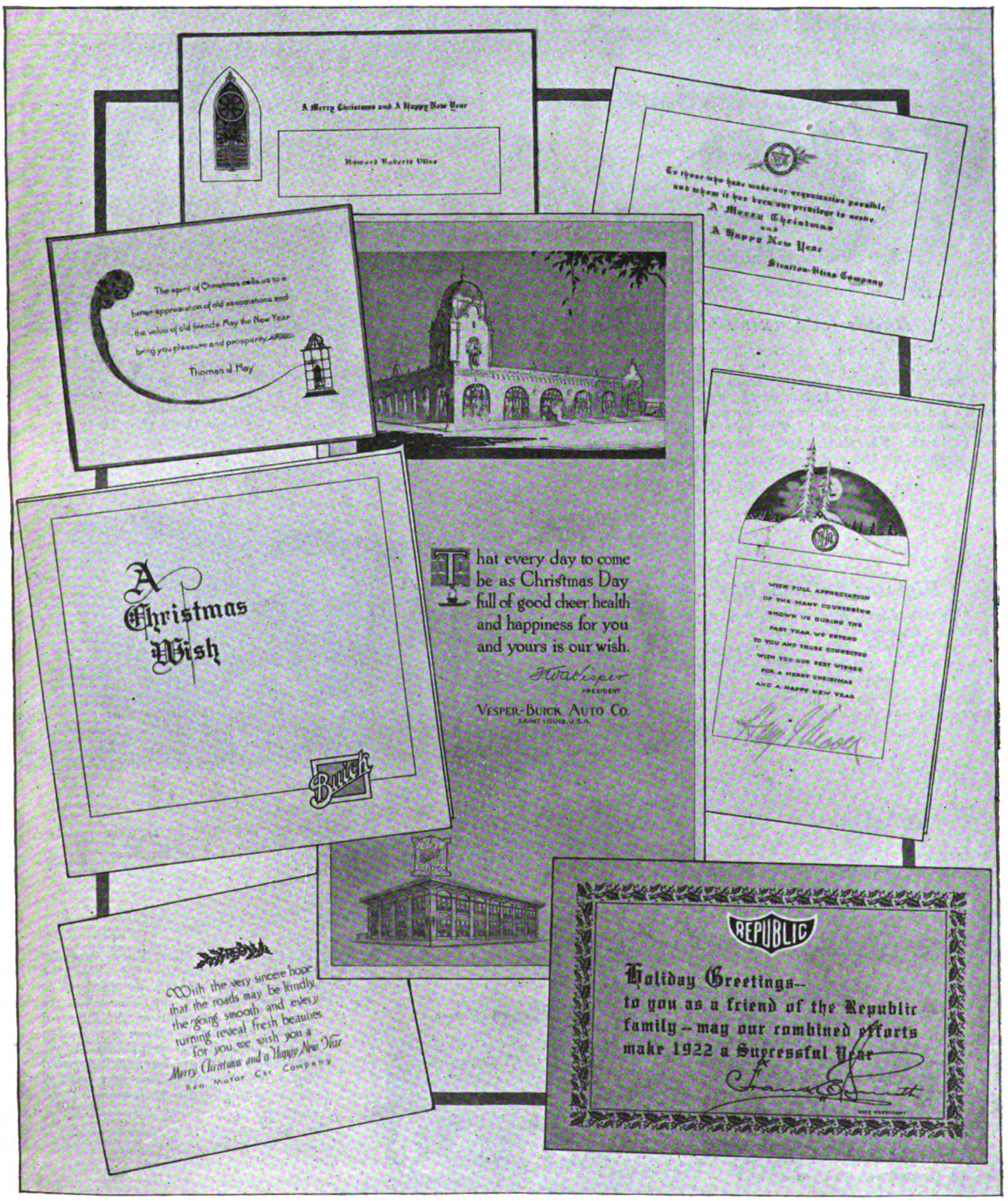
The body is 3 in. longer than the standard Ford sedan, and the driver's seat is adjustable, giving a 4 in. movement backward or forward. The doors are 22 in. wide, the finish is in black enamel.

Bosch Battery Ignition System for Chevrolet

A BATTERY ignition system for the Chevrolet with an automatic spark control has been brought out by the American Bosch Magneto Corp., Springfield, Mass. The system is designed to replace the standard ignition which uses manual spark advance. The compensating governor on the system has been designed to fit the characteristics of the Chevrolet engine so that the spark is advanced and retarded automatically at a point of greatest operating efficiency. The system is waterproof, and the coil is mounted directly on the generator by means of a single bracket, which is supplied with a fitting. The timer distributor is mounted on the generator and is driven by the generator shaft. The system is applicable to all types of Chevrolet engines, including the Superior and FB models. The price is $24.50.

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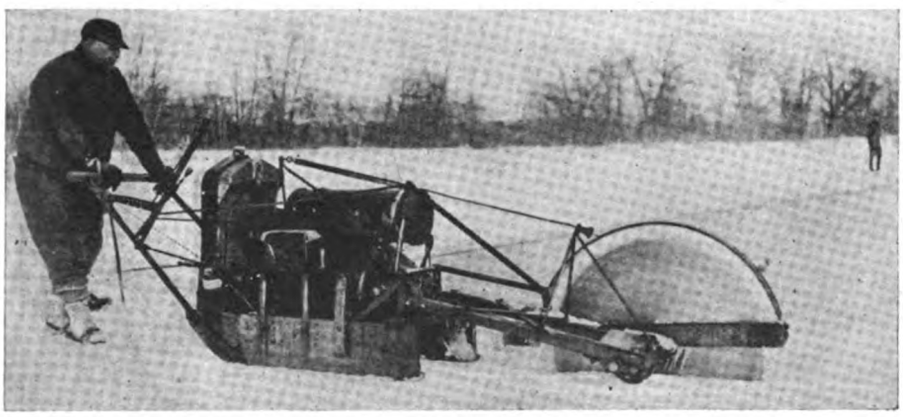
A Page of Christmas Card Ideas



HERE are a few suggestions for the Christmas Card you are thinking about sending to customers, prospects and friends this year. The center card of the Vesper-Buick Auto Co., St. Louis, was particularly effective last year. It is shown folded with the words "A Christmas Wish" at the left

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Interesting Things Automotive



Builds Ice Cutting Machine from Ford Units

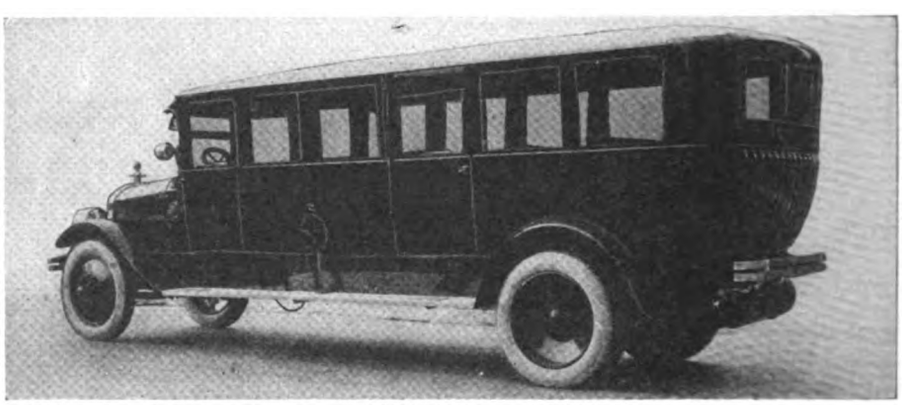
An ice-cutting machine which does the work of six men has been built by Kratochwill Bros., Muscode, Wis., from parts obtained from a disabled Ford. The engine, radiator, gasoline tank and coil are mounted on substantial runners. The saw is connected to one of the axle shafts cut off short while the torque tube makes an excellent saw mounting and provides the necessary flexible connection between saw and engine. The saw is 40 inches in diameter and will cut ice 17 inches thick. The clutch and feed control is from the front. The engine runs on high when the saw is working. The machine is fast and easy to handle

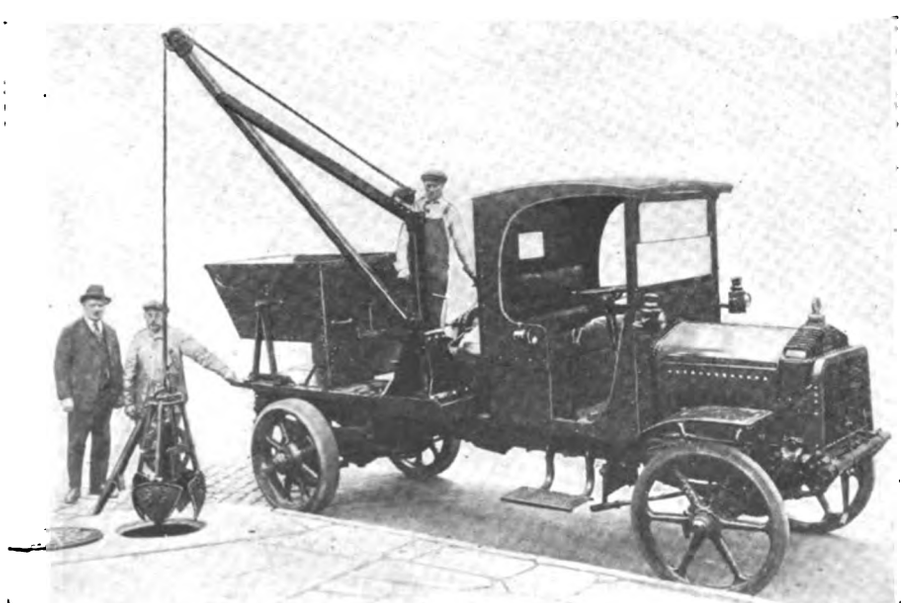


C. M. Glover, secretary-manager of the Santa Barbara Automobile Trade Association, which acted as host to the California state convention held there Oct. 16-17

A Highway Pullman Bus

This De Luxe bus makes hourly trips between Youngstown and Warren, Ohio. The distance is 20 miles. The vehicle is called a Mack Limousine Bus

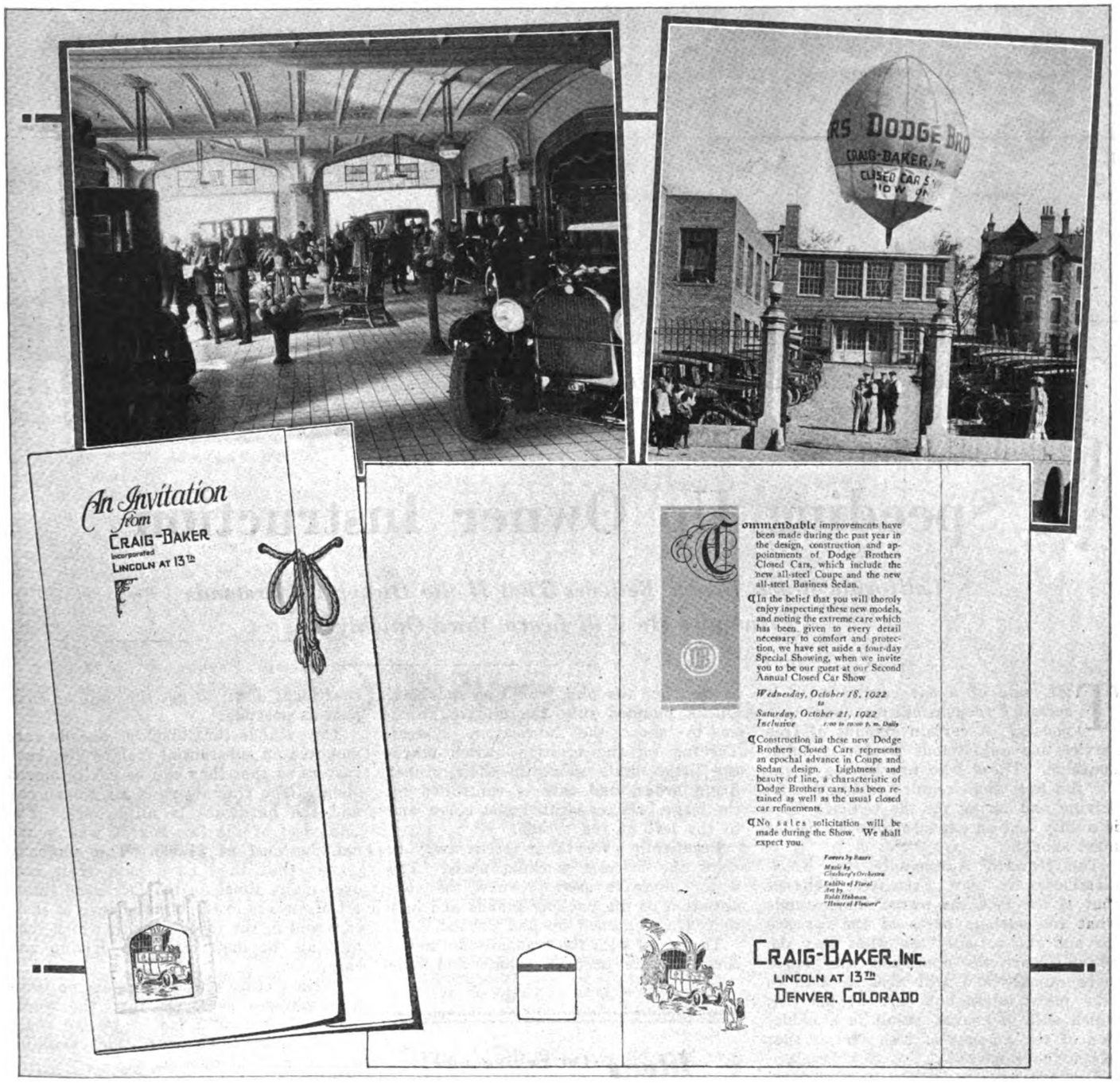




P. F. Healey, New York, has designed a machine for cleaning sewer basins which is claimed to cut the cost of the operation in two. The machine consists of a Selden chassis on which is mounted a dumping body that may be removed. A grab bucket, operated by power driven drums is a part of the special equipment

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Denver Dealer Holds Own Closed Car Show



How Craig-Baker, Inc., Denver Dodge dealer, staged a closed car show and attracted large attendance through attractive display and publicity

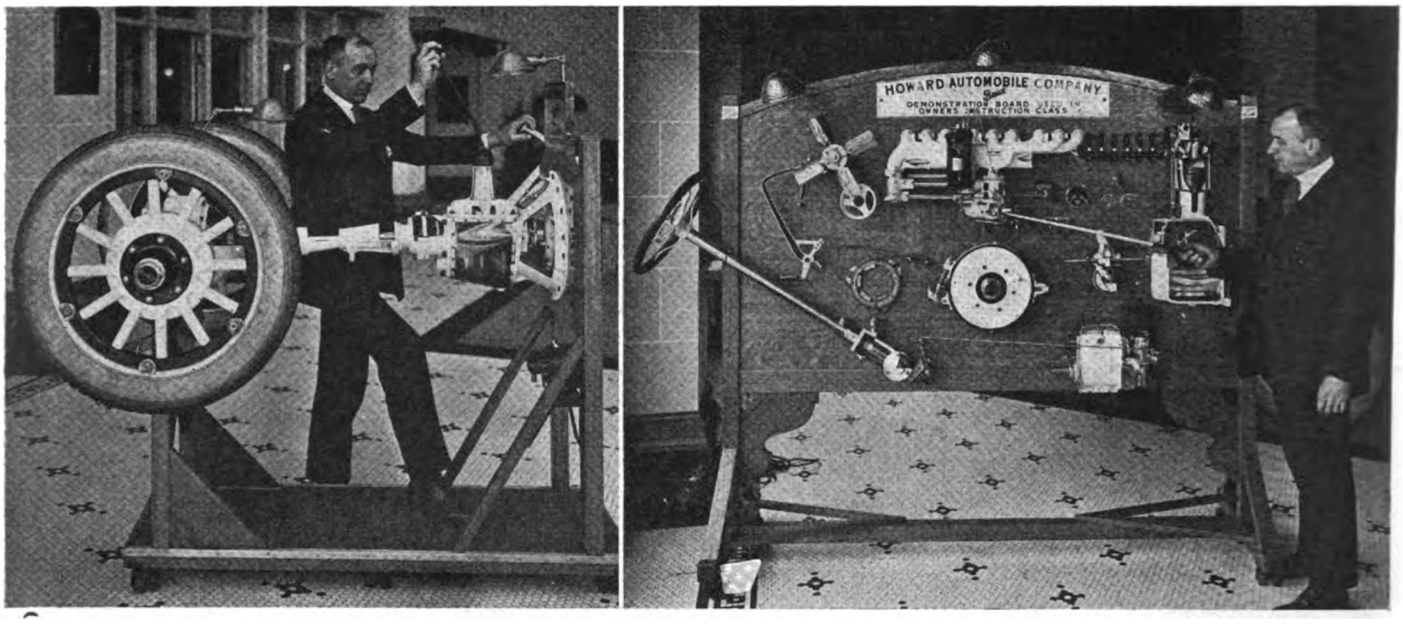
AN attendance averaging between three thousand and thirty-five hundred persons each day was one of the features of the second annual closed car show held Oct. 18-21 by Craig-Baker, Inc., Dodge dealer for Denver and surrounding counties. That the show guests were genuinely interested is evidenced by the fact that, although there was no sales solicitation whatever at the show, the firm sold twenty-seven closed cars during the four-day event, as a direct result of interest aroused or brought to a climax by the show. Besides, many guests voluntarily asked for demonstration calls at convenient dates in the near future.

The showroom was given an extra-welcome atmosphere by flowers and other attractive decorations, and the guests were treated to candy, cigars, a high-class musical enfertainment and a Dodge motion picture film.

Besides sending out ten thousand unique invitations to a select list, the dealer concern used newspaper advertisements to announce the show. A special advertising feature was a large captive balloon, held at a height of six hundred to seven hundred feet, which could be seen from all parts of the city. At night, the balloon with its lettering was illuminated by a light inside.

At the close of the Saturday night show, the Craig-Baker organization of 75 persons from all departments celebrated the success of the event with a dance in the company's roomy and well-arranged building.

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Two display boards to demonstrate the working of the Buick car. These are used by the Howard Automobile Co. in its owners' instruction course

Speeding Up Owner Instruction

California Buick Dealer Believes That If the Owner Understands Principles He Will Learn More Quickly

THE sale of a car carries with it certain responsibilities and expenses. A certain amount of free service and adjustment is almost indispensable. Those who are buying a car for the first time require instruction in driving and caring for the vehicle. This is a duty and an expense that the dealer must shoulder.

The Howard Automobile Co., Buick distributor in San Francisco, believes that if the new car owner understands what the various parts of the car are for and can actually see what they do, he will learn the operation very much more quickly and will also be able to take more intelligent care of his car, which will, of course, result in a reduction of the amount of free service that has to be rendered.

Two instruction boards were devised by R. C. Douglas, the superintendent. One of these boards carries the rear axle, wheels, propeller shaft, gearset and clutch, and the other contains all engine appurtenances and parts which can be used to display the working of the engine. The carburetor, vacuum tank, cylinders, ignition, starting and lighting and also the steering are shown in cutaway sections, most of which are made to move or operate.

The section of the six cylinder engine operates just as it would in the car, and it runs at about 15 r.p.m. In place of the spark plugs, small red electric lamp bulbs are used, and these light at the time the plug would be sparking. Oil is pumped into the oil trough so as to show the lubrication system. Turning on the ignition switch starts the little lights going in their proper firing order, and this is controlled by the large breaker located just below and to the left of the switch.

Practically everything is cut away to show the interior working parts. The water pump is used to show the construction of the packing glands and how they are tightened up and packed.

The stand with the transmission members has the propeller shaft and axle shafts cut down to get the unit as compact as possible.

The stands or display boards are mounted on substantial frames and have castors so that they can be easily moved about. The framework is all golden oak and the hardware is all bronze. The total cost of the two boards was in the neighborhood of $1,500. The company claims that they have paid their cost over many times in the increased interest of owners in the maintenance of their cars and in the rapidity with which they pick up the instructions in driving and care.

In the lecture course there are no technical phrases used. In fact, the wording is such that a lad of twelve could easily understand with the working models in front of him.

Ideas **On Selling and Management**

You will find them on this and the opposite page—ideas that will make dollars or save dollars for the

Car Dealer Truck Dealer
Equipment and Tire Dealer
Tractor Dealer Repairman

Some of our readers are contributors to this section of Motor World. Have you developed a plan that might help some other men? If you have, will you write it out and send it in?

Makes Monthly Calls on Owners

BELIEVING that satisfied customers are an automobile dealer's greatest asset, the O. K. Motors Co., Studebaker distributor of Louisville, has instructed its salesmen to call on every owner once a month and ascertain if the car is giving complete satisfaction. They are required to report each case. In most instances no complaint is made, but sometimes merely an adjustment is needed and the new owner is made happy. By the same token he is always a booster for the car.

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It's Not the Space You Use but How You Use It

How a Los Angeles Dealer, with "Peppy" Talks in One Column Ads, Sells Bumpers

NINE dollars a day, spent in judicious advertising shaped along singularly distinctive lines, is selling twenty sets of Stewart bumpers to automobile owners in and around Los Angeles to-day where only one set of bumpers was sold less than a year ago.

Just about every automobile owner in Los Angeles knows "BILL THE BUMPER MAN," who directs the activities of the Stewart Bumper Shop. Of course, they do not know him personally but they cannot help but form a "general acquaintance," as his daily bumper talks in the Los Angeles daily newspapers must catch their eyes on some day during the week.

The Stewart Bumper Shop runs a one column display advertisement, slightly under six inches in depth, on the sporting page of two Los Angeles papers. The campaign calls for the advertisements to alternate—every other day in the morning and evening papers that are used. The expense of the campaign averages about $9 a day.

Typical of the advertisements published under the signature of "Bill" is the following:

LET 'EM FLAP

The flappers seem to have our solons on the run. They claim that there's too many traffic accidents caused by the driver showing more interest in some chicken crossing the road than in the road itself. But I'm strong for the flapper. What I'd do would be to have all cars equipped with a set of our Stewart Autoguards, then if a collision occurred, there would be no harm done. Of course, anybody with two good eyes can see that some flappers would be likely to demoralize traffic—they can even see more than that—but I believe that I have the proper dope on the subject.

"BILL."

Here's another written in a more serious vein:

DR. WATSON'S ESSEX

It's worth telling about. It is a beautiful little sedan—he bought it months ago, and it's about the classiest little coach job in town. The other day he was driving out of here and had just got well on his way when he ran smack into another fellow's car at 18th and Flower. Everyone knows that the Essex is a speedy little boat—has lots of pep and pickup and Mr. Watson was making about 15 miles when he hit. I saw the car right after the collision and I want to say that the bump didn't even bend his Stewart bumpers—they took up the shock of the impact and actually threw his car back from the one he hit. They surely do protect the car they're on. Why don't you get a set for your car?

"It isn't so much the amount of space you use in newspaper advertising but the way in which you use the space," say officials of the Los Angeles company.

Small Space Ads That Sell Bumpers



Here are three examples of the short, snappy ads that are used by the Stewart Bumper Shop, in Los Angeles, with much effectiveness. It is just one more proof of the fact that it is not so much the space you use in advertising as it is HOW you use it

Using Accessory Testimonials

GATHER data from some of the motorists who have purchased accessories from you, Mr. Accessory Dealer, telling about the ways in which these accessories have best served them. Find, for instance, how someone's spotlight helped him on a bad detour through mud and rain late at night; how chains helped a man make a town where, otherwise, he'd been mired; how a tow line helped a man who'd gone into the ditch. And so on. Then tell all these things in a series of advertisements in which you would play up the various accessories. Such ads would be unique and particularly interesting and would help some.

An Opening Ad Idea

WHENEVER a new accessory store or tire store or garage is opened a large amount of free publicity can be secured for the store by getting all the business establishments in the neighborhood and all the concerns that had a hand in constructing the building or in decorating it to combine with the store in a page of ads in which congratulations would be heaped on the establishment for its opening. This sort of thing would be good advertising for all concerned.

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Fixing Liability When Car Is Being Towed

Some Interesting Court Decisions in Injury Cases—How Responsibility Is Decided

EDITOR Motor World:—As subscribers to Motor World, we would like to know what the courts have held in cases where parties have walked between two autos connected by a tow rope and been injured. How about it if this happened in the day time?—L. G. S., Buffalo, N. Y.

Answer.—It is perfectly legal to tow a disabled motor car, of course, and the courts have decided that if a car breaks down on a public street, it is necessary for the owner to remove it. As wrecking cars have largely taken the place of tow ropes, there are fewer occurrences or accidents of this kind now than there were a few years ago.

There is apt to be some confusion if a motorist breaks down on the road and telephones a dealer to tow him in as to who is responsible for accidents while this is being done. The matter is simply decided, however, by finding out who has control while the car is being moved. If the dealer or his agents are acting independently of the owner, then the dealer is responsible. If, on the other hand, the owner is controlling the removal, giving orders and directing what is to be done, the dealer is not responsible and the owner is the person who must pay for any injuries which occur.

It is not necessary to warn other people in any particular way that there is a rope connecting the two cars, except that "due care" must be used. An illustration of this would be if persons started to drive or walk between the two vehicles, the person in charge of the disabled car would not be considered to be using "due care" unless the presence of the rope was made known to them.

An interesting case is that of Titus vs. Tangeman, reported in 116 New York Appellate Division Reports, 487. A disabled car was being towed along a street, hauled by a rope about 10 feet long. After going a short distance a blockade of traffic was encountered and both machines were stopped near the curb, the rope resting on the pavement.

A mother and daughter out walking, endeavoring to cross the street, came to a point between the car tracks and the stationary cars. The mother inquired whether she could pass between the cars and, on being assured that she could, she started to step over the rope, when the front car started up, raised the rope and tripped and injured her. The woman sued the driver of the disabled car for damages, claiming that he was negligent, because he gave her permission to pass. The court held, however, that as the blockade of traffic had not been broken, it was not to be expected that the forward machine would start up and, as it did not move more than a foot in any event, the driver of the disabled car could not be presumed to have expected it to start, and for that reason he was not liable for the accident.

Another similar case was that of Canfield vs. New York Transportation Co., which is found in 128 New York Appellate Division Reports, page 450. It seems that two electric hansoms, owned by the transportation company, were going north on Broadway, in New York City. The power in the rear machine had given out and it was being towed, attached to the front machine by means of a rope which was about six or eight feet long and an inch to one and one-half inches in thickness. One of the company's drivers was in charge of each machine.

When 34th Street was reached, a traffic officer signaled the machine to stop, which was accordingly done. A woman was crossing Broadway and Sixth Avenue, headed for the corner of 34th Street. She attempted to cross between the cars, was caught by the rope, thrown down and injured. She accordingly sued the transportation company for damages.

The court held that under the circumstances the transportation company was not guilty of negligence any more than if the woman had walked directly into the machine, as the cars were on the street, where they had a right to be, and had been ordered to stop at the places where they then stood, and that, having attempted to warn her when she endeavored to pass between the cars, they fulfilled the obligation of using "due care," which was imposed upon them and were not in any way guilty of causing the accident.

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

Rights of Lienors and Mortgagors Conflict

Editor Motor World:—We would like your advice on the following case. A farmer about one mile from town has a car which is mortgaged by a bank in a close-by town. We have kept this car in repairs, oils and gasoline, under the understanding that the bill should be paid in full, and have asked the said farmer several times for it; one day that car was presented to us for repairs, and getting provoked about not getting any pay for it we decided to hold the car for the whole bill. The bank sent a constable down to get the car, but we refused to let him have it. Now the bank has placed a bond for twice the value of the car in the County court house, and the sheriff has notified us to let them get the car, and also that the bank has sued us for $50 damages. Can they sue for damages under these circumstances, and has a garage a lawful right to hold a car for pay? A Reader, Moneta, Iowa.

Answer:—In your State you have a lien for your charges for repairs and may hold a car until your bill is paid if the work is ordered by the owner, but we know of no case in your State where the relative rights of lienors and holders of chattel mortgages and conditional bills of sale was determined.

Bear in mind that anyone can *sue* for damages but to recover a judgment for damages is another matter. I do not quite understand how a bank could suffer damages in a case of this kind unless it lost an opportunity to sell the car, etc.

If you have not already retained a local lawyer do so at once.

Most Contracts Provide Dealer Must Pay Freight on Parts

Almost all manufacturers' contracts that provide for replacement of parts or defective materials, etc., contain the words "f.o.b. factory." It is generally understood by dealers that this means that the goods will be delivered free on board at the factory and that the expense of transporting them from that point must be borne by the consignee to whom they are consigned.

Occasionally a dealer does not understand this, however, and believes he is compelled to pay some unreasonable charge when he is called upon to pay the freight charges, when, in reality, he is doing no more than his contract calls for.

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Building Provides for Sales, Service and Storage

One-Story Building for Dealer in Small Town Provides Complete Facilities—Will Be Erected on Corner Property 50 x 100 Ft.

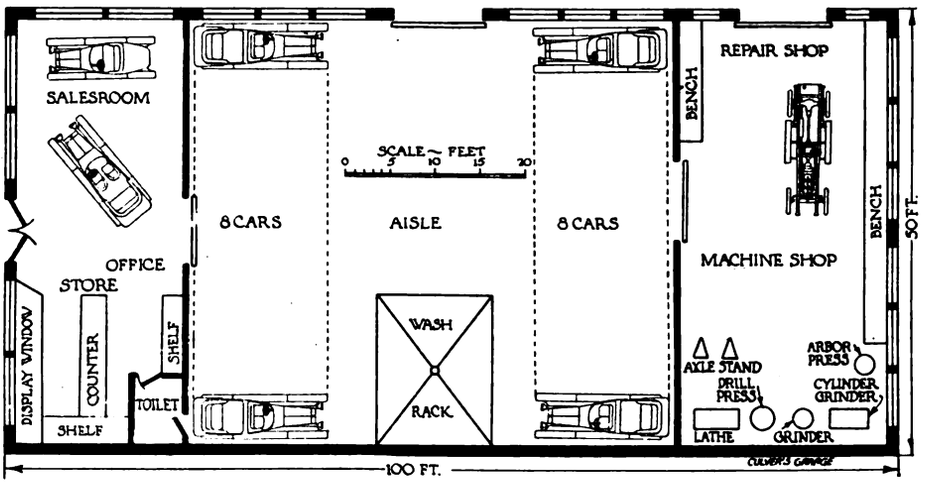
THE plan shown on this page is suitable for the business of a dealer situated in a small town. Provision is made for car and accessory sales, storage and service. The building is for a corner lot 50 x 100 ft.

A combination car salesroom and accessory store extends across the front of the building. The car display occupies the right half of this room and has the advantage of display windows on both the main and side streets. Two cars may be shown in this space without crowding.

The accessory store occupies the left side of this room. It has a display window facing on the street and is equipped with shelves and counter. By using a counter with a glass front, additional display facilities may be secured. A small space in back of the counter is used for the office.

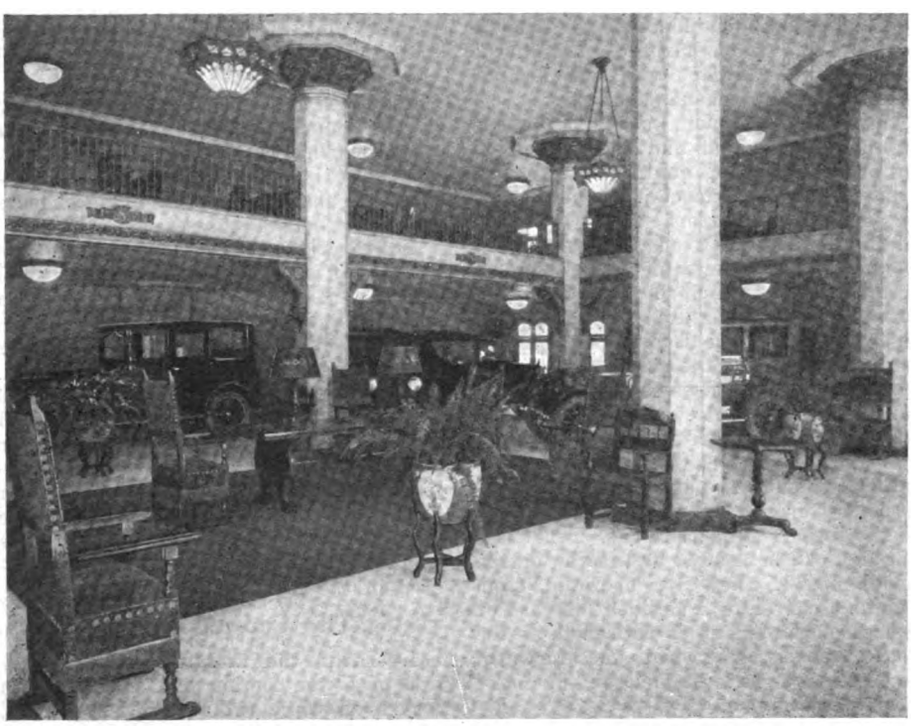
The storage garage, which is located in back of the salesroom, is approximately 50 ft. sq. The roof over it is supported by trusses running parallel to the length of the building. The entrance to the garage is from the side street. The washrack is placed in the aisle. This portion of the building will have to depend on skylights to a certain extent for light and ventilation.

The shop extends across the rear of the building. It may be entered either from the side street or from the garage. The equipment, which is grouped at one end, consists of lathe, drill press, grinder, cylinder grinder, arbor press and axle stands. The windows provide adequate lights for this room, but skylights would assist in the ventilation.



Floor plan for one-story dealer building to be erected on corner property 50 x 100 feet. The storage capacity is about 16 cars

Salesrooms Like This Boost Sales



The picture shows a portion of the Studebaker salesroom in Brooklyn, N. Y. The cars are well displayed in attractive surroundings and the comfort of the prospect has not been forgotten. The sales offices are located on the balcony

Lansing Producing 20 Star Cars Daily

DETROIT, Nov. 2—The first Star cars are now being built at the Lansing plant of Durant Motor Co. of Michigan at the rate of 20 a day. This number will be increased to 50 as soon as body production gets into swing. By the first of the year production at Lansing and Elizabeth, N. J., will be approximately 1000 daily. Production in Elizabeth will begin about Nov. 1. About 18,000 will be built in the balance of 1922.

Orders received at the showings in New York, Washington and Detroit will be the first filled, and the remainder will be taken care of according to priority. Distribution of cars to dealers will be on a proportionate basis. In the early stages of the distribution the allotment will run about one car for every two Durant cars sold. This is due to the fact that orders covering close to a year's production are already filed.

Franklin Dealers Increase

SYRACUSE, N. Y., Nov. 2—The number of Franklin dealers has increased 27 per cent during the past year, according to Sales Manager S. E. Ackerman of the Franklin Automobile Co. Fifteen per cent of this increase dates from the first of this year. The Franklin company plans to have at least 2000 points of representation in this country eventually.

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Tuning Up the Engine

Steps in An Operation That Is Often Performed in the Shop Either By Itself or in Connection With Some Other Work

IN practically every repair operation in which the engine is involved, it is necessary to tune up the power plant, either partially or thoroughly. Very often this is done in connection with other work on the car, but the operation is so common that it would seem advisable to have a systematic plan of going over the various components.

It is preferable, before doing any adjusting or tuning up to give the engine a test to locate in a general way the things that need to be done and to find out any serious faults. This test can best be made by taking the car out on the road somewhere and driving it at various speeds on the level and then climbing a stiff hill that will require all the engine power to climb on high gear.

Engine Power

The car should have no trouble in accelerating quickly to 30 m.p.h. or higher and to maintain this speed without undue noise or effort. An engine with poor compression, a poor mixture or with worn parts will labor and pound, and an experienced mechanic will be able to identify many of the noises and locate faults that can be remedied later when the car is in the shop. Here are some of the things to look for in the road test:

Poor Mixture.—The most usual evidence of a poor mixture is popping in the carbureter, indicating a weak mixture or black smoke coming from the exhaust indicating a rich mixture. If the mixture is good enough to run the engine without either of these evidences, it may be shown up by depressing the foot throttle quickly. The engine should pick up instantly without splutter or fuss. Obviously if the mixture is poor, the engine will not develop power, especially on hills, and will not accelerate well. This loss of power may be due to other causes, such as poor compression, late ignition, carbonized cylinders, weak spark or a clogged muffler. It is possible to identify some of these causes on a road test and others can be located in a shop test. Loss of power may possibly be caused by something outside the engine. A slipping clutch, dragging brakes and wheels badly out of line will be the most likely things to look for.

Knocks and Pounds.—The road test will show up loose parts through noise. A carbon knock is caused by an accumulation of carbon in the combustion chamber. This gets red hot and preignites the mixture just before the top of the compression stroke causing a sharp knock or clink which is reduced or removed entirely by retarding the spark. If the noise disappears when the spark is retarded, the cause is carbon. Carbon will also make the engine run a little hotter. A very excessive amount will cause a considerable increase in temperature due to the heat retaining properties of the carbon and also due to the fact that the engine has to be run with a late spark.

If the cylinders are not carbonized, it should be possible to run the engine with the spark advanced all the way when the car is running on the level. If it is not possible to advance the spark all the way and the knocking is not due to other causes, the spark is timed too far in advance. Another evidence of too early a spark would be backfiring of the engine on starting, either with an electric starter or with the hand crank.

Bearings loose will knock. Each has a distinctive sound and the sounds on different makes of engines vary somewhat so that experience is the only guide in definitely locating loose bearings. Main bearings that are loose give a heavy pound. The connecting rods give a lighter knock which is sometimes increased when the clutch is thrown out and the engine idled. If the looseness is not very great, the sound will be like a regular tapping. Loose piston pin bushings give a somewhat similar sound but the noise is lighter. Crankshaft or camshaft endplay in the bearings is generally, although not always evidenced by a pound once or twice every revolution of the engine. In a Ford car, crankshaft endplay can be located by turning on the headlamps if they are operated from magneto current. A decided increase or decrease in intensity is noticeable as the shaft moves backward or forward, separating or bringing closer the magnets to the spools.

Loose pistons make a slapping sound. The piston rings, through their tension, keep the upper ends of the pistons comparatively still, but the lower ends, not being held by anything slap back and forth against the piston walls at each stroke. The slap would be loudest as the piston ends the exhaust stroke and begins the intake stroke.

If the connecting rod is not properly aligned there will be a side slap of the top end of the connecting rod between the piston bosses. Usually there is considerable clearance at this point so that with the upper and lower bearing holes out of line there is chance for considerable noise at this point in addition to the wear on both the upper bushing and the lower bearings.

A weak mixture is sometimes the cause of a knock, but this will generally be accompanied by popping back in the carbureter and loss of power. If making the mixture richer stops the knock, this is no positive indication that the knock is caused by a weak mixture because a carbon knock can be stopped in the same way. This is one of the puzzling things about trouble shooting, and one which demands experience and study on the part of the mechanic.

Loose piston rings and broken rings make a noise. A ring that is a loose fit in the piston grooves will make a sort of click. A broken ring will cause a sort of rattle. A broken ring, however, sometimes catches and causes other trouble and the sharp corners at the break will cut scores in the cylinder wall very quickly.

A loose flywheel will cause a very heavy pound that sounds much like a main bearing pound, but it is heavier. The noise is caused by the wheel rocking back and forth on the flywheel bolts which are loose.

Improperly meshed timing gears are noisy. If too loose a mesh they will rattle and knock, while if meshed too tight they will sing and grind.

Other miscellaneous causes of noise are loose oil pump parts, loose push rods, overheated engine, loose engine bolts, oil stoppage, too much oil pressure and other loose parts somewhere in the power plant.

The following operations constitute a thorough tune up of the engine. Some engines, owing to special constructions would require special treatment not covered in the general operations.

The Cooling System

1.—Drain the radiator. Note condition of water coming out. Leave drain cock open while radiator is being filled, allowing it to stay open till water is reasonably clear of rust. Remove mud from spaces between fins or cells of radiator. Look for water leaks around

Better Mechanics

Article No. 264

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.

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hoses, examine condition of hoses and clamps and make any necessary adjustments. In replacing hoses, dip the hose in water, not grease. Grease eats the rubber.

2.—Examine fan, fan bearing, fan belt and pulleys. The fan belt should be tight enough so that it offers considerable resistance to being turned with the finger, but not enough resistance to put undue weight on the fan bearing. See that fan lubrication is in good shape.

3.—In replacing water in radiator, it is time to put in some kind of anti-freeze agent as freezing weather has already hit some parts of the country and may be expected in other parts almost any day.

Lubrication System

1.—Drain the oil from the crankcase. Examine the oil that is drained off. If it is in fair shape and without flakes of bearing metal, simply replace the plug or shut off the cock and put in new oil to the "full" mark. At this season of the year lighter oil should be put in. If the oil is full of sludge and sediment or flakes of bearing metal, the crankcase should be washed out either with a thin oil or with kerosene. In using kerosene for washing, follow with a washing with new oil, draining this out before replacing the oil.

If this is not done, the kerosene remaining in the troughs under the connecting rods will retain enough kerosene to materially thin out the new oil. In some engines the amount of kerosene will amount to as much as 12 per cent. As the oil naturally gets thinned out by the condensed fuel, this is not at all desirable.

2.—Clean the oil strainer, washing it with gasoline or kerosene to remove lint which often collects in the mesh and prevents the free entry of oil.

3.—Check oil pressure if the car is of the pressure lubrication type. The amount of pressure varies with the make of engine and the age of the engine. A new engine with tight bearings will show a higher pressure than an engine in which the bearings have loosened up. The manufacturer's recommendations should be closely followed. The adjustment for pressure is by means of the relief or overflow valve usually located right on the oil pump.

Gasoline System

1.—Inspect the tank for leaks or splash through the filler cap. Look inside and see if there is sediment or water. Draw off if any is present.

2.—Drain sediment traps at carbureter, vacuum tank or other places.

3.—If necessary, adjust carbureter mixture, basing performance of road test. Look for air leaks around manifold, carbureter flange, throttle valve rod, etc.

4.—If carbureter floods or does not get sufficient gas, check float level and adjust if necessary.

5.—See that choker operates properly and releases fully. Where controlled through a flexible tube and wire, the tube anchorage sometimes loosens up preventing full closing or opening.

Electrical System

1.—Remove spark plugs, clean off carbon, inspect for cracked porcelain and adjust electrode gap to approximately the thickness of a thin dime. If manufacturer has a gage, use this in setting points.

2.—Examine wiring for worn insulation, loose terminals, etc.

3.—Test battery with hydrometer and voltmeter. Gravity should be 1277-1300 fully charged. Less than 1150 indicates discharged. Inspect level of electrolyte and fill with distilled water. Voltage should be 2.2 volts per cell charged, 1.75 volts per cell discharged.

4.—Examine breaker points in interrupter, either magneto or battery system. Faces of points should be square and reasonably smooth. If burned or at an angle they should be dressed down. The metal is too hard to file, it has to be dressed on a stone. The opening varies slightly in different systems, but should be about 18 to 20 thousandths on battery systems and 10 to 12 thousandths on magneto systems. Use a makers' gage where one is supplied. The smaller gap on the magnetos is used to get a stronger spark at low speeds.

5.—Check charging rate on ammeter. It should run from 14 to 20 amperes with lights off. The cut-out should close at from 7 to 12 miles and open at slightly slower speeds.

6.—See if the starter starts the engine and engages properly.

7.—See that all switches, including the starter switch, are operating properly. If there are automatic cut-outs for ignition, see that they work the way they should. Look for loose fuses.

8.—Test all lights and look for flickers due to loose contacts.

Engine Compression

1.—Look over valves and see that they seat properly and that the tappet clearance is all right. About .003 in. is correct. If manufacturer makes other recommendations follow these. If engine misses, try inserting screwdriver between each valve spring, turning it to increase tension of spring. If missing stops when this is done to any spring, that spring is weak and should be replaced. See that valves do not stick.

2.—Turn engine over slowly with hand crank and see that each cylinder has an equal compression. This is difficult to judge in sixes, eights and twelves, and if compression does not seem to be up to par, better use a compression gage in each cylinder.

After completing all the above operations and such others as the special construction of the engine demands, take the car on another test run and see that noises have been eliminated, that the car pulls well on hills and that it will accelerate rapidly and without fuss.

Manipulation of Ford Babbitt Metal

IN rebabbitting cylinder blocks care must be taken to see that the metal is at the proper temperature for pouring. Perfect bearings can only be poured when the metal is between 800 and 840 deg. Fahr. If a pyrometer is not available, the temperature may be estimated from the appearance of the metal. At about 900 deg. the pot and metal turn red and the metal "burns," coating rapidly when the scum is scraped off. At the proper temperature the metal appears like quicksilver and tarnishes slowly when the scum is scraped off, the coat of tarnish showing all colors. When too cold, the metal acts sluggish and the tarnish takes on a dull appearance.

The temperature can also be checked with a soft pine stick. The stick should char immediately when immersed in the metal, but should not take fire unless held in the metal some time. The stick should be dry, as moisture will cause the metal to fly owing to the sudden formation of steam. Stirring the pot of metal with a dry pine stick will bring the impurities to the top quicker than anything else, and when brought to the top they can be scraped off.

Due to the fact that tin and antimony have a lower melting point and are lighter than copper, it is necessary to stir the metal thoroughly before pouring as otherwise there is a tendency for the copper to settle. If the metal should be poured without stirring, the resultant bearing would be mostly antimony and tin and the bearing would not be hard enough to stand up in service. Here are the proportions of metals used by the Ford Motor Co., in its babbitt bearings:

Metal	Minimum	Maximum
Copper	7.0 per cent	7.5 per cent
Tin	85.0	86.0
Lead	...	10.0
Antimony	7.0	7.5

Fitting Piston Pins to Alloy Pistons

IN many cases pistons are a tight fit, in alloy pistons the pin being locked in place by dowel pins. Under no circumstances should a pin be driven or forced into an alloy piston, as it will be certain to be forced out of round. The proper method of assembly is to place the piston in a can of boiling water for a minute or two. This will expand the piston and enlarge the hole sufficiently so that the piston pin can be inserted by hand. If the pin is still too large to slide in the hole, the pin must be an oversize and another pin should be selected which will go in the hole. If it is necessary to tap the piston pin slightly, hold the piston in the hand or against the body, not against a hard object such as the top of the workbench.

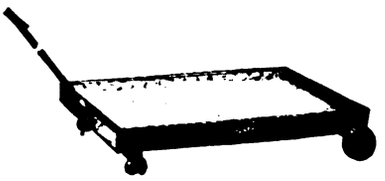
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Equipment for the Shop

New Machinery and Tools

Manley No. 410 Portable Grease Pan

Manley Mfg. Co., York, Pa.



The portable grease and oil pan is run under the car when the crankcase is removed, catching oil, grease, dirt, etc. It is large enough to receive the whole crankcase, and is also used in the same way when taking down and washing off gearsets, rear axles, gears, etc. By removing the metal pan, it can be used as a truck for moving complete engines, gearsets, etc. The handle is provided with a universal joint, so that it can be placed out of the way when under the car. The bottom of the truck is lined with 1-in. solid oak and the pan is removable. The length is 36-in., width 24-in., height of pan 2-in., weight 68 lbs., complete capacity 750 lbs.

Pexto Bit Brace

Peck, Stow & Wilcox Co., Southington, Conn.



The brace can be fitted with screw driver bits, extension bits and ordinary twist drills. The brace has ball bearings and will hold all drills, taper, round or square shape, ⅛ to ½ in. The brace has drop forged steel jaws.

Greb Model G Ball Race Puller

The Greb Co., Inc., 172-173 State Street, Boston, Mass.

Price $22.50.



The ball race puller can be locked on any ball race from the smallest size up to 2-in. in diameter without any changes. It has a reach of 5-in. and the screw is ⅝-in. in diameter. The race is clamped in the apex of the triangle with the clamp shown on the right of the illustration, and the vertical screw removes the race.

Tiger Battery Recharging Clip

Du Chanois Electric Co., Youngstown, Ohio

Price, 20 cents each

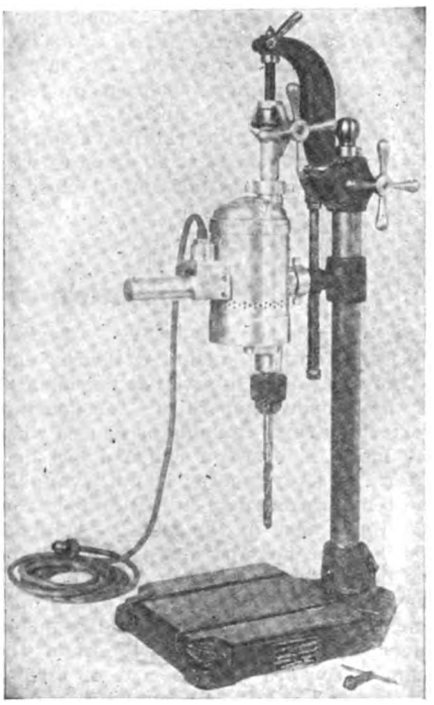


The clip is for connecting up batteries for recharging. The spring is 1¾ in. above the battery. The clip is made of cold drawn spring steel, lead coated. The jaws fit all types of battery terminals and the teeth bite through the corrosion on the poles. A slight pull upward after the connection is made makes the jaws sink in even deeper.

Way Portable Electric Drill

A. F. Way Co., Inc., Hartford, Conn.

Price $100. (Portable unit only)

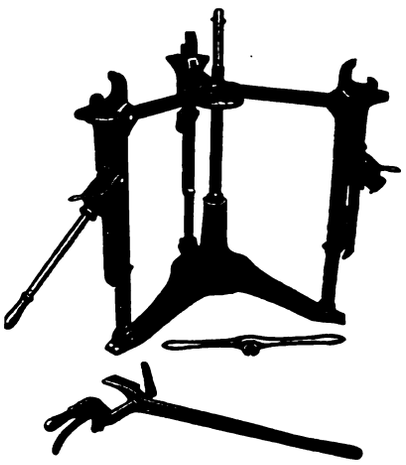


The features of the drill include a ⅓-hp. motor designed especially for the purpose by the General Electric Co., 20.7 to 1 reduction gear, plain, wick packed, and oil tight bearings, and a rigid aluminum housing with proper openings to insure, in connection with a blower mounted on the armature shaft, an adequate circulation of cooling air. The drill uses a special form of plain bearings on the ½-in. armature shaft, these bearings being spool-shaped and having two grooves in the babbitt lining. They are parallel to the axis and terminate in holes which run through to the smaller outer diameter of the spool. Wool wicking is threaded through the groove and the holes and the loose ends are then wound around the spool several layers deep, and soaked in oil. The drill is fitted with a ⅜-in. three-jaw Jacobs chuck, and a breast plate with spade handle interchangeable with an electrical handle or 1⅛-in. standard tube or bar.

List Tire and Rim Machine

E. J. List Mfg. Co., Inc., Havana, Ill.

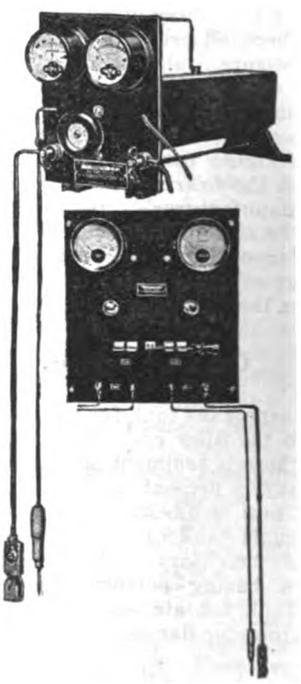
Price, $40



The machine is for mounting on the floor and will remove tires from Q. D. rims of any size. The three hooks on the standards catch the rim and pull it inward to remove the tire or outward to replace the tire by means of the threaded rod in the middle controlled by the handle.

Portostat Battery Test Sets

Forest Electric Co., Inc., 50 Columbia Street, Newark, N. J.

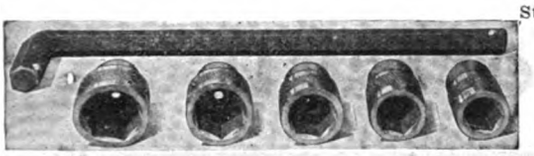


This is a carbon resistance discharge testing set for testing incoming batteries. The entire outfit is combined in a single portable unit.

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Quickway Socket Wrench

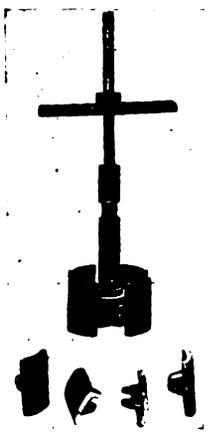
Bethlehem Spark Plug Co., Bethlehem, Pa.



The sockets handle ½, 9/16, 5/8, 11/16 and ¾ nuts and bolts, covering practically all sizes used on average automobiles. The hexagonal handle is double ended, one to operate straight and the other at 90 deg. The sockets are broached and cyanide hardened. They are knurled on the outside.

Stimson Internal Lap Tool

The Stimson Engineering Co.,
598 Sixty-eighth Avenue, Milwaukee, Wis.
Price, $25



This is a device for lapping cylinders. The shoes which make contact with the cylinder bore are held by flexible connections at one end of the shaft. Two sets of shoes are provided, one to fit cylinders from 2¾ in. to 3½ in. and the other to fit cylinders from 3½ in. to 4¼ in. The shoes are easy to change, as each shoe is held in place by one cotter pin. A strap fits loosely on the drive shaft and a set collar is provided on the shaft to gage the distance the tool is to be fed into the cylinder. Cylinders can be lapped either in the chassis or out. The tool is automatically expanded as the work progresses by means of a coil spring which is adjusted by an adjusting nut. The tool is made entirely of steel except the shoes, which are cast iron.

Crescent Straight-Nose Plier

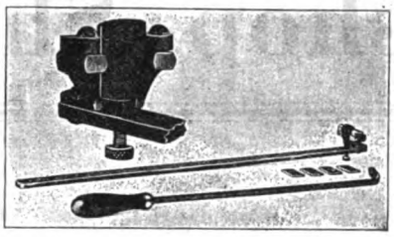
Crescent Tool Co., Jamestown, N. Y.
Price 50 cents.



The pliers are of the thin straight nose type convenient for working in narrow and inaccessible places. The tool is drop forged, hardened and oil tempered, and the bolt and nut are turned from the solid bar of steel and hardened to insure a long life. The finish is nickel plate and each pair is packed in an individual carton. Made in 5 and 6 in. sizes, both at the same price. An assortment known as DB7 consists of six 5-in. pliers mounted on a purple card and six 6-in. pliers packed in individual cartons, furnished to the dealer at $3.75.

Toric Cylinder Score Filling Process

St. Paul Welding & Mfg. Co., St. Paul, Minn.



This is an equipment and a method of filling scores in cast-iron cylinders. The outfit consists of a cleaning scraper of hardened tool steel for preparing the score and removing the oil and other material so that the cast-iron solder will combine with the cast-iron wall. The surfacing tool holder has five hardened steel surfacing blades for finishing the filling metal to the original curvature of the cylinder wall. The five blades have double edges, giving a range of ten sides of the cylinder diameters 3 to 5 in. They are made of high carbon tool steel, oil hardened and drawn through a temper. The blades fit into an adjustable holder which gages the amount of filling metal removed when finishing the work. Surfacing blades are guided on hardened and polished steel balls.

Folk Bearing Mandrel

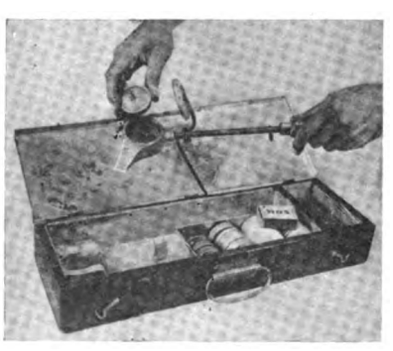
Wayne Tool Mfg. Co., Waynesboro, Pa.
Price $7.05 to $22.45 each.



The mandrel is cylindrical at one end and at the other end has square faces ground, leaving, however, a small part of the cylindrical surface in between the flats. A connecting rod bearing tightened around the squared end and revolved is burnished to size. The round end is used to clamp the bearing and align the connecting rod and piston. Made in sizes from 1¼ to 3 in. The following size assortment will serve for most popular cars: 1¼, 1⅜, 1½, 1⅝, 1¾, 1⅞, 2, 2¼. The price for this set is $83.20.

Heatless Soldering Iron

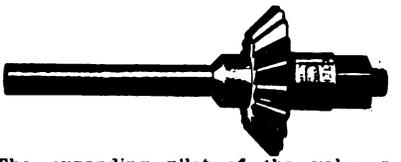
International Sales Co., 921 Southern Building, Washington, D. C.



This is a soldering iron which employs no heat from an outside source but utilizes chemical action to produce the heat. The soldering iron has a receptacle cast into it. In this is placed a small tin container holding the required mixture, with means for ignition. The compound burns with a glow and not a blaze and little smoke is given off. It is said that sufficient heat is generated in a few seconds to do soldering work and the heat will be maintained for some time.

Wayne Valve Seat Reamer with Expanding Pilot

Wayne Tool Mfg. Co., Waynesboro, Pa.
Price $3.90.



The expanding pilot of the valve seat reamer insures a perfect sliding fit of the pilot where the valve stem hole has become enlarged by wear. After inserting the pilot in the hole, it is expanded by screwing down on the taper mandrel. The cutter has a ground taper hole which fits the ground taper part of the pilot, thus making all parts concentric. Furnished complete with wrench. Made with 5/16, ⅜ and 7/16 pilots and 45 or 60 deg. angles. Extra cutters $1.85 each. Worn cutters reground free, customer paying transportation.

Ace Connecting Rod Aligning Gage

Mark W. Jones, Fifty-third and Lansdowne Avenue, Philadelphia.

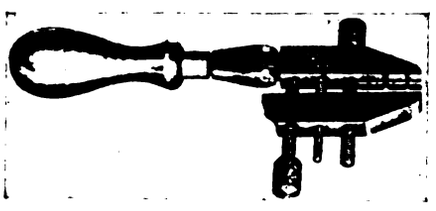
Price with ten bushings, $25; with two bushings, $20.



The gage is for testing the alignment of the connecting rod, piston and piston pin. The column is made from cast iron finished on the bottom, base and side, the base and side being lapped to a master plate within .0005 in. The spindle for bushings is made from machine steel, hardened and ground. The aligning side for piston pins is cast iron, machined and scraped for master plate. A steel spring gib operates by thumb screw and is quickly adjusted to the desired height. The standard aligning slide No. 2 will fit nearly all connecting rods. It is 2¼ in. between sides and suitable for rods 2¼ in. wide or under, with pins 2½ in. long or longer. The No. 1 slide is 1½ in. and made for Fords, Packard Twin-Sixes or engines of similar size. Aligning slide No. 3 is 3¼ in. and suitable for rods 3¼ in. wide or under with pins 3½ in. long or longer.

Starrett No. 200 Hand Vise

L. S. Starrett Co., Athol, Mass.
Price $2.



The outstanding feature of the vise is the adjustable handle which may be clamped at any point within a radius of 180 deg. The stationary jaw has three V grooves for clamping cylindrical pieces, such as wire. The rod and spring between the grooves prevents the adjustable jaw from flopping around when opening or closing the clamp. The capacity of the vise is 1-in., the depth from the end of the jaw to the first screw being 1⅛-in.

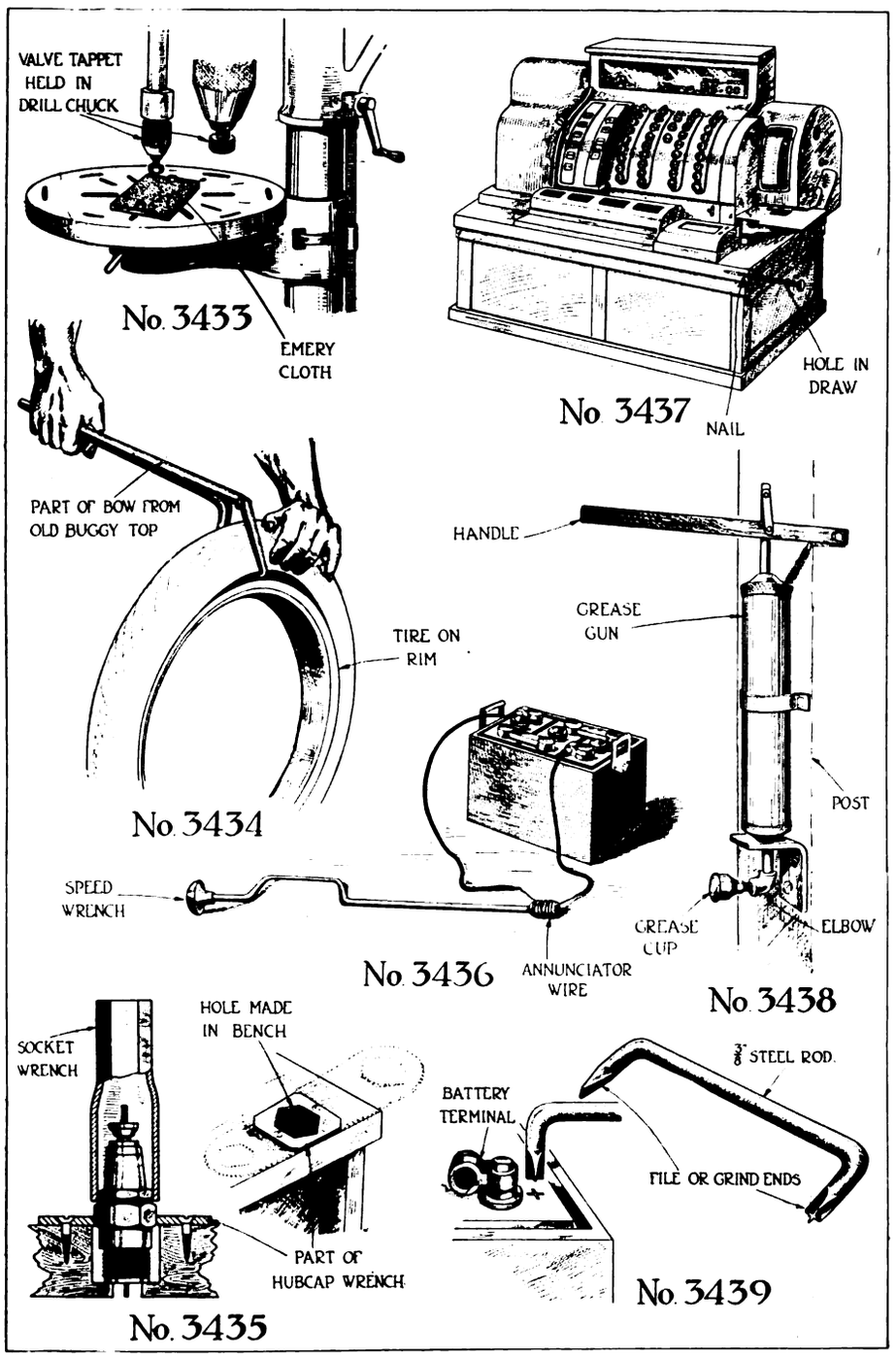
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Repairshop Shortcuts

Ever Make Fuel Consumption Tests?

EVERY once in a while a customer comes in with the complaint that his car is only getting 4 or 5 miles to the gallon and he wants something done about it. Not infrequently it can be proved that the car is getting normal or nearly normal mileage and the owner has simply made a mistake in his figuring. It is very simple to disconnect the vacuum tank from the main tank as there is usually a shut-off cock. The vacuum tank will hold a measured quart. Run the car on this quart and multiply the miles by four as there are four quarts to the gallon. This will give the miles per gallon that the car is making.

Send your shortcuts to Motor World.



No. 3433—Grinding Valve Stem and Tappet Faces—It is worth-while to grind valve and tappet faces before re-assembling to allow for better adjustment. This is done by placing the valve stem or tappet in a drill chuck, pulling down against a piece of emery cloth attached to a board.—John St. Hornow, New York.

No. 3434—Tire Tool for Clincher Tires—Clincher tires that are rusted or stuck to the rim can be removed with a tool which is made from the bow of an old buggy top. The tool is made to fit the size of tire to be removed.—H. J. Engel, New Braunfels, Texas.

No. 3435—Fixed Spark Plug Wrench—A wrench fixed at the top of the work bench allows easy disassembly of spark plugs. It is made from a section of a hub cap wrench, screwed to the top and a hole cut in the bench.—G. A. Luers, Washington, D. C.

No. 3436—Magnetic Speed Wrench—The end of a socket wrench is magnetized by winding it with a number of turns of wire and passing a storage battery current through it. The magnetism in the wrench will hold nuts while they are placed on studs or bolts.—Arthur G. Raabe, Long Island City, N. Y.

No. 3437—Lock for Cash Register—If the cash register attendant finds it necessary to step away from the register, a simple lock can be applied by drilling a hole in the side of the register, away from the light, the drawer going through the case and the drawer. A wire nail is placed in the hole to prevent the drawer from coming out.—G. A. Luers, Washington, D. C.

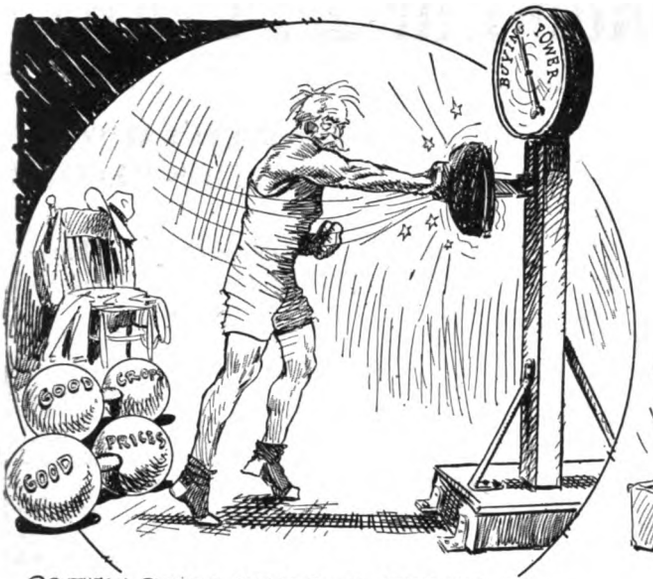
No. 3438—Grease Cup Filler—A filler for grease cups is made from a grease gun mounted on a wall, fitted with an elbow threaded the same size as the grease cup. The grease cup is screwed in with the cap loose, and the plunger of the grease gun is pressed.—Arthur G. Raabe, Long Island City, N. Y.

No. 3439—Battery Terminal Marker—A tool for marking the positive and negative poles of a battery is made from a piece of steel rod bent to an elongated "U" shape and filed to a flat line marker on one end and a plus shape at the other end.—G. A. Luers, Washington, D. C.

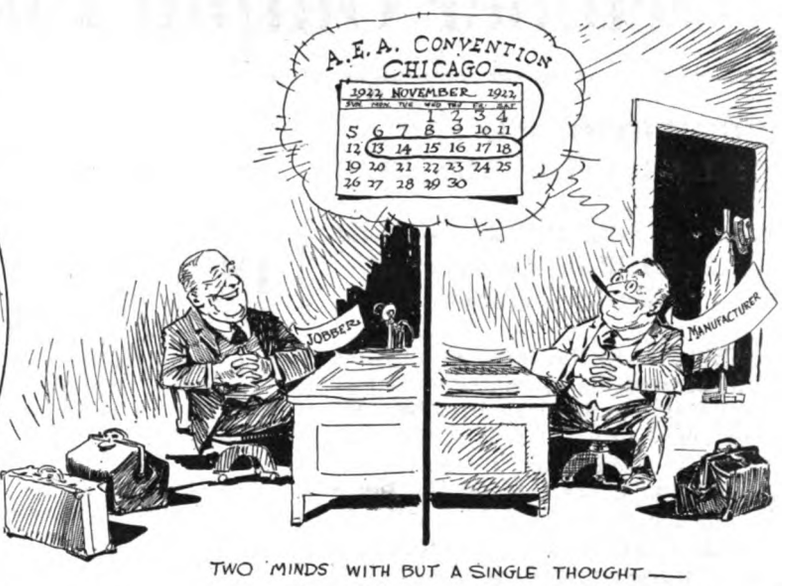
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Along the Automotive Newsway

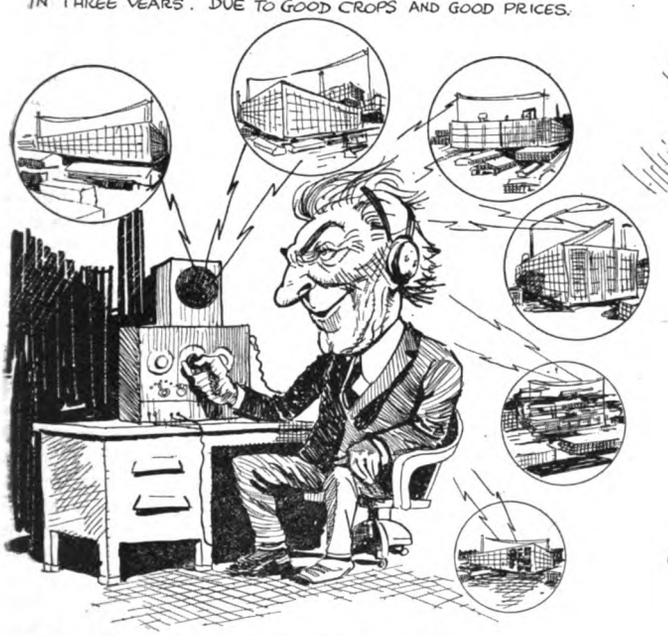
By Leo Roche



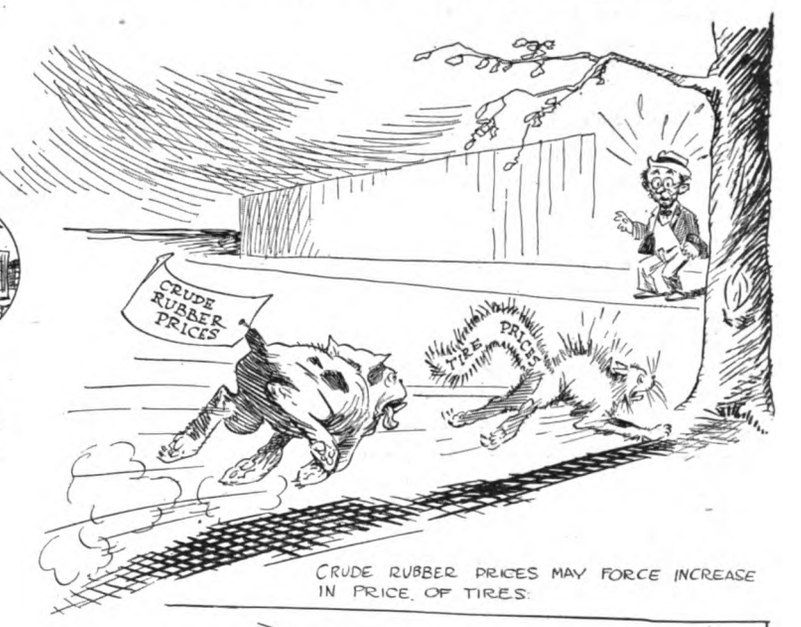
SOUTHERN FARMERS BUYING POWER RETURNING. BEST IN THREE YEARS. DUE TO GOOD CROPS AND GOOD PRICES.



TWO MINDS WITH BUT A SINGLE THOUGHT—



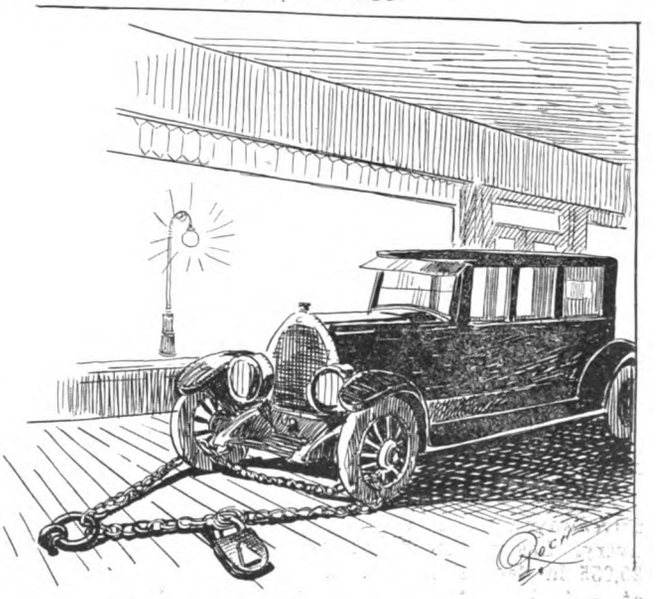
FORD USES RADIO BETWEEN DEARBORN AND SPRINGFIELD. CONSIDERING ITS USE BETWEEN ALL PLANTS AND BRANCHES.



CRUDE RUBBER PRICES MAY FORCE INCREASE IN PRICE OF TIRES.



PARTS MAKERS DOING FINE BUSINESS. SEPTEMBER SALES AMOUNTED TO $37,300,050, OR 62.1% BETTER THAN SAME MONTH IN 1921.



CAR BEING DISPLAYED STOLEN FROM WINDOW—NEWS HEADLINE. IS IT COMING TO THIS, EVENTUALLY?

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October Output Placed at 244,000

PRODUCTION SO FAR NEARLY EQUALS 1920

Total Is 2,119,227 Against 2,205,197 in Best Year of Industry's History

NEW YORK, Nov. 6.—Not only has October, with its estimated output of 244,000 cars and trucks, been the seventh consecutive month of the year to show production in excess of 200,000, but it has brought the figure for the ten month period to within a few thousand of the total output for the best previous year in the production history of the industry. Thus far the aggregate for 1922 is 2,119,227 as compared with 2,205,197 in 1920.

Still Behind on Orders

Factories are still behind in filling orders for closed cars and are hampered in making deliveries by the unsatisfactory rail situation. It is probable that there will be a tapering off in production in November, although there is no evidence now that the demand for cars is showing any notable signs of weakening. This is the season when in other years the slowing up in sales has been pronounced. Manufacturing efforts are centering chiefly on closed models for which there has been an exceptionally brisk demand.

Taken in conjunction with the remarkable record for the month, reports from all parts of the country show that there is only a negligible stocking of open cars. At present, it is not likely that there is more than one month's supply of this type in dealers' hands or on the road to dealers. This fact indicates that the entire production is being sold and that manufacturers are not producing in excess of actual demand.

Farmer Demand Expected

Practically the only section of the country where there has been any accumulation, and that in very small numbers, is the Northwest. In that section, however, there is a pronounced feeling that such reserve is necessary to take care of the farmer demand which is expected to appear as soon as the return from this year's crops are received.

Factories are making greater use of driveaways to surmount difficulties in delivery. Last month these increased from 30,055 in September to 33,320. Instead of a falling off in carload shipments there was an increase from 25,950 in September to 26,980 in October. Boat shipments declined from 8,002 to 7,404 last month.

Most encouraging are the reports from truck manufacturing centers. Business shows an improvement of 75 per cent over a year ago with production for September 35 per cent greater than in the same month last year. Some plants are operating at capacity to meet the growing demand for rail cars and motor buses. Better industrial conditions have enhanced sales of motor trucks in those sections, and interest is showing a greater awakening among farmers.

Look for These Stories in Motor World,

Nov. 15

IDEAS that will help sell open cars in cold weather.

How Oregon builds roads and regulates traffic on them. An attractively illustrated story with information that could be passed on to the public authorities of any State.

Nov. 22

What happens at the Automotive Equipment Association convention and show in Chicago. A complete story, with illustrations, of this big annual gathering of manufacturers and jobbers.

Story of the Service Managers' convention in Chicago. Factory service men will talk about things that affect the dealer.

Story of the National Tire Dealers Association convention in Milwaukee.

HARRY MOOCK NAMED HUDSON SALES HEAD

DETROIT, Nov. 4—Harry Moock has been promoted to sales manager of the Hudson Motor Car Co., taking the position left vacant by H. B. Phipps, who has resumed charge of the foreign fields in which he created a remarkable record before the war. J. S. Draper, formerly district manager in the Middle East, has been made assistant sales manager.

Moock joined the Hudson company about a year ago, entering the organization after resigning the general managership of the National Automobile Dealers Association, where his energy and acquaintance among the dealers created a nation-wide reputation for him.

Fined for Short Measure

CHICAGO, Nov. 7—The two proprietors of a south-side garage were fined $25 each and costs by Judge Richardson, on charges of having sold short measure gasoline.

COAL PROVED FACTOR IN MONTH'S RECORD

Supply Scarce in September—Number of Unfilled Orders Taken Care of

NEW YORK, Nov. 6—Analyzing the report of the traffic committee, which showed an October production in excess of 244,000, directors of the National Automobile Chamber of Commerce at their monthly meeting decided that the increase was brought about by the increased availability of coal, which was relatively scarce in September.

The production in October meets a number of unfilled orders, as well as supplying October sales. The fall months, though seasonally fewer than the summer, are expected to register the best autumn trade on record.

It was reported that the demand for cars is keeping up, despite the season of the year, and that cars are moving at such a rate that dealers have not begun to think of stocking up. It will be another month, at least, before they will begin accumulating a surplus of stock, it is thought.

Explanation for Activity

This continued activity is explained in several ways. In the first place, the continued demand for closed cars has kept up the market and the industry as a whole is averaging 32 per cent production on closed cars, a growth of at least 10 per cent in the last year, made possible by increased capacity of the body plants.

Another explanation is that prospects who had been waiting for lower prices have come into the market because they are convinced that the manufacturers have met their demands for lower lists. Undoubtedly, too, the Ford reduction has been a great incentive to buying, which, of course, helps everyone.

The truck business, it was reported, shows surprising strength and the prospects never were better. Buyers are anticipating a shortage of railroad transportation and purchasing trucks accordingly, while the betterment of general business has been another contributing factor to the prosperity of the truck makers.

Used Car Improvement

The directors also discussed used cars and it was found that there has been an improvement noticed in used car sales in six states: Massachusetts, Ohio, Maine, Colorado, New York and South Dakota. But generally speaking, the situation is bad and will continue, although cooperation on the part of the dealers will help.

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Dealers Are Not Storing Up Stocks

NO GREATER SUPPLY THAN FOR ONE MONTH

Conditions Throughout Country Good With Only Normal Number Weak Spots

DETROIT, Nov. 5 — No noticeable stocking of cars is reported from the dealers at this time. Sales managers state that while there are soft spots in the country, particularly in the grain zones, there are enough points where business is good to keep a steady flow without an accumulation.

Production schedules, of course, are being pared this month with the exception of Buick and one or two other notable examples. Taking an average of all manufacturers, there is not in excess of one month's supply of cars on the road or in the dealers' hands at the present time. Preparations made some time ago for an increase in the percentage of closed car models has been largely responsible for keeping this situation clear.

None of the companies report anything but a healthy general condition with not more than the normal number of weak spots, and a very active closed car demand from the metropolitan centers.

New York

NEW YORK, Nov. 7—Late October and early November have brought a decided slowing up in demand for open cars in the metropolitan territory. Open cars are coming in from the factories, some by freight and some in driveaways, but they are moving much more slowly and in some cases not at all from the establishments of distributors and factory branches. There is beginning a noticeable though not alarming accumulation of open car stock.

Outside the large retail centers of New York, Brooklyn and Newark the open car demand also has fallen flat, but dealers as a rule have only small stocks and a good many, because of used car inventories and lack of ready credit, are not accepting them in any considerable numbers.

Boston

BOSTON, Nov. 7—Some of the larger Boston distributors are now planning to arrange with their banking interests to stock cars for spring delivery. They will be both open and closed models. They are getting orders for spring delivery now as an indication that after the motor show in March there will be a big demand for cars and they have faith in the future when elections, strikes and other unsettled conditions have been swept away.

Philadelphia

PHILADELPHIA, Nov. 7—Inquiry shows that big distributors and dealers are not stocking up on open models. They are sold up and the question is one of deliveries. The tendency is to order more closed models than open ones.

Minneapolis

MINNEAPOLIS, Nov. 7—Dealers of the Northwest are stocking cars because they find the prospects are not flush with money to buy. Grain is moving slowly owing to the railroad and boat situation. Elevators are full of grain waiting to move. Liquidation is only on delivery of the grain. All models are affected but closed cars move better in cities than outside. Probably there will be light winter sales according to bankers.

St. Louis

ST. LOUIS, Nov. 7—Several dealers have stored open cars within the past few weeks due to a slump in sales recently. Very few have any larger number of closed cars on hand. Most dealers are behind on closed car deliveries, this being especially true on new models recently announced.

San Francisco

SAN FRANCISCO, Nov. 7—San Francisco, Oakland and Berkeley dealers are taking on no more new stocks than necessary to carry orders. There is no special demand in northern and central California for open cars. In fact the demand is for closed cars and the dealers

(*Continued on page* 46)

TAKE UNPAINTED CARS TO HURRY DELIVERIES

DECATUR, ILL., Nov. 6—Decatur automobile dealers have devised one scheme to speed-up deliveries of closed-cars, so greatly in demand as fall and winter season purchasers appear.

"We're taking cars from the factory before they are painted," explained one dealer, "and finish them in our own shops. It costs us more, but we save time and meet the customer's demands for immediate delivery. Our shop is kept busy, too."

NUMBER OF MODELS REDUCED BY HUDSON

Four Higher Priced Cars Are Eliminated as Part of Dealer Finance Plan

DETROIT, Nov. 6—Hudson Motor Car Co. has reduced the number of Hudson and Essex models to seven by taking out of its line the four higher priced closed models, including a touring limousine, limousine, cabriolet and sedan. This is a material change from past policies, for in one year Hudson and Essex produced as many as 12 different body types. Before the Essex came into being there was one season in which Hudson alone had nine models.

The new policy is to enable the dealer to concentrate on a few fast-selling models rather than to attempt to cover the entire field of motoring demands. The closed car proportion of the entire Hudson-Essex production now is 56 per cent and even this will be greatly increased in 1923.

Decision to reduce the number of models is made to aid in the carrying out of the company's new dealer finance plan, which aims to lessen the problems of the dealers handling the line.

Realizing the financial problems of the smaller dealer, the company has developed a plan which permits the handling of cars throughout the year at an unusually small expense. The details are very much along the lines of the usual national financing plan.

SHOW IN WASHINGTON DREW 25,678 VISITORS

WASHINGTON, Nov. 4—The most successful closed car exhibition ever held in Washington closed after being attended by 25,678 paid attendants. No official figures are available as to the number of automobiles and accessories sold, but an individual poll of the 85 exhibitors places the figures at approximately $75,000.

The show occupied 25,000 feet of floor space and was the most elaborate in the history of the local automobile exhibitors. Fifty exhibitors of cars showed 62 different makes. Thirty-five accessory firms were present with their exhibits.

It was voted to hold the spring open and closed show on March 10-17.

Best Buick October

DETROIT, Nov. 5—October was the best month in the history of the Buick Motor Co. Production reached 17,666. September production was the best previous month with 16,482.

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SERVICE MEN TO HEAR PROBLEMS DISCUSSED

Program Completed for Two Days Convention to Be Held in Chicago

NEW YORK, Nov. 6—H. R. Cobleigh, secretary of service of the National Automobile Chamber of Commerce, has completed the program for the meeting of factory service managers which will be held at the Hotel La Salle, Chicago, on Nov. 14 and 15.

The first day will be devoted to factory problems and the second day given over to selling service associations to the dealer associations. The convention will be opened by Thomas J. Hay, president of the Chicago Automobile Trade Association, who will deliver the address of welcome. H. J. Leonard, vice-president and general manager of the Stephens Motor Car Co., also will talk. There also will be reports from the service and the pirate parts committees, after which the following topics will be discussed:

How to save transportation costs by shipping parts in carload lots of cars.
How are the taxable and the non-taxable automobile parts distinguished?
Parts discounts to independents.
Boxing parts for shipments.
Flat rate systems in practice.
Lubrication and inspection policies.
Overcoming misrepresentation of service by overzealous salesmen.

The feature of the second day, which will be the service association conference, will be a three-cornered discussion of the importance of better service and service associations as a means to improve it. The owner's point of view will be handled by Alexander Johnston, editor of Motor; the car seller's point of view by Gene Silver, Cole distributor in Chicago; and the maker's point of view by B. B. Bachman, president of the Society of Automotive Engineers and engineer of the Autocar Co.

The afternoon of the second day will be given over to a discussion on how to make service associations most effective. There will be an experience meeting of service association and service division delegates. The N. A. C. C.'s service division speakers' bureau also will take a hand and will tell how it functions for the service associations and divisions, helping them get topics, speakers and films to make their meetings of greatest interest and benefit. One of the speakers will be C. J. Buckwalter, president of the Ambu Engineering Institute.

PEAT-GASOLINE MAN GUILTY OF LARCENY

NEW YORK, Nov. 6—Louis Enricht, the 76-year-old resident of Farmingdale, L. I., who claimed to have invented a process of making cheap gasoline from peat, has been convicted of larceny by a Long Island court, on complaint of a Jamaica garage owner who had invested $3,000 in the Enricht Peat Corp., and who claimed Enricht made false representations.

According to a representative of the United States Patent Office, no patent ever had been issued for the making of gasoline from peat, and it was declared the Enricht method was impracticable.

New Apperson Six

KOKOMO, IND., Nov. 4—The new smaller Apperson six which will make its appearance during the winter will list between $1,200 and $1,400, the definite price not having been determined. It will have 122 or 124 in. wheelbase and the engine will be high powered.

New Studebaker Big Six Coupe, $2,375



The Studebaker Big Six line has been increased by the addition of a five-passenger coupé which includes such features as nickel plated front and rear bumpers, automatic windshield wiper, rear view mirror, Moto-Meter and ornamental radiator cap. The coupé has a two-door body and upholstery is in dark brown velour. Equipment includes heater, transmission lock, cowl ventilator, automatic windshield regulators, three-piece rain vision, windshield, eight-day clock and a trunk in the rear

MINNEAPOLIS UNITES IN ONE ORGANIZATION

Allied Automotive Industries Formed for Mutual and State Usefulness

MINNEAPOLIS, Nov. 7 — Common protection and advancement of good citizenship and to promote proper legislation at the coming session of the Minnesota legislature are the objects of an alliance of the automotive industry in Minneapolis, formed at a mass meeting in the West Hotel. The name is the Allied Automotive Industries, as adopted by representatives of every factor in the business, from motor car and tractor companies to automobile insurance agencies, including the radiator men, paint men, body men and such allied forms of business.

A tribute was paid to Walter Wilmot, many years active secretary for the Minneapolis Automobile Trade Association and manager of the annual winter and fall shows in the Twin Cities and at the State Fair Ground, in his choice as secretary. This association offered the services of Wilmot and the use of its offices for one year. Constitution and by-laws are similar to those of the Ohio State Automotive Trade Association, and the organization does not propose to displace the present separate trade organizations.

Mackie Chosen President

Officers elected are: President, J. H. W. Mackie, general manager for the Payne Motor Co.; vice-president, L. G. Wilcox, manager of the Motor Maintenance Co., and E. P. Farley of the Farley Tire Co.; treasurer, Austin S. Velie, treasurer of Eckland Bros. Co., body builders. Two hundred attended the mass meeting and a membership of 400 is urged.

President Mackie outlined four purposes of the new organization—better acquaintance, business co-operation, common protection, civic and state usefulness.

To make good the general purpose of the organization of affiliating all the allied industries, the board of directors will be made up of two representatives from trade organizations and six at large, to be chosen at the next general meeting. Such organizations exist as the automobile trade association and similar organizations of the northwest tractor men, garage owners, vehicle makers, tire dealers, battery men, service men, implement men, oil men, bus owners and accessory dealers.

Moon's Earnings

ST. LOUIS, Nov. 4—The Moon Motor Car Co., for the quarter ended Sept. 30, reports net profits of $326,478, equal, after preferred dividends, to $2.08 a share on the 154,213 shares no par common stock.

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TRUCK ORGANIZATION MAKES YEAR'S PLANS

Dealer to Be Given Constructive Education—Merchandise Policies Stressed

DETROIT, Nov. 6—A vigorous constructive program for 1922-23 was outlined at a meeting of the National Association of Motor Truck Industries held at the Detroit Athletic Club. The speakers were M. L. Pulcher, president of the association; Don Whittaker, general manager; C. A. Musselman; C. A. Vane, general manager of the National Automobile Dealers' Association; Tom Snyder, secretary of the National Association of Commercial Haulers; S. B. Hadden, of the Allied Motor Commerce.

The program of the association calls for constructive education of the motor truck dealer. The keynote of the meeting was that the future of the industry will be based entirely upon the soundness of manufacturing and merchandising policies. This soundness can only be reached, it was pointed out, by proper co-operation between the manufacturers and parts makers.

According to the program which the association has set for itself, the manufacturer and dealer who is operating his business with a spirit of permanency and sound values will receive the support of the organization which is composed of assemblers, parts manufacturers and dealers, each of which group are represented on the controlling board.

LARGE FLEET OWNERS AGAIN ENTER MARKET

DETROIT, Nov. 6—Vance Day, general sales manager of the General Motors Truck Co., states that for the first time in two years large fleet owners are again buying trucks on a large scale.

It is his contention that, instead of receiving small orders for one or two trucks as they have been doing, the five big packers, owners of some of the largest truck fleets in the world, are again in the market, with the Standard Oil Co. and other large fleet owners. The truck company, Day says, has been filling single orders for 20 and 25 trucks at a time, and their salesmen report that still larger orders will be forthcoming soon.

ROLLS-ROYCE PLANS TO INCREASE OUTPUT

NEW YORK, Nov. 6—The Rolls-Royce Co. of America, Inc., is issuing $2,000,000 fifteen-year 7 per cent sinking fund gold bonds of an authorized issue of $3,000,000. The proceeds will be used for refunding higher interest-bearing obligations and the remainder for working capital.

While this issue will in no way be used for plant expansion, it will facilitate a slight increase in production as officials say that it is possible to increase output to more than 450 cars a year.

The plant is now running at capacity. Earnings since May 1 have been at the rate of over twice the interest charges and orders on hand, it is said, will enable the company to exceed this mark.

TRUCK BEATS LETTER MAILED NIGHT BEFORE

LAMONI, IOWA, Nov. 5—Driving a truckload of cattle over the Jefferson highway last week from Owatonna, Minn., to this city, a distance of 320 miles, Ralph Derry beat a letter, which he mailed the night before leaving, by 15 hours.

On the out-trip he loaded his car with apples bought here for 75 cents and $1 a bushel, selling them at the northern terminal at $1.90 to $2.50.

FIAT MAKES PRICE CUT ON TWO LINES

NEW YORK, Nov. 2—Fiat has announced a radical price reduction on its large 4-cylinder line, model 505, and 6-cylinder cars, model 510. Model 501, the small 4-cylinder line, remains unchanged. The new prices are as follows:

Model 505

	Old Price	New Price
Phaeton	$3,500	$2,500
Sedan	5,000	2,900
Landaulet	4,700	2,900

Model 510

	Old Price	New Price
Phaeton	$5,400	$3,700
Landaulet	5,500	4,500
Brougham	5,500	4,500

STUDEBAKER PRICES OF BIG SIX HIGHER

SOUTH BEND, IND., Nov. 6—Studebaker Corp. has increased the list on its Big Six, the increases ranging from $50 to $135, according to body style. The list is as follows:

	Old Price	New Price
7-passenger phaeton	$1,650	$1,785
4-passenger sport phaeton	1,785	1,835
4-passenger coupe	2,275	2,400
Sedan (regular)	2,475	2,475
Sedan (special)	2,650	2,750

Mason Tires to Advance

NEW YORK, Nov. 4—The Mason Tire & Rubber Co. will advance tire prices approximately 5 per cent Nov. 15.

Torbensen Gets Injunction

NEW YORK, Nov. 2—The Torbensen Axle Co. of Cleveland, has obtained a perpetual injunction in the United States District Court of New York, restraining the United Gear Manufacturers Corp. of New York City, from using the Torbensen name in selling parts for the Torbensen axle when those individual parts are not made by the Torbensen company.

NEW MARKETS OPENED FOR TRUCK BUSINESS

All Factories Busy, F. W. Fenn Reports After Tour Lasting Two Weeks

NEW YORK, Nov. 5—The motor truck industry, all things considered, is in wonderful shape at the present moment. It is doing 75 per cent more business now than it was at the beginning of the year; all its plants are busy, some of them at capacity, and new markets have been opened that promise much business in the immediate future. September was a rare production month, showing an increase of 35 per cent over the same month a year ago.

These are the conclusions reached by F. W. Fenn, secretary of the motor truck division of the National Automobile Chamber of Commerce, after two weeks spent in visiting some 15 factories in different parts of the country.

General business is the barometer of the truck industry. When business is good we will sell trucks, and lots of them, and I am glad to report that business is coming back. There is a labor shortage in all the industrial centers, the demand for trucks is surprising everyone and new markets are opening for us, which tell us that we are just scratching the surface right now.

Demand for Rail Cars

I find a great demand for rail cars. The railroads are coming into the market and not only want these rail cars but also used trucks for short hauls and for store-door deliveries. The carriers are finding that they either must take to the motor trucks and store door deliveries or spend millions building new terminals on the outskirts of the big cities. The electric railways, too, are proving good customers through frankly taking up the motor bus as a feeder to their main lines. The boom in highway building also has helped matters.

Of great benefit to the industry is the decisions of the public service commissions of New York and California, which have held that trucks and buses are necessary to the public and have granted franchises for the operation of bus lines despite the protest of the trollies.

I also feel that the farmers are going to prove mighty good customers.

Plants Visited Active

In my swing through the country I found everyone busy and very optimistic. Mack, Federal and White are going strong. At Diamond T I found great activity because of the fact that the American Railway Express is taking most of the output. Four-Wheel Drive at Clintonville is building flanged wheel trucks for use on the railroads of Porto Rico, Japan and China.

Graham at Detroit and Clintonville has announced a complete line of bodies for smaller haulage work, which has met with great success. The Graham is powered with Dodge engines and distributed by Dodge dealers. The Walker electric at Chicago reports many orders and great activity in the sales department, while the Watson Wagon Works at Canastota, N. Y., is doing so well that it has discharged the receiver who has been at the helm for some time.

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RAY SHERMAN VISITS 25 CITIES IN MONTH

Trip Takes A. E. A. Merchandising Director from El Paso to Yakima

CHICAGO, Nov. 4—Twenty-five merchandising meetings in 25 cities is the October record of Ray W. Sherman, merchandising director of the Automotive Equipment Association, who has just returned from an extensive speaking tour which started at El Paso, Tex., and ended at Yakima, Wash., giving him an excellent opportunity to observe the condition of automotive business in the Pacific Coast states.

In speaking of his trip, Sherman said:

I was most impressed on this trip by the progress of the automotive merchant himself as a business man. For more than ten years I have traveled about the country meeting groups of men engaged in the automotive business. It used to be that at a public meeting of these men most of them would appear in flannel shirts and many in overalls, and it was in that sort of dress that they met the public in their places of business. At twenty-five meetings on this trip I didn't see a single man without a white collar and customary business clothes. Even the mechanics who attended the meetings were well dressed. This condition is beginning to be noticeable all over the country.

Sherman said that automotive business at El Paso and at Phoenix, Ariz., his next stop, had suffered this year because the local market depended a great deal upon cattle, cotton and copper, all of which have been low in price. Conditions there are improving rapidly, he said.

From Phoenix he went to Santa Ana, Cal., thence up the coast through Long Beach, Los Angeles, Bakersfield, Fresno, Sacramento, San Jose, Oakland and San Francisco holding meetings in each place. In these cities he found business thriving and he was especially impressed by the attractiveness of the automotive stores. Neat and orderly arrangement of stocks was the rule and nearly every store had a carefully arranged show window. A remarkable feature was the extent to which successful car dealers are operating accessory and supply departments.

Meetings were held at the following cities in Oregon: Medford, Roseburg, Eugene, Salem, and Portland. From Oregon Sherman went into Washington and addressed meetings at the following points: Chehalis, Aberdeen, Olympia, Everett, Tacoma, Seattle and Yakima.

In towns where the "Ask 'Em to Buy" moving picture was shown last year the attendance to see the "Shop Profits" film this year invariably was much better than last year, Sherman said. He believed this was due to the favorable impression made by the first picture. Everywhere he found a very keen interest in the question of increasing profits in automotive merchandising.

Preparations for a good Christmas business were apparent in many places.

(*Continued on page* 46)

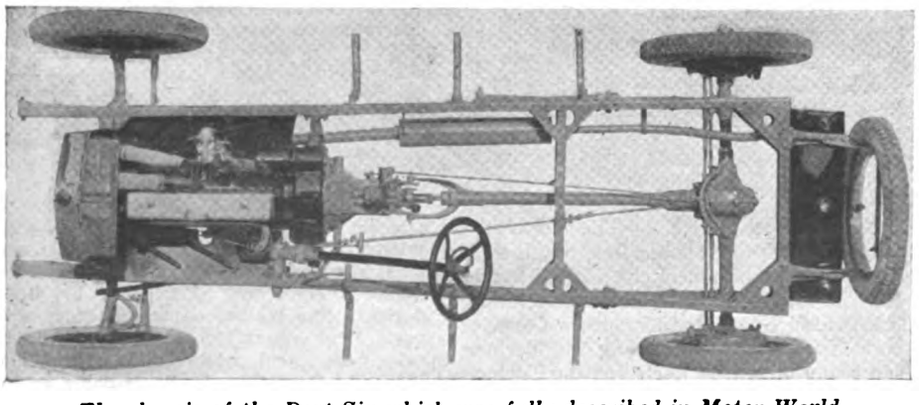
MAINE KEEPS HEAVY TRAFFIC FROM ROADS

AUGUSTA, ME., Nov. 6—The Maine State Highway Commission has just served notice on owners of heavy trucks that there will be no hauling of heavy loads on the highways throughout the winter. At its meeting this week the matter was taken up, and it was announced that the commission felt that it was proper that it should put an embargo upon heavy traffic beginning on Nov. 15.

This will apply to all State highways and the other roads built in conjunction with cities and towns upon which the state expended any money. The notice states that all heavy loads should be moved over the highways before Nov. 15, and that an embargo will be placed beginning with that date. It does not say when it will be lifted, but as it goes on to say that it is the opinion of the commission that the most damage is done to the road surfaces during thawing conditions after a freeze that means late spring before the rule is rescinded.

Just what the owners of heavy trucks will do is problematical. However, as the law is specific, giving the Highway Commission that right, it is doubtful if anything can be done to prevent the regulation becoming effective.

Chassis of Dort Six



The chassis of the Dort Six which was fully described in Motor World issue of Nov. 1

JOBBERS HOST TO 603 DEALERS IN MID-WEST

Big Attendance Due to Preliminary Work of Four Firms Who Entertained

FORT WAYNE, IND., Nov. 5—A successful meeting of automobile dealers, with jobbers as the hosts, has been held here by the Fort Wayne Iron Store Co., Lomont & Co., R. M. Kaough & Co. and the Mossman-Yarnelle Co., local jobbers in automotive equipment. Six hundred and three dealers from Indiana, Ohio, Michigan and Illinois were present at the meeting and banquet. It was unanimously voted at the banquet to hold a similar affair each year.

The meeting was primarily arranged as an educational event. The delegates showed a warm interest in the program, which had to do principally with giving suggestions for efficiency in shop work, particularly in cutting down leaks in the operation of a modern accessory or automobile repair shop. A great deal of emphasis was laid upon sales psychology which should be employed in the selling of automobile accessories, and suggestions were given on the proper way to display accessories and advertise them in order to realize the greatest volume of sales.

Two reels of motion pictures, provided by the Automotive Equipment Association, of which the local jobbers are members, were shown to the dealers, and addresses were delivered by Robert A. Stranahan of the Champion Spark Plug Co. of Toledo and M. B. Ruark of the A. E. A.

Dealers Kept Informed

George A. Hibbins, manager of the R. M. Kaough Co., acted as general chairman of the committee which planned and conducted the convention. The initial work of making the affair a success was started six weeks ago, and all of the dealers invited were kept in close touch with the arrangements by means of letters and through the salesmen of the jobbers.

It is declared that much of the success achieved by the jobbers in getting such a splendid attendance is due to the fact that emphasis was constantly placed, in talks with dealers and in letters sent to dealers, on the fact that the meeting would be HELPFUL.

In addition to Hibbins, other representatives of the jobbers taking a prominent part in the meeting were W. Page Yarnelle, of the Mossman, Yarnelle Co.; C. J. Lomont, of Lomont & Co., and Herbert Lang, of the Fort Wayne Iron Store Co.

Franklin Pays Dividend

SYRACUSE, Nov. 6—The regular quarterly dividend of 1¾ per cent on the cumulative 7 per cent preferred stock of the H. H. Franklin Manufacturing Co. was paid on Nov. 1 to all stockholders of record on Oct. 20.

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MONTREAL JOBBERS FORM ASSOCIATION

Members of Canadian Credit Men's Association Organize Trade Section

MONTREAL, QUE., Nov. 6—At a meeting held at the Old Colony Club, the wholesale automobile accessory houses which are members of the Canadian Credit Men's Trust Association, Limited, organized a trade section. J. Thurston Smith was elected president; James W. Green, vice-president, and Fred H. Pope, secretary.

Smith is well known to the business interests of the city. He is secretary-treasurer of Lewis Bros., wholesale hardware jobbers, ex-president of the General Accountants' Association, ex-director of the Dominion Commercial Travelers' Association, ex-honorary treasurer of the City Improvement League, and also ex-president of the Quebec Division of the credit men's association.

Green is credit manager of the Dominion Rubber System, with which firm he has been identified during the past 12 years.

Pope is manager of the Quebec Division of the credit men's association, under whose auspices the section will function.

The following firms have joined the section:—John Millen & Sons, representative, C. E. Kendrick; Goodyear Tire & Rubber Co., representative, E. H. Dudley; Canadian Fairbanks-Morse Co., Limited, representative, W. H. Irvine; K. & S. Tire & Rubber Goods, Limited, representative, C. S. Lee; Dominion Rubber System, Limited, representative, J. W. Green; Lamontagne, Limited, representative, O. L. Baillargeon; Lewis Bros., Limited, representative, J. Thurston Smith; Sun Co. of Canada, Limited, representative, E. S. Graham; Gutta Percha Rubber, Limited, representative, J. N. Smith; Ames-Holden-McCready, representative, M. J. Kearns.

BENNETT HILL WINS RACE AT BERKELEY

BERKELEY, CAL., Nov. 3—Bennett Hill and his Miller-motored racer won the 100-mile race here Sunday in 52 min., 38.4 sec., an average of 114½ m.p.h. Frank Elliott was second, a quarter of a mile behind the winner. Jimmy Murphy won third from Harry Hartz by an eyelash.

Hill took the lead at the start and was never headed, driving through without a pit stop and coming in on ragged tires rather than risk losing the race to Elliott by stopping to change them. Tommy Milton was hit in the face by a splinter from the board track, thrown up by the car ahead of him, and was put out of the race in the first lap. The splinter smashed Miltons' goggles and drove a fragment of glass into the ball of the right eye, his only good eye, by the way. He drove into the pit blinded and was rushed to a hospital in Petaluma, where specialists summoned from San Francisco reported that the eye would be saved.

This was the last race of the season on this track, the next event on the coast schedule being the Thanksgiving Day races at Los Angeles.

New A. E. A. Sticker



The second issue of the Automotive Equipment Association's series of merchandising stickers has been issued and distributed to manufacturers and jobbers for distribution in turn to dealers. The new issue is directed toward Christmas buying. It is printed in red on a white field with appropriate Christmas tree and holly decorations

A. E. A. MEETING HELD IN CONNECTICUT CITY

BRIDGEPORT, Nov. 2—The first meeting in Connecticut of the merchandising campaign of the Automotive Equipment Association was held here tonight under the auspices of three manufacturers and four jobbers. The "Ask 'em to Buy" film was shown to more than 100 dealers and garagemen of Western Connecticut, and a talk on automotive equipment sales promotion and also on shop profits was given by Neal G. Adair, editor of Motor World.

The meeting, following a dinner, was held in the cafeteria of the Bridgeport Brass Co., which co-operated in the occasion with the American Chain Co. and the Raybestos Co., both of Bridgeport, and with the following jobbers: Hessel-Hoppen Co., New Haven; Horton-Gallo-Creamer Co., New Haven; C. S. Mersick & Co., New Haven, and Post & Lester, Hartford.

L. H. Woodruff, manager of the automotive equipment department of C. S. Mersick & Co., presided at the meeting.

Trucks on Pennsylvania Farms

PHILADELPHIA, Nov. 4—It is announced that the farmers of Pennsylvania now are using 9072 motor trucks.

EQUIPMENT MAKERS HAVE ZONE SYSTEM

Seven Districts Provided—Association Makes Plan for Chicago Convention

CHICAGO, Nov. 4—The Association of Automotive Equipment Manufacturers of which George Fritz is general manager, will hold its convention at the Congress Hotel Nov. 14. The principal business will be the adoption of a new constitution and by-laws, draft of which has been approved by the board of directors and published in pamphlet form. Another matter of business will be the enrolment of new members, a number of whom have indicated their desire for membership. The present membership is 85 manufacturing firms.

The association has issued a prospectus which outlines the various departments and activities of the organization, which is being expanded into a national organization. The following departmental activities are listed: Exchange of trade information; credit reports; research department conducting the following activities—data showing business done by years and months with percentage of increase or decrease, comparison of collections, comparison of production cost, business administration; jobbers' department including suggestions to help the jobber meet his problems in the distribution of automotive equipment; foreign trade department; information bureau.

Zones Established Tentatively

A zone system of organization has been outlined with a director to be elected from each of seven territorial zones. It is planned to have meetings once a month in each zone of the members in that zone to consider trade problems. The following zones have been established tentatively with suggested headquarters:

Western zone, with headquarters at Chicago; Eastern zone, headquarters, New York; New England zone, headquarters, Boston; Middle Western zone, headquarters, Cleveland; Southwestern zone, headquarters, St. Louis; Northern zone, headquarters, Minneapolis; and Pacific Coast zone with headquarters at San Francisco.

HARRISBURG JOBBERS CHANGE FIRM'S NAME

HARRISBURG, Nov. 5—The General Auto Supply Co., with headquarters in Harrisburg and branches at Lancaster and York, has been granted a charter and has changed its name to the General Automotive Supply Co. The capitalization of the new company is $300,000.

At a meeting of the stockholders the following officers were elected: R. W. Shreiner, Harrisburg, president; G. H. Shreiner, Lancaster, vice-president; L. V. Good, Harrisburg, secretary; Harry S. Smeltzer, Harrisburg, treasurer, and B. Smith, Harrisburg, assistant treasurer. R. W. Shreiner is general manager.

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STOCKS OF TIRES LOW IN HANDS OF DEALERS

Factories Take Orders on Spring Dating Basis—Prices May Increase

CLEVELAND, Nov. 6—Commenting on the unusual activity in the tire industry this year, caused mainly, it believes, by increased touring and the many miles of new roads put into commission, the Federal Reserve Bank of this city says:

Dealers have operated with hand to mouth stocks, fearing more price reductions. There are few, if any, big dealers' stocks over the country, and this means continual orders to the factories. The average size of orders is small, but there are a large number of them.

Many factories are now taking orders from dealers on a spring dating basis. The new terms have been presented to the dealers by most of the large tire companies, and this indicates that the same policy of financing the dealer will be followed as in the past but with changes in the general scheme.

Some of the companies are preparing to make immediate shipments on spring dating orders and others plan to make shipments after Jan. 1. The price in some cases is being guaranteed against decline for six months. Other manufacturers are again following the trade acceptance plan. Practically all are serving notice on the dealers of a probable advance in tire prices in the near future.

OIL PUMPING THEME AT SERVICE MEETING

NEW YORK, Nov. 6—Oil pumping was discussed at a meeting at the Automobile Club of America, which was attended by 80 service managers and dealers, the principal speakers being A. Ludlow Clayden of the Sun Oil Co. of Philadelphia, H. E. Pengilly of the Standard Oil Co. of New York, and George A. Round of the Vacuum Oil Co.

Discussing the pressure type of lubrication, Clayden told his audience that oil-pumping troubles usually occur as wear takes place in the bearings, being followed by an apparent drop in oil pressure. A remedy is to still further cut the supply of oil by opening the by-pass, said Clayden.

Round, talking on splash lubrication, claimed faulty design of the connecting rod dippers and incorrect oil levels in the troughs often cause trouble, while Pengilly urged the service managers to make a special campaign to educate owners to change oil regularly.

Pengilly condemned the practice of flushing out the crankcase with kerosene and told of a new flushing oil which has, he claims, all the advantages of kerosene without its detriments.

Another meeting will be held at the A. C. A. on Dec. 1.

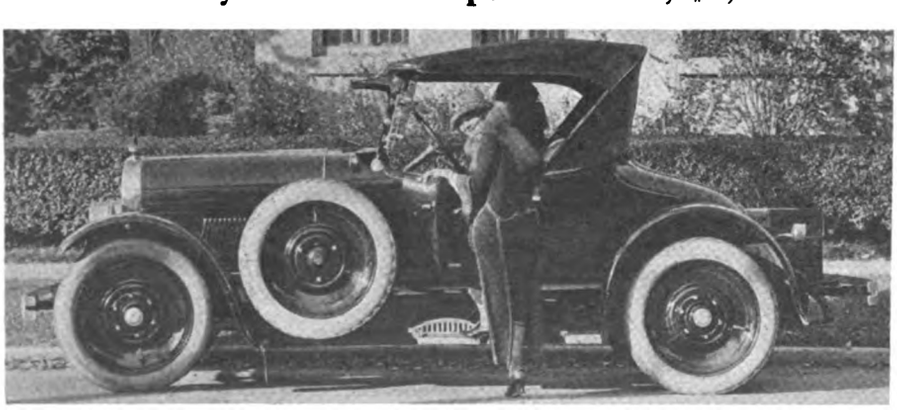
ACCIDENTS INCREASED 28 PER CENT LAST YEAR

WASHINGTON, Nov. 3—Statistics compiled by the Bureau of the Census show that during 1921 automobile fatalities increased 28 per cent. The record shows that 10,168 deaths resulted from accidents caused by automobiles and other motor vehicles, excluding motorcycles. This number represents a death rate of 11.5 per 100,000 population as against 10.4 in 1920 and 9.4 in 1919 and 9.3 in 1918.

The State of New York had 1633 casualties, or 15.4 per cent per 100,000 population in 1921, as against 13.5 per cent in 1920. Pennsylvania was next with 1086 casualties, or 12.2 per cent for each 100,000 population, as compared against 11.9 per cent in 1920.

According to the Bureau of the Census, there were 886 deaths resulting from automobile accidents in Illinois; 865 in California; 737 in Ohio; 519 in Massachusetts, and 443 in Michigan. The other States had fewer casualties. In Detroit there were 133 deaths from automobile accidents.

The Haynes Model 55 Sport Roadster, $1,895



This is one of the four sport models fitted to this chassis, the others being the phaeton, $1895, coupelet, $2195, and sedan, $2695. All have full sport equipment, six disk wheels and six 32 x 4½ in. tires. The roadster has windshield wings, nickel plated parts usual to this type of car and upholstery of brown Spanish leather

EFFECT OF NEW DUTY IN MEXICO AWAITED

Most Dealers There Had Depleted Stocks of Cars When Levy Was Imposed

MONTEREY, MEXICO, Nov. 3—What effect the placing of a 10 per cent ad valorem duty upon all imported automobiles may have upon the sale of cars in this country remains to be seen. The new duty was fixed by decree of President Alvaro Obregon and came wholly unexpected to dealers, many of whom found themselves with depleted stocks.

During the last several months there has been quite a revival in the demand for automobiles of American manufacture, especially for the medium price cars. Dealers made many sales, and this kept their stocks low. The 10 per cent ad valorem duty which must now be paid on all cars will be added to the retail sales price, it is stated.

Until recently the sale and use of automobiles in Mexico were confined almost entirely to the larger cities, particularly Mexico City, Monterey, Chihuahua, Guadalajara, Tampico, Torreon and a few others. This was due to two reasons—one, the danger which one met with of being held up by brigands in the smaller communities and rural districts, and, second, the lack of passable highways.

Country Rid of Bandits

The country has been practically rid of bandits during the vigorous administration of President Alvaro Obregon, although hold-ups continue to occur occasionally in some remote sections; at any rate, travel overland is now considered to be safer than at any time since the overthrow of President Porfirio Diaz, nearly twelve years ago.

The Obregon Government is giving much attention to the construction and improvement of public roads. The program for such improvements is extensive, but the lack of money is hampering its fulfillment.

Red Seal Battery Contest

NEW YORK, Nov. 6—Manhattan Electrical Supply Co. of New York is promoting a contest among jobbers and dealers in the automotive, electrical, hardware and radio fields, offering prizes for the best answer as to "Why the Red Seal dry battery is the best all-purpose battery." More than 50 prizes are offered. The answers must be given in not more than 10 words. The contest closes Nov. 15.

Pardee Returns to Commercial

NEW YORK, Nov. 1—C. L. Pardee, Jr., at one time credit manager for the Commercial Investment Trust Co., has returned to that concern in the same capacity.

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STUDEBAKER SALES EXCEED PRODUCTION

Cars Produced in Third Quarter Numbered 29,924; Sales Aggregated 30,199

SOUTH BEND, IND., Nov. 5—Directors of the Studebaker Corp. at their meeting declared the regularly quarterly dividend of 2½ per cent on the common capital stock and the regular 1¾ per cent on the preferred.

The Studebaker report for the quarter tells of capacity operations and the sales demand ahead of production. There were 29,924 Studebakers produced and 30,199 sold. Production schedules for the fourth quarter call for 20,000 cars, which will make 110,000 for the year as against 66,000 in 1921.

Consolidated Balance Sheet

The consolidated balance sheet of the Studebaker Corp. and subsidiary companies is as follows:

ASSETS

	Sept. 30, 1922	Dec. 31, 1921
Cash	$20,123,734	$8,334,799
Sight drafts outstanding	4,137,804	1,822,393
Investments	3,563,590	2,178,170
Net receivable (less reserves)	6,176,207	4,035,221
Inventories	15,101,740	22,209,885
Deferred charges	623,219	394,262
	$49,726,297	$38,974,732
QUICK ASSETS		
Plants and property	$38,903,832	$37,290,413
Housing development	1,706,005	2,255,715
Trade name and goodwill	19,807,276	19,807,276
Total	$110,143,411	$98,328,138

LIABILITIES

Accounts payable—current	$4,046,504	$3,492,414
Reserve for taxes	3,642,646	2,904,373
Reserve dealers' discount and deposits	1,292,641	1,306,446
Other payable reserves	2,799,875	2,545,160
	$11,781,667	$10,248,394
ALL LIABILITIES		
Preferred stock	$9,150,000	$9,800,000
Common stock	60,000,000	60,000,000
Special surplus	4,455,000	4,050,000
Surplus	24,456,743	14,229,743
Total	$110,143,411	$98,328,138

The statement of comparative profit and loss and surplus as of Sept. 30 is as follows:

THIRD QUARTER

	1922	1921
Number cars produced	29,924	23,338
Number cars sold	30,199	21,086
Net sales	$35,065,894	$29,058,893
Net profits before taxes	4,934,370	4,251,867
Less reserves for U. S. and Canadian taxes	450,397	988,667
Net profits	4,483,973	3,263,200
Less dividends	2,565,375	1,221,500
Surplus	1,918,598	2,041,700

SAFETY CAMPAIGN LOWERS ACCIDENTS

BRIDGEPORT, CONN., Nov. 5—The "safety first" campaign inaugurated by the Bridgeport police department in handling and supervising motorists, as well as the school recently conducted by the department for operators, are credited by Capt. James Walker, head of the traffic bureau, with being responsible for the notable decrease in the accident death rate in this city.

Statistics show that during the three years, 1919, 1920 and 1921, there were 94 persons killed and 2031 injured in local street accidents.

In the opinion of Walker, based on available figures since then, this accident record will not be repeated for a long time to come, if ever, this year's figures to date indicating that the public is beginning to profit by the "safety first" campaign, are taking fewer chances and that motorists are more carefully supervised.

FIRST NINE MONTHS

	1922	1921
Number cars produced	87,951	56,163
Number cars sold	90,252	55,552
Net sales	$108,488,756	$80,593,998
Net profits before taxes	17,621,133	11,644,326
Less reserves for U. S. and Canadian taxes	1,980,759	2,000,000
Net profits	15,640,374	9,644,326
Less dividends	5,008,375	3,664,500
Surplus	10,631,999	5,979,826
Prior surplus	18,279,743	13,467,047
Total surplus	28,911,743	19,446,874

$1,751,905 EARNED BY NASH IN QUARTER

Profits of Company for Nine Months Reported as Aggregating $5,023,441

KENOSHA, WIS., Nov. 6—Nash Motors Co., for the three months ended Aug. 31, 1922, reports net earnings of $1,751,905. Net earnings for the nine months of the fiscal year total $5,023,441. C. W. Nash, president of the company, commenting on the above showing, said:

All this year we have been in a practically oversold condition, despite plant additions and increased production. Sales figures of the first 10 months of 1922 show that 95 per cent more Nash cars have been marketed this year than during the first 10 months of 1921.

The advent of better business conditions generally and the noticeable improvement among agricultural districts of both the middle west and southwest, together with a better outlook in tobacco and cotton territories of the country, point to a considerably greater demand for Nash cars this coming year than we have ever witnessed.

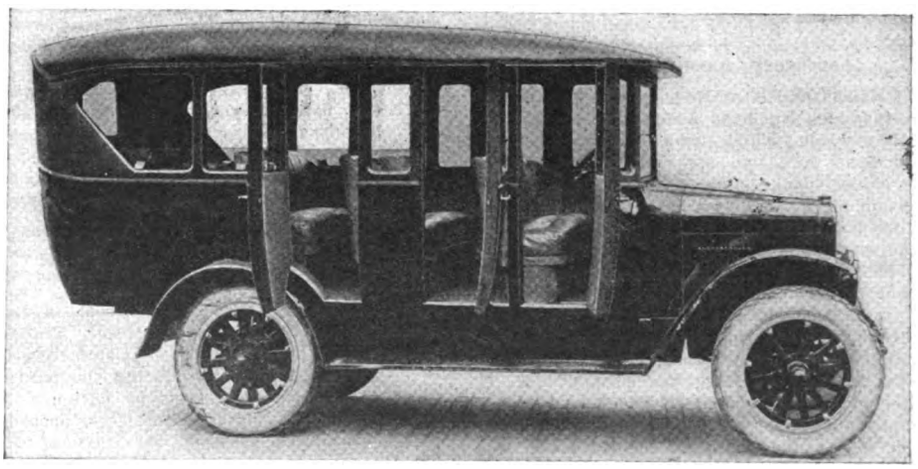
Stockholders of the company at a special meeting approved the retirement of the company's $3,500,000 7 per cent cumulative preferred stock.

PIERCE-ARROW SHOWS DEFICIT GROWS LESS

BUFFALO, Nov. 4—Pierce-Arrow Motor Car Co. reports an operating income of $11,209 for the three months ending Sept. 30. Interest, taxes and other charges were $351,178, which left a deficit of $339,969, as against a deficit of $2,109,999 in the same period last year.

Deficit for the nine months ending Sept. 30, 1922, amounted to $376,961.

New International Speed Sedan



The International Harvester Co. has introduced a de luxe bus for hotel, club and resort use. It is known as the International Model S Speed Sedan. The top is art-craft construction. The seats are wide and deep cushioned. Fourteen to fifteen passengers may be comfortably seated in the cross seats from which they can obtain an unobstructed view. Entrance is obtained through three side doors while a passage at the end of the third seat gives easy access to the rear without disturbing other passengers. Speeds of 25 to 30 m.p.h. can be obtained. The length of the chassis overall is 185⅝ in. Heavy pneumatic cord tires are a part of the regular equipment

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ASSOCIATION ACTIVITIES

Red Arrow for Cars

PHILADELPHIA, Nov. 5 — Hundreds of red arrows bearing the legend, "Car to Right Has Right of Way," have appeared pasted on the inside of windshields in passenger cars and trucks, as the outcome of the October meeting of the Automobile Accessories Business Association, at which it was decided to distribute the printed "sticktights."

The movement is the beginning of a campaign on the part of the association to instruct automobile and truck drivers on the Act of Assembly of Pennsylvania, assigning the right of way to the car on the right and the movement has the backing of Mayor Moore, James B. Cortelyou, director of public safety and William B. Mills, superintendent of police.

The arrows are being distributed to passenger car and truck owners through dealers, garages and the three hundred members and guests of the Automobile Accessories Business Association who attended the recent monthly meeting. Within a few days thousands of cars, it is expected, will sport the little red arrows that act as reminders to the man at the wheel.

Eastman Elected in New York

NEW YORK, Nov. 6—Lee J. Eastman, president of the Packard Motor Car Co. of New York, is the new head of the Automobile Merchants Association of New York, having been elected to that office at a special meeting of the directors. The new vice-president is Russell L. Engs, president of the Cole Motor Car Co., Inc., of New York.

Eastman has been an active force in local automobile circles since 1919, when he came to New York from Philadelphia, where he was president of the Packard Philadelphia Co. As president of the Motor Truck Association of Philadelphia, vice-president of the Automobile Trade Association and director in the Philadelphia Chamber of Commerce, Eastman was active in improving sales methods, preaching good roads, supporting legislation for the good of the industry, and preventing the enactment of pernicious laws.

Accessory Association Meets

PHILADELPHIA, Nov. 1—The Automobile Accessories Business Association at its first fall meeting, which was held at the Hotel Lorraine, had two especially good and interesting speakers who addressed the organization on trade topics and, in addition, two films issued by the A. E. A., were shown on the screen.

The first speaker, R. A. Stranahan, president of the Champion Spark Plug Co. and former president of the A. E. A., answered satisfactorily in the affirmative the question implied in the topic assigned to him, "Ask 'Em to Buy and Increase Profits." W. C. Hecker, vice-president of the Curtis Pneumatic Machinery Co., St. Louis, also a member of the directorate of the A. E. A., was the second speaker, making an illuminating address on "How to Make Profits in the Shop."

Springfield Used Car Plan

SPRINGFIELD, MASS., Nov. 4 — At a meeting of the Springfield Automotive Dealers Association it was decided to adopt a used car plan similar to that followed in Boston, eliminating some features of the plan introduced here last winter, which met with persistent opposition from some members. This action was taken following a report of an investigating committee which had consulted different authorities.

The new plan provides for regular reports on all used car purchases by the dealers and looks to standardized practice in rehabilitating cars bought for resale. At the same time it does away with the arbitrary rating of all makes and conditions of cars on an age basis. As a result of the latest action, it is expected that the Springfield Automobile Board of Trade, which has dealt with the used car situation for the past eight months, will soon be dissolved and the problem be handled directly by the association.

Huntington Dealers Organize

HUNTINGTON, W. VA., Nov. 5—Automobile dealers of Huntington, at an enthusiastic meeting in Hotel Frederick, formed a permanent organization and elected officers to serve for the next year. Approximately 70 per cent of the automobile companies of the city were represented. Officers chosen included: Theodore Cavendish, president; J. E. Curtis, vice-president; W. R. Titus, treasurer, and B. R. Osborne, secretary. With three trustees to be chosen at a later date, the officers will constitute the board of directors.

Closer co-operation between the buying public and the dealers was pledged by the new association and an effort will be made to enroll a representative of each automobile selling agency in the city in the organization.

Safety Campaign in Salt Lake

SALT LAKE CITY, Nov. 6—The Intermountain Automotive Trades Association with headquarters here is in charge of the Safety Week program and many and varied are the things which it is putting over. Almost every civic organization is co-operating.

One of the biggest features of the week has been the visit of H. H. Matthieson, traffic engineer of Los Angeles, who is known as "The Safety Man," and who carried on a campaign for safety among the school children of the city. Substantial cash prizes are offered high school students for Safety essays. On Sunday the churches throughout the city will refer to the movement.

Des Moines to Meet Monthly

DES MOINES, Nov. 6 — Interest in the monthly meetings of the Motor Trades Bureau of the Chamber of Commerce is to be kept at high pitch during the winter months by a series of talks by nation-wide authorities on automotive subjects, according to Southard Whiting, secretary of the association.

Iowa County Meeting

WATERLOO, IOWA, Nov. 6—Sixty members attended the annual meeting of the Blackhawk County Automobile Dealers Association at which Harter B. Hull, Waterloo, was elected president; J. N. Collar, Cedar Falls, vice-president; F. B. Rupp, Waterloo, secretary, and W. M. Orr, Waterloo, re-elected treasurer.

Dan E. Weigle, managing a commercial club campaign, spoke upon "Co-Operation," developing his theme from the automobile men's viewpoint. Promoters of the fall style show were granted their request for a display of closed cars in connection with the show.

Atlanta Annual Meeting

ATLANTA, Nov. 4—D. C. Black, president of the Atlanta Automobile Association, an organization of automobile and accessory retailers and wholesalers, advises that the annual meeting of the body will be held Wednesday, Dec. 20, at the Capital City Club in Atlanta. Officers for the ensuing year will be elected at this meeting, and plans outlined for an educational campaign during the first half of 1923.

Salt Lake Elects Mendenhall

SALT LAKE CITY, Nov. 5—The County Automotive Trades Association has elected B. W. Mendenhall of the Mendenhall Auto Parts Co., as chairman to fill the vacancy brought about by the resignation of V. A. Culver of the Motor Mercantile Co. M. L. Graham of the M. L. Graham Co. was chosen vice-president.

Show for Greenville

GREENVILLE, S. C., Nov. 2—An automobile show next March was practically assured at a luncheon of the automobile bureau of the Chamber of Commerce this week. A special committee to investigate the matter further and make a definite decision was authorized by the bureau and will be appointed by President Eugene B. Smith in the near future.

ENGINEERS DISCUSS GEAR NOISE PROBLEM

DETROIT, Nov. 4—Five hundred production men attended the first production meeting of the Society of Automotive Engineers recently held here.

The problem of eliminating gear noise by means of more accurate production methods was prominent in the discussions. K. L. Herrman of the Studebaker Corp., in his paper on "Production Errors in Gears," gave the results of intensive research conducted by his company in an effort to eliminate gear troubles and thus give the owner a mechanism which will operate more smoothly. H. J. Crain and J. Brodie of Packard also discussed methods of reducing gear noise.

A. B. C. Hardy, president of the Olds Motor Co., was the chief speaker at the production dinner, held at the Hotel Statler. Pierre S. duPont, chairman of the board of General Motors Corp., also spoke briefly, while B. B. Bachman, president of the S. A. E., acted as chairman.

W. M. Waller Dies

WACO, TEX., Nov. 2—W. M. Waller, who has represented the Perfection Spring Co. in the replacement sales in the Middle West and Southwest, died at his home here after an extended illness. Waller, before going with the Perfection Spring Co., was with the Johnson Bros. Auto Supply Co. of Wichita, Kan., but more recently his home has been in this city.

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CHANGES IN THE TRADE

Davis & Culver Automobile Co., Galesburg, Ill., has been appointed local distributor for the Gray.

E. D. Horrell, Galesburg, Ill., has been appointed agent for the Stutz car in that territory.

R. G. Ransom has been appointed office manager of the **Covey-Ballard Motor Co.**, Salt Lake City.

J. F. Nolan, president of the **Philadelphia Roamer Co.**, Philadelphia, has been appointed distributor of the new Barley.

Earl B. Beveridge, formerly of the **Beveridge Motor Co.**, Salt Lake City, has joined the **Taylor-Richards Motor Co.**

Lowry Bros. Motor Sales Co., Lake Geneva, Wis., has been organized to act as Essex, Hudson, Maxwell and Star dealer.

H. E. Lange and **A. C. Herrick** have purchased the **Ed. Jones Garage**, Muscatine, Iowa, and will continue the business.

Imperial Auto Supply store has been opened in Des Moines by **Claude Sheets** and **E. A. Frank**, both well-known local accessory men.

C. H. Blair has bought the **Thomas Street Garage**, Springfield, Mass., and will conduct it as a service and repair establishment.

Dort Motor Car Co. announced the appointment of **Baird & Collins** as dealers at Sturgis, Mich., and **J. H. King** at Portageville, Mo.

Franklin Automobile Co. has appointed the following dealers: **Thomas Gay**, Streator, Ill.; **Franklin Motor Car Co.**, Poughkeepsie, N. Y.

Milliman-Curtis, Kalamazoo, Mich, has taken the agency for the line of the **Barley Motor Car Co.**, including the Roamer and the Barley six.

Roberts Motor Co., of Valdosta, Ga., has been organized by **J. Y. Roberts, Abial Winn** and **C. C. Taylor** to operate an automobile agency in Valdosta.

Milford Waddle, Kalamazoo, Mich., has taken over the distribution for the entire Dort line. His territory includes Kalamazoo and eight adjacent counties.

H. L. Munson, formerly with the Buick organization in Hartford, Conn., has been appointed sales manager of the **Springfield Buick Co.**, Springfield, Mass.

Green Bay (Wis.) Motor Car Co. has been appointed Gray dealer by the **Daggett-Yewdale Motor Co.**, Milwaukee, distributor in Wisconsin and Upper Michigan.

James A. Muir has severed his connection with the **Corcoran-Victor Co.** of Cincinnati and associated himself with the **C. M. Hall Lamp Co.** of Kenosha, Wis., caring for the jobbing trade.

Republic Sales & Service Co., Hartford, Conn., automobile dealers, has been incorporated. **H. H. Hoffman, Matt Galya** and **Alexander L. DeLaney**, all of Hartford are the incorporators.

The Illinois Auto Supply Co., Decatur, Ill., has been appointed territory agent for the **Durant Motor Co.** and has the new Star car on its sales floor. The company is also agency for the Durant car.

Minott Garage, Greenfield, Mass., hitherto run by **Charles H. Minott**, Waltham dealer, has been leased by **Tirrell & Gilmore** and will be conducted as sales and service headquarters for the Hudson and Essex.

Nash-La Fayette Co., automobile dealers of Hartford, Conn., has been incorporated with an authorized capital stock of $100,000. The incorporators are **Walter L. Plumb, J. Cedric Sleeth** and **Albert E. Binks**, all of this city.

Aldrich Brothers, Kalamazoo, Mich., has taken the distributing agency for the complete Durant line in southwestern Michigan. **Aldrich Auto Sales Co.** has been formed in Battle Creek to take over the business given up by **Aldrich Brothers.**

Ponce de Leon Motor Co., of Ponce de Leon, Fla., has been incorporated to operate an agency in Florida territory. **Z. D. Adair**, of Ponce de Leon, is president of the company; **B. B. Murray**, vice-president, and **H. F. Adair**, secretary and treasurer.

Moon-Pittsfield Co. has been formed to distribute the Moon car in Pittsfield, Mass. **Walter T. Doyle** and **Robert R. Reeves**, who have been automotive salesmen for Pittsfield concerns, are in control and will appoint sub-agents in other parts of Berkshire county.

Harry W. Watson, who has been connected with the **Firestone Tire & Rubber Co.**, for six years, of which the major portion was spent in the Columbus office, has been made manager of the Columbus branch, which serves 32 counties in Ohio and six in West Virginia.

Lynn Whaley, former Acason dealer in Toledo, has been appointed to take charge of the wholesale territory covering 27 counties around Toledo for the **Transport Utilitor Sales Co.**, of which **K. G. Mengert**, formerly with Packard, has been named general manager.

Republic Sales and Service Co., Inc., Bridgeport, Conn., automobile dealers, has elected the following officers; President, **Matt Galya**; vice-president and secretary, **Alexander L. DeLaney**, formerly and for many years prosecuting attorney here; treasurer, **H. H. Hoffman.**

William Elliott Phelps, sales manager of the **Barley Motor Car Co.**, has returned from Pittsburgh, where he closed a contract with **C. J. Freeman** to act as the company's distributor throughout western Pennsylvania, under the title of **World Motor Co.**, handling the Barley six and Roamer models exclusively.

Roberts Motor Car Co., one of the leading pioneer truck organizations of Portland, Ore., and for several years past representatives of Republic trucks, has taken over the distribution for the Federal line. The Republic will be continued as before, the addition giving the company a wider range of trucks to handle.

Edward Taylor, formerly in charge of sales in the west central States for Transport trucks, has resigned to take a similar position with the **Stewart Motor Truck Corp.** with practically the same territory. His headquarters are at Cleveland and the territory takes in Ohio, Indiana, West Virginia, Kentucky and parts of Illinois.

W. R. Sherin Co., Milwaukee, operating a large repair, painting and trimming shop, has established a complete storage battery repair and service station. The new department is in charge of **Monroe Kleinsteuber**, for many years associated with the city of Milwaukee as assistant superintendent of the fire and police telegraph alarm system.

M. R. Himes, manager of the **United Garage Co.**, Toledo Reo dealers, has resigned and will be succeeded by **W. F. Hoy.** Himes has been confined to his bed with serious illness for several weeks. He will not withdraw from the Toledo Automotive Trade Association, of which he is a director, and will probably be back into the sales field here as soon as he recovers from his illness.

Edward H. Conger during the war in the United States Transport service and recently with the **Nash Motors Agency** of Philadelphia, has gone with the **Packard Motor Car Co.** of Washington, D. C. Prior to the world war Conger was in charge of all motor transports in Nicaragua during the revolution. During the war he was on duty at the Marine Corps depot of supplies in Philadelphia.

Oscar G. Woolverton, associated with the General Motors Truck Co. for eleven years, has been appointed Haynes district sales manager for Texas. The State, which formerly was part of the territory assigned to the **Charles W. Tway Co.**, Atlanta, has been definitely removed from that company's selling franchise, and it will be Woolverton's purpose to establish as many Haynes distributors and dealers in the State of Texas as possible with direct contracts with the Haynes factory.

Columbia-Kissel Motor Co. has been formed in Philadelphia to take on the distributorship of the Kissel car. The organizers are **E. J. Fink**, president, and **Samuel F. Levy**, secretary and treasurer, formerly Maxwell-Chalmers distributor in that city. In forming the company they have retained the services of some of their former executives, including **A. C. Rowland** as sales manager, and **J. W. Turner**, formerly general manager in charge of the Baltimore branch, as wholesale sales manager.

CHANGES TAKE PLACE IN BOSTON DISTRICT

BOSTON, Nov. 5—Changes continue to be reported in the Boston motor trade. The Columbia Motor Co. is handling the Moon.

B. C. Hamilton, who was in charge of sales for the Chandler-Cleveland Co., has joined the Brown Motors Co., distributor of Gray cars, as sales manager. Ralph B. Nettleton, who had been president of Chandler and Cleveland, and who introduced both lines into Boston, has gone to Cleveland to accept a position at the Chandler factory. The factory has sent on M. R. Parker as New England branch manager for the two cars. He had been a distributor at Atlanta and later acted as a traveling factory manager, supervising sales and was looking after things at Minneapolis when he was sent to Boston.

Plans are being completed to close contracts for the handling of both the Earl and the Case cars in Boston.

Elgin Is Operating

CHICAGO, Nov. 7—The Elgin Motor Car Corp., for which a receiver was appointed in Federal Court, is operating under permission of the court to produce as many cars as the materials and units on hand are sufficient for without the purchase of additional materials. This point will be reached within a few days, it is expected. In the meantime negotiations are under way for reorganization of the company.

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DEALERS NOT STORING UP STOCKS OF CARS

No Greater Supply Than for One Month—Conditions Throughout Country

(*Continued from page* 37)

are not stocking up on open cars. If they could get more closed cars they would take them since orders are ahead of shipments. Prospective car buyers and a majority of the dealers feel that further price reductions are coming in the medium priced cars, and for this reason also are not putting in heavier stocks than actual orders will take care of.

Indianapolis

INDIANAPOLIS, Nov. 3—There has been no appreciable stocking or storage of open or closed cars to date. The large storage house leased to the dealers association is practically empty. Sales are still brisk in many lines. Two weeks ago there was a sharp drop in some lines. A shortage is noted in closed types with several dealers. Selling is keeping pace with deliveries. Sales are generally above average.

Kansas City

KANSAS CITY, Nov. 7—No decided general tendency is noted to stock cars here but there is a decided recognition of the probability that farmers will be able to buy this winter and that they are most likely to buy open models. They are not sold on closed cars chiefly because of supposed unfeasibility on rough country roads, and also because of farmers' tendency to buy transportation for needs as low priced as possible and yet have quality equipment.

Buffalo

BUFFALO, Nov. 7—Buffalo dealers are stocking cars, including open models, moderately. They are not filling warehouses with them as in former years but are taking reasonable precautions against being caught short when next year's business opens up. The foregoing applies to dealers handling makes of cars most in demand. The present demand naturally is very largely for closed models, and many of the dealers complain of inability to get cars enough.

Milwaukee

MILWAUKEE, Nov. 7—Milwaukee dealers say that there is nothing unusual in the manner of stocking cars nor quantity. They are proceeding as usual at this season.

Cleveland

CLEVELAND, Nov. 7—Motor car dealers here are not stocking open cars. They are carrying on an extensive campaign for the sale of closed cars and are doing well.

Timken Bearing Earnings

DETROIT, Nov. 6—Timken Roller Bearing Co. reports earnings for the first nine months of the year of $6,339,000, after depreciation and taxes. October's gross business exceeded September's, and current operations are up to the October total. This would indicate not only a new high record for the last quarter, but total earnings, after all depreciation charges and tax write-offs, of around $8,500,000, which is more than $7 a share on the stock.

RAY SHERMAN VISITS 25 CITIES IN MONTH

Trip Takes A.E.A. Merchandising Director from El Paso to Yakima

(*Continued from page* 40)

Some of the large jobbers have prepared to carry out aggressively the "Buy an Automotive Gift" campaign of the A. E. A. Dealers nearly everywhere showed a realization of the possibilities of this campaign, Sherman said, and were preparing to co-operate by using local newspaper advertising and by appropriate decoration of their stores and by using suitable wrappers, ribbons or tags for articles most likely to be selected for gifts.

The sale of accessories, Sherman said, is reaching its greatest volume in articles of practical utility. He mentioned spot lights, bumpers, moto-meters, windshield wipers, cigar lighters, mirrors, ash trays and heaters as among the items creating the greatest response with the buying public. He said that many articles once considered novelties, as cigar lighters and ash trays, are coming to be considered necessities.

A striking instance of profitable "Asking 'Em to Buy" was observed by Sherman at one of his stops. A car dealer who had a gasoline filling station used to ask the customer, "How Many Gallons?" He changed that question to "Shall I fill it up?" The result thus far has been to add an average of two gallons to every gasoline sale he makes.

Sherman said he found a number of car dealers who were reaping very satisfactory after-sale profits by keeping car purchasers coming back to them for all supplies, accessories and maintenance.

The New Car and Truck Description Index

Giving the date and page number on which they appeared

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Calendar of Trade Events

CONVENTIONS

Chicago .....Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

Chicago .....Nov. 14-15
Semi-Annual Convention, Factory Service Managers, under Auspices of the National Automobile Chamber of Commerce.

Milwaukee.....Nov. 14-16
Third Annual Convention of the National Tire Dealers Association, Hotel Pfister.

Harrisburg.....Nov. 20-21
Annual Convention of the Pennsylvania Automotive Association, George G. McFarland, president; L. H. Haberling, secretary and general manager.

Toledo.....Dec. 6-8
Annual Convention of the Ohio Automotive Trades Association.

Chicago .....Jan. 29-31
Annual Meeting, Automotive Electric Service Association, Congress Hotel.

SHOWS

Houston.....Nov. 8-18
South Texas Fair.

Jersey City.....Nov. 11-18
Third Annual Show, Fourth Regiment armory, under the auspices of the Hudson County Automobile Trade Association.

Los Angeles.....Nov. 11-19
Automobile Show, Motor Car Dealers Association, Burt Roberts, manager.

Chicago .....Nov. 13-18
Annual Show of Automotive Equipment Association.

Cincinnati .....Nov. 22-29
Second Annual Automobile Accessory and Radio Exposition, Music Hall, under the auspices of the Cincinnati Automotive Trade Association.

Bridgeton, N. J.....Nov. 25-Dec. 2
First Closed Car Show, Martin Dye Building, under the auspices of the Bridgeton Automobile Dealers Association, J. W. Acton, manager.

New York.....Dec. 3-9
Eighteenth Annual Automobile Salon, Commodore Hotel.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, auspices of the Automobile Body Builders Association.

Cleveland.....Jan. 20-27
Annual Automobile Show, New Public Auditorium, under the Auspices of the Cleveland Automobile Manufacturers and Dealers Association, Herbert Buckman, Manager.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Chicago .....Jan. 27-Feb. 3
Annual Automobile Salon, Drake Hotel.

Ann Arbor, Mich.....Jan. 29-Feb. 3

Minneapolis .....Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Portland, Ore.....February
Annual Automobile Show, under the auspices of the Portland Automobile Dealers Association.

Atlanta .....February
Annual Southern Automobile Show, Atlanta Auditorium, under the auspices of the Atlanta Automobile Association, Virgil W. Shepard, manager.

Troy, N. Y.....Feb. 3-10
Ninth Annual Automobile Show, State Armory, under the auspices of the Troy Used Car Sales Corp., Frank M. Baucus, manager.

Charlotte, N. C.....Feb. 5-10
Annual Automobile Show, Made-in-Carolinas Exposition Building, under the auspices of the Charlotte Automotive Trade Association.

Lansing, Mich.....Feb. 5-10

Cincinnati.....Feb. 7-14
Automobile Show, under the auspices of the Cincinnati Automobile Dealers Association, Harry T. Gardner, manager.

Kalamazoo and Flint, Mich.....Feb. 12-17

Grand Rapids and Mt. Clemens, Mich. Feb. 19-24

Louisville, Ky.....Feb. 19-24
Fifteenth Annual Automobile Show, under the auspices of the Louisville Automobile Dealers Association, George T. Holes, secretary.

Brooklyn, N. Y.....Feb. 24-Mar. 3
Annual Automobile Show under auspices of the Brooklyn Motor Vehicle Dealers Association, 23rd Regiment Armory.

Des Moines.....Feb. 25-March 5
Fourteenth Annual Automobile Show, Coliseum, Passenger Cars and Accessories only, under the auspices of the Des Moines Automobile Dealers Association, Dean Schooler and C. G. Van Vliet, managers.

Muskegon, Mich.....Feb. 26-March 3

Syracuse.....Feb. 26-Mar. 3
Annual Automobile Show under auspices of the Syracuse Automobile Dealers Association.

Springfield, Mass.....Feb. 26-March 3
Annual Automobile Show under the auspices of the Springfield Automotive Dealers Association.

Bay City, Mich.....March 5-10

Newark, N. J.....Mar. 10-17
Annual Automobile Show under the auspices of the New Jersey Automobile Exhibition Co., Claude E. Holgate, manager.

Port Huron, Mich.....March 12-17

Battle Creek, Mich.....March 19-24

Alpena, Mich.....April 2-7

CLOSED CAR WEEK

Louisville, Ky.....Nov. 20-25

RACES

Los Angeles.....Nov. 30

San Diego.....January

CHEVROLET STARTS PLANT IN BUFFALO

BUFFALO, Nov. 4—Ground has been broken for the erection by the Chevrolet Motor Co. of an automobile manufacturing plant in this city to duplicate the one the company is erecting in Cincinnati.

There will be erected, beside the automobile plant, a building in which Fisher bodies will be made. These bodies will be placed on chassis manufactured in the other plant.

It is expected 1200 men will be employed in the Chevrolet building when it is opened and 800 men in the Fisher company's factory. The Chevrolet plant will have capacity of 450 cars. The two buildings combined will have floor space of 400,000 square feet.

Joins El Automovil Staff

NEW YORK, Nov. 5—Edgar P. Day, who for a number of years has represented The American Exporter and previous to that the Horseless Age, has joined the advertising staff of El Automovil Americano, the Spanish automotive dealer paper published by The Class Journal Co., and will make his headquarters in Detroit.

Parker Tire Receivership

INDIANAPOLIS, Nov. 4—The Parker Tire & Rubber Co., which operates a tire plant in this city, has been placed in the hands of a receiver. Suit in what was called a "friendly receivership case" was brought in the name of the Central Rubber & Supply Co., jobbers in mill supplies and automobile accessories.

Though insolvency is not claimed, it is alleged that an emergency exists and the assets of the company are endangered by numerous debtors' claims and threatened suits. The Bankers Trust Co. was appointed receiver, and it is understood that, though the plant will not be operated for the present, its stock of tires will be sold by the receiver.

ASSOCIATED MOTORS HAS DAYTON OFFICE

DAYTON, OHIO, Nov. 2—Executive offices of the Associated Motor Industries have been opened here in a three-story building which has been completely remodeled for the purpose. The building is about 250 by 150 feet. The sales department with spacious display rooms is on the first floor. Officers of the company occupy offices on the second floor. Departmental offices are on the third floor.

U. S. Tractor Progresses

MENASHA, WIS., Nov. 4—Rapid progress has been made in the last six months by the U. S. Tractor & Machinery Co. of Menasha, Wis., in liquidating its indebtedness, and adequate capital has been provided to enable the concern to resume quantity production of tractors and farm operating equipment on a larger scale. Manufacturing schedules will be materially increased Nov. 1.

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾-1	$1650a	3¾x5	34x5n	34x5n	W
Acason....RB	1½	1950	3¾x5¼	36x3½	36x6	W
Acason....H	2½	2750	4⅜x5¾	36x4k	36x8k	W
Acason....L	3½	3450	4⅜x5¾	36x5k	36x10k	W
Acason....M	5	4350	5 x5¼	36x6	40x12	W
Ace	1½-1½	2400	3¾x5	34x3½	34x6	W
Ace	2	2850	4¼x5¼	36x4	36x7	W
Ace	2½-3	3400	4⅛x5¼	36x4	36x8	W
Acme	1	....	3¾x5	35x5n	35x5n	W
Acme	1½	....	3¾x5	34x3½	34x5	W
Acme	2	....	3¾x5	34x3½	34x6	W
Acme	3	....	4⅛x5¼	36x4	36x7	W
Acme	4½	....	4½x5½	36x4	36x7k	W
Acme	6½	....	4½x5½	36x5	40x10	W
Acme	9	....	4¾x6	36x6	40x12	W
American	2½	3350	4 x6	36x4k	36x4dk	W
American	4	4275	4½x6	36x5k	36x5dk	W
American	5	4500	4½x6	36x5	36x12	W
Armleder	1	....	3¾x5¼	34x3½k	34x6k	W
Armleder	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder	1½	....	4½x5¼	34x3½k	34x6k	W
Armleder	2½	....	4¼x5½	36x4k	36x7k	W
Armleder	2½	....	4½x5¼	36x4k	36x7k	W
Armleder	3½	....	4½x6	36x5k	36x5dk	W
Armleder	3½	....	4½x5½	36x5k	36x5dk	W
*Atlas	1	1495	3¾x5½	31x4½n	34x4½n	W
*Atlas	1½-2	1950	3¾ 5½	36x6n	36x6n	W
Atterbury	1½	2175	3¾x5	34x3½	34x5	W
Atterbury	2½	3375	4½x5¼	36x4	36x4d	W
Atterbury	2½	3475	4½x5¼	36x4	36x4d	W
Atterbury	3½	4275	4½x5½	36x5	40x5d	W
Atterbury	3½	4375	4½x5½	36x5	40x5d	W
Atterbury	5	4975	4¾x6	36x5	40x6d	W
Atterbury	5	5125	4¾x6	36x5	40x6	W
Autocar	1½-2	1950	4¾x4½	31x4k	34x6	D
Autocar	1½-2	2050	4¾x4½	31x4k	34x6	D
Autocar	2-3	2950	4 x5½	34x5	36x7k	D
Autocar	2-3	3375	4 x5½	34x5	36x7k	D
Autocar	4-6	3950	4¼x5½	34x6	36x12	D
Autocar	4-6	4100	4¼x5½	34x6	36x12	D
Available	H1½	2475	4 x5	36x3½k	36x5k	W
Available	H2	2775	4 x5	36x3½k	36x6k	W
Available	H2½	3160	4 x5	36x4k	36x8k	W
Available	H3½	4175	4½x5½	36x5	40x5d	W
Available	H5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x1s	34x5n	34x5n	I
Beck	A Jr.	1¼	1285a	3½x5	31x4½n	34x4½n	I
Beck	B-30	1½	1350	3¾x5	34x5	36x6	
Beck	C-40	2	1550	3¾x5	36x6	36x6	
Beck	D-50	2½	1950	4½x5¼	38x7	40x8	
Bell	M (Iowa)	1	1495	3⅝x5⅛	35x5	35x5n	W
Bell	E (Iowa)	1½	2100	3¼x5¼	34x3½	34x5	I
Bell	O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Bessemer	G	1	....	3½x5	35x5n	35x5n	I
Bessemer	H-2	1½	....	3¾x5	36x3½	36x5	D
Bessemer	J-2	2½	....	4½x5¼	36x4	36x4d	D
Bessemer	K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem	KN	1	1195	3½x3	35x5n	35x5n	B
Bethlehem	GN	2	1795	4 x3¼	31x4	34x6k	D
Bethlehem	GN	3	2495	4 x5¼	36x4k	36x8k	D
Bridgeport	A	1½	....	3⅝x5⅛	34x3½	34x6	W
Bridgeport	B	2½	....	4½x5½	36x4	36x4d	W
Bridgeport	C	3½	....	4½x6	36x5	36x10	W
Brinton	C	2	2500	3¾x5	34x4	34x5	W
Brinton	D	3	2975	4⅛x5¼	36x4	36x7	W
Brockway	E	1	....	4 x5	33x5n	33x5n	B
Brockway	S-5	1½	....	4 x5	36x4	36x6	W
Brockway	SK	1½	....	4½x5¼	36x4	36x6	W
Brockway	KR	2½	....	4½x5½	36x4	36x8	W
Brockway	K-5	2½	....	4⅛x5¼	36x4	36x8	W
Brockway	RT	3½	....	4¾x6	36x5	36x10	W
Brockway	R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway	T-4	5	....	4¾x6	36x6	40x6d	W
*Buick		½	945b	3⅜x4¾	31x4n	31x4n	B
Case		2	....	4¼x5¾	36x6	38x7	I
*Chevrolet		¼	510b	3½x4	30x3½n	30x3½n	B
*Chevrolet	G	¾	650	3½x4	34x4n	34x4½n	B
*Chevrolet	T	1	1095	3¾x5¼	33x4n	35x5n	W
Chicago	C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago	C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago	C3½	3½	....	4½x5½	36x5	36x10	W
Chicago	D5	5	....	4½x5½	36x6	40x12	W
Clydesdale	10	¼-1½	1485	3¾x5	34x5n	34x5n	B
Clydesdale	10A	¼-1½	1535	3¾x5	34x5n	34x5n	B
Clydesdale	18	¼-1½	1890	3¾x5	34x5	34x5	W
Clydesdale	20	1-1½	2385	3¾x5	34x5	34x5k	W
Clydesdale	42	1½-2	2475	3¾x5	36x3½	36x6	W
Clydesdale	65X	2½-3	3250	4¼x5½	36x4	36x8	W
Clydesdale	65EX	2½-3	3450	4½x5½	36x4	36x8	W
Clydesdale	90	3½-4½	4100	4½x5½	36x5	36x10	W
Clydesdale	120	5-6	4500	4¾x6	36x6	40x12	W
Comet	T	1½	1950	3¾x5	34x4	34x4	W
Commerce	9	¾-1½	1150	3¾x5	32x4½n	32x4½n	B
Commerce	T	¾-1½	1450	3¾x5	34x4½n	34x4½n	B
Commerce	10	¼-1½	2500	3¾x5	33x5n	33x5n	B
Commerce	12	1½	1695	3¾x5	34x3½	34x4	I
Commerce	12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce	16	2	1995	3¾x5	34x4	34x6	I
Commerce	16	2	2150	3¾x5	35x5n	36x6n	I
Commerce	18	2½	$2150	4⅛x5¼	36x4	36x7	I
Commerce	18	2½	2495	4⅛x5¼	36x6n	40x8n	I
Commerce	25	2½	2425	4⅛x5¼	36x4	36x7	W
Commerce	25	2½	2770	4⅛x5¼	36x6	40x8n	W
Cook	51	2½	3600	4 x5½	36x6n	40x8n	W
*Corbitt		¾-1	1250	3½x5	33x5n	33x5n	
Corbitt	E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt	D-22	1½	2200	3¾x5	34x3½	34x5	W
Corbitt	C-22	2	2600	4⅛x5¼	36x3½	36x7	W
Corbitt	B-22	2½	3000	4⅛x5¼	36x4	36x7	W
Corbitt	R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt	A-22	3½-4	3800	4½x5½	36x5	36x10	W
Corbitt	AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder	AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder	B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder	D	2	2400	4⅛x5¼	36x4	36x7	W
Day-Elder	C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder	F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder	E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn	E	1	1600	3⅝x5¼	35x5n	35x5n	W
Dearborn	FX	1½	2300	3¾x5⅛	34x4	34x5	W
Dearborn	F	1½	2180	3¾x5⅛	34x4	34x5	W
Dearborn	48	2	2590	3¾x5⅛	31x4½n	34x7	W
Defiance	G	1	1525	3¾x5	35x5n	35x5n	B
Defiance	D	1½	1815	3¾x5	35x5n	36x6n	I
Defiance	E	2	2075	3¾x5	35x5n	38x7n	I
Denby	31	1¾	1485	3¾x5	35x5n	35x5n	B
Denby	33	1½	2145	3⅝x5	35x5n	38x7n	I
Denby	35	2½-3	2795	4⅛x5¼	36x4	36x7	I
Denby	27	4	3895	4½x5½	36x5	36x5d	I
Denby	210	5	4295	4½x5½	36x6	40x6d	I
Dependable	A	¾-1	1650	3⅝x5⅛	34x5n	36x6n	W
Dependable	C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable	D	2½	2650	4 x5½	34x5	36x6	W
Dependable	E	3	2950	4¼x5½	36x4	36x7	W
Diamond T	O-3	1-1¼	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T	T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T	U	2-2½	2650	4 x5¼	36x4	36x7	W
Diamond T	K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T	EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T	S	5	4500	4¾x6	36x6	40x6d	W
Deane		2½	4100b	4¼x5¾	36x5	36x7	C
Deane		3½	5100b	4⅜x5¾	36x5	36x5d	C
Deane		6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers		¾	730	3⅞x4½	32x4n	32x4n	B
Derris	K-2	1	2490	4 x5½	33x5n	33x5n	B
Derris	K-4	2-2½	3100	4¼x5½	36x4	36x7	W
Derris	K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort	103	½	685a	3½x5	31x4n	34x4n	B
Double Drive	B	3	4000	4¼x5½	36x6	36x6	W
Duplex	A	2	2775	4 x5¼	35x5n	38x7n	W
Duplex	E	3½	3500	4¼x5½	36x8	36x8	I
Duty	22	2	1590	3½x5	34x3½	34x5	I
Eagle	101	1½	1875	3⅝x5⅛	34x5	34x5	I
Eagle	100-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D.	B	3	4200	4⅜x5½	36x6	36x6	B
Fageol	1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol	2½	2½	3900	4⅜x5¾	34x4	36x7	W
Fageol	3½	3½	5000	4½x5¼	36x5k	40x5dk	W
Fageol	5	5	5700	4½x5¾	36x6	40x6d	W
Fargo	R	2	1700	3¾x5	36x4	36x6	I
*Federal		1½	1375	3¾x5	—x5n	—x5n	
Federal	SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal	TE	1½	2175	4¼x5½	36x3½	36x5	W
Federal	UE	2-2½	2425	4½x5¼	36x4	36x7	W
Federal	WE	3½-4	3150	4½x5½	36x5	36x5d	W
Federal	X2	5-6	4500	4⅜x6	36x6	40x6d	W
*Ford	TT	1	380	3¾x4	30x3½n	32x4½n	W
Front Drive	C	1½	2800	3¾x5½	36x6	36x6	W
G.M.C.	K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C.	K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C.	K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C.	K-41T	5†	2450	4 x5½	36x4	36x8	W
G.M.C.	K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C.	K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C.	K-71T	10†	3700	4½x6	36x5	40x12	W
G.M.C.	K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C.	K-101T	15†	4050	4½x6	36x5	40x14	W
G.M.C.	K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W.		1½	1850	3¾x5½	35x5	35x5	I
*Garford	15	1	1590	3⅝x5⅛	34x5n	34x5n	W
Garford	25-B	1½	1990	3¾x5⅛	36x3½	36x5	W
Garford	70-H	2½	2750	4¼x5½	36x4	36x8	W
Garford	77-D	4	3750	4½x6	36x5	36x5d	W
Garford	68-D	5	4500	5 x6½	36x6	40x6d	W
Garford	150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary	F	1-1½	1775	3¾x5	36x3½	36x5	W
Gary	I	2	2450	4 x5½	36x3½	36x6	W
Gary	J	2½	2850	4¼x5½	36x4	36x8	W
Gary	K	3½	$3790	4½x6	36x5	40x5d	W
Gersix	M	5	4450	5 x6½	36x6	40x6d	W
Gersix	M	1½	3100	4 x5½	36x3½	36x7	W
Gersix	K	2½	3500	4½x5½	36x4	36x8	W
Gersix		3½	4560	4½x6	36x5	40x12	W
Getfredsen	20	1	2075	3¾x5½	34x5	34x5	W
Getfredsen	31	1½-2	3000	4 x5½	36x6	38x7n	W
Getfredsen	A	2½	3375	4 x5½	36x4	36x7	W
Getfredsen	B	3½-4	4475	4½x5½	36x5	36x10	W
Getfredsen	100	5-6	6500	5 x6½	36x6	40x14	W
Graham Bros.		1	1265	3⅞x4½	33x4½n	34x5n	B
Graham Bros.		1½	1325	3⅞x4½	33x4½n	36x6n	B
1Gramm-Pion	10	1	1245	3½x5	33x5n	33x5n	B
1Gramm-Pion	15	1½-2	1750a	3¾x5	36x3½k	36x5k	I
1Gramm-Pion	65	1½-2	2250a	3¾x5	36x3½k	36x5	W
1Gramm-Pion	20	2-2½	2475a	4¼x5½	36x4k	36x7k	W
1Gramm-Pion	30	3	3300a	4½x5½	36x5k	36x5dk	W
1Gramm-Pion	75P	3½	4225a	4½x5½	36x6n	42x9n	W
1Gramm-Pion	40	4	3850a	4½x5½	36x5	36x5dk	W
1Gramm-Pion	50	5-6	4450a	4¾x6	36x6	40x6dk	W
Hall	1½	1½	3100	3⅜x5	34x5n	38x7n	W
Hall	2½	2½	3275	4½x5¼	36x4	36x6	W
Hall	3½	3½	4100	4½x5½	36x5	36x5d	W
Hall	5	5	5100	4½x5½	36x5	40x6d	W
Hall	7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey	W OA	2	2650	4¼x5½	34x4	34x7	W
Harvey	WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey	WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye	O	1	1375	3⅝x5½	34x5n	34x5n	
Hawkeye	K	1½	1645	3¾x5½	34x3½k	34x5k	I
Hawkeye	M	2	2145	4¼x5	36x4k	36x6k	I
Hawkeye	N	3½	3700	4½x6¾	36x5k	36x10k	I
Hendrickson	O	1½	2200	3⅝x5⅛	36x4n	36x5n	W
Hendrickson	N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson	M	3½	3000	4¼x5	36x5k	36x5dk	W
Hendrickson	K	5	4000	5 x6¼	36x6	40x6	W
Huffman	B	1½-2	1795	3¾x5	34x3½	34x6	W
Huffman	C	1½-2	1695	3¾x5½	36x3½	36x6	I
Huffman	D	2-3	2895	4¼x5½	36x4	36x7	
Hurlburt	A-A	1-1½	1950	3¾x5	34x5n	34x8n	W
Hurlburt	B-B	2-2½	2800	4¼x5½	36x4	36x4d	W
Hurlburt	C-C	3-3½	3475	4¼x5½	36x5	36x5d	W
Hurlburt	D-D	4-4½	4150	4½x6	3 x5	36x6d	W
Hurlburt	E-E	6-6½	4850	4¾x6¼	36x6	40x6d	W
Indep'd't(Iowa)	B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa)	G	1½	2040	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.)	HI	2½	2940	4½x5¼	36x4	36x7	I
*Indiana	10	1	....	3¾x5¼	34x5n	34x5n	B
Indiana	12	1½-2	....	3¾x5¼	34x3½k	34x5k	W
Indiana	20	2	....	4½x5½	36x4k	36x7k	W
Indiana	25	2½-3	....	4½x5½	36x4k	36x8k	W
Indiana	35	3½-4	....	4⅜x5½	36x5k	36x5dk	W
Indiana	51	5-7	....	5 x6¼	36x5k	40x6dk	W
*International	S	1	1250	3½x5	32x4½n	32x4½n	I
International	21	1	1550	3½x5¼	36x3½k	36x3½	I
International	31	1½	1650	3½x5¼	36x3½k	36x5k	I
International	41	2	2100	3½x5¼	36x3½k	36x6k	I
International	52	2½	3500	4¼x5	36x6n	36x6dn	I
International	61	3	2400	4¼x5	36x4k	36x7k	I
International	62	3	2600	4¼x5	36x4	36x7	I
International	101	5	3600	4¼x5	36x5	40x12k	I
International	102	5	3800	4½x5	36x5	36x12	I
Jackson	4WD	3½	3850	4½x5½	36x7	36x7	B
K-Z	1	1	1750	3½x5	34x3½	34x5	W
K-Z	1½	1½	2075	3¾x5	36x4	36x6	W
K-Z	2½	2½	2550	4¼x5¾	36x4	36x8	W
K-Z	3½	3½	3350	4½x5½	36x5	40x10	W
K-Z	5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo	T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo	G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo	LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo	NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo	HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo	SK	4	3845	4¼x6	36x5	36x12	W
Kalamazoo	OK	5	4350	4½x6	36x6	40x6d	W
2Kelly-S	K-31	1½	2700	3¾x5¼	36x3½	36x6	C
2Kelly-S	K-34	1½	2700	3¾x5¼	36x3½	36x6	W
2Kelly-S	K-38	2½	2900	3¾x5¼	36x4	36x4d	W
2Kelly-S	K-35	2½	2900	3¾x5¼	36x4	36x4d	C
2Kelly-S	K-40	3½	3900	4½x6½	36x5	40x5d	C
2Kelly-S	K-41	3½	3900	4½x6½	36x5	36x10	I
2Kelly-S	K-42	3½	3900	4½x6½	36x5	40x5d	W
2Kelly-S	K-50	5	4400	4½x6½	36x6	40x6d	C
2Kelly-S	K-60	6	4600	4½x6½	36x6	40x7d	C
2Kelly-S	K-61	5-7	4800	4½x6½	36x6	36x7d	I
Kimball	AB	2	3675	4 x6	36x4	36x7	W
Kimball	AC	2½	3975	4¼x6	36x4	36x8	W
Kimball	AK	3	4500	4½x6	36x4	36x10	W
Kimball	AE	4	5000	4¾x6	36x5	40x12	W
Kimball	AF	5	5500	5 x6	36x6	40x7d	W
*Kissel	Express	1	1585	3⅞x5½	34x5n	34x5n	W
Kissel	Utility	1½	1975	3⅞x5½	36x3½	36x6	W
Kissel	Freighter	2½	2875	4¼x5½	36x4	36x8	W
Kissel	H. D.	4	3675	4¼x5½	36x5	36x12	W
Kleiber	AA	1	2200	4¼x5¾	34x3½k	34x5k	W
Kleiber	A	1½	3100	4½x5¾	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor. †Capacity with semi-trailer.

1—Gramm-Pioneer. 2—Kelly-Springfield.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5¼	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Keebler.....D	1½	2150	3½x5	34x3½	34x5	W
Keebler.....M	2½	3175	4 x5½	36x4	36x7	W
Keebler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Keebler.....F	3½	4470	4½x5½	36x5	36x10	W
Keebler,MT. Trac	5	3275	4 x5½	36x4	36x7	W
Krebs.....23	¾	1360	3½x5	34x4½	34x4½	B
Krebs.....24	1	1675	3½x5	34x5	34x5	W
Krebs.....45	1½	2275	4½x5½	36x4	36x7	W
Krebs.....75	2½	2550	4½x5½	36x4	36x8	W
Krebs.....110	3½	3175	4½x5½	36x5	40x10	W
Krebs.....140	5	....	4¾x6	36x6	40x6d	W
Larrabee.....X-2	1	1925	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2400	3½x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3½x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½-3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5-7	4890	4¾x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5¼	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5 6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack...AB D.R.	1½	3450	4 x5	36x4k	36x3½dk	D
Mack...AB Chain	1½	3000	4 x5	36x4k	36x3½dk	C
Mack...AB Chain	2	3300	4¼x5	36x4k	36x4dk	C
Mack....AB D.R.	2	3750	4½x5	36x4k	36x4dk	D
Mack....AB D.R.	2½	3850	4½x5	36x4k	36x4dk	D
Mack...AB Chain	2½	3400	4½x6	36x4k	36x4dk	C
Mack...AC Chain	3½	4050	5 x6	36x5k	40x5dk	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4¼x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Mapleleaf.....**	1½	3000	3½x5¼	34x5n	36x6n	W
Mapleleaf...AA**	2	3600	4 x5¼	36x4	36x7	W
Mapleleaf...BB**	3	4050	4½x5½	36x4	36x4d	W
Mapleleaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Mapleleaf..DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	4¼x5½	34x3½	34x5	W
Master.....JD	1½	2590	4¼x5½	34x3½	34x6	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4¼x5½	34x4	36x8	W
Master.....DD	2½	3190	4¼x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x8	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4¼x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3½x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1¼	2000	3¾x5	34x3½	36x5	W
Menominee....H	1½	2475	4 x5	36x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4¾x6	36x6	40x12	W
Moline.....10	1½	1985	3½x5	34x5n	36x6n	I
*Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5¼	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-5	4600	4¾x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3½x5¼	34x4	34x5	I
Nash.....3018	2-2½	2150	3½x5¼	34x4k	34x7k	I
Nash.....Quad.	2-2½	2750	4½x5½	36x6	36x5k	I
Nash..3018, LWB	2-2½	2200	3½x5¾	34x4k	34x7k	I
Nash..Quad. LWB	2-2½	2800	4¼x5½	36x6	36x6	I
Nash.....5018	2½	2250	3¾x5¼	34x4k	34x7k	I
*Nelson.....G2	1½	....	4½x5¼	36x3½	36x6	W
*Nelson.....G3	2½	....	4½x5¼	36x4	36x7	W
*Nelson.....G4	3½	....	4½x6½	36x5	36x5d	W
*Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5¼	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5½	36x4k	36x7k	W
Noble.....A21	1¼	1750	3½x5½	34x5	34x5	W
Noble.....B31	1½-2	2395	3½x5¼	36x4	36x7	W
Noble.....D51	2½-3	2795	4¼x5½	36x4	36x8	W
Noble.....E71	3½-5	3495	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3¾x5¼	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4¼x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4½x5¼	34x4	36x6	W
Northwestern..WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	34x3½	34x4	W
Norwalk.....36E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,36E Spec	1½	2285	3¾x5¼	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3½x5	36x3½	36x5	W
Oneida.....E	2½	....	4½x5½	36x4k	36x7k	W
Oneida.....B	2½	3950	4½x5½	36x5k	36x8	W
Oneida.....C	3½	4725	4½x5½	36x6	40x12	W
Oneida.....D	5	5000	4¾x6	36x6	40x6d	W
Old Reliable .. A	1½	2350	4 x5	34x4	36x6	W
Old Reliable .. B	2½	3500	4¼x6	34x4	36x4d	W
Old Reliable .. C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6¼	36x6	40x7d	C
*Oldsmobile Econ	1	1005	3½x5¼	35x5n	35x5n	I
Olympic.....A	2½	3200	4¼x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	2½	3200	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	2485	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	2585	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3485	4 x5½	38x7n	38x7n	B
Oshkosh.....BB	2½	3585	4 x5½	38x7n	38x7n	B
*Overland.....4	1½	425	3½x4	30x3½n	30x3½n	B
Packard.....EC	2-3	3100	4¼x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4¼x5½	36x6n	40x8n	W
Packard.....ED	3½-4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige.....54-20	2½	2420	4½x5½	34x4	34x8	W
Paige.....51-15	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot....Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot....Lincoln	2	2050	4 x5¼	34x4	34x6	W
Patriot....LS-800	2	2175	4 x5¼			
Patriot .Washgt'n	3	2900	4½x5½	36x5	36x7	W
Pierce-Arrow.....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow.....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow.....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3½x5	36x4	36x6	..
Pittsburgher.....	3	3800	4½x5¼	36x5k	36x8	W
Power.....F	2	3150	4 x5¼	36x5	36x7	W
Power.....C	3½	....	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier.....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4¼x5½	34x4	34x6	W
Rainier.....R-29	2½-3	....	4½x5¼	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R25	3½-5	....	4½x5¼	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	36x6	40x6d	W
Rainier.....R27	6	....	4¾x6	36x6	40x6d	W
Ranger..TK-20-2	1½	1450	3¾x5	36x6n	38x7n	W
*Reo.....F	¾-1½	1185	4¼x4½	34x4½n	34x4½n	B
Reliance.....10A	1½	2400	4 x5¼	36x3½	36x5	I
Reliance.....20B	2½	3100	4¼x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3½x5	34x3	34x4	I
Republic..10 Exp	1	1695	3½x5	34x5n	34x5n	I
Republic.....11T	1½	1795	3½x5	34x4	34x6	I
Republic.....19	2½	2195	4¼x5¼	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rewe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rewe....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rewe....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rewe....G.P.W.	3	5250	3½x5r	38x7n	42x9n	W
Rewe.....HW	4	4500	4¼x6	36x5	36x6d	W
Rewe.....F. W.	5	4850	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4-3½x4	32x4n	32x4n	B
Samson.....25	1½	....	4-3½x5½	35x5n	35x5n	B
Sanford....W-15	1½-2	2150b	3¾x5	36x3½k	36x5k	..
Sanford.....25	2½-3½	....	4½x5¼	36x4	36x4d	W
Sanford.....35	3½-5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5-7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ten	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ten	3	3800	4¼x5½	36x5	36x5d	W
Schacht....4-Ten	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ten	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ten	7	5050	4½x6	36x6	40x7d	W
Schwarts.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwarts.....K	2	3000	3¾x5¼	34x3½	34x7	W
Schwarts.....L	3	3600	4¼x5½	36x4	36x8	W
Schwarts.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½-2½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½-2½	3250	4¼x5¼	34x5n	38x7n	W
Selden.....50	2½-3½	3250	4½x5¼	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4¾x6	36x6	40x12	W
Seneca.....M	½	$ 820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3½x4½	32x4½n	32x4½n	B
*Service.....25	1½	....	3¾x5½	34x5n	34x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4½x5½	35x5n	38x7n	W
Service.....52	3	....	4½x5½	36x4	36x8	W
Service.....72	3½	....	4½x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	1450	3½x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5¼	34x4	36x6	W
Signal.....J	2½	2375	4½x5¼	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x8d	W
Signal.....R	5	3900	4¾x6	36x6	40x6d	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5¼	36x4k	36x8	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x12	W
Standard.....5-K	5-7	4400	4¾x6	36x6	40x14	W
*Star.....	½	610b	3½x4½	30x3½n	30x3½n	B
Sterling.....1½	1½	2885	4 x5¼	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5½	36x4k	36x6k	W
Sterling.....2½	2½	3290	4½x5½	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6½	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6½	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6½	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6½	36x6	40x7d	C
*Stewart...Utility	¼-1½	1245	3½x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3½x5½	35x5n	35x5n	I
Stewart.....9	1½-2	1700	3¾x5	34x3½	34x6	I
Stewart.....7-X	2½-3	2390	4¼x5½	34x4	34x8	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x10	I
*Stewart.....	1¼	1245	4-3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1095	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3¾x5¼	34x5n	34x5n	W
Stoughton.....B	1½	2150	3¾x5¼	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....F	3	3150	4½x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4½x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Thomart.....	1½	1795	4 x5¼	34x5	34x5	C
Tiffin.....GW	1½	2100	4½x5¼	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5¼	36x4	36x3½d	W
Tiffin.....PW	3½	3600a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4½x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4½x5¼	35x5n	38x7n	W
Tower.....H	2½	2475	4½x5½	36x4	36x7	W
Tower.....G	3½	3475	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595a	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595a	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3¾x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5½	34x3½k	34x5k	I
Transport.....35	2	1885n	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5½	36x4k	36x8k	I
Transport.....60	3½	2585	4½x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Trayler.....B	1½	2390	3½x5½	34x3½	34x5	W
Trayler.....C	2-2½	2850	4 x5½	36x4	36x7	W
Trayler.....D	3-3½	3300	4½x5½	36x4	36x8k	W
Trayler.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3½x5	34x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3¾x5½	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5½	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5½	36x4k	36x7k	I
Twin City...B.W.	2	2400	4 x5½	36x6	40x8	I
Twin City...A.W.	3½	3500	4½x6	36x5	40x5d	W
*Twin City.....B	3½	....	5½x6	36x6	36x6	I
*Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4½x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4½x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4½x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4½x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
United.....A	1½	2445	3¾x5½	34x3½k	34x5k	W
United.....B	2½	3150	4½x5½	36x4k	36x7k	W
United.....C	3½	3975	4½x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States..U	1¼	1809	3½x5½	34x5n	34x5n	B
UnitedStates,NW	1½-2	2375	3¾x5	36x5	36x3½	W
United States...N	1½-2	2175	3¾x5	36x3½k	36x5k	I
United States...R	3	3300	4 x5½	36x4	36x4d	W
United States...S	4	4075	4½x5½	36x5	36x5d	W
United States...T	5-7	4975	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Velie.....53	2½	2185	4 x5½	36x4k	36x7k	I
Veteran.....M**	1½	2699	3¾x5½	35x5n	35x5n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

8—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾-1	$1650a	3¾x5	34x5n	34x5n	W
Acason...RB	1½	1950	3¾x5½	36x3½	36x6	W
Acason...H	2½	2750	4⅜x5¾	36x4k	36x8k	W
Acason...L	3½	3450	4⅜x5¾	36x5k	36x10k	W
Acason...M	5	4350	5 x3¼	36x6	40x12	W
Ace	1½-1¾	2400	35/8x5	34x3½	34x6	W
Ace	2	2850	4⅛x5¼	36x4	36x7	W
Ace	2½-3	3400	4⅛x5¼	36x4	36x8	
Acme	1	....	3¼x5	35x5n	35x5n	W
Acme	1½	....	3¼x5	34x3½	34x5	W
Acme	2	....	3¾x5	34x3½	34x5	W
Acme	3	....	4⅛x5¼	36x4	36x7	W
Acme	4	....	4⅛x5½	36x4	36x7k	W
Acme	4½	....	4½x5½	36x5	40x10	W
Acme	6½	....	4¾x6	36x6	40x12	W
American	2½	3350	4 x6	36x4k	36x4dk	W
American	4	4275	4½x6	36x5k	36x5dk	W
American	5	4500	4½x6	36x5	36x12	W
Armleder	1	....	3¾x5¼	34x3½k	34x6k	W
Armleder	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder	1½	....	1¾x5½	34x3½k	34x6k	W
Armleder	1½	....	4⅛x5¼	34x3½k	34x6k	W
Armleder..HW-B	2½	....	4¼x5½	36x4k	36x7k	W
Armleder..HW-C	2½	....	4⅛x5¼	36x4k	36x7k	W
Armleder..KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder..KW-C	3½	....	4½x5½	36x5k	36x5dk	W
*Atlas	2	1495	3¾x5⅛	34x4½n	34x4½n	W
*Atlas...44	1½-2	1950	3¾ 5⅛	36x6n	36x6n	W
Atterbury...20R	1½	2175	3¾x5	34x3½	34x5	W
Atterbury...22C	2½	3375	4⅛x5¼	36x4	36x4d	W
Atterbury...22C	2½	3475	4⅛x5¼	36x4	36x4d	W
Atterbury...22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury...22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury...8E	5	4975	4¾x6	36x5	40x6d	W
Atterbury...8E	5	5125	4¾x6	36x5	40x6	W
Autocar...21UF	1½-2	1950	4¾x4½	34x4k	34x6	D
Autocar...21UG	1½-2	2050	4¾x4½	34x4k	34x6	D
Autocar...27H	2-3	2950	4 x5½	34x5	36x7	D
Autocar...27K	2-3	3075	4 x5½	34x5	36x7k	D
Autocar...26Y	4-6	3950	4¼x5½	34x6	36x12	D
Autocar...26-B	4-6	4100	4¼x5½	34x6	36x12	D
Available...H1½	1½	2175	4 x5	36x3½k	36x5k	W
Available...H2	2	2775	4 x5	36x3½k	36x6k	W
Available...H2½	2½	3160	4 x5	36x4k	36x8k	W
Available...H3½	3½	4175	4½x5½	36x5	40x5d	W
Available...H5	5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x4s	34x5n	34x5n	I
Beck...A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	I
Beck...B-39	1½	1350	3¾x5	34x5	36x6	
Beck...C-40	2	1550	3¾x5	36x6	36x6	
Beck...D-50	2½	1950	4¼x5¼	38x7	40x8	
Bell...M (Iowa)	1	1495	3⅜x5½	35x5	35x5n	W
Bell...E (Iowa)	1½	2100	3¾x5¼	34x3½	34x5	I
Bell...O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Bessemer...G	1	....	3½x5	35x5n	35x5n	I
Bessemer...H-2	1½	....	3¾x5	36x3½	36x5	D
Bessemer...J-2	2½	....	4¼x5¼	36x4	36x4d	D
Bessemer...K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem...KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem...GN	2	1795	4 x3¼	34x4	34x6k	D
Bethlehem...GN	3	2495	4 x5¼	36x4k	36x8k	D
Bridgeport...A	1½	....	3¾x5⅛	31x3½	34x6	W
Bridgeport...B	2½	....	4½x5½	36x4	36x4d	W
Bridgeport...C	3½	....	4½x6	36x5	36x10	W
Brinton...C	2	2500	3¾x5	34x4	34x5	W
Brinton...D	3	2975	4⅛x5¼	36x4	36x7	W
Brockway...E	1	....	4 x5	33x5n	33x5n	B
Brockway...S-5	1½	....	4 x5	36x4	36x6	W
Brockway...SK	1½	....	4⅛x5¼	36x4	36x6	W
Brockway...KR	2½	....	4½x5½	36x4	36x8	W
Brockway...K-5	2½	....	4½x5¼	36x4	36x8	W
Brockway...RT	3½	....	4¾x6	36x5	36x10	W
Brockway...R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway...T-4	5	....	4¾x6	36x6	40x6d	W
*Buick	½	945b	3⅜x4¾	31x4n	31x4n	B
Case	2	....	1¼x5¼	36x6	38x7	I
*Chevrolet	¼	510b	3½x4	30x3½n	30x3½n	B
*Chevrolet...G	¾	650	3½x4	34x4n	34x4½n	B
*Chevrolet...T	1	1095	3½x5¼	33x4n	35x5n	W
Chicago...C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago...C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago...C3½	3½	....	4½x5½	36x5	36x10	W
Chicago...D5	5	....	4½x5½	36x6	40x12	W
Clydesdale...10	¾-1½	1485	3¼x5	34x5n	34x5n	B
Clydesdale...10A	¾-1½	1535	3¼x5	34x5n	34x5n	B
Clydesdale...18	¾-1½	1890	3¼x5	34x5	34x5	W
Clydesdale...20	1-1½	2385	3¼x5	34x5	34x5k	W
Clydesdale...42	1½-3	2475	3¼x5	36x3½	36x6	W
Clydesdale...65X	2½-3	3250	4¼x5¼	36x4	36x8	W
Clydesdale...65EX	2½-3	3450	4½x5½	36x4	36x8	W
Clydesdale...90	3½-4½	4100	4½x5½	36x5	36x10	W
Clydesdale...120	5-6	4500	4¾x6	36x6	40x12	W
Comet...T	1½	1950	3¾x5	34x4	34x4	W
Commerce...9	¾-1½	1150	3¾x5	32x4½n	32x4½n	B
Commerce...T	¾-1½	1450	3¾x5	34x4½n	34x4½n	B
Commerce...10	¾-1½	2500	3¾x5	33x5n	33x5n	B
Commerce...12	1½	1695	3¾x5	34x3½	34x4	I
Commerce...12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce...16	2	1995	3¾x5	34x4	34x6	I
Commerce...16	2	2150	3¾x5	35x5n	36x6n	I
Commerce...18	2½	$2150	4⅛x5¼	36x4	36x7	I
Commerce...18	2½	2495	4⅛x5¼	36x6n	40x8n	I
Commerce...25	2½	2425	4⅛x5¼	36x4	36x7	W
Commerce...25	2½	2770	4¼x5¼	36x6	40x8n	W
Cook...51	2½	3600	4 x5⅛	36x6n	40x8n	W
*Corbitt	¾-1	1250	3½x5	33x5n	33x5n	
Corbitt...E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt...D-22	1½	2200	3¾x5	34x3½	34x5	W
Corbitt...C-22	2	2600	4⅛x5¼	36x3½	36x7	W
Corbitt...B-22	2½	3000	4⅛x5¼	36x4	36x7	W
Corbitt...R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt...A-22	3¼-4	3800	4½x5½	36x5	36x10	W
Corbitt...AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder...AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder...B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder...D	2	2400	4⅛x5¼	36x4	36x7	W
Day-Elder...C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder...F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder...E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn...E	1	1600	3⅝x5⅛	35x5n	35x5n	W
Dearborn...FX	1½	2300	3¾x5⅛	34x4	34x5	W
Dearborn...F	1½	2180	3⅜x5⅛	34x4	34x5	W
Dearborn...48	2	2590	3¾x4½n	34x7	W	
Defiance...G	1	1525	3¾x5	35x5n	35x5n	B
Defiance...D	1½	1815	3¾x5	35x5n	36x6n	I
Defiance...E	2	2075	3¾x5	35x5n	38x7n	I
Denby...31	1¾	1485	3¾x5	35x5n	35x5n	B
Denby...33	1½	2145	3¾x5	35x5n	38x7n	I
Denby...35	2½-3	2795	4⅛x5¾	36x4	36x7	I
Denby...27	4	3895	4½x5½	36x5	36x5d	I
Denby...210	5	4295	4½x5½	36x6	40x6d	I
Dependable...A	¾-1	1650	3⅝x5⅛	34x5n	36x6n	W
Dependable...C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable...D	2½	2650	4 x5½	34x5	36x6	W
Dependable...E	3	2950	4¼x5½	36x4	36x7	W
Diamond T...O-3	1-1¼	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T...T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T...U	2-2½	2650	4 x5¼	36x4	36x7	W
Diamond T...K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T...EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T...S	5	4500	4¾x6	36x6	40x6d	W
Deane	2½	4100b	4¼x5¾	36x5	36x7	C
Deane	3½	5100b	4⅜x5¾	36x5	36x5d	C
Deane	6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers	¾	730	3⅞x4½	32x4n	32x4n	B
Derris...K-2	1	2490	4 x5½	33x5n	33x5n	B
Derris...K-4	2-2½	3100	4¼x5½	36x4	36x7	W
Derris...K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort...103	½	685a	3½x5	31x4n	34x4n	B
Double Drive...B	3	4000	4¼x5½	36x6	36x6	W
Duplex...A	2	2775	4 x5¼	35x5n	38x7n	W
Duplex...E	3½	3500	4¼x5½	36x8	36x8	I
Duty...22	2	1590	3½x5	34x3½	34x5	I
Eagle...101	1½	1875	3⅝x5⅛	34x5	34x5	I
Eagle...100-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D...*...B	3	4200	4¼x5½	36x6	36x6	B
Fageol...1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol...2½	2½	3900	4⅜x5¾	34x4	36x7	W
Fageol...3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol...5	5	5700	4½x6¼	36x6	40x6d	W
Fargo...R	2	1700	3¾x5	36x4	36x6	I
*Federal	1½	1375	3¾x5	—x5n	—x5n	
Federal...SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal...TE	1½	2175	4½x5¼	36x3½	36x5	W
Federal...UE	2-2½	2425	4½x5¼	36x4	36x7	W
Federal...WE	3½-4	3150	4½x5½	36x5	36x5d	W
Federal...X2	5-6	4500	4¾x6	36x6	40x6d	W
*Ford	¼	380	3¾x4	30x3½n	32x4½n	W
Front Drive...C	1½	2800	3¾x5½	36x6	36x6	W
G.M.C...K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C...K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C...K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C...K-41T	5†	2150	4 x5½	36x4	36x8	W
G.M.C...K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C...K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C...K-71T	10†	3700	4½x6	36x5	40x12	W
G.M.C...K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C...K-101T	15†	4050	4½x6	36x5	40x14	W
G.M.C...K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W	1½	1850	3¾x5½	35x5	35x5	I
*Garford	1S	1590	3⅝x5⅛	34x5n	34x5n	W
Garford...25-B	1½	1990	3¾x5⅛	36x3½	36x5	W
Garford...70-H	2½	2750	4¼x5½	36x4	36x8	W
Garford...77-D	4	3750	4½x6	36x5	36x5d	W
Garford...68-D	5	4500	5 x6½	36x6	40x6d	W
Garford...150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary...F	1-1½	1775	3¾x5	36x3½	36x5	W
Gary...I	2	2450	4 x5½	36x3½	36x6	W
Gary...J	2½	2850	4¼x5½	36x4	36x8	W
Gary...K	3½	$3790	4½x6	36x5	40x5d	W
Gary...M	5	4450	5 x6½	36x6	40x6d	W
Gersix...M	1½	3100	4 x5½	36x3½	36x7	W
Gersix...K	2½	3500	4½x5½	36x4	36x8	W
Gersix	3½	4560	4½x6	36x5	40x12	W
Getfredson...20	1	2075	3⅝x5½	34x5	34x5	W
Getfredson...31	1½-2	3000	4 x5¼	36x6	38x7n	W
Getfredson...A	2½	3375	4 x5¼	36x4	36x7	W
Getfredson...B	3½-4	4475	4½x5½	36x5	36x10	W
Getfredson...100	5-6	5500	5 x6½	36x6	40x14	W
Graham Bros	1	1265	3⅞x4½	33x4½n	34x5n	B
Graham Bros	1½	1325	3⅞x4½	33x4½n	36x6n	B
1Gramm-Pion...10	1	1245	3½x5	33x5n	33x5n	B
1Gramm-Pion...15	1½-2	1750a	3¾x5	36x3½k	36x5k	I
1Gramm-Pion...65	1½-2	2250a	3¾x5	36x3½k	36x5	W
1Gramm-Pion...20	2-2½	2475a	4⅛x5¼	36x4k	36x7k	W
1Gramm-Pion...30	3	3300a	4¼x5½	36x5k	36x5dk	W
1Gramm-Pion...75P	3½	4225a	4½x5½	36x6n	42x9n	W
1Gramm-Pion...40	4	3850a	4½x5½	36x5	36x5dk	W
1Gramm-Pion...50	5-6	4450a	4¾x6	36x6	40x6dk	W
Hall...1½	1½	3100	3⅝x5	34x5n	36x7n	W
Hall...2½	2½	3275	4⅛x5¾	36x4	36x6	W
Hall...3½	3½	4100	4½x5½	36x5	36x5d	W
Hall...5	5	5100	4½x5½	36x5	40x6d	W
Hall...7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey...WOA	2	2650	4¼x5½	34x4	34x7	W
Harvey...WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey...WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye...O	1	1375	3⅝x5½	34x5n	34x5n	
Hawkeye...K	1½	1645	3⅝x5½	34x3½k	34x5k	I
Hawkeye...M	2	2145	4¼x5	36x4k	36x6k	I
Hawkeye...N	3½	3700	4½x6¾	36x5k	36x10k	I
Hendrickson...O	1½	2200	3⅝x5½	36x4n	36x5n	W
Hendrickson...N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson...M	3½	3000	4¼x5	36x5k	36x5dk	W
Hendrickson...K	5	4000	5 x6¼	36x6	40x6	W
Huffman...B	1½-2	1795	3⅜x5	34x3½	34x6	W
Huffman...C	1½-2	1695	3¾x5½	36x3½	36x6	I
Huffman...D	2-3	2895	4¼x5½	36x4	36x7	
Hurlburt...A-A	1-1½	1950	3⅜x5	34x5n	34x5n	W
Hurlburt...B-B	2-2½	2800	4¼x5½	36x4	36x4d	W
Hurlburt...C-C	3-3½	3475	4¼x5½	36x5	36x5d	W
Hurlburt...D-D	4-4½	4150	4½x6	36x6	40x6d	W
Hurlburt...E-E	6-6½	4850	4½x6¼	36x6	40x6d	W
Indep'd't(Iowa) B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa) G	1½	2040	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.)..HI	2½	2940	4¼x5¼	36x4	36x7	I
*Indiana...10	1	....	3¾x5¼	34x5n	34x5n	B
Indiana...12	1½-2	....	3⅝x5¼	34x3½k	34x5k	W
Indiana...20	2	....	4⅛x5½	36x4k	36x7k	W
Indiana...25	2½-3	....	4¼x5½	36x4k	36x8k	W
Indiana...35	3½-4	....	4⅜x5½	36x5k	36x5dk	W
Indiana...51	5-7	....	5 x6¼	36x5k	40x6dk	W
*International...S	1	1250	3½x5	32x4½n	32x4½n	I
International...21	1	1550	3½x5¼	36x3½k	36x3½	I
International...31	1½	1650	3½x5¼	36x3½k	36x5k	I
International...41	2	2100	3½x5¼	36x3½k	36x6k	I
International...52	2½	3500	4¼x5	36x6n	36x6dn	I
International...61	3	2400	4¼x5	36x4k	36x7k	I
International...62	3	2600	4¼x5	36x4	36x7	I
International..101	5	3600	4¼x5	36x5	40x12k	I
International..102	5	3800	4½x5	36x5	36x12	I
Jackson...4WD	3½	3850	4½x5½	36x7	36x7	B
K-Z...1	1	1750	3½x5	34x3½	34x5	W
K-Z...1½	1½	2075	3¾x5	36x4	36x6	W
K-Z...2½	2½	2550	4¼x5¼	36x4	36x8	W
K-Z...3½	3½	3350	4½x5½	36x5	40x10	W
K-Z...5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo...T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo...G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo...LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo...NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo...HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo...SK	4	3845	4¼x6	36x5	36x12	W
Kalamazoo...OK	5	4350	4½x6	36x6	40x6d	W
2Kelly-S...K-31	1½	2700	3¾x5¼	36x3½	36x6	C
2Kelly-S...K-34	1½	2700	3¾x5¼	36x3½	36x6	W
2Kelly-S...K-38	2½	2900	3¾x5¼	36x4	36x4d	W
2Kelly-S...K-35	2½	2900	3¾x5¼	36x4	36x4d	C
2Kelly-S...K-40	3½	3900	4½x6½	36x5	40x5d	C
2Kelly-S...K-41	3½	3900	4½x6½	36x5	36x10	I
2Kelly-S...K-42	3½	3900	4½x6½	36x5	40x5d	W
2Kelly-S...K-50	5	4400	4½x6½	36x6	40x6d	C
2Kelly-S...K-60	6	4600	4½x6½	36x6	40x7d	C
2Kelly-S...K-61	5-7	4800	4½x6½	36x6	36x7d	I
Kimball...AB	2	3675	4 x6	36x4	36x7	W
Kimball...AC	2½	3975	4¼x6	36x4	36x8	W
Kimball...AK	3	4500	4½x6	36x4	36x10	W
Kimball...AE	4	5000	4¾x6	36x5	40x12	W
Kimball...AF	5	5500	5 x6	36x6	40x7d	W
*Kissel...Express	1	1585	3⅞x5½	34x5n	34x5n	W
Kissel...Utility	1½	1975	3⅞x5½	36x3½	36x6	W
Kissel...Freighter	2½	2875	4¼x5½	36x4	36x8	W
Kissel...H. D.	4	3675	4¼x5½	36x5	36x12	W
Kleiber...AA	1	2200	4¼x5¼	34x3½k	34x5k	W
Kleiber...A	1½	3100	4½x5¼	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl.
d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor. †Capacity with semi-trailer.

1—Gramm-Pioneer. 2—Kelly-Springfield.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5½	36x4k	36x7k	W
Kleiber.....B	2½	3050	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Keebler.....D	1½	2150	3½x5	34x3½	34x5	W
Keebler.....M	2½	3175	4 x5½	36x4	36x7	W
Keebler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Keebler.....F	3½	4470	4½x5½	36x5	36x10	W
Keebler,MT.Trac	5	3275	4 x5½	36x4	36x7	W
Krebs.....23	¾	1360	3¾x5	34x4½	34x4½	B
Krebs.....24	1	1675	3¾x5	34x5	34x5	W
Krebe.....45	1½	2275	4½x5½	36x4	36x7	W
Krebs.....75	2½	2550	4½x5½	36x4	36x8	W
Krebs.....110	3½	3175	4½x5½	36x5	40x10	W
Krebs.....140	5	....	4¾x6	36x6	40x8d	W
Larrabee.....X-2	1	1925	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2400	3¾x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½-3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5-7	4800	4¾x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5 6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack...AB D.R.	1½	3450	4 x5	36x4k	36x3½dk	D
Mack...AB Chain	1½	3000	4 x5	36x4k	36x3½dk	C
Mack...AB Chain	2	3300	4½x5	36x4k	36x4dk	C
Mack....AB D.R.	2	3750	4½x5	36x4k	36x4dk	D
Mack....AB D.R	2½	3850	4½x5	36x4k	36x4dk	D
Mack...AB Chain	2½	3400	4½x5	36x4k	36x4dk	C
Mack...AC Chain	3½	4950	5 x6	36x5k	40x5dk	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4¼x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Maplesleaf.....**	1½	3000	3¾x5½	34x5n	36x6n	W
Maplesleaf.....AA**	2	3600	4 x5½	36x4	36x7	W
Maplesleaf.....BB**	3	4050	4½x5½	36x4	36x4d	W
Maplesleaf.....CC**	4	4800	4½x5½	36x5	36x5d	W
Maplesleaf.....DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	4¼x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x6	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4¼x5½	34x4	36x8	W
Master.....DD	2½	3190	4¼x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x8	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	9	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3¾x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee....HT	1-1½	2000	3¾x5	34x3½	36x5	W
Menominee....H	1½	2475	4 x5	36x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4¾x6	36x6	40x12	W
Moline.....10	1½	1985	3½x5½	34x5n	36x6n	I
*Moreland...R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1960	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-5	4600	4¾x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3¾x5½	34x4	34x5	1
Nash.....3018	2-2½	2150	3¾x5½	34x4k	34x7k	1
Nash.....Quad.	2-2½	2750	4½x5½	36x6	36x5k	1
Nash...3018, LWB	2-2½	2200	3¾x5¾	34x4k	34x7k	1
Nash, Quad. LWB	2-2½	2800	4¼x5½	36x6	36x6	1
Nash.....5018	2½	2250	3¾x5½	34x4k	34x7k	1
*Nelson.....G2	1½	....	4½x5½	36x3½	36x6	W
*Nelson.....G3	2½	....	4½x5½	36x4	36x7	W
*Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
*Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Notco.....DK	2	3100	4½x5½	36x4k	36x7k	W
Notco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5½	36x4k	36x7k	W
Noble.....A21	1½	1750	3½x5½	34x5	34x5	W
Noble.....B31	1½-2	2295	3½x5½	36x4	36x7	W
Noble.....D51	2½-3	2795	4¼x5½	36x4	36x8	W
Noble.....E71	3½-5	3495	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3¾x5½	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4¼x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern...W	1½	2700	4½x5½	34x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E.Spec	1½	2285	3¾x5½	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	36x3½	36x5	W
Ogden.....E	2½	....	4½x5½	36x4k	36x7k	W
Ogden.....W	3	....	4¾x5½	36x4k	36x8k	W
Oneida.....B0	1½	2825	4 x5½	36x3½	36x7	W
Oneida.....C0	2½	3200	4 x5½	36x4	36x8	W
Oneida.....D0	3½	4050	4½x5½	36x5	36x10	W
Oneida.....E0	5	4725	4½x5½	36x6	40x12	W
Oshkosh.....A	2	2485	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	2585	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3485	4 x5½	38x7n	38x7n	B
Oshkosh.....BB	2½	3585	4 x5½	38x7n	38x7n	B
*Overland.....4	½	425	3½x4	30x3½n	30x3½n	B
Packard.....EC	2-3	3100	4¼x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4¼x5½	36x6n	40x8n	W
Packard.....ED	3½-4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5½	34x3½	34x5	W
Paige.....54-20	2½	2420	4½x5½	34x4	34x8	W
Paige.....51-13	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4½x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x8d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot....Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot....Lincoln	2	2050	4 x5¼	34x4	34x6	W
Patriot....LS-800	2	2175	4 x5¼			
Patriot .Washgt'n	3	2900	4½x5½	36x5	36x7	W
Pierce-Arrew.....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrew.....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrew.....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3½x5	36x4	36x6	..
Pittsburgher.....	3	3800	4½x5½	36x5k	36x8	W
Power.....F	2	3150	4 x5¼	36x5	36x7	W
Power.....C	3½	....	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier.....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4½x5½	34x4	34x6	W
Rainier.....R-20	2½-3	....	4½x5½	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R25	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	36x6	40x6d	W
Rainier.....R27	6	....	4¾x6	36x6	40x6d	W
Ranger..TK-20-2	1½	1450	3¾x5	36x6n	38x7n	W
*Reo.....F	5½-11	1185	4¼x4½n	34x4½n	34x4½n	B
Reliance.....10A	1½	2400	4 x5½	36x3½	36x5	1
Reliance.....20B	2½	3100	4¼x5½	36x4	36x4d	1
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	1
Republic.....10	1	1395	3¾x5	34x3	34x4	1
Republic..10 Exp	1	1695	3¾x5	34x5n	34x5n	1
Republic.....11X	1½	1795	3¾x5	34x4	34x6	1
Republic.....19	2½	2195	4¼x5½	36x4	36x7	1
Republic.....20	3½	3095	4½x5½	36x5	36x10	1
Rowe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rowe....C.D.W.	2	3300	4 x5	34x4	36x3½	W
Rowe....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rowe....G.P.W.	3	5250	3¼x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4¼x6	36x5	36x6d	W
Rowe.....F. W.	5	4850	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4-3½x4	32x4n	32x4n	B
Samson.....25	1½	....	4-3½x5½	35x5n	35x5n	B
Sanford.....W-15	1½-2	2150b	3¾x5	36x3½k	36x5k	..
Sanford.....25	2½-3½	....	4½x5½	36x4	36x4d	W
Sanford.....35	3½-5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5-7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ten	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ten	3	3800	4¼x5½	36x5	36x5d	W
Schacht....4-Ten	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ten	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ten	7	5050	4½x6	36x6	40x7d	W
Schwarts.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwarts.....K	2	3000	3¾x5¼	34x3½	34x7	W
Schwarts.....L	3	3600	4¼x5½	36x4	36x8	W
Schwarts.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½-2½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½-2½	3250	4½x5½	34x5n	38x7n	W
Selden.....50	2½-3½	3250	4½x5½	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4¾x6	36x6	40x12	W
Seneca.....M	½	$ 820	3½x4½	32x3½n	30x3½n	B
*Service.....12	¾	....	3½x4½	32x4½n	32x4½n	B
*Service.....25	1¼	....	3¾x5½	34x5n	34x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4½x5½	35x5n	38x7n	W
Service.....52	3	....	4½x5½	36x4	36x8	W
Service.....72	3½	....	4½x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	1450	3¾x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5½	34x4	36x6	W
Signal.....J	2½	2375	4½x5½	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x8d	W
Signal.....R	5	3900	4¾x6	36x6	40x6d	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5½	36x4k	36x8	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x12	W
Standard.....S-K	5-7	4400	4¾x6	36x6	40x14	W
*Star.....	½	610b	3½x4¼	30x3½n	30x3½n	B
Sterling.....1½	1½	2885	4 x5¼	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5½	36x4k	36x6k	W
Sterling.....2½	2½	3290	4½x5½	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6½	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6½	36x6	40x6d	W
Sterling.....S-C	5	5500	5 x6½	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6½	36x6	40x7d	C
*Stewart...Utility	¼-1½	1245	3½x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3½x5½	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3¾x5	34x3½	34x6	I
Stewart.....7-X	2½-3	2390	4½x5½	34x4	34x8	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x10	I
*Stewart.....	1¾	1245	4-3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1095	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3¾x5½	34x5n	34x5n	W
Stoughton.....B	1½	2150	3¾x5½	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....F	3	3150	4½x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4½x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Themart.....	1½	1795	4 x5½	34x5	34x5	C
Tiffin.....GW	1½	2100	4½x5½	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5½	36x4	36x3½d	W
Tiffin.....PW	3½	3600a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4½x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4½x5½	35x5n	38x7n	W
Tower.....H	2½	2475	4½x5½	36x4	36x7	W
Tower.....G	3½	3475	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595a	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595a	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3¾x5	36x4	36x7	I
*Transport.....	1½	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5½	34x3½k	34x5k	I
Transport.....35	2	1885a	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5½	36x4k	36x8k	I
Transport.....60	3½	2585	4½x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Trayler.....B	1½	2390	3¾x5½	34x3½	34x5	W
Trayler.....C	2-2½	2850	4 x5½	36x4	36x7	W
Trayler.....D	3-3½	2300	4½x5½	36x4	36x8k	W
Trayler.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3½x5	34x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3¾x5½	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5½	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5½	36x4k	36x7k	I
Twin City...B.W.	2	2400	4 x5½	36x6	40x8	I
Twin City...AW.	3½	3500	4½x6	36x5	40x5d	W
*Twin City.....B	3½	....	5½x6	36x6	36x6	I
*Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4½x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4½x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4½x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4½x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
United.....A	1½	2445	3¾x5½	36x3½k	34x5k	W
United.....B	2½	3150	4½x5½	36x4k	36x7k	W
United.....C	3½	3975	4½x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States .U	1¼	1800	3½x5½	34x5n	34x5n	B
UnitedStates,NW	1½-2	2375	3¾x5	36x5	36x3½	W
United States...N	1½-2	2175	3¾x5	36x3½k	36x5k	I
United States...R	3	3300	4 x5½	36x4	36x4d	W
United States...S	4	4075	4½x5½	36x5	36x5d	W
United States....T	5-7	4975	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Velie.....53	2½	2185	4 x5½	36x4k	36x7k	I
Veteran.....M**	1½	2699	3¾x5½	35x5n	35x5n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

8—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Veteran.....P**	2	$3699	4½x5½	36x4	36x7	W
Veteran.....R**	3	4200	4½x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....29	½	1050	3½x4½	31x4n	31x4n	W
*Vim.....50	½-¾	995	4 x5	32x4n	32x4n	B
Walker-JohnsonA	2	2500	3¾x5	34x3½	34x6	W
Walker-JohnsonB	3	3000	4¼x5½	36x4	36x8	W
Walter.....M	2½	3850	4½x5¾	36x4	36x8	D
Walter.....S	5	4850	4½x6¼	36x6	40x6d	W
*Watson.....C	1	1465a	3½x5½	35x8n	35x8n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2450	4⅛x5¼	30x3½	36x5k	W
Western....L1½	1½	2450	3¼x5	30x3½	36x5k	W
Western....W2½	2½	3250	4⅛x5¼	36x4	36x7	W
Western....L2½	2½	2450	4¼x6	36x4	36x7	W
Western....W3½	3½	4000	4½x6	36x5	40x5d	W
*White.....15	¾	2400	3¾x5⅛	34x5n	34x5n	B
White.....20	2	$3250	3¾x5½	36x4k	36x7k	D
White.....40	3½	4200	3¾x5¾	36x5	40x5d	D
White.....45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick.....E	1	1225	3¾x5	34x5n	34x6n	W
White Hick.....H	1½	1375	3¾x5	36x3½	36x5	W
White Hick.....K	2½	1675	4½x5¼	36x4	36x5	W
Wichita.....K	1	1875	4¾x5¼	36x3½	36x4k	W
Wichita.....M	2	2400	3¾x5¼	36x3½k	36x6k	W
Wichita.....RX	3	3200	4¾x5¾	36x4k	36x8k	W
Wichita.....O	4	$3500	4½x6¼	36x5k	36x5k	W
Wilcox.....AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4¼x5	36x4k	36x3½dk	W
Wilcox.....E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox.....F	5	4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¾x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4½x5¼	36x4	36x7	W
Wilson.....G	3½	3685	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin.....A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin.....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin.....C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin.....D	3½	3000	4¾x5¾	36x6n	40x8	W
Wisconsin.....E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin.....F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will.....N	1½	2450	3¾x5	36x3½k	36x6k	W
Witt-Will.....P	2½	2900	4½x5¼	36x4k	36x8k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm. r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders: Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm...	15-25	1185	4	Midw.	4-4½x5¼	Gas.	3
Allis-Chalm...	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm.	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork...2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork.....C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T....	15-30	1900	4	Clim.	4-5 x6½	G,K,D	4
Aultman-T....	22-45	2800	4	Own	4-5½x8	G,K,D	6
Aultman-T....	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Automot. B-3.	12-24	1250	4	Herc.	4-4 x5½	Gas.	2-3
Avery,SR.Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4¾x6	G,K,D	2-3
‡Avery.....	....	....	*	Own	4-4x5½	G,K,D	3-4
Avery.....	12-25	....	4	Own	2-6½x7	G,K,D	2-3
Avery.....	14-28	....	4	Own	4-4½x7	G,K,D	3-4
Avery.....	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7½x8	G,K,D	8-10
Bates Mule.H	15-25	....	4	Midw	4-4½x5¼	Gas.	3
Bates Mule..F	18-25	....	*2	Midw	4-4½x5¼	Gas.	3
‡Bates MuleG	25-35	....	*2	Midw	4-4½x6	Gas.	..
Bear.....	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman Jr..	¾-1½	180	2	B&S	1-2¼x2½	Gas.	
¶Beeman...G	2-4	240	4	Own	1-3½x4½	Gas.	....
Best.....	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best.....	60	....	*2	Own	4-6½x8½	G,K,D	8-9
¶Beloes.....	....	....	4	B & S.	1-2½x2½	G.	..
Boring.....	5-10	395	4	LeR.	4-3½x4½	G	..
Boring...1921	....	1850	3	Wauk	4-4½x5¾	GorK	2
**Bryan.....	15-30	....	4	Own	2-4 x5	K.	3
Capital.....	15-30	1000	2	Own	4-4¼x6	Gas.	3
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	2-3
Case.....	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case.....	22-40	2550	4	Own	4-5½x6¼	G,K,D	4-5
Case.....	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T35	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar 5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur.....	5-2½	345	2	N Wau	2-4½x4½	GorK	1
Cletrac.....F	9-16	595	*2	Own	4-3¼x4½	G,K,D	2
Cletrac.....W	12-20	1315	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Dil.....D	20	2380	4	Cont.	4-4½x5½	Gas.	3
Dil.....R.W.	20	2980	4	Midw	4-4½x6	Gas.	3
Do-It-All,Baby	1	237	..	Own	1-2¾x2¾	Gas.	1
Do-It-All....A	3-6	495	..	Own	1-4½x5	Gas.	1
Do-It-All,Jack	6	395	..	Own	1-3¾x3¾	Gas.	1
Do-It-All....6	12	495	2	Own	2-3⅛x3¾	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	G or K	4-5
E-B.....AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol.....D	9-18	1175	4	Lyc.	4-3½x5	Gas.	2
Farm Horse..B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Fitch...4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	$ 395	4	Own	4-4x5	G K	2
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt...A	18-36	2150	4	Wauk.	4-4¾x6¾	G or K	4
Gray.....	20-36	1975	3	Wauk.	4-4¼x6¼	Gas.	4
Gray.....	22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. Western St	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr..20	20	865	4	Own	2-5½x6½	K.D.	2
Hart-Parr..30	30	1045	4	Own	2-6½x7	K.D.	3
‡Hart-Parr.....	....	1395	4	Own	6½x7	K.D.	..
Heider.....D	9-16	628	4	Wauk	4-4¼x5¾	G,K	2
Heider.....C	12-20	725	4	Wauk	4-4½x6¾	G,K	3
Heider....Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light 4.	12-25	985	4	Wauk	4-4½x5¾	G or K	3
Huber Super 4	15-30	1885	4	Midw.	4-4½x6	Gas	3
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International.	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†790	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5¼x8	G,K,D	4
¶Kinkade.....	1½-3	190	1	Own	1-3 x3	Gas.	....
La Crosse.....	12-24	985	2	Own	2-6 x7	G,K	3
Lauson.....S	12-25	1295	4	Midw.	4-4½x5¼	Gas.	3
Lauson.....21	15-30	1675	4	Beav.	4-4¾x6	G or K	3-4
‡Lauson Read	15-30	2000	4	Beav.	4-4¾x6	K	....
Leader.....B	12-18	685	4	Own	2-6 x6½	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K	3-4
‡Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Linn.....H4J	40-	4500	*	Cont.	4-4½x5½	Gas	4
Linn.....W	60	5000	*	Wauk	4-5 x6½	Gas	6
Little Giant. B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant. A	26-35	3300	4	Own	4-5½x6	K	6
Lombard. 1922	85-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard. 1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2¾x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	G or K	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	G or K	3-4
Minne. Med.D	22-44	2650	4	Own	4-6 x7	G or K	5-6
MinneHeavyD	35-70	3850	4	Own	4-7½x9	G or K	8-9
Mohawk 1922	8-16	650	2	Light	4-3¼x4½	K or G	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch..	9-18	....	2	Own	4-3½x5	Gas.	2-3
‡Monarch	20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Moter Macult.	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	375	4	Own	2-3¾x4	Gas.	1
Nichols-Shep.	20-42	2650	4	Own	2-8 x10	G or K	3-6
Nichols Shep.	25-50	3000	4	Own	2-9 x12	G or K	4-8
Nichols-Shep.	35-70	3650	4	Own	2-10½x14	G or K	8-12
Nilson Senior..	20-40	1975	5	Wauk	4-5 x6¼	G,K	4
OilPull.....K	12-20	....	4	Own	2-6 x8	K,D	3
OilPull.....H	16-30	....	4	Own	2-7 x8½	K,D	4
OilPull.....G	20-40	....	4	Own	2-8 x10	K,D	5-6
OilPull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar ..K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Pioneer.....G	18-36	....	4	Own	4-5½x6	G,K,D	4
Pioneer.....C	40-75	....	4	Own	4-7 x8	Gas.	10
Plowman....A	15-30	1295	4	Buda	4-4½x6	G,K	3-4
Reliable.....	10-20	390	4	Own	2-6 x7	Ker.	2
Russell.....	12-24	1500	4	Own	4-4½x5¾	G or K	2-3
Russell.....	15-30	2200	4	Own	4-5 x6½	G or K	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	G or K	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	G or K	8-10
Samson....M	....	445	4	Own	4-4 x5½	G,K	2
Sandusky,...J	10-20	1250	4	Own	4-4½x5½	G,K,D	2
Sandusky...E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
¶Shelby.....	1	150	3	B & S	1-2½x2½	G	..
Shelby.....D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby.....C	9-18	....	4	Wauk	4-3¾x5½	G or K	2
Tore Cultivator	C	750	3	LeR	4-3½x4½	Gas.	2
ToreTractor'22	6-10	495	3	LeR	4-3½x4½	Gas.	2
Townsend.....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend.....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend.....	25-50	2500	2	Own	4-8½x10	Ker.	4-8
Traction Motor	40-50	....	4	....	8-3½x5	Gas.	4-5
Traylor....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar....10	25-40	3750	*2	Wauk	4-5 x6¼	G or K	4
Twin City.....	12-20	1200	4	Own	4-4½x6	G,K	3
Twin City.....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City.....	40-65	4750	4	Own	4-7½x9	G,K	8-10
Uncle Sam C20	12-20	1295	4	Weid.	4-4 x5½	G	2-3
Uncle Sam B19	20-30	1985	4	Beav.	4-4¾x6	G or K	3-4
Uncle Sam D21	20-30	1895	4	Beav.	4-4¾x6	G or K	3-4
Utiliter.....501	2½-4	295	4	Own	1-3½x4½	G	1
Utiliter...501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	....	4	Own	4-4¼x5¾	G,K	3
Waterloo....N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore21-22	12-25	1185	4	Wauk	4-4 x5¾	G,K	3
Whitney....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin...E	16-30	1850	4	Clim.	4-5 x6½	G or K	3
Wisconsin...F	20-40	2050	4	Wauk	4-5 x6¼	G or K	4
Wisconsin...H	22-40	2550	4	Clim.	4-5½x7	G or K	4-6
Yuba....12-20	12-20	2400	*2	Wauk.	4-4½x6¾	G,K D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4¼x6	G,K,D	..
Yuba....20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba.....	25-40	4750	*2	Yuba	4-5¼x7	D	..

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont.—Continental. Dom.—Domas Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nwav.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor. ¶Garden Tractor. **Steam Tractor.

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (N.A.C.C.)	NAME AND MODEL	Carburetor	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle Type and Make	†Gear Ratios
.....	$4500c	$4500	.....	.....	$6500	136	33x5	Cont..	6-3⅝x5¼	31.54	Ambassador.....R	Strom...	West.....	Bosch.....	m-d B-L....	B-L....	f Norwalk..	F Tim...	4.45
$1995c	1785	1850	$1885c	.....	2485	127	33x4½	H-S...	6-3½x5	29.40	American.....D-66	Strom...	G-D.....	A-K.....	s-p B&B...	B & B..	m Hartford..	F Salis...	4.50
.....	1195	.....	.....	$1450c	.....	114	32x4	Cont..	6-3½x4¼	23.44	Anderson...Aluminum 6	.....	West.....	West.....	s-p B&B...	.....	.....	Salis...	.....
{1495	1495	1595	{1595c	1995c	1995d	120	33x4	Cont..	6-3⅝x4½	27.34	Anderson.....Series 40	Rayfield.	Remy.....	Remy.....	s-p B&B...	Durston.	f Snead.....	¾F Salis...	4.50
{1785p			{1945c																
.....	2620	2645	.....	3625	3695	130	34x4½	Own..	8-3¼x5	33.80	Appersen.....8-21-S	Johnson	Bijur.....	Remy.....	m-d Own....	Own....	m Sterling...	½F Own...	4.25
1575	1475	1545n	{1895n	2275	2345	121	32x4	Cont..	6-3⅝x4½	27.34	Auburn.....6-51	Strom...	Remy.....	Remy.....	s-p B&B...	G-L....	m Universal..	F Salis...	4.75
			{1995n																
.....	1395	.....	.....	.....	1850d	113	32x4	Cont..	6-3½x4¼	23.44	Barley.....	.....	Delco .	Delco....	s-p B&B...	Fuller...	f M&E.....	Col....	.....
1800	1800	.....	.....	2400	2500	121	32x4	Cont..	6-3¼x4½	25.35	Bay State.....	Strom...	Delco....	Delco....	s-p B&B...	Warner..	m Spicer....	¾F Col....	4.67
2950	2950c	.....	.....	3950	3950	121	32x4	Buda.	4-3¾x5½	22.50	Biddle.....B1 & B5	Zenith..	G-D.....	Simms....	s-p Warner .	Warner..	m Spicer....	½F Std....	4.50
5000	5000	.....	.....	.....	7000	125	32x4½	Own..	4-4 x5½	25.60	Brewster.....91	Zenith..	USL.....	Bosch....	c Own....	Own....	F Own.....	F Own...	3.92
865	885	725g	.....	1175	{1395	109	31x4	Own..	4-4¾x4¾	18.23	Buick..1923-34-5-6-7-38	Marvel..	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	¾F Own...	4.66
					{1325														
1175	1195	975g	.....	1935	1985	118	33x4	Own..	6-3⅝x4½	27.34	Buick....1923-41-4-5-47	Marvel..	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	¾F Own...	4.60
.....	.....	1435	{1625a	1895	2195	124	34x4½	Own..	6-3⅝x4½	27.34	Buick..1923-48-9-50-4-55	Marvel..	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	¾F Own...	4.90
			{1675c																
3100	3150	3150	.....	{3875a	4100	132	33x5	Own..	8-3½x5⅛	31.25	Cadillac.....61	Own....	Delco.....	Delco.....	m-d Own....	Own....	m Spicer....	F Tim...	4.50
				{3925d															
1750	1790	.....	.....	2480	2575	122	32x4½	Cont..	6-3⅛x4½	27.34	Case.....X	Rayfield.	Delco.....	Delco.....	m-d Own....	Own....	f Snead.....	½F Col....	5.25
.....	1990	2250	1950	2480	2975	129	34x4½	Cont..	6-3⅝x5¼	31.54	Case.....W	Rayfield.	Delco.....	Delco.....	m-d Own....	Own....	f Arvac.....	¾F Col....	4.45
1185	1185	.....	.....	1595	2295	117	32x4	Own..	6-3¼x4½	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own....	m Hardy.....	½F Adams	5.13
.....	.....	1345	.....	.....	.....	122	32x4	Own..	6-3¼x4½	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own....	m Hardy.....	½F Adams	5.13
1495	1495c	1645	1595a	1995c	{2295d	123	33x4	Own..	6-3½x5	29.40	Chandler.....Six	Rayfield.	Bosch.....	Bosch.....	s-p B&B...	Own....	f Own.....	F Own...	4.45
					{2375f														
510	525	425g	.....	{ 840c	860	102	30x3½	Own..	4-3½x4	21.53	Chevrolet.....Superior	Zenith .	A-L.....	Remy....	c Own....	Own....	m Own.....	½F Own...	3.66
				{ 680k								Holley .		A-L.....					
1085	995	.....	1260	1295a	1495	112	32x4	Own..	6-3⅛x4½	22.50	Cleveland.....41	Strom...	Bosch.....	Bosch.....	s-p Own....	Own....	m Mech.....	¾F Own...	4.45
2685	.....	2685	2685c	3285b	{3285c	127¼	33x5	Nort..	8-3½x4½	39.20	Cole.....890	Johnson	Delco.....	Delco.....	c North...	North...	m Spicer....	F Col....	4.46
					{3685f														
1475	1475	.....	1475c	1925c	1995d	115	32x4	Cont..	6-3⅛x4½	27.34	Columbia.....Elite	Strom...	A-L.....	A-K.....	s-p B&B...	Durston.	m Spicer....	¾F Tim...	.....
995	985	.....	.....	.....	1395d	115	31x4	Cont..	6-3½x4¼	23.44	Columbia.....Light Six	Strom...	A-L.....	A-L.....	s-p B&B...	Durston.	m Spicer....	¾F Tim...	.....
.....	1985	3085f	.....	2985d	3085f	125	33x4½	Cont..	6-3½x5¼	29.40	Comet.....C-53	Strom...	Wagner..	Wagner..	s-p B&B...	Muncie..	m Arvac.....	¾F Col....	4.45
1395	1395	.....	{1495b	2065b	2165d	116	32x4	Falls.	6-3½x4¼	23.44	Courier.....	Till.....	Bijur.....	A-K.....	s-p B&B...	Muncie..	f Norwalk.	¾F Col....	5.00
			{1495c																
3000	3000	3000	.....	.....	4500	122½	32x4	Cont..	6-3⅝x5¼	31.54	Crawford.....22-6-60	Strom...	West.....	Bosch.....	m-d B-L....	B-L....	Spicer....	½F Tim...	.....
.....	.....	.....	3500	.....	.....	135	33x5	Cont..	6-3⅝x5¼	31.54	Crawford-Dagmar...6-60	Zenith..	West.....	Bosch.....	m-d B-L....	B-L....	Spicer....	½F Tim...	.....
.....	.....	.....	.....	.....	.....	142	33x5	Own..	8-3¾x5	45.00	Cunningham.....V	Strom...	Delco.....	Delco.....	m-d Own....	Own....	f Snead.....	F Tim...	4.28
4350b	4350c	4350	.....	5250	6000	132	33x5	Own..	8-3½x5¼	39.20	Daniels.....D-19	Zenith..	Delco.....	Delco.....	m-d Own....	Own....	m Spicer....	F Tim...	.....
.....	1295	.....	1495	1795	1795	114	31x4	Cont..	6-3½x4¼	23.44	Davis.....71	Strom...	Delco.....	Delco.....	s-p B&B...	Warner..	m Peters....	½F Tim...	5.10
1595	1595	.....	1695	2095	.....	120	32x4	Cont..	6-3⅝x4½	27.34	Davis.....61-67	Strom...	Delco.....	Delco.....	s-p B&B...	Warner..	m Peters....	¾F Tim...	5.15
1175	1175	1295c	1245	1545	1595	112	32x4	H-S...	4-3½x5	19.60	Dixie Flyer.....H-S-70	Strom...	Dyneto....	Eisemann.	s-p B&B...	G-L....	f Hardy.....	F Peru...	4.75
850	880	.....	.....	980b	1195d	114	32x4	Own..	4-3⅞x4½	24.03	Dodge Brothers.....	Stewart..	N.E.....	N.E.....	m-d Own....	Own....	m Own.....	½F Own...	4.16
3350g	3950c	3950	.....	4985c	5750f	132	33x5	Own..	6-4 x5	38.40	Derris.....6-80	Strom...	West.....	Bosch.....	m-d Own....	Own....	m Spicer....	F Tim...	4.23
865	865	.....	{1015a	{1240	{1370	108	31x4	D-Ly.	4-3½x5	19.60	Dort.....19-14	Carter...	Bosch.....	Conn.....	m-d Detlaff..	Own....	m Mech.....	¾F Flint..	4.66
			{1015d	{1020k	{1070k														
1275	1275	.....	.....	1650	1975	104	30x3½	Own..	4-2⅝x4½	11.03	Driggs.....	Zenith..	Bosch.....	Bosch.....	s-p Hoos....	Mech...	m Spicer....	¾F Own...	4.75
6500	6500	6750	.....	7800	7800	134	33x5	Own..	8-2⅞x5	26.45	Duesenberg...Straight 8	Strom...	Delco.....	Delco.....	s-p Own....	Own....	f Own.....	½F Own...	4.81
3000	3200	.....	.....	3800	4000	124	32x4½	Own..	4-3½x5½	24.81	Du Pont.....A	Y&T.....	West.....	Eisemann.	m-d B-L....	B-L....	m Spicer....	Col....	4.50
890	890	.....	.....	1365	1365	109	31x4	Cont..	4-3⅞x4¼	24.03	Durant.....A-22	Till.....	A-L.....	A-L.....	s-p Own....	Own....	m,f Spicer..	¾F Adams	4.30
1600	1650	.....	.....	2250	2400	123½	32x4½	Anst..	6-3¼x4½	25.35	Durant.....B-22	Rayfield.	A-L.....	A-L.....	s-p Ansted..	Warner..	m,f Spicer..	½F Tim...	5.15
1485	1095	950g	.....	1395c	1795	112	32x4	Own..	4-3⅞x5½	18.91	Earl.....40	Scoe....	A-L.....	Conn.....	s-p B&B...	Own....	f Own.....	½F Own...	3.66
1095	1095	.....	1095	1345	.....	118	33x4	Lyc...	4-3½x5	19.60	Elcar.....K-4	Strom...	Delco.....	Delco.....	s-p B&B...	Muncie.	m Peters....	¾F Salis...	4.50
1395	1395	.....	1395	1975	2065	118	33x4	Cont..	6-3⅝x4½	27.34	Elcar.....8-R	Strom...	Delco.....	Delco.....	m-d Warner .	Warner..	m Spicer....	¾F Salis...	4.50
1125c	1125	.....	1165	1695	1615	118	33x4	Falls.	6-3¼x4¼	23.44	Elgin.....K-1	Strom...	West.....	Wagner..	s-p B&B...	Mech...	m Mech.....	¾F Col....	4.66
.....	1045	.....	.....	1145k	{1895	108½	32x4	Own..	4-3⅝x5	18.23	Essex.....	Own....	Bosch.....	Bosch.....	m-d Own....	Own....	m Spicer....	½F Own...	4.66
					{1245k														
269r	298s	235g	.....	530	{595	100	30x3½	Own..	4-3¼x4	22.50	Ford.....T	Own....	Own.....	Own.....	m-d Own....	Own....	m Own.....	½F Own...	3.63
					{725														
3900	3900	.....	.....	4900	4900	132	32x4½	Own..	6-3⅝x5	27.34	Fox.....7F	Zenith..	West.....	Bosch.....	m-d B-L....	B-L....	Spicer....	½F Tim...	4.45
1900	1950	1750g	.....	2750	2850	115	32x4	Own..	6-3½x4	25.35	Franklin.....10	Own....	N.E.....	A-K.....	s-p B&B...	Own....	m Spicer....	½F Own...	4.78
895	895	.....	.....	1095k	1345d	112	32x4	Lyc...	4-3½x5	29.60	Gardner.....T-R & G	Carter...	West.....	West.....	s-p B&B...	Mech...	m Mech.....	¾F Flint..	4.80
1385	1385	.....	.....	1895	1945	116	32x4	Own..	6-3⅛x4½	23.44	Grant.....	Strom...	Bijur.....	A-K.....	s-p B&B...	Durston.	m Spicer....	¾F Col....	4.66
490	490	.....	.....	.....	760	100	30x3½	Own..	4-3⅝x4	21.03	Gray.....	Scoe....	West.....	West.....	m-d Own....	Detroit..	m Mech.....	½F Tim...	3.90
2175	2475c	.....	3250	.....	3475	120	32x4½	Weid..	4-3¾x5½	22.50	H.C.S.....Series 4	Strom...	Delco.....	Delco.....	m-d B-L....	B-L....	m Spicer....	¾F Own...	.....
.....	.....	2650	.....	3450	3450	125	32x4½	Own..	4-4¼x4½	27.23	Handley-Knight.....	Till.....	A-L.....	A-L.....	m-d Warner .	Warner..	m Spicer....	½F Tim...	4.90
.....	995	.....	.....	.....	.....	114	31x4	Cont..	6-3⅛x4¼	25.35	Hanson.....30	Marvel..	Delco.....	Delco.....	s-p B&B...	Detroit..	.....	¾F Tim...	.....
1595	1595	1795	.....	2475c	2585	121	32x4	Cont..	6-3⅝x4½	27.34	Hanson.....60	Marvel..	Delco.....	Delco.....	s-p B&B...	Detroit..	.....	¾F Tim...	.....
.....	1345	1345c	.....	1950	1950	115	32x4	H-S...	4-3½x5	19.60	Hatfield.....A-42	Zenith..	Dyneto....	Conn.....	s-p B&B...	G-L....	m Spicer....	¾F Col....	4.66
2395	2395c	2395	.....	3095d	3395	132	33x5	Own..	6-3½x5½	29.40	Haynes.....75	Strom...	L-N.....	King.....	s-p Warner .	Own....	m Universal..	¾F Own...	4.60
1545	1495	.....	{1895a	{2095b	{2395d	121	32x4½	Own..	6-3½x5	29.40	Haynes.....55	Rayfield.	L-N.....	King.....	s-p Warner .	Own....	m Universal..	½F Own...	4.11
			{1895d	{2135p	{2695p														
.....	2500c	2500	.....	3300c	3600f	126	34x4½	Own..	6-3⅝x4¼	29.40	Holmes.....Series 4	Strom...	Dyneto....	Eisemann.	m-d B-L....	B-L....	m Spicer....	½F Tim...	4.90
.....	1525c	1575	.....	2570c	{1625k	126	34x4½	Own..	6-3½x5	29.40	Hudson.....Super 6	Own....	Bosch.....	Bosch.....	m-d Own....	Own....	m Spicer....	½F Own...	4.45
					{2295														
1395	1395	.....	.....	.....	2295	120	32x4	Cont..	6-3⅜x4½	27.34	Huffman.....	Strom...	Dyneto....	Conn.....	s-p B&B...	Covert..	.....	F Salis...	.....
{1150	1150	.....	1250a	{1635	1785	112	32x4	Own..	4-3¼x5½	16.90	Hupmobile.....Series R	Strom...	West.....	A-K.....	m-d Own....	Own....	m Universal..	¾F Own...	4.87
{1025g				{1335k															
.....	1485	1685c	.....	2085	2985	121	32x4½	Cont..	6-3¼x4½	25.35	Jackson.....636	Strom...	A-L.....	Remy.....	s-p B&B...	Covert..	f Snead.....	¾F Salis...	4.75
995b	995	.....	1095a	1445c	1465d	112	31x4	Own..	6-3¼x5	25.35	Jewett.....Six	Strom...	Remy.....	A-K.....	m-d Long....	Warner..	m Mech.....	½F Tim...	4.45
1895	1795	.....	.....	2785	2485	120	32x4	Own..	6-3⅛x4¾	26.38	Jordan.....MX	Strom...	Delco.....	Delco.....	s-p Detroit..	Detroit..	m Spicer....	½F Tim...	4.42
.....	.....	2150c	.....	.....	.....	124	32x4	Own..	6-3⅛x4¾	26.38	Jordan.....H	Strom...	Delco.....	Delco.....	s-p Detroit..	Detroit..	m Universal..	½F Tim...	4.42
.....	985	.....	.....	.....	1450	111	32x3½	Gray..	4-3½x5	19.60	Kelsey.....4	Scoe....	Bosch.....	Bosch.....	f-d Own....	f-d Own..	.....	Own....	4.50
.....	985	.....	.....	.....	1450	111	32x3½	Gray..	4-3½x5	19.60	Kelsey.....4	Scoe ..	Bosch.....	Bosch....	s-p B&B...	Detroit..	Snead.....	½F Std...	4.75
.....	1525	.....	.....	.....	2175	118	32x4	Walk'r	6-3½x4½	23.44	Kelsey.....6	Strom...	Bijur.....	Bosch.....	f-d Own....	f-d Own..	.....	Own....	.....
5000	5000	5250	.....	5000	6000	130	32x4½	Own..	8-3 x5¼	28.80	Kenworthy.....8-90	.....	.....	.....	.....	.....	.....	.....	.....
1795	1795	.....	1795c	2100	2550	120	32x4½	Own..	8-3 x5	28.80	King.....K	Ball&B .	West.....	A-K.....	s-p Detroit..	Own....	f Hardy.....	F Col....	4.08
.....	1885	2385	2385c	2975c	3075	124	32x4½	Own..	6-3⅛x5½	26.38	Kissel.....45	Strom...	Remy.....	Remy.....	m-d Warner .	Warner..	m Spicer....	F Own...	3.92
1690	1090	1690	1890	2750	2890	121	33x4	Cont..	6-3⅜x4½	27.34	Kline Kar.....6-55-K	Rayfield.	Wagner..	Conn.....	s-p B&B...	G-L....	f Snead.....	½F Std...	4.75

MISCELLANEOUS

a—2 Passenger, d—5 Passenger,
b—3 Passenger, e—6 Passenger,
c—4 Passenger, f—7 Passenger,
g—Chassis Price,
h—All Metal Type,
k—Soft Top Type,
n—Tire Size 32x4½,
p—Sport,
r—Price without starter and demountable rims. Price, complete, $864.
s—Price without starter and demountable rims. Price, complete, $393.
†Standard Phaetons.

ENGINE

Anst—Ansted
Cont—Continental
D.-Ly—Dort Lycoming
H-S—Herschell-Spillman
Lyc—Lycoming
Nort—Northway
Walk'r—Walker
Weid—Weidely

CARBURETOR

Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg
Y & T—Yale & Towne

CLUTCH

f-d—Friction drive
c—Cone
m-d—Multiple disc
s-p—Single plate
B & B—Borg & Beck
B-L—Brown-Lipe
North—Northway

STARTING, LIGHTING IGNITION

A-L—Auto Lite
G-D—Gray & Davis
L-N—Leece Neville
N. E.—North East
West—Westinghouse

GEARSET

f-d—Friction Drive
B-L—Brown-Lipe
G-L—Grant-Lees
Mech—Mechanics
North—Northway

UNIVERSAL

f—fabric
m—metal
M &E—Merchant & Evans
Mech—Mechanics

REAR AXLE

F—Floating
½F—Semi-Floating
¾F—Three-Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
Tim—Timken

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (N.A.C.C.)	NAME AND MODEL	Carburetor	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal Joint: Type and Make	Rear Axle: Type and Make	†Gear Ratio
$3985	$4090c	$4090	.....	$5500	$5500	132	33x5	Own..	8-3¼x5¼	33.80	LaFayette	Johnson	Delco	Delco	m-d Own	Own	m Own	F Own	4.58
5500	5500	5500	.....	5500	5500	134	32x4½	Own..	6-3¾x5¼	33.75	Leach 999	Rayfield	Delco	Delco	m-d	Own	m	Tim	
1695	(1695	(1795	$2045d	2345c	(2515d	123	32x4½	Anst..	6-3¼x4½	25.35	Lexington 23	Rayfield	G-D	Conn	m-d Ansted	Warner	f Snead	¾F Own	5.10
	1995	2095			2145d														
1575	1395	.....	1575	(2085	2245	117	32x4	Own..	6-3½x5	23.44	Liberty 10-D	Strom	Wagner	Wagner	s-p B&B	Detroit	m Spicer	½F Tim	4.80
				1695k															
3800	3800c	3800	.....	4400d	4700d	136	33x5	Own..	8-3¾x5	36.45	Lincoln	Strom	Delco	Delco	m-d Own	Own	m Spicer	F Tim	4.55
.....	7600c	7800	.....	10500	11000	142	35x5	Own..	6-4½x5½	48.60	Locomobile 48	Ball&B	West	Delco	m-d Own	Own	m Own	F Own	3.50
3385	3185c	3185	.....	3985	4385	136	32x4½	Own..	6-3¾x5⅛	33.75	Marmon 34	Strom	Delco	Delco	m-d Own	Own	m Spicer	¾F Own	3.75
885	885	.....	.....	(985	1335	109	31x4	Own..	4-3½x4½	21.03	Maxwell	Stewart	A-L	Simms	c Own	Own		¾F Own	4.56
				1235															
6300	6300c	6300	.....	7500	7500	140	33x5	Own..	6-4½x6	48.60	McFarlan 1922	Rayfield	West	Splitdorf	s-p B&B	B-L	m Peters	F Tim	3.50
3950	3950c	3950c	.....	4850	5250	132	32x4½	Own..	4-3¾x6¾	22.50	Mercer Series 5	Ball&B	West	Eisemann	m-d Own	Own	m Spicer	F Own	3.87
.....	3750	3750	.....	5000	5000	132	32x4½	Own..	6-3¾x5	33.75	Mercer 6	Strom		Eisemann				¾F	3.77
1895	1895	.....	.....			119	32x4	Cont..	6-3¼x4½	25.35	Merit	Strom	Delco	Delco	s-p B&B	Muncie	f Snead	F Col	4.60
1490b	1590	.....	1850c	2050c	2275d	120	32x4	Own..	6-3½x5	29.40	Mitchell F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4.42
.....	.....	1690	.....	.....	.....	127	32x4½	Own..	6-3½x5	29.40	Mitchell F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4.42
950	950	.....	.....	.....	.....	115	32x4½	Own..	4-3¼x4½	16.90	Monroe 1922-S-9	Zenith	A-L	Conn	m-d Own	Mech	m Universal	¾F Own	5.80
1295	1195	p1445d	1885c	1585c	1695	115	31x4	Cont..	6-3⅛x4½	23.44	Moon 6-40	Strom	Delco	Delco	s-p B&B	Warner	m Spicer	½F Tim	4.80
1785	1785	1785	1885	2785	(2785f	128	33x4½	Cont..	6-3⅝x4½	27.34	Moon 6-56	Strom	Delco	Delco		B&B	B-L	m Spicer	½F Tim	5.09
					2485c														
1210	1240	.....	1395c	.....	2040d	121	33x4	Own..	6-3¼x5	25.35	Nash 691-96-97	Marvel	Delco	Delco	s-p B&B	Own	m Own	½F Own	4.50
.....	.....	1390	1645	1890c	2190f	127	34x4½	Own..	6-3¼x5	25.35	Nash 692-94-95	Marvel	Delco	Delco	s-p B&B	Own	m Own	½F Own	4.50
915	935	.....	.....	(1385b	(1545d	112	33x4	Own..	4-3½x5	18.23	Nash Four 41-4	Schebler	Delco	Delco	s-p B&B	Own	m Own	½F Own	4.88
				1195k	1275k														
3475b	2475c	(2375	.....	3250c	3825f	130	32x4½	Own..	6-3½x5¼	29.40	National BB	Rayfield	West	Delco	s-p B&B	B-L	m Arvac	F Col	4.09
		3150		3725c															
2500	2500c	2600c	.....	.....	3500d	128	32x4½	Cont..	6-3¼x4½	25.35	Noma 3C	Claudel	Delco	Delco	s-p B&B	Detroit	m Spicer	½F Tim	4.45
3000	3100c	3200c	.....	.....	5500	128	32x4½	Bea..	6-3½x5¼	29.40	Noma 1D	Zenith	Delco	Delco	s-p B&B	Detroit	f Spicer	½F Tim	4.45
.....	1035	.....	.....	.....	.....	116	32x3½	Lyc..	4-3½x5	19.60	Norwalk 430-KS	Zenith	Dyneto	Delco	s-p B&B	G-L	m Universal	¾F Col	5.00
975	995	795g	1165c	(1445d	1545	115	32x4	Own..	6-2 11/16x4¾	18.99	Oakland 6-44	Marvel	Remy	Remy	c Own	Muncie	m Mech	F Own	4.33
				1185a															
3750e	3750	3880	3750c	4500c	4800f	134	33x5	Cont..	6-3⅝x5¼	31.54	Ogren 6 T D Luxe	Rayfield	Bosch	Bosch	m-d B-L	B-L	m	F Col	4.00
955	975	1380d	1075	1475	1595	115	32x4	Own..	4-3 11/16x5¼	21.86	Oldsmobile 43 A	Zenith	A-L	Remy	s-p B&B	Warner	m Own	¾F Own	4.33
1735e	1850e	1735	.....	.....	.....	122	33x4½	Own..	8-2 7/16x4¾	26.45	Oldsmobile 46	Ball&B	Delco	Delco	c Own	Warner	m Own	¾F Own	4.43
1625g	1375	.....	1675	1875	2025	115	32x4	Own..	8-2 7/16x4½	26.45	Oldsmobile 47	Johnson	Delco	Delco	s-p B&B	Warner	m Spicer	¾F Own	5.10
525	525	.....	425g	795	875	100	30x3½	Own..	4-3 3/8x4	18.23	Overland 4	Till	A-L	Conn	s-p B&B	Own	m Own	½F Own	4.50
2485	2485	2250g	.....	3175	3275	126	33x4½	Own..	6-3 3/8x5	27.34	Packard Single-Six	Own	A-K	Delco	m-d Own	Own	f Spicer	½F Own	4.30
.....	2350g	2685	.....	.....	3525	133	33x4½	Own..	6-3 3/8x5	27.34	Packard Single-Six	Own	A-K	Delco	m-d Own	Own	f Spicer	½F Own	4.66
3850	3850	3850	.....	5240	5400	136	35x5	Own..	12-3x 5	43.20	Packard Twin-Six	Own	Bijur	Delco	m-d Own	Own	m Spicer	½F Own	4.36
1465	1465	1290g	.....	1995	2245	119	32x4	Own..	6-3¼x5	25.35	Paige 6-44	Strom	Remy	A-K	s-p Long	Own	m Universal	¾F Salis	4.75
2495b	.....	2195	2245	3100	3155	131	33x4½	Cont..	6-3 3/8x5	33.75	Paige 6-66	Rayfield	Remy	A-K	s-p Long	Warner	m Mech	¾F Tim	4.60
.....	1390	1425	.....	2295	2395	120	32x4½	Cont..	6-3 3/8x4½	27.34	Paterson 22-6-52	Strom	Delco	Delco	s-p B&B	Durston	m Hartford	½F Std	4.50
.....	2900e	2990	.....	(3300a	(3990d	128	33x5	Own..	8-3½x5	33.80	Peerless 23	Ball&B	Delco	Delco	m-d Own	Own	M Spicer	¾F Tim	4.90
				3400c	4090f														
5250	5250c	5250	.....	6800	(6900	138	33x5	Own..	6-4 x5½	38.40	Pierce-Arrow	Own	Delco	Delco	m-d Own	Own	m Spicer	½F Own	3.93
					7000														
2050	2000	2050	.....	2950	3000	126	32x4½	H-S..	6-3¼x5	25.35	Pilot 6-50	Till	Bijur	Conn	s-p B&B	Muncie	m Hartford	¾F Col	4.33
3150	3100e	3250	.....	4300	5100	126¾	32x4½	Own..	6-3 3/8x5½	27.34	Premier 6-D	Johnson	Delco	Delco	s-p B&B	Own	m Spicer	¾F	
1095	1095	.....	.....	1750	1825	117	32x4	Falls..	6-3½x4¼	23.44	Premocar 6-40-A	Strom	Wagner	Wagner	s-p B&B	Mech	m Spicer	¾F	
.....	1665	.....	.....	2385	2475	116	32x4	Own..	4-3¾x5	22.50	R & V Knight R	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	F	
2475	2475c	2475	.....	3015	3105	127	32x4½	Own..	6-3½x4½	29.40	R & V Knight J	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	½F Tim	4.90
1505	1645	1485	1745	(2355c	(2435f	120	33x4	Own..	6-3 1/16x5	24.34	Reo T6 & U6	Rayfield	N.E	N.E	m-d Own	Own	m,f Own	½F Own	4.70
				(1835	(1885														
3200	3200	3200	.....	.....	4000	131	32x4½	Dues..	4-4¼x6	28.90	ReVere C	Strom	West	Bosch	m-d B-L	B-L	m Spicer	¾F Std	4.00
.....	1485	.....	.....	1885	1985	117	32x4	Own..	6-3 1/16x4¾	23.44	Rickenbacker A	Strom	Simms	A-K	c Own	Own	m Universal	¾F Own	
2685	2485c	2685	.....	3585	3585	128	32x4½	Cont..	6-3½x5¼	29.40	Roamer 6-54-E	Strom	Bijur	Bosch	s-p G-L	G-L	f Snead	½F Tim	4.88
3785	3485	3650c	3650c	.....	4650c	128	32x4½	Dues..	4-4¼x6	28.90	Roamer 4-75-E	Strom	Bijur	Splitdorf	m-d B-L	B-L	f Snead	½F Tim	3.77
.....	10900	.....	.....	.....	.....	143½	35x5	Own..	6-4½x4¾	48.60	Rolls-Royce	Own	Bijur	Bijur	c Own	Own	m Own	F Own	3.25
1195	1195	.....	.....	1795	1795	112	32x4	Own..	4-3½x5	19.60	Saxon 125	Strom	Wagner	Wagner	s-p Detlaff	Covert	m Peters	¾F	4.75
1645	1645	.....	.....	2645	2645	118	33x4	Cont..	6-3¼x4½	25.35	Sayers Six DP	Strom	Delco	Delco	s-p B&B	G-L	m Arvac	½F Std	4.75
875	875	.....	.....	.....	.....	108	30x3½	Lyc..	4-3½x5	19.60	Seneca L-2 & O-2	Zenith	A-L	A-L	s-p B&B	G-L	m Universal	F	4.75
1095	1095	.....	.....	.....	.....	112	31x4	Lyc..	4-3½x5	19.60	Seneca 50 & 51	Zenith	A-L	A-L	s-p B&B	G-L	Detroit	F	4.80
980	980	.....	.....	1685	1685	114	32x4	Supr..	4-3 3/8x5	18.23	Sperling A	Zenith	Bijur	Splitdorf	s-p B&B	Warner	m Hartford	¾F	
2150	.....	2395	2395	2750	3200	127	34x4½	Own..	8-3¼x5	33.80	Standard 98	Zenith	West	Splitdorf	s-p B&B	G-L	m Arvac	½F Tim	4.45
2750	2750	2750	2425g	3950c	3985f	130	32x4½	Own..	2-4 x5		Stanley 740	None	Bijur	None	None	None	None	½F Own	1.50
1765	1765	.....	.....	2750	.....	118	33x4	Cont..	6-3¼x4½	25.35	Stanwood Six	Strom	West	A-K	s-p B&B	G-L	m Peters	½F Std	4.50
319r	348s	285g	.....	580	645	102	30x3½	Cont..	4-3¼x4¼	15.63	Star	Till	A-L	A-L	s-p		Spicer		Tim 4.87
2250	2250	2450	.....	3150	3450	125	34x4½	Own..	4-3 3/8x5½	22.50	Stearns-Knight SKL4	Rayfield	West	A-K	m-d Own	Own	f Climax	½F Own	4.50
2700	2700	2850	.....	3500	3700	130	34x4½	Own..	6-3 3/8x5	27.34	Stearns-Knight 6	Rayfield	West	A-K	m-d Own	Own	f Climax	½F Own	4.50
1575	1585e	1625c	.....	2450	2550	122	33x4½	Own..	6-3¼x4½	25.35	Stephens 90	Till	A-L	A-L	s-p B&B	Mech	m Mech	½F Tim	4.90
7250	6900e	6800	(6900c	8600	8900e	138	35x5	Own..	6-4 11/16x5½	47.27	Stevens-Duryea E	Strom	West	Berling	m-d Own	Own	m Own	F Own	3.94
			(5600g																
975	975	785g	.....	1225	1550	112	32x4	Own..	6-3¼x4½	23.44	Studebaker Light Six	Strom	Wagner	Wagner	s-p Own	Own	f Thermoid	½F Own	4.55
(1250	1275	1275c	1000g	1875	2050	119	32x4	Own..	6-3½x5	29.40	Studebaker Special Six	Strom	Wagner	Wagner	s-p Own	Own	m Spicer	½F Own	4.40
1275c																			
1300g	1650	.....	1785	2275	2475	126	33x4½	Own..	6-3 7/16x5	36.04	Studebaker Big Six	Ball&B	Wagner	Wagner	s-p Own	Own	m Spicer	½F Own	3.70
2450	(2790c	(2640e	2670a	3490	4450	130	32x4½	Own..	4-4 3/8x6	30.63	Stutz KLDH	Strom	Remy	Delco	m-d Warner	Own	m Hartford	½F Own	3.50
	3165c	3015																	
2025	2125	2175c	.....	2650c	2785	118	32x4	Own..	4-3 3/8x5½	18.23	Templar A-445	Strom	Bijur	Simms	s-p B&B	Detroit	f Snead	½F Co	4.40
1175	1175	.....	.....	.....	.....	117	33x4	H-S..	4-3½x5	19.60	Tulsa E-1-2-3	Zenith	Dyneto	Conn	s-p B&B	Muncie	m	F Salis	4.80
1275	1275	.....	1305	1785	1785	115	32x4	Own..	6-3¼x4½	23.44	Velie 58	Strom	West	A-K	s-p Dooley	Durston	m	¾F Own	4.66
.....	1990f	1990	.....	.....	2890	125	32x4½	Cont..	6-3½x5¼	29.40	Westcott D-48	Rayfield	Delco	Delco	s-p B&B	B-L	m	½F Tim	4.45
.....	1690	.....	1890	.....	2690	120	32x4	Cont..	6-3¼x4½	35.35	Westcott B-44	Rayfield	Delco	Delco	s-p B&B	Warner	m	½F Col	4.33
2475	2475	.....	.....	3275	3475	121	32x4½	Own..	8-3¼x4	33.80	Wills Sainte Claire A-68	Zenith	Delco	Delco	m-d Own	Own	m	¾F Own	4.40
1235	1235	1375	.....	1795	1950	118	32x4	Own..	4-3 5/16x4¼	21.03	Willys-Knight 28	Till	A-L	A-L	m-d Own	Own	f	¾F Own	4.44
3400	.....	3400	3600	4000	4550	132	33x5	Own..	6-3 3/16x5¼	33.75	Winton 40	Rayfield	Delco	Delco	m-d Warner	Warner	f	¾F Tim	4.66

MISCELLANEOUS
a—2 Passenger, d—5 Passenger
b—3 Passenger, e—6 Passenger,
c—4 Passenger, f—7 Passenger
g—Chassis Price.
h—All Metal Type.
k—Soft Top Type.
n—Tire Size 32x4½.
p—Sport.
†—Price without starter and demountable rims. Price, complete, $414.
s—Price without starter and demountable rims. Price, complete, $443.
†Standard Phaetons.

ENGINE
Anst—Ansted
Bea—Beaver
Cont—Continental
Dues—Duesenberg
H-S—Herschell-Spillman
Lyc—Lycoming
Supr—Supreme

CARBURETOR
Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg

STARTING, LIGHTING IGNITION
A-L—Auto Lite
G-D—Gray & Davis
L-N—Lecce Neville
N E—North East
West—Westinghouse

CLUTCH
c—Cone
f-d—Friction drive
m-d—Multiple disc
s-p—Single plate
B & B—Borg & Beck
B-L—Brown-Lipe

GEARSET
f-d—Friction Drive
B-L—Brown-Lipe
G-L—Grant-Lees
Mech—Mechanics

UNIVERSAL
f—[illegible]
m—[illegible]

The following price changes have been announced since the above tables were compiled: **STUDEBAKER BIG SIX:** Phaeton, $1,785; 4-passenger sport, $1,835; 4-passenger coupe, $2,400; sedan (regular), unchanged; sedan (special), $2,750.

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Speed Brace Socket Wrenches

No wrench can handle that out-of-the-way nut or bolt like a Speed Brace Socket Wrench. And the Mossberg line contains a complete assortment of these efficient wrenches in all sizes and shapes for all kinds of work.

These are supplied the dealer, together with sales boards—Silent Salesmen—in assortments that correspond with the demand. All live ones. Mossberg all-steel construction, finished in burnished nickel. Rugged, practical wrenches, made for hard work. Popular among your customers.

No. 2400 Salesman

This well balanced display board assortment contains 70 Speed Braces in quantities ranging from four to nine of each wrench. Each number is made of ½ inch steel bar, is 19¼ inches in length, and is finished in burnished nickel. The board itself is made of chestnut with nickeled steel hook. Size, 20 inches by 60 inches. Free with complete assortment.

"L" Salesman

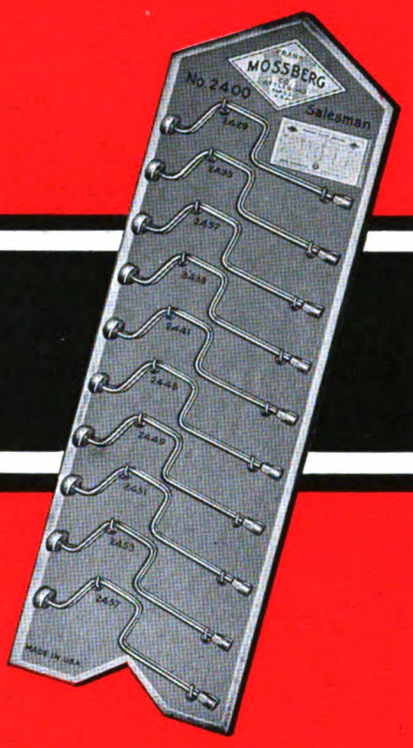
Assortment contains 140 Solid Socket Wrenches—47 6-inch "T" Wrenches—57 12-inch "T" Wrenches, and 36 10-inch Offset Wrenches. All fast sellers. Constructed of ½ inch steel bar, finished in burnished nickel. Board 20 inches by 60 inches—same high quality as "2400" board. Furnished free with complete assortment.

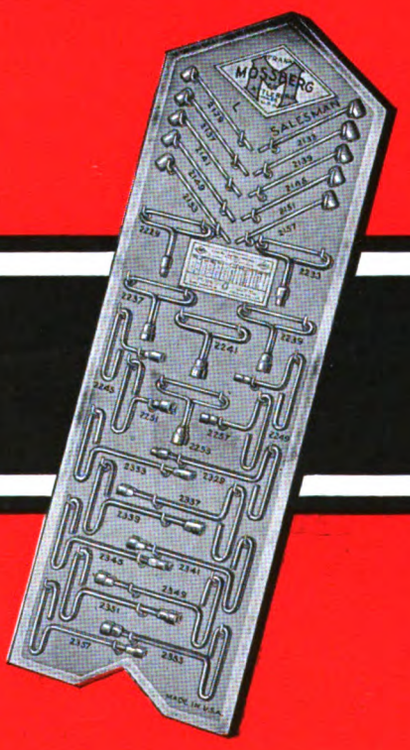
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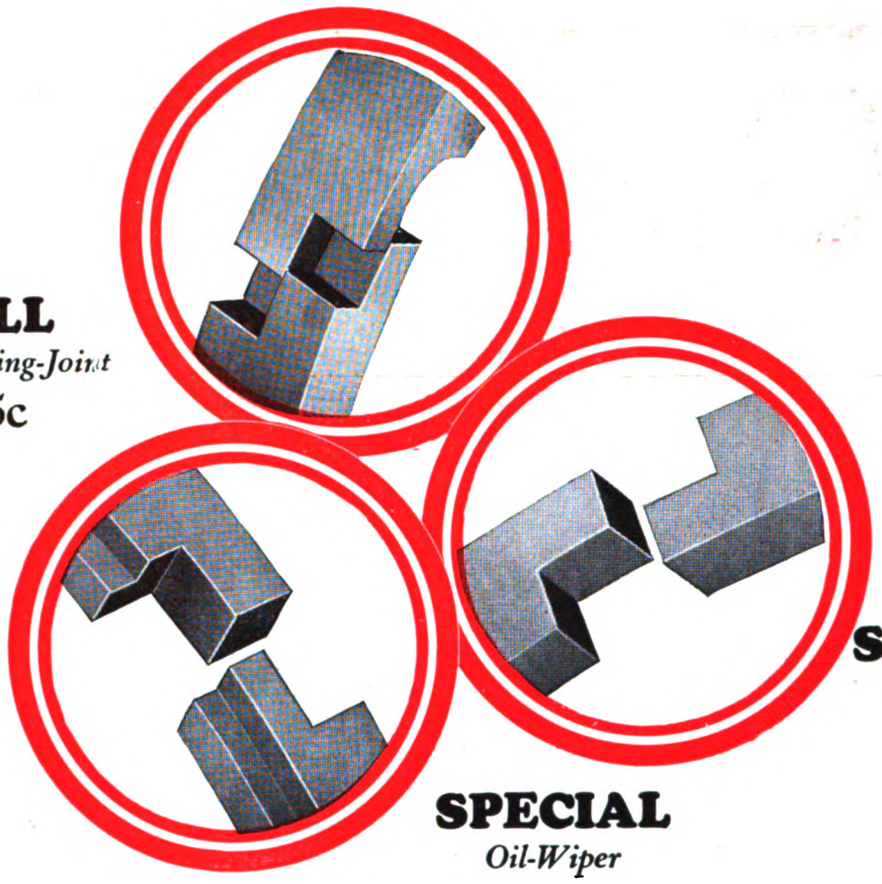
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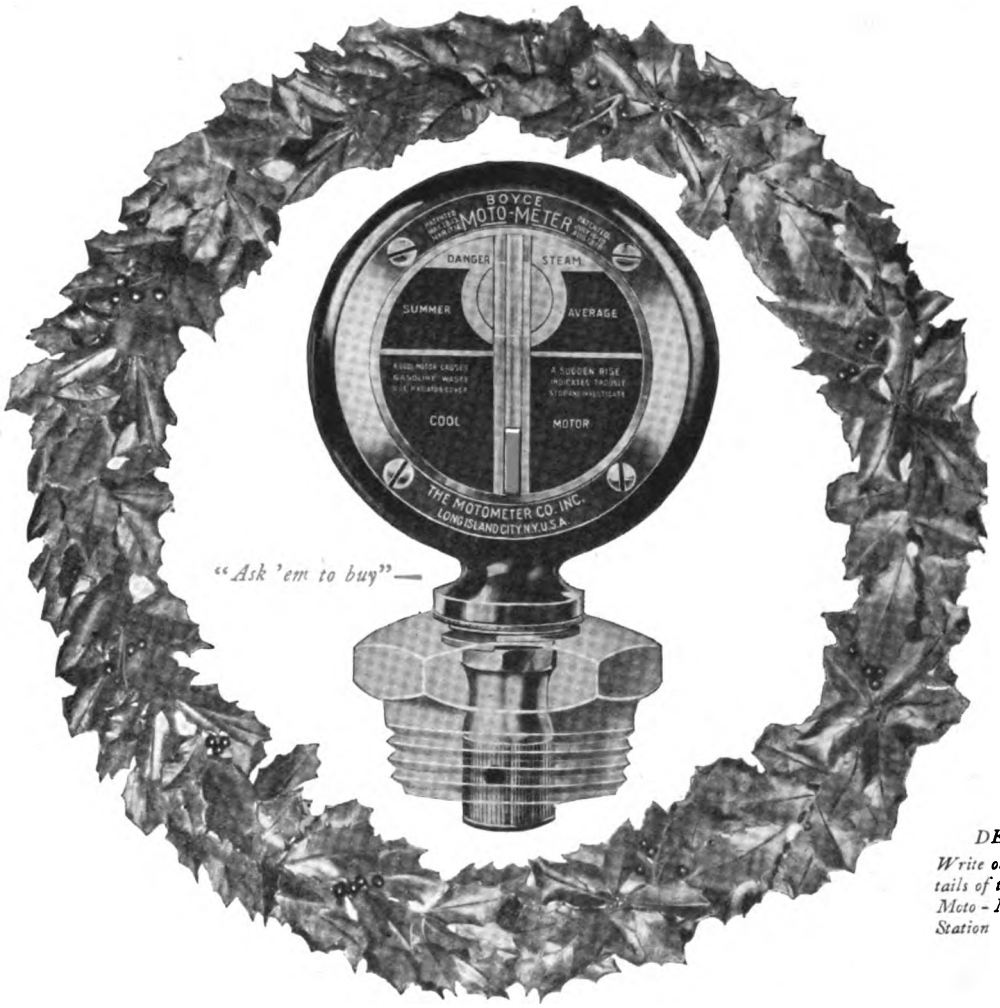
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DEALERS, JOBBERS AND GARAGEMEN

Volume LXXIII
Number 7

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HOWELL, MICHIGAN

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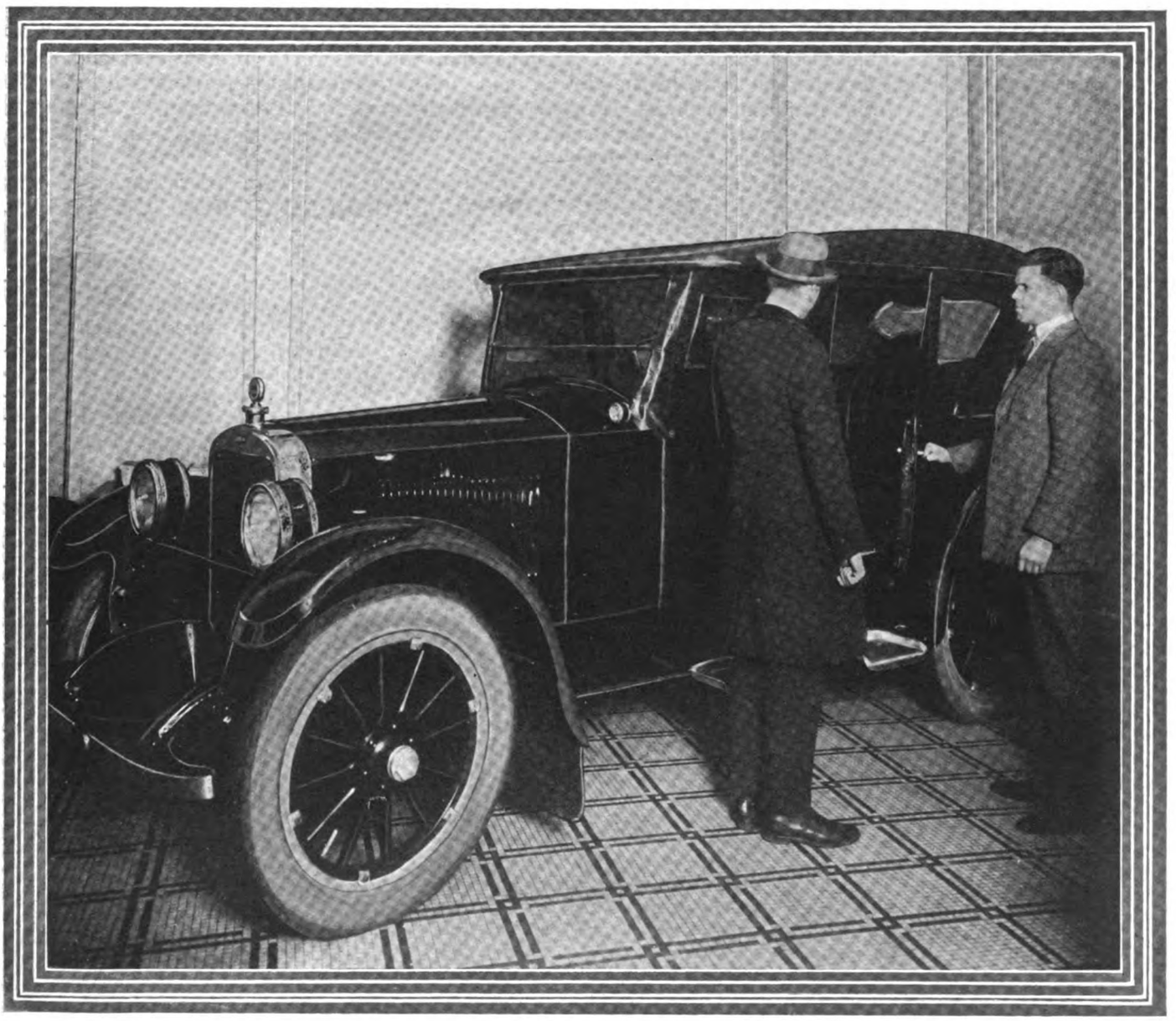
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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXIII New York, U. S. A., Wednesday, November 15, 1922 No. 7

When Closed Cars Are Scarce—



Let's Not Forget That Open Cars Have Winter Selling Points That Will Appeal to Prospects If They Are Properly Presented. Read on the Next Two Pages HOW to Sell Open Cars This Winter.

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Selling Open Cars This Winter

A Story That Tells How Some Dealers Who Can't Make Closed Car Deliveries Are Putting a Seasonal Appeal Into the Merchandising of Open Models

By LEON F. BANIGAN

INABILITY to make prompt delivery of closed models this winter threatens to curtail sales and profits for many dealers and, in some instances, to actually turn what otherwise would be a profitable year into a lean one.

The story of one eastern dealer handling a popular make is probably typical of hundreds of others throughout the country. This dealer entered 1922 with more than $50,000 worth of new cars and more than twenty used vehicles. But he had faith in the car he sold, faith in the future market and faith in his ability to wrest a fair profit from his business. For ten months he drove his organization at white heat. More than 200 new car sales, the reduction of his used car surplus, and the wiping out of his obligations to his banker was his reward for that ten months' work—

But not yet a penny of real profit on his investment. On his desk on Nov. 1 were orders for closed cars unfilled since Aug. 1 AND A LETTER FROM HIS DISTRIBUTOR ANNOUNCING THAT THE DEALER COULD EXPECT NO MORE CLOSED MODELS for the remainder of this year.

TO that dealer it meant just one thing—a year's hard work and *nothing* to show for it.

Nothing, UNLESS he can hold those closed-car prospects and sell them open cars while this winter's snow is flying—

Nothing, UNLESS he can make his open models attractive enough to prevent those closed-car sales from going to other dealers who were more fortunate in their ability to get closed models of less popular makes—

Can he?

That is this dealer's problem and that is the problem of many another dealer selling a popular make automobile this winter.

It is an issue that must be faced squarely. Will dealers who can't hope to supply the demand for closed models this winter plan NOW their winter selling efforts on open cars?

The answer is emphatically *"Yes,"* because in this lies the only opportunity for a profitable business through the winter.

At the outset it is well to recognize the fact that the open car of to-day is an infinitely better winter car than it was a few years ago. Five things have contributed to this:

1—*Chassis and powerplant refinements that have made all motor cars more dependable in all kinds of weather.*

2—*Better body work and especially the improved curtain and windshield designs which provide better protection from the elements.*

3—*Production and perfection of many accessories that contribute greatly to the comfort and safety of winter driving.*

4—*Improvement in design and workmanship of winter tops for all makes of automobiles.*

5—*Lower initial and operating cost of open models, even when equipped especially for winter driving.*

And it is these five things that CAN be sold this winter by the dealers who must depend on open-model sales for the bulk of their profits.

However, in selling the open car for winter use, no dealer will wish to present the open car in such a way as to place the closed model at a disadvantage in the prospect's mind. Enthusiasm in selling the open model must not be allowed to carry the dealer to a point where he will make it embarrassing for himself to sell closed models when they are more plentiful. It is not necessary to make claims of superiority for the open model, or to belittle the virtues of closed models. But it is desirable to sell the fact that OPEN CAR COMFORT IS POSSIBLE IN WINTER AND DEMONSTRATE IT.

Following are a few selling ideas that have been successful in moving open cars for dealers who could not supply the demand for closed models.

Salesroom and window displays.

1—During cold weather display on the salesroom floor and occasionally in the window one phaeton with all curtains attached, a heater installed, a protector on the hood or radiator, a tire cover, tires equipped with chains, wiper on the windshield, mats or scuff plates on the running boards, etc. Make it a rule to SELL every prospect who enters the salesroom on the various features that may be pointed out on this special car. Such a car on the salesroom floor not only helps sell open cars to prospects who can-

Nothing to Sell but Open Cars

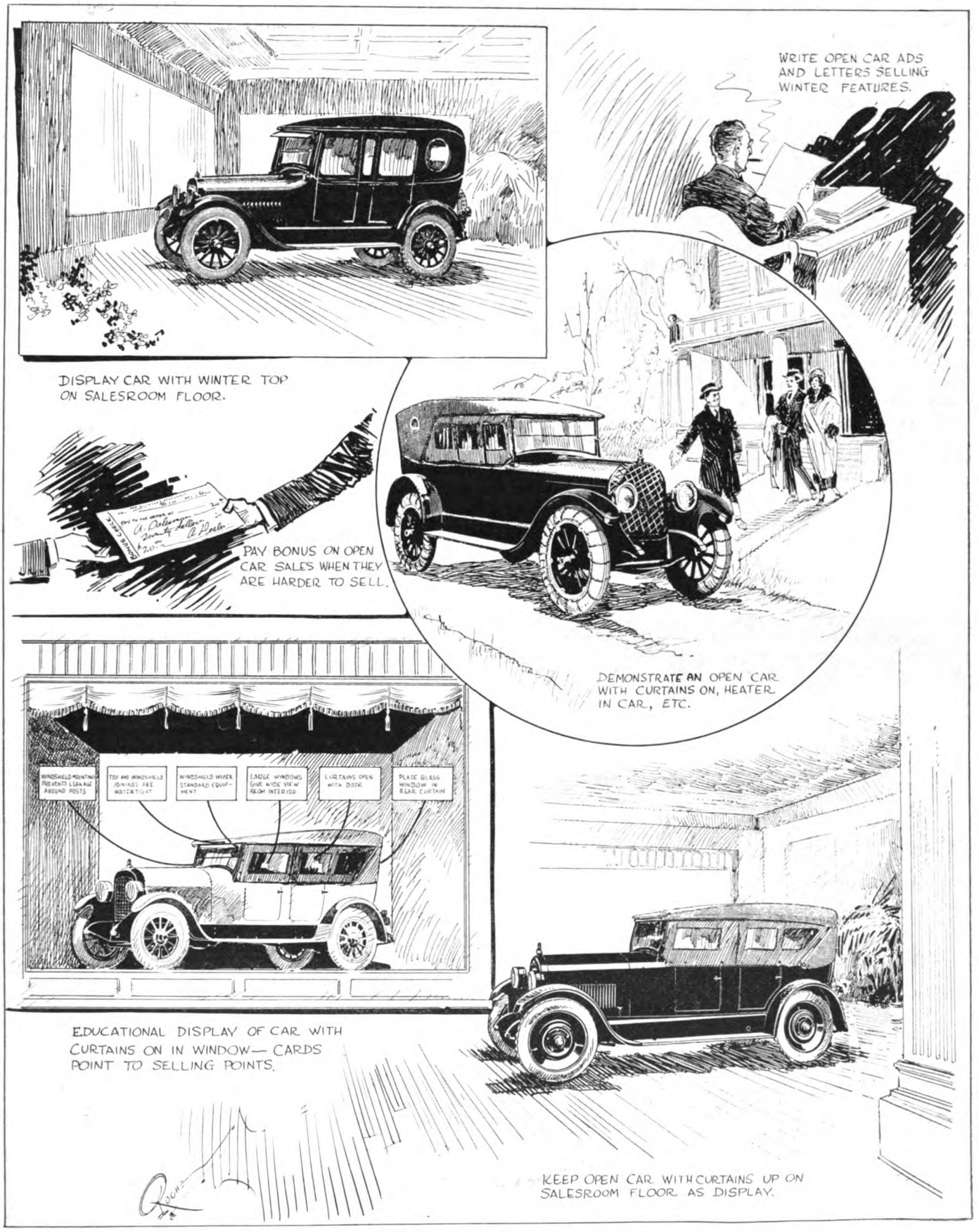
"CAN'T get closed jobs this winter—might as well shut up shop!"

It's not a new story. Some dealers have been saying so every winter, but some others know that open cars CAN be sold in larger quantities when they are presented with a seasonal appeal. This story tells some of the methods that have been successfully used in past winters to present the open car as a desirable winter car when closed models are scarce.

Is there an idea or two in this story that will help you sell more open cars this winter?

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Making a Winter Appeal with Open Cars



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not be supplied with closed models, but it provides a means of making a stronger selling appeal to the open-car prospect.

2—Equip a car with a winter top that is properly fitted and attractive in appearance and also with the other winter equipment mentioned in the foregoing paragraph, and use this on the salesroom floor to sell the winter-top ideas as a substitute for the closed car that cannot be delivered. Be prepared to quote a price instantly on this model with full equipment as it stands. Such a display and the ability to promptly quote a price "as she stands" has been particularly successful in selling open cars to closed-car prospects for some dealers.

An Educational Display

3—Make an educational window display of the winter features of a phaeton by equipping it with curtains and winter accessories and run ribbons from winter selling features to signs which describe them. For instance, attention might be directed to the water-tight connections now made in motor cars where curtains and top join the windshield, etc. Advantages of gypsy curtain, now practically universal, and other refinements may be stressed. Point out any other features of car in body or chassis that may be mentioned as distinctly advantageous in winter driving.

Advertising:

The dealer who must sell open cars this winter may very profitably devote a part of his advertising effort to selling the ability of his open models to serve well in winter weather.

Some newspaper space may be devoted regularly to pointing out the fact that it is possible to ride in comfort in "open" models, and how his cars are particularly built to give winter comfort.

Newspaper advertising and sales letters that sell the open-car equipped with a winter top have been used profitably by some dealers. In such efforts the price was quoted on the completed job and demonstrations were made in a car that had been equipped by the dealer, or that belonged to a friendly owner.

Demonstrating:

Many dealers report success in selling open models in winter by demonstrating them with curtains up and a heater and other winter accessories attached. Many an open-car sale has been lost through the fact that a demonstration date, previously made, fell on a cold, damp, raw day and the dealer and his salesmen gave no thought to selling anything but the mechanical performance of the car, completely overlooking the comfort factor in the demonstration. Some dealers have found it advantageous, where open cars are used in demonstrations, to have them equipped with windshield wings, which enhance considerably the comfort of winter driving. Other dealers make arrangements with owners of cars fitted with winter tops to use these occasionally for demonstrations.

Make the Prospect Comfortable

Neglecting to provide foot warmers for demonstrations on extremely cold days has killed many a sale for some dealers and salesmen.

Remember that the comfort of the prospect is one of the things that is going to figure in the sale of cars that are demonstrated this winter.

Selling the open car:

Aside from the displaying, advertising and demonstrating of open cars in winter there are other merchandising efforts that some dealers have profitably employed.

One of these is the practice of offering one or two per cent higher commission on models that the dealer wishes particularly to move. Some dealers, finding open models piling up in cold weather, offer one or two per cent bonus on these for a limited period. Other dealers have found it effective to conduct a sales contest offering special prizes and bonuses for open-car deliveries made by salesmen in certain periods.

Selling Used Cars

The factor of comfort is one often overlooked in selling used cars in winter. Some dealers have found it profitable to pay particular attention to repairing the curtains of used cars and showing a few used cars with the curtains up. When dealers sell used cars this way they do not neglect the opportunity of calling the prospect's attention to the good condition of the curtains and the comfort that they will afford him while driving the car in winter weather.

On the whole, a special winter selling effort on open models does not involve the expenditure of a lot of money or doing anything radical in a merchandising way. It simply means the USE of a timely, seasonal appeal in presenting the ability of open models to provide reasonably comfortable winter driving.

The dealer who can't make closed car deliveries and who puts intensive, seasonal effort into selling open jobs this winter is going to sell more and make more money than the fellow who devotes all his time and effort to dodging and putting off closed car prospects.

Could You Dress This Window for $40?



The "welcome" sign is only an incident in the welcome which this window extends to the passerby. In Brooklyn, N. Y., where it graced the sales room of the Kunkel Automobile Co., Velie dealer, many passersby became visitors, some of them prospects and several of them customers as a result of the appeal which it made to inspect the cars shown. Kunkel's men had a lot of fun getting up the exhibit. All they had to buy was lumber and paint for the fence. The ferns were regular salesroom decorations and the autumn leaves, evergreens and pumpkins were gathered in a trip with a car out into the country on Long Island. A few bushels of ordinary gravel made up the roadway and green paper with shredded strips pasted on it by hand provided the grass along the edges of the road. The display was used during Brooklyn's "Autumn Auto Show," which was just another name for a closed car week

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Taking the Proverbial "Stitch in Time"—

How One Dealer Insures Complete Understanding, on Both Sides, Before Starting a Repair Job

By TOM BOTTERILL
Hudson and Essex Dealer, Denver



Tom Botterill

WE have always been of the opinion that the successful dealer, now and in the future, will be the one who gives serious consideration to his old customers, not only through the courtesy of the sales department, but also the courtesy that comes through the employees of the service station or the repair department.

We have felt as motor cars became more or less standard that those dealers who wished to stay in business could only do so by giving their customers service and courtesy superior to that of their competitors.

It has occurred to me that, if the work that comes to the repair department was taken in properly, and if the right explanation was made to the customer, that everything would go along much more smoothly and more satisfactorily than it usually does; and in order to try to accomplish this, we have issued the following instructions or suggestions to the men in charge of taking in the work of our repair department:

"Be sure to have a distinct understanding with the customer on work.

"Hurry Up" Jobs

"If the customer wants a 'hurry-up' job, and you know it cannot be done in a satisfactory manner, tell him so. Explain to him that haste on mechanical work usually spells a poor job, but if he must have it, we will do the best we can, if he is unable to give us the necessary time.

"As an example: When a job of tuning comes in, or suppose the customer has a noise in the motor, explain to him that we will do the things that will usually remedy this trouble, but perhaps this will not do the work as it should be done, so that he may have to come back.

"Tell him it is our rule to take care of such troubles at the least possible expense and delay, but often in doing this, we find that we have not overcome the particular trouble, so that you must impress upon him that if such happens in his case, to be sure and bring the car back, calling our attention to the fact that the trouble is still there.

"Explain to him that there are so many things that may happen to a motor car that our diagnosis is not always correct, but that we stand ready to make good on any defects that may occur in our shop or our work.

"Explain to him that our whole efforts are to please him, but that so long as the human element enters into work, we are bound to make some mistakes, but that we sincerely regret these mistakes and only want the opportunity to make good.

"I want you to sell our service. I want you to impress the customer with the fact that we stand ready to make good on any work, regardless of what it may cost us.

"During the months of June, July and August, the shops are unusually busy, and that is the time when the customer should be treated the most courteously, and everything should be explained to him thoroughly.

"I have often noticed that there is a feeling we should have more room, but this can easily be explained to him by the fact that we only have three or four months when the shop is working at capacity, and the rest of the year, we are looking for work.

"Impress upon our customers the necessity of having their overhauling or their big work done during the dull season, like October, November, December, January and February. At such times we can do better work, do it quicker and save him considerable money.

"We want each customer thoroughly impressed with the fact that we are particularly anxious to please him, and that our whole efforts are to do so. While we may occasionally make mistakes that will displease him, nevertheless, we always stand ready to make good on those errors.

"Extend every courtesy in your power to every customer. In other words, 'Do unto him, as you would have him do unto you.' Always see that every car goes out in good shape—steering wheel cleaned off, the upholstery in good shape, and that no grease spots or dirt be allowed to appear on any car that is left here to be repaired.

"The strict observance of these suggestions will assist you very much in reducing complaints from your customers and insure you a greater co-operation from the customer."

You will note that we have repeated ourselves quite a good deal in these instructions, particularly on those points dealing with courtesy and thoughtfulness in regard to the wants of our patrons. I am satisfied from a careful study of our records that fully 90 per cent of our cars are sold through the direct or indirect influence and good recommendations of our old customers, and I know that there is no surer way of offending these customers than being careless and negligent in our Service Department.

Building Good Will

It seems to me that it is far better to explain thoroughly to a customer just what can be done in regard to his troubles, have a clear understanding as to the work to be performed, and also call his attention to the fact that men are only human after all and not infallible, and that if our work is not satisfactory in all cases, our intentions are, so that we may thoroughly realize that we are trying our best to please him, and particularly to impress upon his mind that any work that we should turn out that is unsatisfactory to him, he may feel free to come back immediately and call it to our attention, and it will be taken care of without charge to him.

We have been drilling our shop employees for some time in the necessity of this courtesy to the customer, and this year we have had fewer complaints than ever before in our history. We have always had a very liberal policy in regard to real service to our customers, but even with the very best of intentions without your men trained to courteously explain them to the customer these intentions would be worthless and the customer might be offended in such a way that he would never return again.

We feel that there is no dealer who can afford to neglect this very important part of his business, and if he is to succeed in the future, and to stand out as he wishes to do, he must extend every thoughtful action and courtesy to the owners of his cars, in order that they in turn will constantly say a good word for his institution.

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Making Smiles Ring the Cash Register

The "Smile" and the "Funny Story" Boost Sales for Hollywood Dealer Who Makes Good Humor a Feature of His Merchandising

SMILES and wholesome humor, featured in an unusual merchandising policy, have contributed largely toward building a remarkable business in Hollywood, California, for Frank and Walter Muller, owners of Muller Brothers service station and accessory store. Muller Brothers is indeed a distinctive institution. There is something "absolutely different" in the atmosphere at the Hollywood establishment.

Smiles—jokes—laughter, bubbling good nature, overwhelm all outward signs of hard commercialism.

"Have you heard this one?" seems to be as important a part of a salesman's conversation as "Do you need some oil?"

"EVERYBODY'S happy at Muller Bros." Every employee greets every customer with a winning smile and "new ones" are liberally uncorked on every turn.

"I don't believe in stern business faces or a stern business atmosphere," said Frank Muller. "There is enough of the serious side of life in the ordinary course of events, and I believe in conducting my business with a smile. We have the best-natured customers of any service station in the world. Why, our customers even register kicks with a smile. However, there are few occasions for any kicks here. As the latest issue of The Air Hose, our house organ, says: 'Volstead needn't worry about us. We never get a kick out of anybody.'"

Muller Brothers put out a house organ "every now and when we get the money" that probably has greater reader interest than any other house organ of its kind in the country. It reaches 7000 motorists in Hollywood, from Mary Pickford and Charlie Chaplin to flivver pilots, and they all read it. It is brimful of rich humor of a varied and original variety, but behind it all there is a veiled merchandising theme that sells merchandise and service.

Motorists in Hollywood watch for "The Air Hose" as they would for their favorite magazine.

From the current issue of the Muller Brothers house organ the following "lead" article is quoted under the heading, "National Convention of Muller Patrons to Convene on Labor Day:"

"It has been our ambition to bring together all the patrons of the World's Greatest Service Station. We'll realize the dream on Labor Day. We're going to gather 'round our gas tanks for a big get-acquainted celebration.

"Everyone who has ever had the pleasure of trading with us is invited. We want you to bring the children, your empty gas tanks and your check books. It will be a good ol' fashioned get-together party. We'll talk about old times, about each other, about our neighbors and considerably about those who don't trade with us. You will hear all about your own affairs from someone else. And think of the thrill and the joy of meeting all your old friends—people you haven't seen for two or three days.

"Muller Brothers are going to no expense to make the day eventful. Those who find it convenient are requested to bring at least three flat tires. If the pump service is delayed, you may remove the cap from your gas tank and allow what you've got to evaporate.

"Although it is Labor Day the festivities will be carried out strictly upon a basis of law and order. You'll get what you order if we got it. If we haven't got it, you can depend upon getting something else.

"We don't belong to any union, but there is plenty of strength in union and plenty of the same stuff in our gasoline.

"There's that much in common between us, although it isn't as common as some competitors might lead you to believe. Furthermore, we can tell a union suit as far as we can see a clothes line."

Some dealers may consider such reading matter as the above pure nonsense, but whatever it is, it is bringing an overwhelming volume of business to Muller Brothers for Hollywood motorists like this brand of humor.

"We've had to add to our circulation lists every month in order to satisfy requests for 'The Air Hose,'" said Mr. Muller. "It's the greatest 'merchandiser' we have ever employed, and yet there are no direct appeals for merchandise carried in it."

Frank and Walter Muller started up in business in Hollywood about three and a half years ago after they were discharged from the army. They ventured first in a small way, as their capital was small. They had one pump and a small stock of accessories. To-day their service station and store buildings cover more than three acres and their establishment represents the very last word in equipment and service features.

THERE is just one rule at Muller Brothers':

"Keep 'em Smilin'."

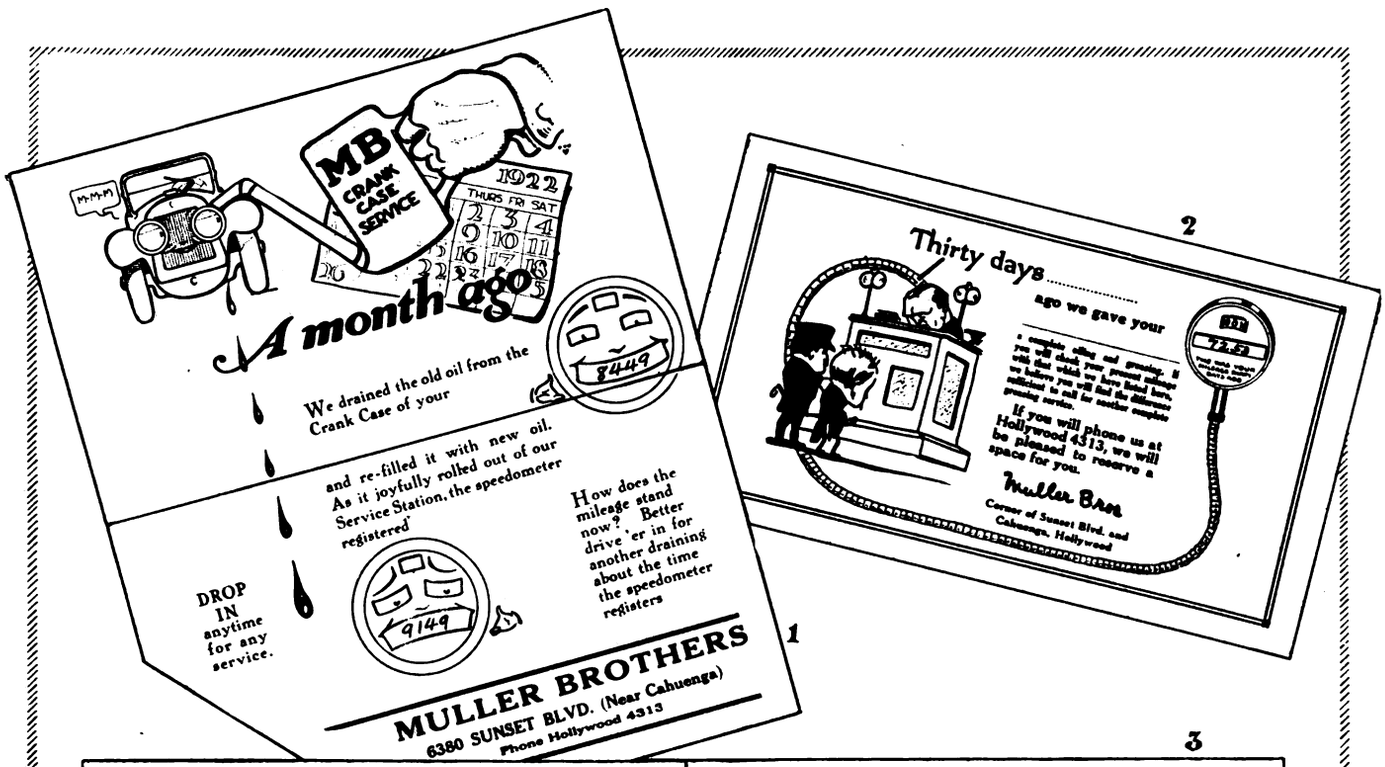
Every employee has a smile for every customer. Smiles, laughs, funny stories and bubbling good nature are an important part of the Muller Brothers' brand of salesmanship. Customers like the friendly atmosphere of the place and they tell others about it.

"The Air Hose," the firm's house organ, published "every now and when we get the money," fairly sparkles with humor. People ask to be put on the mailing list of this paper. Read the two pages from it which are reproduced on the opposite page. They are typical of the Muller Brothers' "Smile" policy.

You'll get a good laugh out of this story—and some selling ideas, too.

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Mail Advertising That Commands Attention



3

Page Two — The Air Hose at *Mullers*

ALL NIGHT SERVICE

Ordinarily the World's Greatest Service Stations close at 10:00 P.M. However, we don't want to disappoint our regular customers. So if you run out of gas, break a tire or develop an agonizing squeak during the night, just call us up at the store. Hang onto the phone and be patient. We open promptly at 7:00 A.M.



◆ ◆

If you can't get us on the phone we'll grant you the privilege of swearing.

If you call another service station we'll do the swearing.

◆ ◆

Something Must Be Wrong

The motor vehicle department reports that 3927 people bought new autos in California last month.

There's some dirty work somewhere. Our books show only 3721 new customers for the same period.

◆ ◆

No Need to Tickle 'Em

The reason Al and Bill are kept on the gas tanks exclusively is because we insist upon treating all customers alike, regardless of what kind of car they got or how much they buy. The first two gas men we had, guaged their good nature by the amount of gas sold. They'd grin at a flivver, smile at a Dodge, chuckle at a Buick, laugh at a Cadillac and go into convulsions over a Rolls-Royce.

A motorcycle pulled up one day and they cried themselves to death.

Muller Brothers
AIR HOSE

Published every now-and-then as we get the money, in the interest of those who motor

GAS N. OIL, Editor

MULLER BROS., AUTO NECCESSITIES
638 Sunset Blvd., Corner Cahuenga
Hollywood, California

Phone Holly 4111

The government probably would step in to settle a strike at Muller Brothers sooner than they did in the rail tie-up. Imagine the seriousness of 98 per cent of Hollywood's automobiles being squeaky, dirty and out of gas at the same time.

◆ ◆

Volstead needn't worry about us. We never get a kick out of anybody.

◆ ◆

Will Hays told us he was sorry he didn't bring his automobile with him. He said it wasn't because he needed the car, but that he wanted to go back and tell his friends he had enjoyed the honor of trading with us.

◆ ◆

KIPLING TODAY

A modern flapper and her ultra modern escort—

"A Rag, a Bone and a Hunk 'O Cheese."

◆ ◆

One of the boys who used to have his foot on the rail frequently in the good old days, rolled up in front of our gas tanks. He told the tankman to "fill 'er up and have one yourself."

◆ ◆

Sunset boulevard in front of our place is Hollywood's official brake testing ground. Our place shines in their eyes as they drive past. They slam on the binders. If they stop quickly they come in and buy gas. If they can't stop suddenly they go round the block, then come back and have their brakes lined. Try it yourself.

Page Three — The Air Hose at *Mullers*

Will Hays Came and Went.

The rail strike came and went.
Our printer came and went
(without getting his money),
But Hood Tires go on forever.

◆ ◆

Special Offer This Month

During September we're going to give our usual $9 worth of service absolutely free with every purchase. Your only expense so far as gas is concerned will be a small charge of 23 cents a gallon.

A good spare tire is last, but not least

GAS MAY GO UP

Here's a gentle warning to our customers. It might be well to lay in a supply of gasoline at present prices. Several gallons can be stored in the family fruit jars in the cellar near the furnace. The reason—

Mathilde is going to marry Max pretty soon. Maybe Grandpa Rockefeller doesn't exactly approve. But in the event he loosens up and forces a million or so on the unsuspecting Max as a wedding present—well, just figure it out for yourself.

◆ ◆

We oughta do a rushing business if those rubber bathing suits become popular. You can depend upon the patching and vulcanizing done in our rubber department.

◆ ◆

WARNING TO GIRLS

When a man asks you to go for a ride, don't take any chances. Find out first where he buys his gas, oil and tires.

Every hill that requires low gear is instantly related to our gasoline profit

MUTTON ROMANCE

He called her his little lamb. Then she got his goat, pulled the wool over his eyes and fleeced him. Now he's the most sheepish looking bird in the world.

OH, SKINNAY!

A thin school mom called Lena Catt
Cavorted on the beach at Catalina;
And there never was a lean-ah cat
Than cattish Lena Catt at Catalina.

◆ ◆

If you haven't got a car, buy a horn for the kiddies to play with.

◆ ◆

When all cars are equipped with Hood tires we'll turn our tire repair department into a cafeteria.

WE CAN FIX ANYTHING THAT'S PUNCTURED EXCEPT A ROMANCE.

A Hood tire will run 20,000 miles on the rubber, 2,000 miles on the carcass, 5,000 miles more on its reputation and heck knows how much farther on the fact that we sold it to you.

No, Oscar! It takes wind to keep your tires up—not garters.

1 and 2—These two pieces of literature feature the monthly lubrication service sold by Muller Brothers. Both of them emphasize the importance of regular lubrication and also serve as timely reminders. 3—Two pages reproduced from "The Air Hose," the Muller Brothers house organ. There is a lot of real humor on these pages. Read them through and you'll agree with us

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Safety and Usefulness of Highways First in Oregon System

Widening and Fencing of Curves, Elimination of Grade Crossings, Adequate Caution Signs and Enforcement of a Good Traffic Law Enhance Safety of Travel and Efficiency of Traffic Control

By H. W. LYMAN

CONSTRUCTION of State highways along the lines of the greatest safety to all who use them, as well as along the lines of the greatest permanence and usefulness, and erection of such signs and signals as may be necessary or desirable to keep the highways safe for travel and cut the number of accidents to the minimum, is one of the paramount duties of a State highway department.

Such is the position taken by the Oregon State Highway Commission, and as a result Oregon has already become known throughout the Pacific Coast country as a safe State in which to drive, and other Western States are adopting the system which has been worked out in Oregon.

In a general way, it may be said that there are three fundamental points in Oregon's system, which, it should be understood, embrace all the primary State roads outside the corporate limits of cities and towns, or in other words, the more important country roads. The cities and towns are left to solve their own road problems, as in practically all other States, although working in harmony with the State highway officials.

These three points are: 1—Safe construction, including widening of curves, super-elevation on curves, construction of fences and guards along hill sides and at other dangerous points and the elimination of railroad grade crossings.

2—Adequate signing of the highways, including the erection of a large number of caution signs, uniform in character, at possible points of danger; placing of a large number of red reflector lights and highway lighthouses at sharp curves and danger points and the painting of a line down the center of the road along many of the curves.

3—An adequate traffic law, enforced by a squadron of state motorcycle officers, co-operating with county officers and city police. The third feature is common in all States, at least in theory, but in the first two Oregon may be said to have made an important contrib ution to highway development, at least so far as the West is concerned.

OREGON roads, passing for the most part through forests or over mountains, cannot of necessity be made as wide and straight as can roads in the Middle West, and therefore proper construction becomes a problem to be carefully studied. In general the policy is maintained of eliminating so far as possible all sharp and blind curves, widening all curves four feet more than the straight road, dishing all curves so as to swing cars naturally around the curves and eliminating danger of skidding. Strong fences are put up along dangerous curves, and in some places masonry retaining walls have been erected to eliminate as far as possible danger of cars running over the side hills. These fences are made of stout beams and planking set firmly in the ground and are painted white and are uniform throughout. Erection of all such guards is designated as part of the construction of the road itself and is completed along with the road improvement.

One of the most important contributions in development of safer highways made by Oregon has been toward elimination of grade crossings. Remarkable progress has been made in this regard in the last two years, and the avowed intention of the State highway commission is to eliminate every railroad grade crossing in the state. This work has been accomplished in some cases by relocation of road and in others by bridging over or tunneling under the railroad tracks. In at least one instance cost of a viaduct and new location to eliminate one grade crossing exceeded $80,000, but this did not deter the highway commission, which has adopted the blanket policy of complete elimination of all primary grade crossings.

HIGHWAY development and traffic control are going to continue to wield a strong influence on motor car buying for a long time to come. Poor highway facilities and inadequate traffic control already are exerting strong sales resistance in some localities.

Motor World is presenting from time to time such articles as this one to provide the dealer with information upon which to base intelligent suggestions for the improvement of local highway conditions. There have been several stories in the past months and there will be more in the future.

The State highway department has adopted a standard caution sign which has been put up at dangerous points on all main roads of the State and is being put up on additional roads as they are built. Erection of such signs is considered just as much a part of the building of the road as is the drainage or the pavement surface. These signs are made of sheet iron enameled white, with black lettering bearing the caution slogan. They are diamond shaped, 18 inches along the sides, with angles of 103 and 77 degrees and are fastened to posts four by four inches in size, which are sunk securely in the ground. Such signs are placed at the driver's right edge of the road a few feet outside the pavement or gravel surface and at such points to

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command the attention of the oncoming driver. They are set approximately 400 feet ahead of the points regarding which they are to warn the motorist.

Taking the position that none of its completed roads are dangerous, the highway department has eliminated that word and has substituted "Caution." As the sign has been standardized, there are across the top in small letters the words, "State Highway"; next in large letters appears the word "Caution," following which there is an insignia of a standard kind, such as a black curved line for a curve, cross line for road intersection, etc., and under this in large letters appears the descriptive words, such as "Curve, Slow down," or "School," or "Cross Roads," etc. In this way every possible kind of danger point is described to the oncoming motorist, and he learns to at once be on the alert and to drive with caution immediately he sees one of the signs ahead.

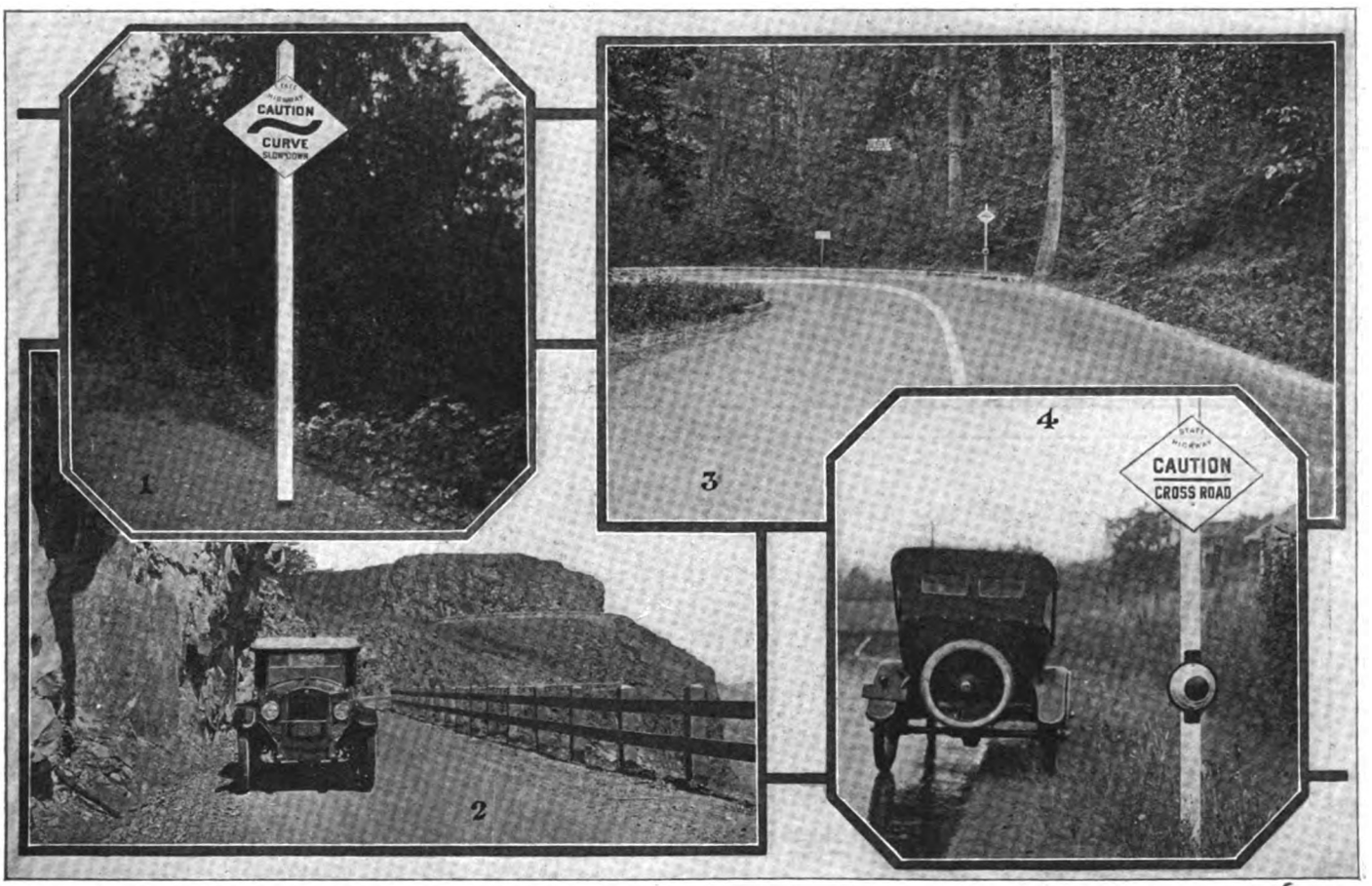
In placing the above signs a study is made of the position of the average driver's headlight as he comes down the road, and the signs are erected so that the lights will fall upon them at night. In addition many of the signs are equipped with red bull's eye reflectors placed immediately under the metal diamonds which show up brightly at night and automatically warn the driver.

In addition the highway commission has recently begun experiments with highway lighthouses, and have erected five at hazardous points on the main roads, these lights being arranged to automatically flash a red light at intervals of about every two seconds. If these lights prove beneficial others will be erected, despite their high cost.

Painting of a white line down the center line of the road on curves has recently been taken up and is proving highly desirable, so much so that the practice may be put into effect throughout the State. This plan, which consists of a white painted line about two inches wide, running down the center line of the curve, was put into use on the Columbia river highway, where traffic is unusually heavy for the width of the road, and has proved effective in keeping drivers on their own side of the road and in showing the location of the center of the road on dark or foggy nights. Of course this system cannot be used except on pavement.

The highway department has one primary object in all this work and is driving straight toward that end. That is to make the Oregon highways just as fool proof as possible and to cut down to a minimum the number of highway accidents. While definite figures are not available, it is known that the past year has seen a distinct lessening in the number of accidents on the State highways outside the corporate limits of cities and towns, despite the fact that traffic has greatly increased during the period.

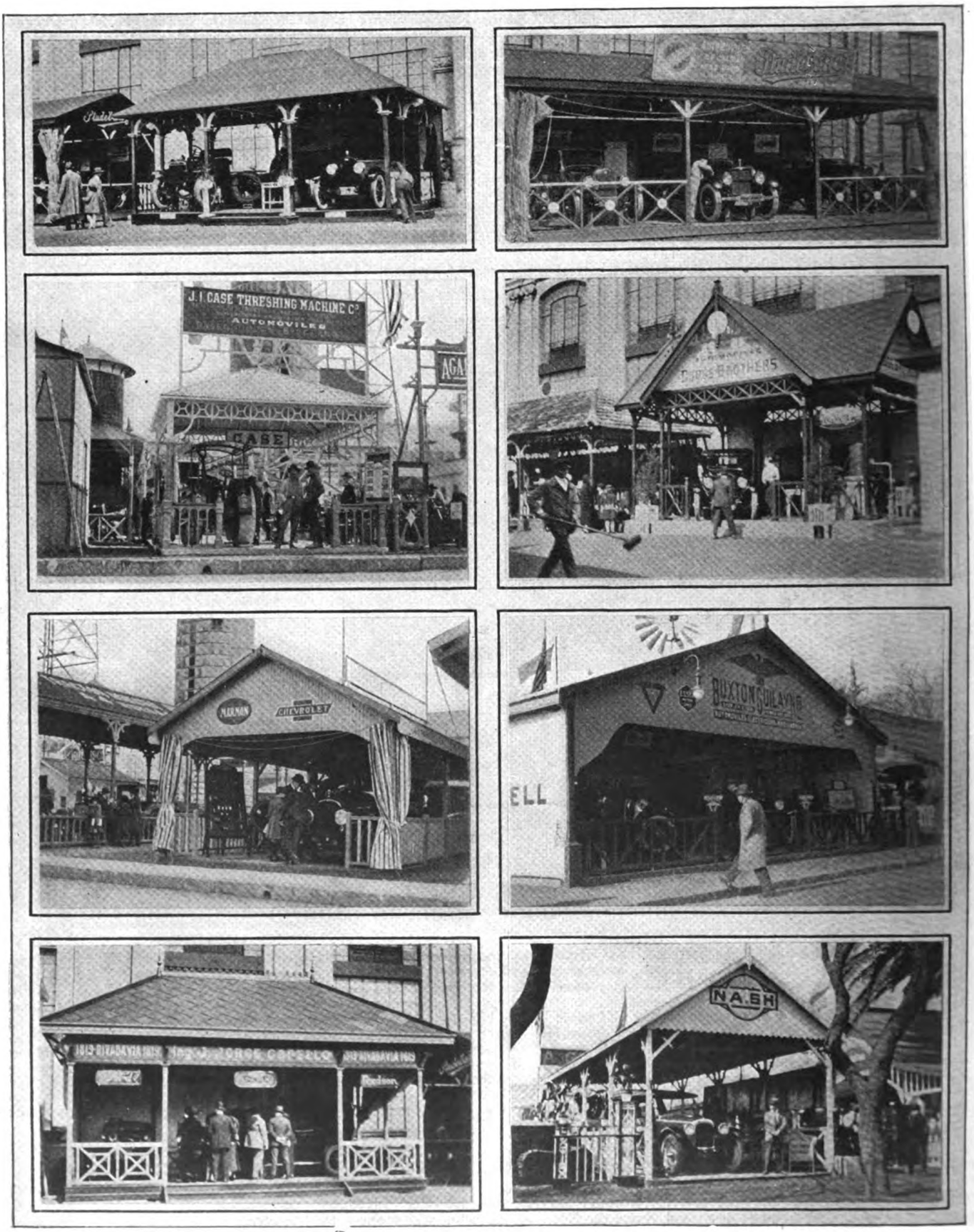
Protecting Motorists on Oregon Highways



1—Standard caution sign for all curves that are in any way hazardous. Many are equipped with red reflectors for night signalling in addition. 2—View showing method in which mountain highways are protected along the outside by erection of strong fences and walls. In the foreground is the standard heavy timber fence, painted white, while in the distance is shown a standard retaining wall of stone masonry. Many miles of both such protecting walls have been put up on Oregon roads. The view is on the Columbia River highway. 3—View showing curve on Columbia River highway marked with white line down center to guide traffic. Note the standard caution sign at the beginning of the curve located so lights at night will fall upon it. 4—One of the many standard caution signs erected by Oregon State highway department to warn motorists of cross roads, school, sharp curve or other hazardous point. Note red reflector to warn drivers at night. The approaching headlight lights this reflector up as brightly as if it had an electric globe behind it.

MOTOR WORLD has still more of these traffic stories in reserve for publication. Two of them describe interesting and progressive developments in traffic control in cities where an effort has been made, with success, to make motoring not only safer but more pleasant. Another discusses fundamentals which dealers might suggest to public officials of their communities to bring about improved traffic conditions. Watch for these traffic stories—about one a month.

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Old Friends in a New Setting

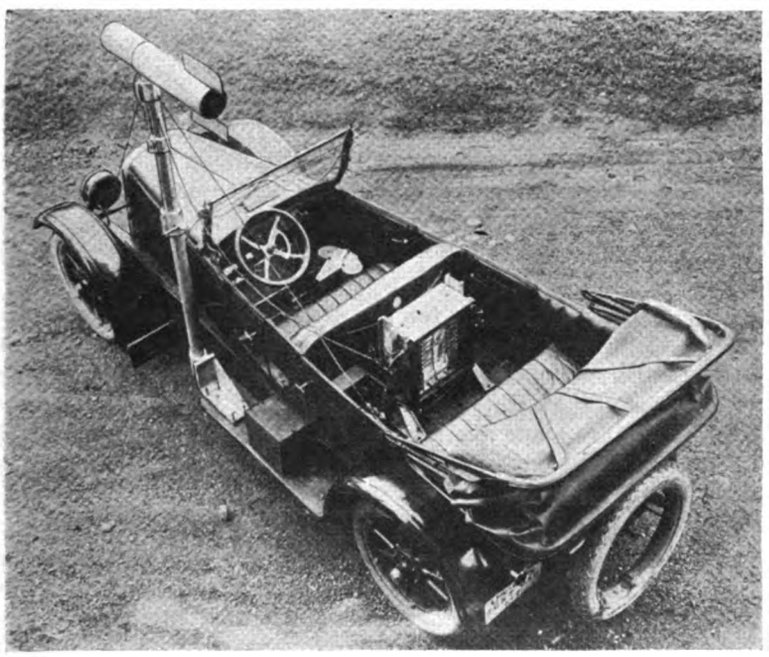
THESE views show some of the automobile exhibits at Buenos Aires during the annual Argentine cattle show recently held. The automotive dealers and distributors of this southern metropolis have learned the merchandising value of such exhibits and, in addition to exhibiting at the cattle show, they also are holding their yearly automobile exposition in early November

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Interesting Things Automotive



Above—Labor is cheap in India and all automobile dealers have unusually large numbers of employees. Here we see the "House of Milton"—A. Milton & Co., Ltd., of Calcutta, automobile importer and dealer, with its force



Left—The Bureau of Standards saves the nation many millions of dollars annually, by virtue of its efforts to assure everyone of full weight and measures. Gasoline and automobile tires are the main problems of the bureau at the present time, and this photo shows some of the instruments used by the bureau to test the quality of cars. The car is equipped with recording apparatus for registering various temperatures, pressures, wind speed and direction. An automatic recording device measures all conditions that influence the power output of the car

The Boston Oldsmobile Co. plastered $10, $5, $2 and $1 bills on both sides of an Oldsmobile Four, and had the car lettered, after which it was driven down into the business section. As a result, when it stopped swarms of people gathered about it. Several people asked if the car was for sale as it stood with the bills affixed. As the money represented a couple of hundred dollars the offers to buy it on the spot had to be refused



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Editorial Notes

The Woman Who Drives Her Own

IN a little town in New Jersey the other day a group of school teachers threatened to strike because the town frowned on their request for a garage in which to park their cars during sessions.

The lines of candidates for drivers' licenses in states that require them are remarkable in the high percentage of women present.

The large number of women designated as owners in the registration lists is often a subject of comment.

All of which suggests the question: "Are automobile dealers fully cognizant of the sales opportunities that exist among women who own and drive their own cars.

Women as direct buyers of automobiles are yearly becoming a larger factor in the merchandising potentialities of the industry. Their influence long has been felt in the design of closed car interiors and in the manufacture of many of the accessories to adorn the motor car. However, up to recent times this influence was regarded mostly as an influence that exerted itself through the husband or father who bought the car.

To-day thousands of women in all parts of the country are not only exerting an influence through male relatives in the sale of cars, but they are actually purchasing cars themselves, driving them themselves and depending upon them for personal transportation in business, social and professional pursuits.

Isn't it time for the men who sell the products of the automotive industry to recognize the fact that the "Woman Who Drives Her Own" is definitely in the market in numbers large enough to justify special merchandising attention?

How many women in your town, for instance, are engaged in commercial and professional pursuits that make them financially able to own an automobile? How many of these women could be sold automobiles if they were made the object of a well-planned merchandising effort?

Isn't it time for consideration in every dealer organization of "The Woman Who Drives Her Own?"

The Weekly Sales Meeting

THERE is, perhaps, no one thing that holds such potentialities of success in an automotive selling business as properly conducted weekly sales meetings.

Many inspiring things have been said and written about the force of unity in action. The world is full of inspiring examples of great accomplishments made possible by the united effort of a group of men. The great business enterprises of America to-day stand as monuments to the collective effort of serious men with one ideal their guiding star.

Thinking men wonder how any business can hope for success without first solidifying its organization and coordinating its efforts. And yet, the automobile dealer, whose commodity has a high unit price, whose business is done mostly away from the watchful eyes of its executives, is very often totally disinterested or but only lukewarm in his attitude toward this great factor of success —the strength of united action.

Periodical sales meetings, if properly conducted, will play a great part coordinating the effort of salesmen, in standardizing selling methods, in educating and increasing the efficiency of sales forces.

Such meetings provide the opportunity to crystallize the best thoughts on the merchandising of a product under existing conditions; through the exchange of ideas that is made possible. They give salesmen splendid opportunities to ask questions and listen to advice. They reawaken in everyone from the dealer down the enthusiastic interest and refreshed viewpoint that so often is apt to suffer in their close daily contact with the details of their jobs.

The opportunity for the exchange of new and successful selling ideas is one of the big benefits that weekly sales meetings provide. Many effective selling ideas that might otherwise remain locked in the mind of one man are made available to all, to the benefit of the whole organization collectively and individually, as a result of such meetings.

The automotive dealer needs as much, if not more than any other business man, every force that will help him centralize his selling efforts around one high standard policy and the strength that unity of thought and action will give every phase of his business.

Let's let neither the despondency of impending failure or the assurance of present successes cause us to neglect that good old institution—the weekly sales meeting.

"Aim high to avoid shooting yourself in the heel," says George E. Bond of the Kansas City Motor Car Dealers' Association, paraphrasing the ancient advice to "hitch your wagon to a star."

New Jersey, by a majority of about 10,000, voted in favor or a $40,000,000 Highway Bond issue at the election the other day. Sort of "paving the way" for better automotive business, eh?

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Suit on Breach of Warranty Must Prove Fraud

Small Chance of Damages Against Dealer Who Sold 1915 Model Believing It Was a 1916 Model

EDITOR Motor World: As an interested reader of Motor World for several years, I would like to ask your opinion of the following:

Mr. Smith purchases an automobile of Mr. Brown, a sub-dealer, in August, 1916. Mr. Jones, the master dealer, tells Mr. Smith, the purchaser (before he purchases the car), that it is a 1916 model.

Mr. Jones, the master dealer, thinks he is correct in telling Mr. Smith, the purchaser, it is a 1916 model, as the factory in these years called any model shipped out after July 1 a succeeding year model.

This car was received at master dealer's town Oct. 31, 1915, and was supposed to have been shipped from factory only a few days previous. The serial number of this car in factory master parts book and in serial supplement of the National Used Car Market Report shows it to be a 1915 model.

The master dealer wrote the factory, asking what year model the car was, and the factory referred the letter to their large distributor and they in turn answered that the car was produced and shipped in what was known as the 1916 year.

The 1915 model was listed at $230 less than the list price of the 1916 f.o.b. factory, but there was not any change in the body or engine—the only change being from celluloid to glass in the rear curtain. The car was sold to Mr. Smith, the purchaser, for $125 less than the delivered price of this make of car at the time of delivery. Mr. Smith is now threatening to sue the master dealer, Mr. Jones, for the difference in the factory list price of 1915 and 1916 list models, or $230. What chance is there of Mr. Smith recovering anything at this time? If there is any chance of recovering at all what could he recover?—Subscriber, Chesterton, Md.

Answer.—If the facts in your letter are correctly stated there certainly was no fraud or deceit on the part of the dealer, and an action could not successfully be maintained on that theory. If the purchaser succeeded in successfully setting up a breach of warranty as to the year model of the car the usual damages would be the difference between what the car was actually worth as sold and what it would have been worth if as warranted. In my opinion it is reasonable to fix this at the difference between the value of the celluloid and the glass in the curtains of the respective models, as after all, the cars were the same—the car sold was a "new" car—there was no misrepresentation or deceit, and I am not sure from reading your letter that the dealer was not actually justified in calling the car sold a 1916 model—when it was sold after July, 1915.

If the purchaser should start a suit the dealer should retain counsel and vigorously defend it with good chances of success.

Purchaser Upheld in Title Dispute

That where the selling agent of a motor truck company was allowed by the company to sell trucks as his own property even though they were covered by a chattel mortgage given by the dealer to the company, and he was in the habit of thus obtaining money to pay the company for the trucks delivered to him, the motor company was held to be estopped to setting up its own title to the trucks as against purchasers from the dealer who had no knowledge of the company's claim under its chattel mortgages, although they had been properly recorded.—Gramm Bernstein Motor Truck Co. vs. Todd, 209 Pacific Reporter, page 3. (Washington State).

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

Agreements to Not Re-engage in Business

The Court of Chancery of New Jersey, in the recent case of Messinger vs. Franklin, reported in 118 Atlantic Reporter, at page 260, decided that on the sale of a retail business a provision in the contract of sale, that the seller would not re-engage in a competitive business "within an area of at least ten city blocks," was too indefinite a restriction and was too uncertain as to its meaning to be enforced by the courts. The buyer plea to restrain the seller from re-engaging in the same kind of business was therefore denied.

In another New Jersey case recently before the same court, where a party had sold out his business and agreed not to re-engage in a competitive business the court enforced the agreement which had been made between the seller and the buyer and refused to allow the seller to transfer his property to his wife, re-engage in business under her name and thus carry on a competing business through the use of a subterfuge.—Clabella vs. Weidech, 113 Atlantic Reporter, page 259.

Recent Motor Vehicle Lien Cases

Missouri.—Any person who has a lien on chattel for work and labor done thereon may retain possession of the chattel until paid. Barton vs. Brundage, 240 Southwestern Reporter, page 890. If the owner wrongfully takes possession of the property on which there is a lien, lienor may replevin and force the owner to return the property until the lien is discharged. — Barton vs. Brundage. (Same).

West Virginia.—A mechanic or artisan providing labor and material and performing labor on an automobile at the owner's request or direction has a common law lien thereon for the value of materials and labor and a right to retain possession of the property until paid, notwithstanding Code 1913C, 75, Par. 12, Sec. 3853.—Stallard vs. Stepp, 112 Southeastern Reporter, page 184.

Must File Incorporation

The Supreme Court of Arkansas recently, in the case of Moise vs. Burkhart, decided that persons associated together and doing business as a corporation, are liable as co-partners, if they have neglected to file the articles of incorporation with the Secretary of State.—242 S. W. Rep., pg. 810.

Must Execute Bill of Sale

That a person selling a second hand automobile who does not execute a bill of sale and transfer the license fee receipt cannot recover the balance of the purchase money due him on a note, although he innocently neglected to transfer the license fee receipt as required by law, was the decision in the lately decided Texas case of Foster vs. Beall, reported in 242 S. W. Rep., pg. 1117.

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Distributor Stages Traveling Closed Car Show

Four Closed Models Shown in Various Cities in Territory Get Public Attention and Sales

THREE progressive towns in Colorado and one in Wyoming were treated recently to a novel and practical motor enterprise in the form of a "traveling" closed car show, staged two days in each town by the local Cadillac dealer, through the co-operation of the R. R. Hall Cadillac Co. of Denver, distributor for these two States and Western Nebraska. The distributing firm supplied four closed models for these unique exhibits, and sent its territorial salesman, W. B. Taylor, to supervise the shows. The local dealers decorated their salesrooms and advertised the events to their respective communities, and the results were highly gratifying to all concerned—including the public, which expressed both interest and delight. The shows were welcomed as events well worth considering as an asset to civic pride, and they served to stimulate a broader appreciation of the automotive industry's representation in these fortunate communities.

The towns visited on this first "circuit" were Boulder, Fort Collins and Greeley, Colo., and Cheyenne, Wyo., and the attendance at the four shows was estimated, respectively, at 1000, 1200, 800 and 1500. The local dealers participating at the respective points were Bolinger-Mitchell Motors, Inc., H. C. Bradley, Sherman Auto Co. and Mentz Motor Co.

There was an average of one closed car sale in each of the towns as a direct result of the two-day show, and all the dealers made worth-while additions to their lists of prospective customers. Other dealers in the territory are asking for similar co-operation, and the distributing firm plans to continue this show program each fall, gradually increasing the number of towns visited in order to cover the territory as fully as possible.

An "Economy Run" Idea

THERE has been a veritable epidemic of "economy runs" staged in Southern California during recent months, but it remained for Paul G. Hoffman, Studebaker dealer in Los Angeles, to come forth with a new sort of a demonstration to show the economy of operation of its particular line of cars. The Hoffman Company, when it decided to hold an economy run, borrowed nine veteran Studebakers from their owners. Each of the cars was a Studebaker big six, that had passed the 50,000-mile mark, some of them so far past that the speedometer required six figures to record the mileage.

Gathered from different points in Southern California by Studebaker dealers the cars represented more than 1,000,000 miles of travel. One that was entered had done more than 350,000 miles of hard service. Another entry is credited with 250,000 miles of service and was taken directly from the owner to make the run.

Seven of the cars finished with a perfect score for the 239 miles of travel, ninety miles of which are over mountain roads with steep grades that twist around turns over paths that are rutted and pitted with chuck holes.

Trophies were awarded to the winning cars.

The Hoffman company published large display space in the daily newspapers featuring the economy run, with very substantial results.

Ideas On Selling and Management

You will find them on this and the opposite page—ideas that will make dollars or save dollars for the

Car Dealer Truck Dealer Equipment and Tire Dealer Tractor Dealer Repairman

Some of our readers are contributors to this section of Motor World. Have you developed a plan that might help some other men? If you have, will you write it out and send it in?

Competitions Better Than Bonuses

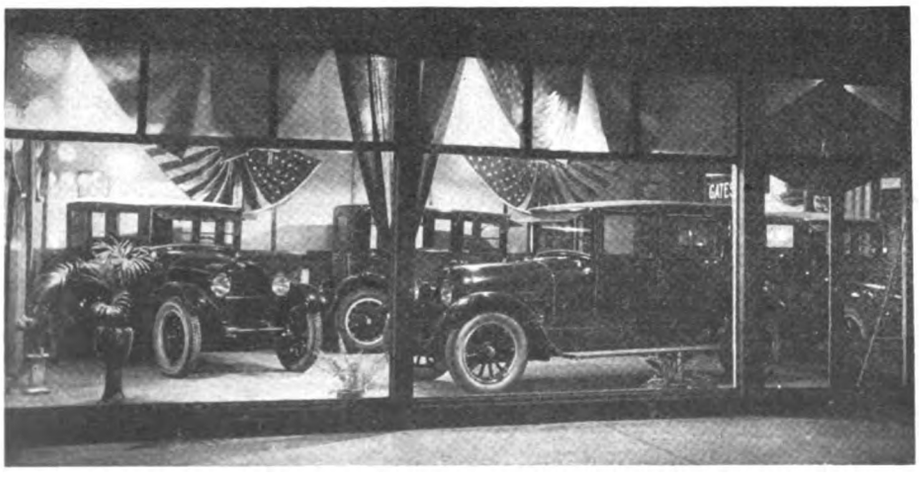
BONUSES and prizes are all very well for stimulating salesmen to unusual effort in selling new or used cars, but E. G. Waltz, manager of the used car department for the Franklin Detroit Co., believes that he has a better method.

"Salesmen have become so accustomed to the offers of bonuses and prizes," he says, "that they have come to pay very little attention to them, in a way. Of course, they are always glad to earn the extra money or the prize and to excel the other fellows, but after all it doesn't cost them anything in particular in case they lose.

"Our plan is to arrange a contest in which the losers really lose something. In other words, we not only put a premium on sales, but we put a penalty on failure to make sales.

"Last month, for example, we took the new car salesmen in with us and divided up into two teams of seven men each. The contest was based on total sales of used cars, and the losers had to take the winners out to a popular road house and treat them to a frog and chicken dinner.

"A salesman may think, 'Oh well, what if the other side does beat us; it doesn't amount to a great deal anyway.' But if that same salesman knows that it's going to cost him several dollars out of his own pocket, to say nothing of commissions, to lose the contest, I find that he'll get out and hustle like everything."



Here is one stop of the traveling closed car show staged by the co-operation of the R. R. Hall Cadillac Co., Denver. This show was held in the salesroom of the Mentz Motor Co., Cheyenne, Wyo.. dealer

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Display Sells Accessories in Small Towns

Garages with Well Balanced Stock and Good Display Can Get Large Volume of Business

THE big proportion of accessories bought by farmers and small-town motorists are bought in the cities, except—

Except when the small-town car dealer or garageman carries a good stock of accessories and displays them well.

In such case, the motorists, whether farmers or town people, buy accessories of the local dealer.

The habits of small-town dealers are fairly well established. Most of them don't even carry much of a parts stock. It's so easy to order from the city when a customer asks for something. As for accessories—the small-town dealer is usually actually surprised when the motorists ask him for any except the barest necessities.

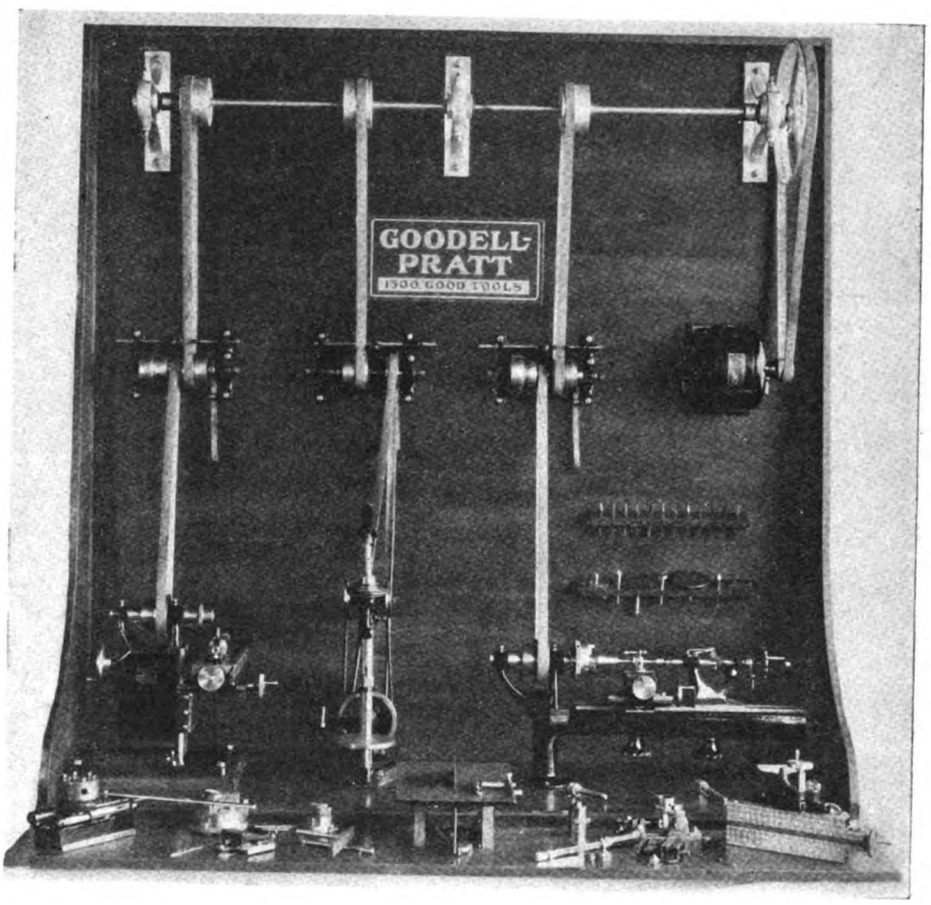
There are a few dealers, here and there, in the small towns, who have seen the possibilities in accessories. They have noted the daily arrivals of miscellaneous items of motor car equipment at the railroad stations and postoffice, and have presumed that they could get the business by preparing for it.

The P. H. Rea Garage, at Marshall, Mo., a town of 5000 people, is one which has gone after accessory business. It has carried a large stock of accessories. It shows them in the windows—and especially in glass-front cases at the entrance to the garage. The company has a large garage business and many visitors. Every visitor sees the accessories, and he sees also the large and varied assortments of accessories visible in the stockroom behind the counter.

This accessory display cabinet, with several shelves, extends about fifteen feet along the north side of the garage section, and the counter, where all statements are issued, where orders are given and payment made for service or parts, adjoins it. The display cabinet is built into the partition which separates the stockroom from the garage. The glass-front of the cabinet has doors—but the doors are locked. A customer wanting an accessory points to it, and the salesman gets it from the inside.

The value of the visibility of the accessories and large stock of parts is great. Not only does every person entering the garage, even if he only pauses a moment, see many things, but most visitors stand a few minutes at the counter, and, glancing around, inevitably are led to think of many items. They also carry away the impression that this establishment carries great variety and quantities of everything.

"Does it pay to handle accessories on a pretty large scale in this small town?" P. E. Ott, manager, echoed the question. "I should say it does! Many years the accessories have practically paid the expenses of the garage."



Display Shows Tools in Motion

There is something fascinating about the element of motion in a store window, and the attractive set-up shown in the accompanying illustration, which has been shown by automotive establishments in Worcester, Greenfield, Rochester and one or two other places, has proved an effective means of stimulating business among car and truck owners and repairmen. The wheels run continuously and noiselessly throughout the business day and the attractive exhibit of bench drill, milling machine, lathe and various attachments carries an educational value along with its efficacy as a silent salesman. The exhibit is put on through the co-operation of the Goodell-Pratt Co., Greenfield, Mass.

Making Advertising Specific

ADVERTISING that is specific is always more effective in selling than advertising which is simply general.

Since this is the case, it will help in selling more goods to make your advertising as specific as possible. And one splendid way for making your advertising more specific is by devoting your advertising to certain, definite topics. For instance, you could devote one advertisement to a talk on the goods you carry which help in night driving. Another ad might deal with the articles you carry which are of aid to the man who washes and polishes his own car. Another ad could deal with aids to women drivers. And so on.

Selling Accessories for Closed Cars

PEOPLE who can afford closed cars can, nearly always, afford to purchase accessories which will make their closed cars comfortable.

Since this is the case, then, it would be a good idea for the accessory dealer to feature in his window displays and advertising step lights, heaters, cigar lighters, flower holders, seat covers and so on.

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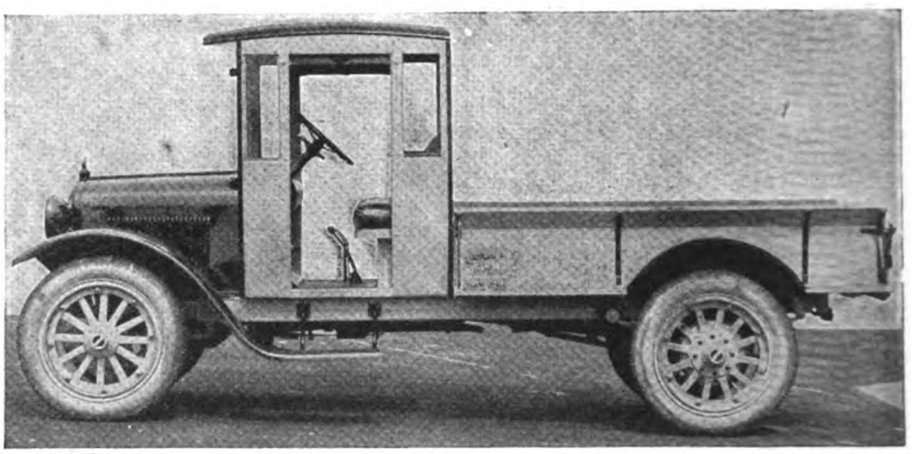
Mason Road King Priced at $1200

Will Be Built by Durant Subsidiary—Rated Capacity Is One Ton

A ONE ton speed truck has been developed by the Mason Motor Truck Co., a subsidiary of Durant Motors, Inc. The new truck will be marketed under the trade name Mason Road King. A number of body types will be standardized, including a stake body and an open express body. The prices at the factory are as follows: Chassis, $1,200; with cab, $1,325; with cab and stake body, $1,415; with cab and express body, $1,450.

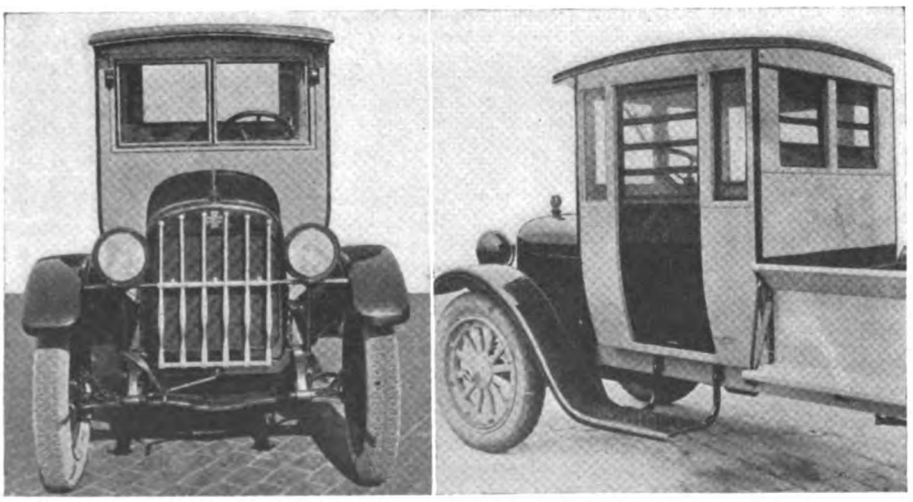
The engine is a four-cylinder Hercules of 4-in. bore and 5-in. stroke. It is fitted to a 1¼-in. carbureter which is supplied with fuel by gravity from a 12 gal. tank mounted on the dash. The cylinders are block-cast, with a detachable head and an aluminum oil sump. Full electric equipment is provided, including starting, lighting, and ignition, the whole system being of Auto-Lite make. A USL storage battery of 117 ampere-hours capacity is included in the equipment. Lubrication of the engine is by pressure to the main bearings and by splash to interior parts. An oil pressure gage is fitted to the dashboard.

The cooling water is positively circulated by means of a pump, the latter being provided with a "through" shaft for the generator drive. The flat tube, cellular type radiator is of large capacity and back of it is fitted an 18-in. fan driven by a 1½-in. flat belt from the forward end of the accessory shaft. The fan spindle is mounted in a vertical slot of the fan bracket, and the belt tension can be readily adjusted by means of a screw with lock nut located on top of the bracket in a very accessible position.



The Mason Road King with cab and open express body as shown is priced at $1450. The wheelbase is 130 in. and the tires are 34 x 5 in. pneumatics

The clutch is a plate type enclosed in the flywheel. The gearset is a three-speed type of Warner manufacture and is separately mounted on the sub-frame. Between it and the clutch, there is a Spicer double universal joint to take care of any misalignment between the engine and gearset bearings. The reduction ratios of this gearset are as follows: First forward, 3.53; second, 1.74; third, direct drive; reverse, 3.97. The control lever for the gearset is mounted on the cover plate.



Left—Front view of the Mason Road King showing the adjustable ventilating windshield, radiator guard and method of headlamp bracing. Right—Three-quarter rear view of cab showing the curtain equipment. The curtains slide in grooves and are pulled down into position

The rear system is of the torque arm type, comprising an exposed tubular propeller shaft with two Spicer universal joints. Final drive is by spiral bevel gears with a reduction ratio of 4.9 to 1. A specially low reduction gear of 5.5 to 1 will be furnished for hilly countries, if desired. The rear axle is of the full-floating type of built-up construction. The truck has a wheelbase of 130-in. and the standard 56-in. tread.

The frame is of pressed steel, the two side members being parallel with each other and having a 5⅞ x 1¾ x ⅛-in. section. Half elliptic springs are used all around, the front springs being 38-in. long and 2-in. wide, and the rear springs 40-in. long and 2½-in. wide. Driving thrust is taken up on the rear springs. The wheels are of the wood type, fitted with demountable rims and 34 x 5-in. pneumatic tires all around. Both sets of brakes act on drums on the rear wheels, which drums are 14-in. in diameter and have a width of braking surface of 2¾-in. The outside or contracting brakes are the service brakes. The front axle is of the usual I-beam section, 2⅝ x 1¾-in. The steering gear is mounted on the left-hand side of the chassis.

The truck chassis with cab but without body weighs 3320 lbs. The complete truck with stake body weighs 3950 lbs., and with box body, 3690 lbs. The cab furnished has sliding curtain doors with celluloid windows that can be quickly lowered or raised. Equipment furnished with the truck includes a pump, jack, set of tools, head, dash and tail lamps, ammeter, Stewart speedometer and ventilating windshield. Lubrication of the chassis bearings is partly by grease and partly by oil.

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New Chalmers Coach Lists at $1585

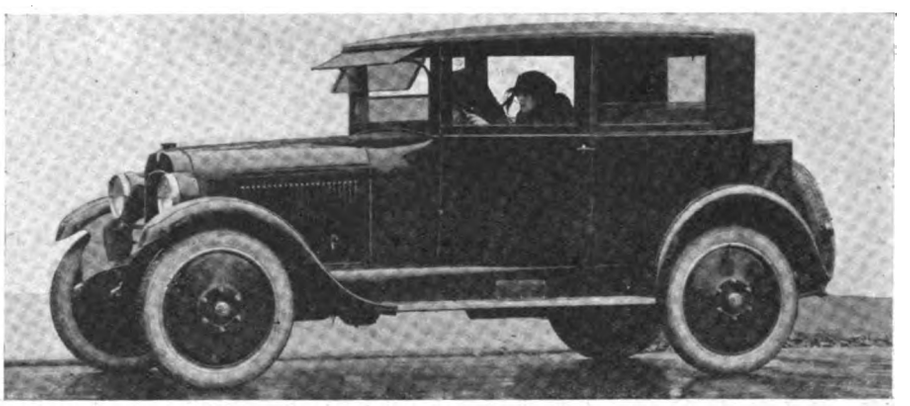
THE Chalmers six coach, just put on the market, is a five-passenger closed car of the composite type, built on the standard Chalmers chassis and listing at $1,585.

Distinctive features in design are found in the unusual width of the body, the broad doors, the front seats which fold and then tip forward—the driver's chair completely clearing the steering wheel and wide windows all around offering clear view for all passengers.

The body is maroon with black superstructure. A carmine stripe on maroon runs around the body several inches below the belt. Black disk wheels with maroon trimming add to the striking appearance. Special attention has been given the substantial fabric covering of the rear and rear side panels. Seams are eliminated by running fabric cut in one piece from side-window to the opposite side-window.

The roof, which is also fabric covered, is sloped at an angle to harmonize with the slope of the hood. The interior trim is in broadcloth with hardware of satin finish. The door-window lifters are of the lever type, raising or lowering the windows with less than a half turn. Rear quarter windows are operated by a strap arrangement. There is a roller curtain for the rear light.

A large trunk is mounted on a nickeled trunk rack at the rear. For this a dust cover is also supplied. Wood trunk bars of natural finish protect the body. Additional equipment includes parking lights, windshield visor, rear view mirror, windshield cleaner, dome light, non-skid cord tires, five disk wheels and heater. The upper glass of the windshield is hinged from the top, the lower from the bottom. Both sections swing outward, and by this arrangement ventilation is controlled. The entire assembly is held all around in a rabbet.



The new Chalmers coach seats five passengers. It lists at $1585

Flint Has a New Axle for Light Trucks and Buses

A NEW one-ton axle for light speed trucks and buses has been brought out by the Flint Motor Axle Co. It differs from the passenger car axle in that it is made heavier to stand the added stresses due to the higher loads. It is spiral bevel type, the spiral bevel gear and pinion being of larger dimensions than those required for passenger car practice, and the pinion shaft is supported by ball bearings on both sides of the pinion, giving a straddle construction, and hence a more rigid support on the pinion shaft to insure true pitch line contact.

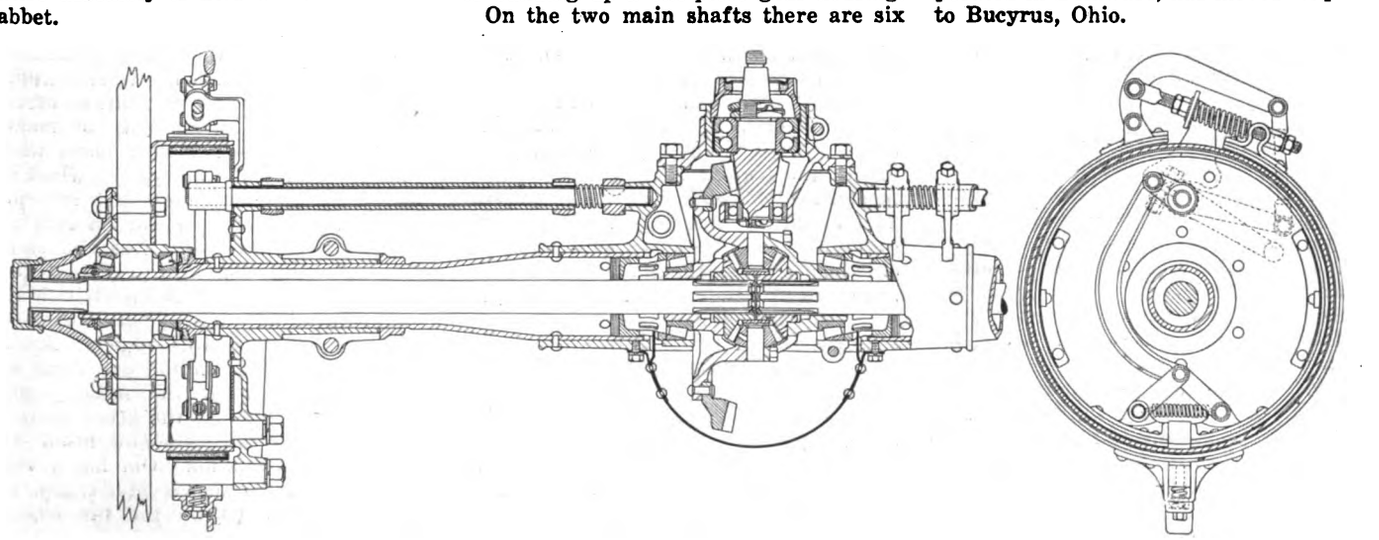
The gearcase or center housing is made of malleable iron cast in one piece, the tube hole being bored to the same diameter that is required for the bearings on the sides of the differential. This is done for production reasons, as the malleable casting permits of lower priced manufacture than the usual pressed steel housing construction, or by the method of building up a one-piece gear housing.

On the two main shafts there are six roller bearings, all of the same size, and the shaft is splined on both ends, the hub having a pressed fit and the side gear and differential having a slide fit in the splines. The main tubes are large diameter of 30-40 carbon steel. The tube narrows down to 3 in. diameter at the spring support.

The axle main shafts are 1½ in. diameter. This axle is designed to stand 4000 lb. live and dead loads. The corresponding front axle is made to provide load-carrying capacities of 1400 to 2200 lb. The loads mentioned are those for which the axles are guaranteed, and in the design of the axle, factors of safety of from 6 to 9 are claimed to have been incorporated. The axle, which is a floating type, can be furnished in gear ratios of 4.9, 4.4, 5.2 and 5.5 to 1. The axle can either be furnished in torque arm or Hotchkiss type drive.

Turn Auto Moves

CLEVELAND, Nov. 10—The American Turn Auto Corp., recently incorporated in Delaware, has moved its plant to Bucyrus, Ohio.



A sectional view of the new Flint 1-ton axle for light speed trucks and buses. It is of the spiral bevel type and the center housing is of malleable iron

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Small Engines Are Most Popular at London Show

Many Four Passenger Cars with Engines of Less Than 120 Cu. In. Exhibited—Framed Side Panels Give Better Protection on Open Cars

LONDON, ENGLAND, Nov. 3.

THE outstanding feature of the Sixteenth Annual London Motor Car Show is the large number of new models with four-cylinder engines of less than 120 cu. in. piston displacement. These new models are of the four passenger type and sell at from $1,200 to $2,000. They represent a continued endeavor to secure lower operating costs through the use of smaller and more efficient engines. A number of makers, who formerly specialized on large cars, are introducing smaller models. There is a marked increase in the number of overhead valve engines. A number of new small six cylinder models are also exhibited.

The new British designs generally show that more consideration has been given to production costs without, however, lowering the standard of body work, of finish, or of the quality of the accessories. In response to a buyer's demand for better weather protection, framed detachable side panels for open cars are now almost universally supplied. Some of these side panels have elaborate framing and attachments. On one car the panels are of glass but celluloid is used in all other cases.

Many of these panels are usable when the top is down, the rear panels then forming a V-shaped shield for the passengers on the rear seat. Most makers are adding standard sedan bodies to their line. The enclosed body on a light car costs about $500 more than the open body.

United States Well Represented

There are a total of 159 different makes of cars being shown. The United States is represented by Dodge, Hupmobile, Paige, Case, King, Moon, Durant, Packard, Buick, Chevrolet, Oakland, Cadillac, Chandler, Cleveland, Gardner, Essex, Hudson and Overland. France, Italy and Belgium are also represented at the show.

It is evident that the most popular type of car for 1923 will be a four-cylinder, four passenger model of 90-120 cu. in. piston displacement, selling at from $1,500 to $2,000. Six cylinder cars of similar size are mostly new models and are not attracting much attention because of the higher prices asked for them. Buyers capable of paying these prices apparently prefer four-cylinder models of larger piston displacement. There is considerable interest in two-passenger fours listing at from $1,000 to $1,250.

The British motor taxation system penalizes engines of large displacement and slow speeds. This condition encourages a home demand for cars that are not popular overseas. This operates to curtail production and to maintain prices at comparatively high levels. However, prices generally show a downward trend. American cars cost on the average 20 per cent less than last year, British 15 per cent less and continental cars about 12 per cent less.

Morris, who now has the largest output of any British maker and who is planning a production of 15,000 cars for next year, offers a four passenger 12 hp. car with 102 in. wheelbase at about $1,250. This price is not approached by any other British make of similar specifications.

More Chassis Models

British makers generally are increasing the number of their chassis models and body types. Daimler is introducing two small sizes, one of 87 cu. in. displacement and the other of 132 cu. in., both having four speed gearsets amidships. This company is also producing the 86 cu. in. size with a three speed gearset which is a unit with the power plant, and a new four cylinder chassis of 86 cu. in. displacement. A two cylinder air-cooled 10 hp. car is also included in the Daimler line. With the exception of the air-cooled engine, all power plants are of the Knight type. Some of these models are offered in two chassis lengths. The result is that this maker has 12 different chassis models with which he offers 55 optional bodies. Wolseley has a line of five different chassis ranging from a two cylinder 7 hp. model to a six cylinder 24 hp. model.

The show is remarkably free from unusual designs. The following percentages apply to individual models of all nations exhibiting. Disregarding two-cylinder models, which show no increase in popularity, fours constitute 75 per cent, sixes 19 per cent, eights 5 per cent, and twelves 1 per cent of the total, all of these figures being practically as for last year. Detachable heads are apparently gaining favor. The L-head and T-head type of engine have lost ground and the overhead valve type with push rods has gained. Sleeve valve engines show a slight increase. Magneto ignition shows a slight loss. Aluminum pistons are used on 48 per cent of the models as compared with 34 per cent last year. Spiral bevel rear axles are used on 83 per cent of the cars, as contrasted with 67 per cent a year ago. The practice of mounting one brake on the transmission is less popular. Forty-eight per cent of the cars exhibited have unit power plants as compared with 27 per cent a year ago.

Equipment Is More Complete

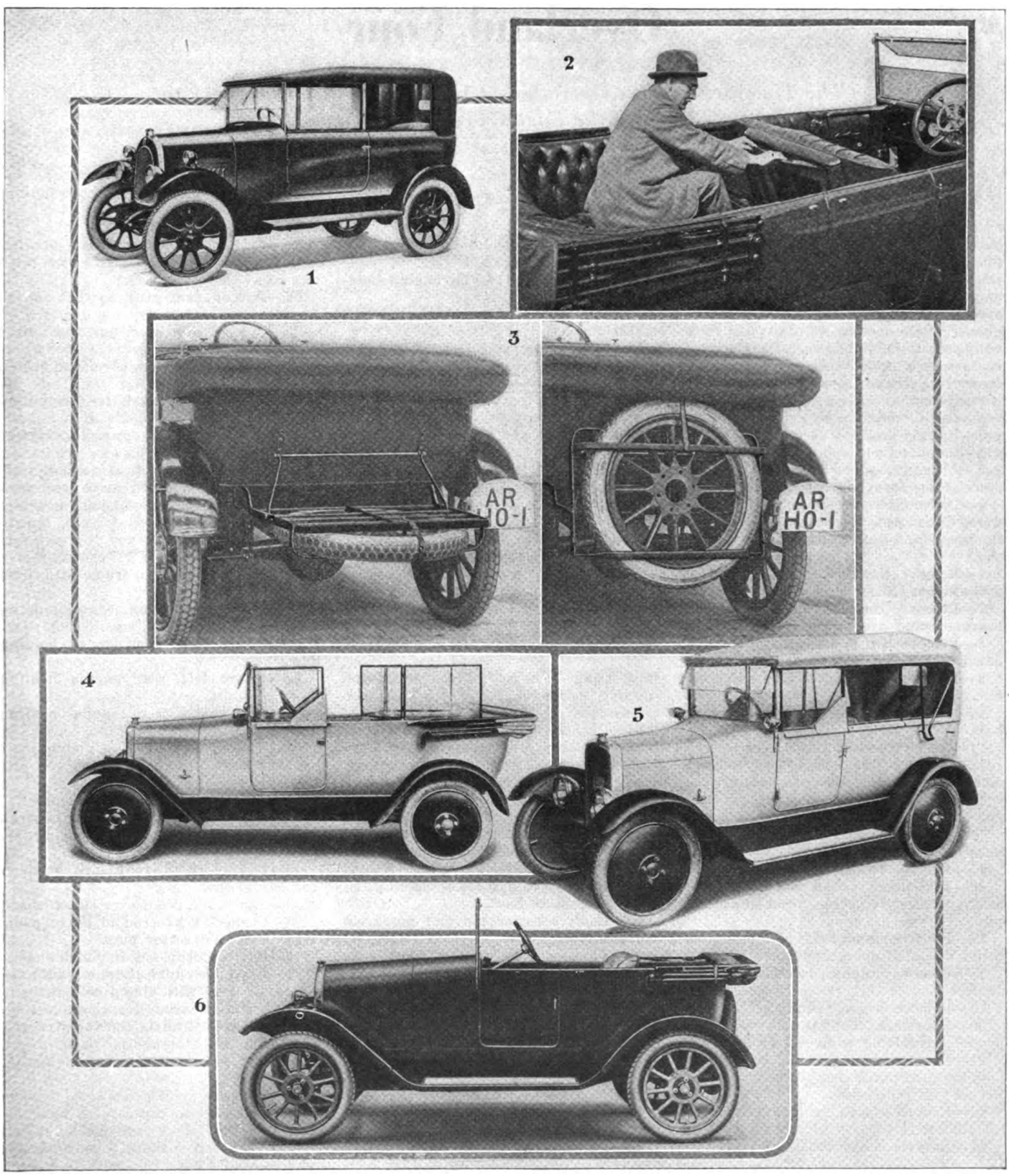
Grease gun chassis lubrication and leather spring covers are now regular equipment on 25 per cent of all British cars. Rear trunk carriers are found on 15 per cent of all four passenger models and rear folding windshields on six makes. The provision for storing frame side panels on open cars usually consists of a compartment behind the back upholstery. Other plans include a pocket behind the front seat panel, large door pockets, or a drawer under the rear seat. The body types of several makes of light cars with from 60 to 70 cu. in. displacement are miniatures of the close coupled four passenger type. The rear seat accommodating two children or one adult sitting slantwise.

Disk wheels show a slight decrease in popularity whereas wire wheels appear upon about the same percentage of cars as last year. The majority of makers use a pressed steel, hollow spoke wheel. The popularity of this type of wheel has increased materially during the past year. Wood wheels appear on very few models. Straight side tires are slowly gaining favor. They are regular equipment on six per cent of the British cars as compared with one per cent last year. The new users of this type of tire include Rolls-Royce on the one hand and the Singer, one of the most popular British light cars, at the other extreme.

Two British cars are now fitted with the Entz transmission. One has a 3⅛ x 5⅛ four cylinder sleeve valve engine and sells at about $3,750 for the chassis. The other has an overhead camshaft engine with a 4 in. bore and 5½ in. stroke.

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New Body Trends at the London Show



1—The 12 h.p. Bean folding top sedan has one door on each side and sliding front seats. Central pillar folds down on top of door. 2—Upholstered pocket behind driver's seat on Sunbeam car for detachable framed side panels which are furnished instead of side curtains. 3—Combination Phoenix luggage and wheel carrier. 4 and 5—New 10 h.p. Singer with framed side panels. With top down, the side panels form a tonneau windshield. 6—The new Humber four cylinder car. The cylinder dimensions are about 2¼ x 4 in. The price is about $1300.

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Installing a Set of Oversize Push Rods on the Overland Four

The Time Set on This Operation is 5½ Hours—It Is Necessary to Remove the Engine From the Chassis

AFTER considerable service push rods will show evidence of wear. The guides will wear also and the remedy is to ream the guides out to the stock oversize and put in new oversize push rods. The evidence of need for this operation is considerable noise which may be located at this point by careful observation or with the use of a microphone. Side motion of the push rods will confirm the diagnosis. If the trouble is found to be at this point, the following sequence of operations should be carried out:

1—Drain radiator, oil and gearcase.
2—Remove hood.
3—Remove front splasher by removing one ⅜ in. and two ⅜ in. cap screws and two ¼ in. stove bolts.
4—Disconnect the positive battery wire, disconnect the headlamp wires at the lamps and draw through the radiator shell.
5—Remove the lamp stay rod.
6—Remove the radiator shell.
7—Remove the starting crankshaft bracket bolts.
8—Remove two ⅜ in. radiator holding down bolts.
9—Remove the radiator stay rod ⅜ in. nut.
10—Loosen the clamps on the radiator hose.
11—Remove the radiator.
12—Remove clamp bolts and pull out clutch and brake pedal pads.
13—Disconnect speedometer cable at speedometer gear end.
14—Disconnect accelerator rod at carbureter.
15—Remove two floor boards.
16—Disconnect brake rod from foot brake pedal by removing cotter and clevis pin.
17—Remove clamp bolts holding clutch pedal to clutch operating shaft.
18—Remove clutch pedal and key from shaft.
19—Remove brake pedal.
20—Disconnect hand brake rod from lever by removing wing nut from rod.
21—Remove four ⅜ in. cap screws holding gear shift box to gearset and lift off gear shift box.
22—Remove spark control wire from distributor.
23—Remove choke wire from carbureter.
24—Remove gas throttle wire from carbureter.
25—Shut off gasoline.
26—Remove gasoline line.
27—Remove starting motor cable from starting motor.
28—Remove generator wire at generator.
29—Remove wires from coil and remove coil.
30—Remove two bolts holding muffler pipe to exhaust manifold.
31—Remove four ⅝ in. engine holding down bolts.
32—Put engine lifting hook in No. 3 spark plug hole.
33—With crane and chain falls carefully remove engine. Place engine on suitable bench or stand. (Two men necessary.)
34—Remove cylinder head.
35—Remove valves, pins and springs.
36—Remove fan belt and with drift drive pin out of crankshaft fan pulley and pry off pulley.
37—Remove cap screws holding timing gear case cover and remove cover. Replace one bolt to hold generator in place.
38—Drain oil base.
39—Remove cap screws holding oil base and remove base.
40—Remove cotter pin and nut from cam gear.
41—Turn engine over so that gear marks register.
42—With gear puller pull cam gear.
43—Remove distributor cap.
44—Take off intake manifold but do not disturb exhaust manifold.
45—Remove valve covers.
46—Block up under valve springs with blocks of wood 2⅛ in. long.
47—Remove two front camshaft bearing cap screws and drive out bearings.
48—Pull out camshaft. Either tie up push rods or hold them up so that camshaft will slip by easily. Be careful to replace push rods in their original positions. (Two men are necessary.)
49—With special reamer, ream out push rod guides. Keep the reamer well oiled and make sure that none of the filings fall into engine. One oversize push rod can be put in without pulling out the engine.
50—Install camshaft.
51—Put in front camshaft bearing with oil groove at top and fasten with two cap screws and locks.
52—Put on cam gear so that marks register.
53—Put on cam gear nut and cotter pin.
54—Replace gear case cover and fasten with cap screws.
55—Drive on crankshaft fan pulley and drive in pin.
56—Replace valves, springs and pins.
57—Put on cylinder head.
58—Lower engine into frame very carefully. One man at rear to steer propeller shaft into universal joint housing. (Two men are required for this operation.) It may be necessary to pry engine into position.
59—Line up engine in frame with short pinch bar.
60—Put in right front engine holding down bolt.
61—Insert right rear engine holding down bolt.
62—Insert left rear engine holding down bolt.
63—Insert left front engine holding down bolt.
64—Put on front and side engine pans and fasten with lock washers and nuts securely.
65—Place sliding gears in neutral.
66—Place gear shift lever in neutral.
67—Put on gear shift housing assembly.
68—Tighten with four lock washers and cap screws.
69—Slip brake pedal over clutch shaft.
70—Connect brake rod to brake pedal with clevis and cotter pins.
71—Put Woodruff key in clutch shaft.
72—Assemble clutch pedal on shaft and clamp securely with clamp bolt and nut.
73—Connect carbureter choke wire.
74—Connect throttle control wire.
75—Connect starting motor wire.
76—Put on gas line from carbureter to tank.
77—Connect muffler head to exhaust manifold with two cap screws, nuts and lock washers. Make sure that gasket is placed between exhaust manifold and muffler head flange.
78—Put on coil, fastening with two ¼ in. stove bolts, nuts and lock washers.
79—Fasten wires from distributor to coil and ignition wire from switch to coil.
80—Connect up generator wire.

Better Mechanics

Article No. 265

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.

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81—Fasten spark control wire to distributor.

82—Check spark timing by removing No. 1 plug. Hand crank engine until No. 1 piston is at the top of its travel on compression stroke. This can be determined by putting a wire through the spark plug hole to top of piston. Continue cranking slowly until top of piston is flush with cylinder block. The breaker points in the distributor should be just starting to open as contact point is coming in contact with No. 1 contact post in the distributor cover. If timing is off, release clamp screws that hold distributor to generator, and set timing by remeshing distributor gears. Make sure that timing is checked with fully retarded spark.

83—Put on radiator and fasten with two bolts, lock washers and nuts.

84—Assemble radiator hose and clamp securely.

85—Fasten radiator stay rod with lock washer and ⅜ in. nut.

86—Fasten starting crankshaft bracket to radiator with two ⅜ in. bolts, lock washers and nuts.

87—Put radiator shell in place.

88—Slip front splasher under radiator shell, line up holes in shell and splasher and fasten to frame with one ⅜ in. two ⅝ in. cap screws and two ¼ in. stove bolts, lock washers and nuts.

89—String head lamp wires through radiator and shell and fasten in lamp sockets.

90—Fasten radiator shell to radiator with two rivets.

91—Put on front lamp stay rod and radiator stay bar.

92—Fill radiator with water.

93—Put five quarts oil in engine base.

94—Connect speedometer cable.

95—Put in floor boards.

96—Put on pedal pads, clamping with clamp bolts.

97—Connect accelerator to carbureter.

98—Put in spark plugs.

99—Connect battery cable to battery.

100—Put on hood.

Adjustment of Lincoln Brakes

THE Lincoln is equipped with two independent sets of brakes, the foot or service brake and the hand or emergency brake. The foot brake is operated by the right foot pedal and the hand brake by the lever at the right of the driver. The foot brake is external or contracting upon, the hand brake internal or expanding within, the brake drum. The brake load is equally distributed to each brake band by pull rods which operate through equalizing bars. The brake bands should be adjusted as nearly alike as possible so that an approximately equal movement of the brake levers will be required to make them grip the drums.

Occasional oiling of the brake levers and connections will considerably increase the efficiency and ease of operation. If they seize too suddenly or squeak when applied a few drops of neatsfoot oil or a mixture of oil and flake graphite applied to the lining will usually remedy this trouble. This should be sparingly applied, as a careless application will greatly reduce the efficiency of the brakes.

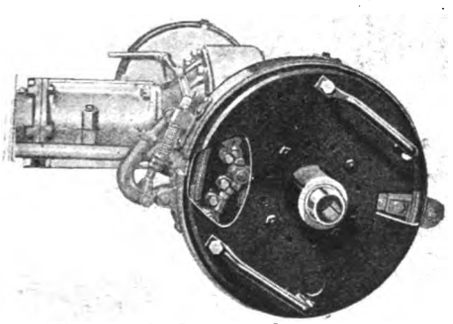


Fig. 1—A dummy drum or gage for adjusting the Lincoln brakes

To Adjust Foot Brakes

Compensation for ordinary wear may be made by turning the nut (4), Fig. 2 and only after considerable use is it necessary to make more complete adjustment. Wear of brake linings cannot be taken up by any adjustment of brake pull rod or by adjustment of the stop screws (6) for lever (10) which are properly set at the factory and bear no relation to adjustment for wear. To make a complete brake adjustment, a gage for adjusting brakes, Tool 618, will be found of great convenience. Remove axle shaft, wheel and bearings, slide the gage into position on the axle as shown in Fig. 1. The gage represents, and is the same size as, the brake drums. Lubricate all clevis pins and other moving parts in the brake mechanism and work oil in by moving foot pedal and hand lever back and forth several times. Remove cotter pin from the adjusting screw (11) and screw clockwise until the brake lining at this point just clears the drum. Replace cotter. Loosen the adjusting nuts (8) and (9) under the stop (7), using the pair of special wrenches in the tool kit, and screw down until the lower half of the brake band comes up and just clears the drum. Then tighten both nuts securely. Next adjust nut (4); turn by half revolutions in a clockwise direction until the top half of the band just clears the drum. It should now be possible to revolve the drum without any binding or dragging of bands. Pull forward on link (5) until the end of screw (6) is approximately ¼ in. away from the stop. If adjustment is correct you will be unable to move drum with the hands. When the brake is fully applied by pushing down hard on the foot pedal the shortest distance from center of pin (13) in lever (10) to the drum should be approximately 2⅜ in. The foot pedal pad when completely compressed with the brake tight on the drum must be at least 2 in. from the floor board. If it is less than this figure the pull rod between the pedal and intermediate brake cross shaft may be shortened to correct this condition.

Adjusting Hand Brake

A limited amount of wear may be taken care of by jacking up the wheel and removing the plug in the brake drum between the wheel spokes. Revolve the wheel until the four clamp screws (2) which secure screw (3) can be seen. Loosen the clamp screws and turn each of the screws (3) a part of a revolution in a clockwise direction, using the special wrench furnished in the tool kit. Pull back vigorously on the hand lever. If the lever stands in the third or fourth notch, the adjustment is satisfactory. When correct adjustment is obtained tighten clamp screws and replace plug. To make complete adjustment, the wheels should be removed as for foot brake adjustment. Loosen the seven clamping screws (2) which secure (1) and (3). Remove the cotter pin in adjusting screw (12). Apply the gage tool 618 and turn screw (12) until the brake lining just clears the drum. Replace cotter pin. Revolve drum until adjusting screws (3) can be seen. Adjust screws (3) as explained before so that when

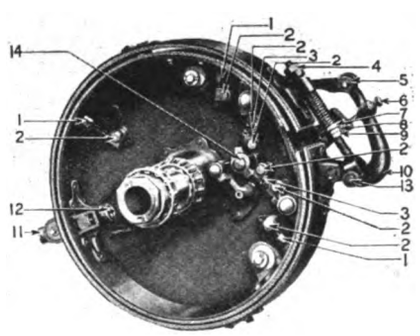


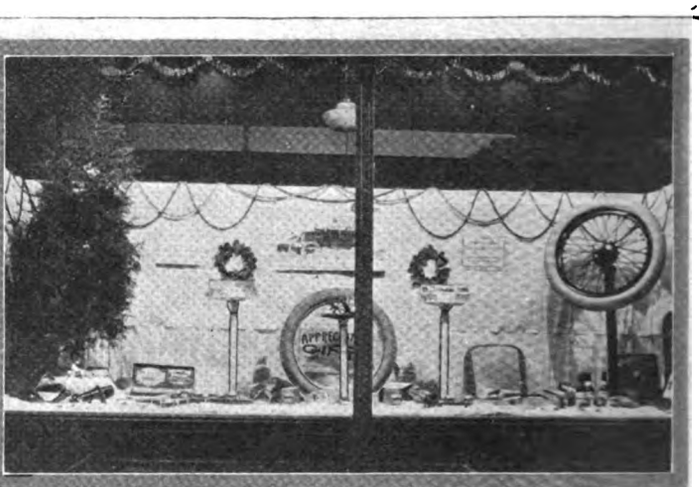
Fig. 2—Adjusting and inspection points on the Lincoln brake

lever is pulled back vigorously center of the pin (14) will stand 1½ in. from the inside of the drum and the lever will stand in the third or fourth notch. Then tighten the four clamp screws (2) which secure the adjusting screws (3) with the hand lever fully released. Revolve the drum and adjust the two forward upper and lower band adjusting screws (1) as much as possible without causing lining to drag on drum. Revolve drum and adjust rear band adjusting screw in same manner. Then back off these three screws one-half revolution and tighten clamp screws. If adjustments are correct pulling the hand lever back to the second notch prevents turning by hand.

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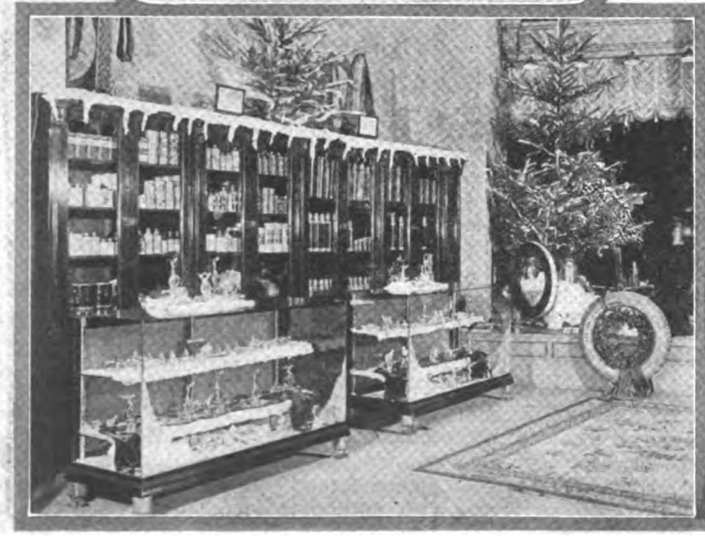
A Page of Christmas Display Ideas

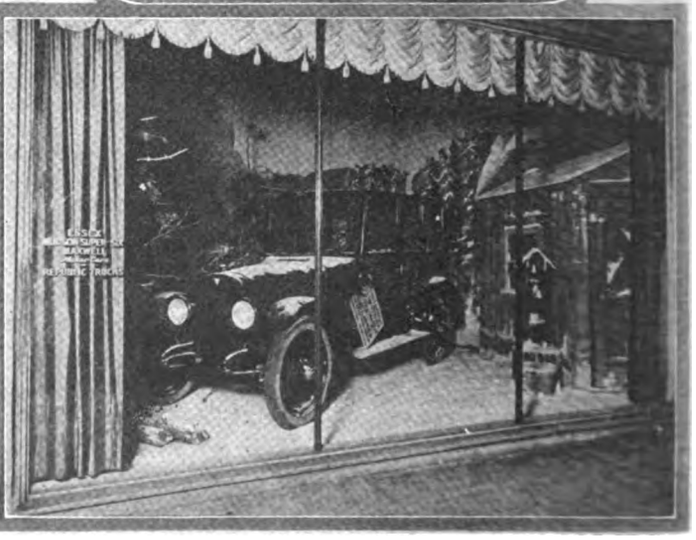












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Equipment to Sell

New Devices for the Car and Truck

Reid Air Spring

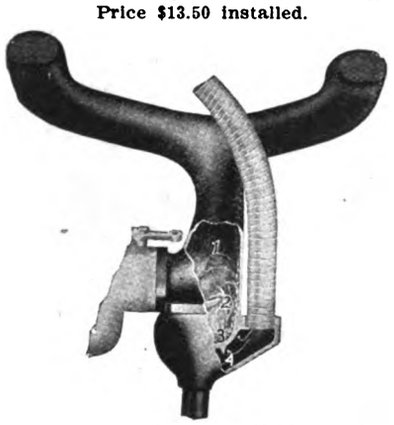
Reid Air Spring Co., 121 George Street, New Haven, Conn.
Price, $150 per set of four



The air springs are installed by removing the horn and riveting the Reid brackets in place in the original rivet holes. The frame is not cut. The air springs can be removed at any time and the original horn replaced. It is said that there is no tendency for the car to tip or sway when turning corners.

Stew Pot Revaporizer

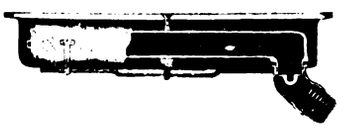
W. G. Engineering Co., East Moline, Ill.
Price $13.50 installed.



The stew pot is a manifold attachment which heats only the heavy ends of the gas, allowing the gas vapors to be drawn into the cylinders unheated. The heavy gas forming in drops runs into the stew pot where it is vaporized and drawn in with the rest of the mixture.

Linendoll Car Heater

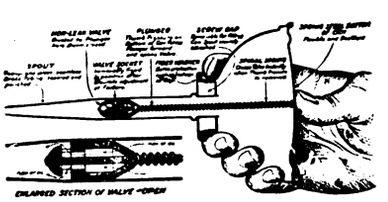
Norwalk Auto Parts Co., Norwalk, Ohio



The heater is of the flush type, only the grating showing on a line with the floor. The heater pan is of sheet steel and acts as a container for the heating coil. It is provided with drain grooves which lead to a clean-out hole in the bottom. The heating coil is of cast metal and the cross connections are reversible to connect to the exhaust lines on either right or left side. The heat control is on the instrument board, and the valve has a tongue of such shape that once it is closed it seats on a ledge on all four sides. The coverplate is polished aluminum, with four locating faces on the other side held rigidly in position by one screw. The heaters can be taken apart and cleaned from the inside of the car.

O-No-Drip Oil Can

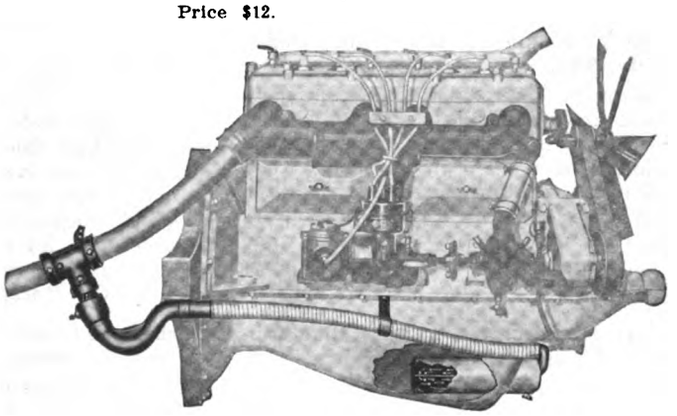
Arthur S. Harding Co.,
100 Boylston Street, Boston, Mass.
Price 50 cents.



The oil can has a valve in the spout which is operated directly by the spring steel bottom of the can. The spout is seamless brass and is a tight fit for the valve.

E-vap-O Heaters

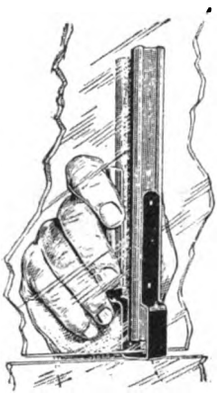
Harvey E. Mack Co., Harmon Place at Thirteenth Street, Minneapolis.
Price $12.



An exhaust heater for heating crankcase oil to prevent freezing of oil around the screen. This is accomplished by raising the temperature inside the crankcase to such a point that moist vapors which get by the piston rings, pass out through the breather pipe instead of condensing into water and mixing with the oil. Unburned fuel which also finds its way into the crankcase is vaporized by the heat and disposed of in the same manner. A sheet-iron drum is introduced into the front of the crankcase and hot exhaust gas is passed through this constantly. A separate outlet is provided for this exhaust.

Ace Windshield Cleaner

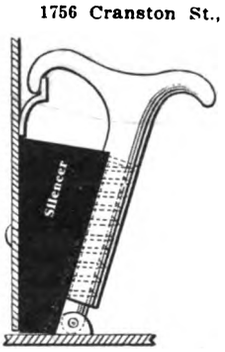
New England Tube & Stamping Co.,
West Haven, Conn.
Price $1.



The cleaner consists of two parallel rubber strips which move horizontally across the outside of the glass and a felt strip which keeps the inside surface free from fog and steam. The materials used consist of polished aluminum with a black enamel spring frame.

Hood Silencer

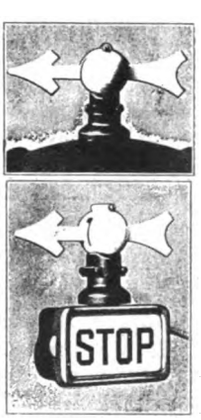
Atlantic Tubing Co.,
1756 Cranston St., Providence, R. I.



The hood silencer is made of hard resilient rubber, of such a shape that it will fit nearly all cars. It goes in the space between the hood latch and the hood and prevents rattle and wear.

Traf-I-Kop Traffic Signal

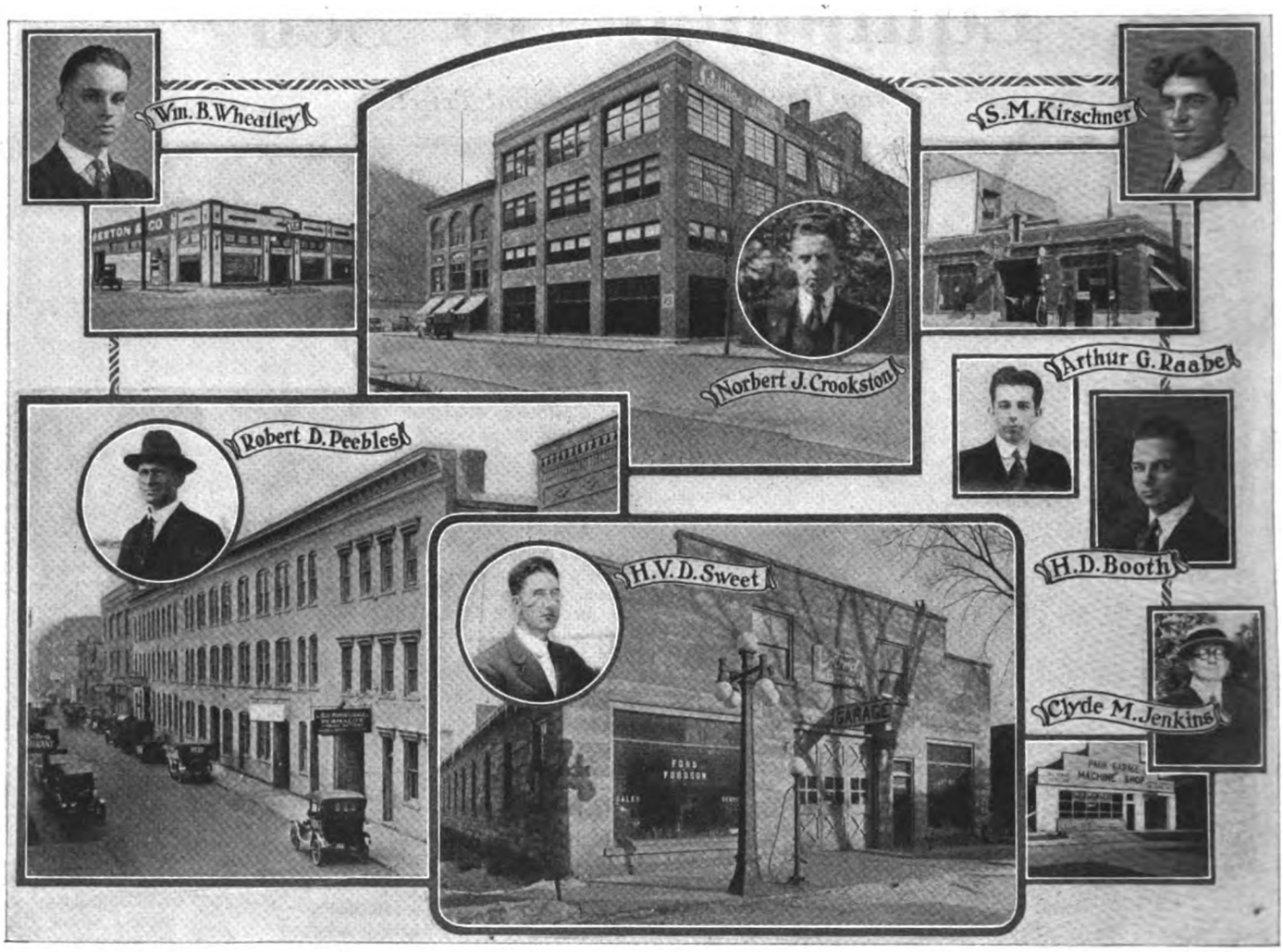
Motor Products Co.,
Norwalk, Ohio.



The device is a semi-automatic arrangement for signaling the intention to turn or stop. It consists of a white arrow mounted on the left front fender, and a similar arrow mounted on the left rear fender pointing straight ahead or straight away driving. The arrows are connected by steel cables inclosed in waterproof conduit to an operating device or switch located on the steering column of the car. At night a white light is displayed only when the arrows indicate a turn. On the left rear fender is a stop signal which flashes a red light when the service brake is depressed.

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Where Repairshop Shortcuts Come From



NEARLY three thousand five hundred repair shop shortcuts have been published in Motor World since the beginning of the department in the issue of April 14, 1915, over seven years ago. We have often wondered ourselves what some of the contributors to this department looked like and what kind of places they worked in. So we wrote for some pictures and here they are. These men have been among those whose names appear most often on the Repairshop Shortcut page. We hope they will keep going strong and have a lot of contenders for honorable mention. We have gone a long way but we are only starting.

Arthur G. Raabe, Brooklyn, N. Y.

After graduating from high school in 1916, he got a job as stock clerk with the New York Chandler distributor. Later the distributor made electric trucks, and Raabe worked as mechanic, electrician and demonstrator. His further experiences were as superintendent of a fleet of trucks and estimator for a railroad. His first shortcut was published in 1919, and he is still going strong.

S. M. Kirschner, Foreman, The Harvard Garage, Harvard, Ill.

S. M. started polishing brass lamps on cars in a garage in Wisconsin in 1909. He learned something of the innards of a car, then went with another garage and learned a lot about bearings. Later he went with the Rambler factory in the final testing department and received his first initiation into the electrical starting and lighting equipment business with the 24-volt outfits that were used at that time. He has been with the Harvard Garage since 1915.

Clyde M. Jenkins, Jenkins Bros., Dodge City, Kan.

Early in 1910 Jenkins took a short course in automobile repairing and a short time later secured a position as manager of a shop in Anthony, Kan., which he later purchased and operated until 1915. Several other garages were under his management until 1921, when he and his brother opened the present business, later taking another partner.

Robert D. Peebles, Foreman, Blue Ribbon Garage, Bridgeport, Conn.

After a short experience with stationary and portable farm engines in 1906, Peebles took a Y. M. C. A. course and then served three years with Packard in Boston, later becoming foreman of the Packard, Manchester, N. H., branch, which position he held until 1917, when he went with the Blue Ribbon Garage, handling the Packard and Dodge.

H. V. D. Sweet, Foreman, Canajoharie Motor Sales Co., Canajoharie, N. Y.

From shop helper in 1907, Sweet has been through the mill, acting as mechanic, automotive electrician and foreman. He has served as foreman in Reo, Oakland, Ford and Chevrolet shops, and at present is foreman and electrical expert and has charge of the manufacture of the ECO storage battery.

Norbert J. Crookston, Mechanic, Johnstown Automobile Co., Johnstown, Pa.

Mr. Crookston is evidently a modest young man who faces the camera only on occasions of World Wars and picnics. The snapshot is slashed from a group

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Repairshop Shortcuts

at some outing. He is one of the old and valued Cadillac experts and has been connected with the service department of this company since 1908. He finds time to work out some original ideas in addition to giving prompt and efficient first floor service to Cadillacs.

William B. Wheatley, Foreman, R. G. Edgerton & Co., Norfolk, Va.

Wheatley has been living a Dr. Jekyll and Mr. Hyde existence in his 20 years of life. He has been going to all kinds of schools and colleges, and at the same time, or while he sleeps or something, he has been putting the stethoscope on the hearts of Flivvers, building cyclecars when he was a youth of 12 and all that sort of thing. He is now shop foreman for the Virginia distributor of the Reo, having only recently taken the position. He sent his first shortcut to Motor World in 1917.

H. D. Booth, Mechanic, Cortland, N. Y.

Booth started as a wash boy in a garage, learning the mechanical end when the wash rack was dull. Later he spent his entire time as mechanic, and is now associated with a small but progressive garage on the main highway between Syracuse and Binghamton.

No. 3440—Cole Clutch Bearing Tool—A tool to remove and assemble the split nut on the Cole 8 clutch bearing is made from a piece of 1½ in. spring 17 in. long. This is used with a 12 in. monkey wrench. The spring is ground to fit the clutch.—Ed. Ruesch, Buffalo, N. Y.

No. 3441—Solid Wrench Extension—An extension to secure more leverage on solid wrenches is made by attaching a loop of strap iron to the handle of a hammer. The use is indicated in the illustration.—Arthur G. Raabe, Long Island City, N. Y.

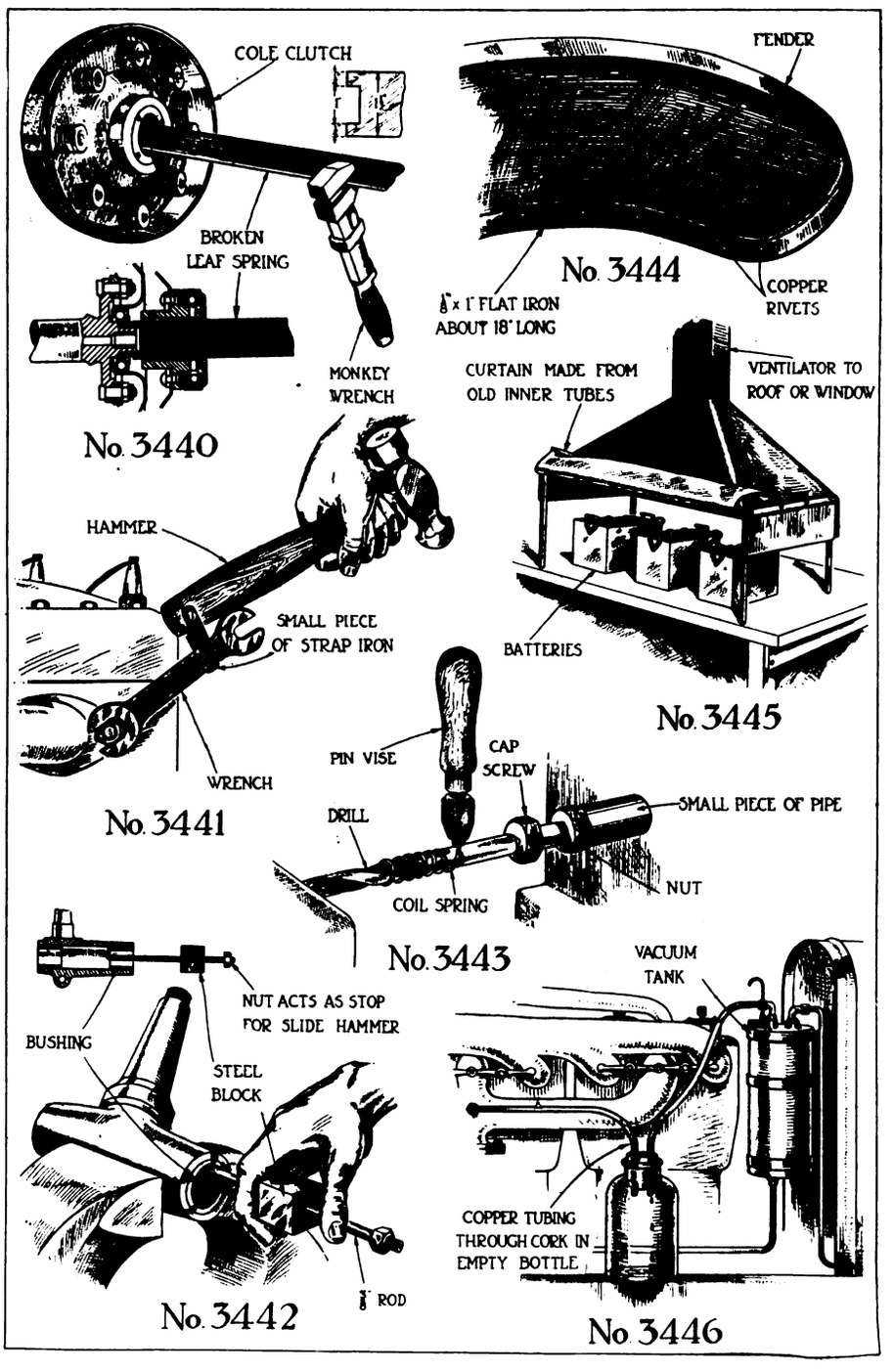
No. 3442—Bearing Sleeve Puller—A bearing sleeve puller is made from a piece of rod with a nut on one end and the other end bent over at right angles. A steel block with a hole slides on the rod and when the hook is placed in back of the bushing the nut acts as a stop for the slide hammer.—Arthur G. Raabe, Long Island City, N. Y.

No. 3443—Improvised Drill From Coiled Spring—For drilling in very close quarters, a device consisting of a handle and a coil spring is used to turn the drill. Pulling the spring in the direction in which it is wound diminishes the inside diameter and causes it to grip the drill. The opposite direction opens it up.—G. A. Luers, Washington, D. C.

No. 3444—Reinforcing Broken Fenders—A strip of 1 x ⅛ in. flat iron is bent to the shape of the fender and riveted to the inside. Flat head tinner's rivets or copper rivets with the head of the rivet on the outside are used to attach the strip to the fender.—E. J. McKinney, Blackshear Garage, Blackshear, Ga.

No. 3445—Vapor Hood for Batteries—A hood for taking off the hydrogen gas is made from sheet metal and a flue goes to the roof or window. Curtain flaps made from old inner tubes are dropped down when batteries are being charged.—Arthur G. Raabe, Long Island City, N. Y.

No. 3446—Test for Vacuum Tank—Vacuum tanks that are suspected of pumping gas to the manifold can be tested with two pieces of copper tubing with vacuum tank ferrules and nuts, a cork and a bottle. If gasoline drops into the bottle, gas is being pumped into the manifold.—Hayes D. Pettit, Wilmington Motor Service Co., Wilmington, N. C.



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Maine Dealers Keenly Interested in Better Sales Methods

Fine Spirit of Dealers from Widely Scattered Sections of State Shown at Bangor Meeting—Co-operative Action Started —Need of State Association Stressed

BANGOR, ME., Nov. 9.

AUTOMOBILE dealers of Maine need a representative, vigorous State association. They have an association, an infant association, formed and supported, so far, by less than 100 of the 600 automotive tradesmen in the commonwealth. The association has ambition but hardly the strength to undertake the heavy tasks that lie immediately ahead in subjects of legislation, highway administration, taxation and others inseparably tied up with the growth and prosperity of the industry.

The dealers of Maine held a meeting here yesterday and to-day which called sharp attention to the lack of adequate organization which is proving a hindrance to the development of the trade in the Pine Tree State, just as it is in numerous other unorganized or weakly organized States. It was a State convention but not a convention of the State association, though delegates were drawn from the ranks of members as well as non-members. The meeting was not called to promote the State association but it did put in such a strong light some of the weaknesses of the trade due to lack of statewide organization that it would seem a vigorous building up of the association would follow.

It developed that the coming legislature is likely to consider a gasoline tax, in addition to present levies on the motor vehicle using public, that use of motor vehicle tax revenues is being, to some extent, already and may be further diverted away from highway maintenance, and that serious restrictions of motor truck development are under consideration. In the face of these unfavorable prospects the best the convention could do, in its unorganized State, was to declare itself opposed to use of motor vehicle revenues for anything but highway maintenance, capital investment for road building to come out of general taxes, and to make the small but organized Maine Automobile Dealers Association the agency for presentation of its thoughts before the motorists of the State and the legislature.

The convention brought together more than 150 dealers, many of whom traveled by train or motor car the long distances that must be traveled to get from city to city in this State of vast area with a comparatively small population. The meeting showed the dealers keenly interested in better sales methods, sounder financing, saner handling of used cars and legislation to promote the wider use of motor vehicles. It revealed also a remarkably friendly spirit among competing dealers, which will help the process of statewide organization if it is undertaken while enthusiasm over the convention still runs high.

An Interesting Program

The principal speakers were Henry Meixell of the National Motor Vehicle Conference Committee, who suggested practical methods of working for constructive legislation: L. B. Sanders, secretary of the Boston Used Car Statistical Bureau, who made one of his stirring addresses on the folly of over-trading and the employment of dealer co-operation to overcome it; and Neal G. Adair, editor of Motor World, who gave a talk, illustrated with charts, on methods of intensifying sales methods in a dealer territory. Col. I. K. Stetson, president of the First National Bank of Bangor, advised the dealers to keep close to their bankers and to refuse sales rather than sacrifice profits in used car trading. Major George C. Webber, of Auburn, an attorney, talked on legislative problems of the State affecting the trade. Webber made a suggestion that would apply anywhere when he urged dealers, in their organization efforts relating to legislation, not to forget the friendly cultivation of the legislators of their own districts, who thus can be won over to causes supported by their dealer constituents.

The convention had an interesting novelty in the appearance of different chairmen for the different meetings. This spread the direction of affairs around the State and gave variety to the proceedings. Another feature was the "town meeting" idea for meals. The delegates ate lunch and dinner together, in formal assemblage, throughout the convention and the sessions followed the meals in the same hall.

The used car discussion resulted in a determination of Bangor dealers to stiffen their co-operative plans while the Portland dealers have arranged for a meeting, with Sanders of Boston present, to develop their co-operative work.

Maine Dealers Who Promoted State Convention

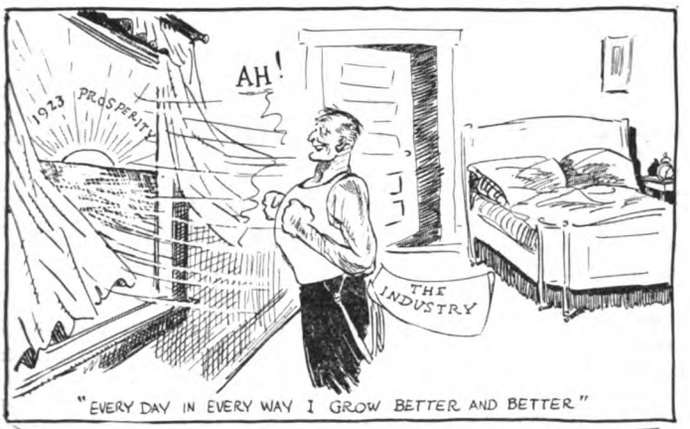


First row, left to right: Miles B. Mank, Miles B. Mank Motor Co., Portland; Myron D. Kidder, Myron D. Kidder Co., Inc., Portland; Haven Sawyer, Sawyer Motor Car Co., Bangor; W. B. Thombs, Portland. Second row: Carl Curtis, Lewiston Buick Co., Lewiston; V. S. Darling, Darling Automobile Co., Auburn; C. G. Abbott, the Henley-Kimball Co., Portland

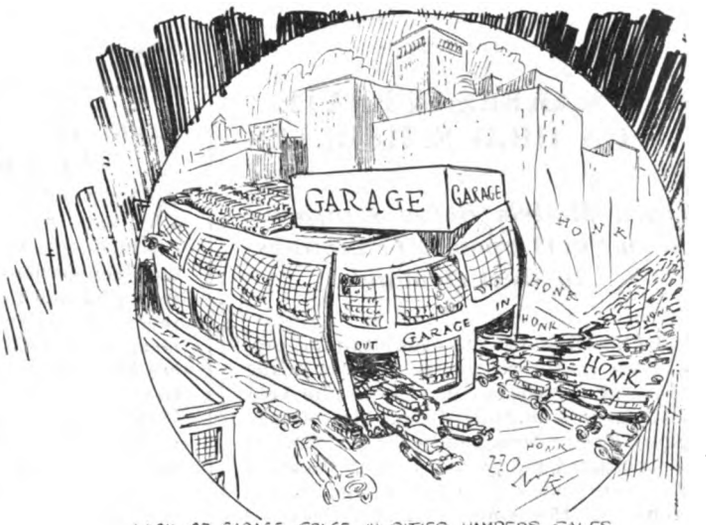
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Along the Automotive Newsway

By Leo Roche



"EVERY DAY IN EVERY WAY I GROW BETTER AND BETTER."



LACK OF GARAGE SPACE IN CITIES HAMPERS SALES OF AUTOMOBILES.



GOVERNMENT WILL FILM CONTINENTAL ENGINE TO ADD TO ITS AUTOMOTIVE LIBRARY OF EDUCATIONAL FILMS



TIRE MAKERS NON-COMMITTAL ON RUMORED PRICE INCREASE



WHO SAID WE WOULDN'T HAVE TURKEY THIS THANKSGIVING?



THERE WILL BE THREE NEW SALON EXHIBITORS — DE DION BOUTON AND VOISIN OF FRANCE, AND HISPANO-SUIZA OF SPAIN

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Closed Bodies Big Need of Plants

CAR MAKERS OPERATE ON HIGH SCHEDULES

Open Models Being Equipped with Sport Special Trimmings to Meet Demand

DETROIT, Nov. 11—Maintaining production marks at points approximating those of the earlier months of the year is largely a matter of material supply, closed bodies being the principal obstacle to continued heavy operations. Demand for open models is limited to special sections of the country and to export markets. Some factories report demand for closed bodies now to be in excess of 75 per cent of output.

Several factories which have been among the leaders during the year are now operating on low schedules because of failure of the closed body supply. Orders on many of their closed models are piled two months ahead and the plants are operating at 30 to 50 per cent of former production figures. One of these factories, with orders far ahead, showed an operating deficit in the last two months.

For the most part dealers are declining to take open models for stocking against spring demand and are clamoring for all the closed models they can get. There is a general demand for closed cars from cities in every part of the country. Price uncertainty has caused dealers to fight shy against accepting any models except those for which they have a ready market. If there is to be any stocking it will be light and will not take place in any volume until the spring season is at hand.

New Sport Models Produced

A large part of the present open body business is in special models with sport trimmings, the usual open types not making special appeal except in those cars which recently have been remodeled or repriced. New sport models will be brought out by a number of factories in the near future to meet the demand now existing for cars of this type.

Ford Motor Co. will continue to build at the rate of upward of 5000 cars daily, a rate maintained through October. Sales are running in excess of production and the company is extending its output as rapidly as it can. Chevrolet is now on a basis of about 1200 daily and will increase this to 2000 as rapidly as it can execute its new factory and production plans.

Buick is operating at close to 800 cars daily, this total including its Flint, Detroit and the McLaughlin Buick plant in Canada. Studebaker continues at its maximum of about 450 daily in all plants. Dodge Brothers' is operating at about 600 daily, its normal capacity, Hudson-Essex at about 250 daily, Hupp at about 125 daily, and Paige-Jewett at 125.

Maxwell has run into a shortage of closed bodies and production has been reduced considerably below earlier season figures but will re-bound as rapidly as the body plant can be brought up to high output. Chalmers operations continue at the former rate pending the completion of negotiations for the taking over of the company by Maxwell.

Cadillac continues to lead in the better priced car field, holding its schedule close to 100 cars daily. Packard production

(*Continued on page* 44)

Olds Breaks Post-War Records

LANSING, Nov. 14—As the result of a price reduction late in September all post-war production records of the Olds Motor Works were broken during October, according to Guy Peasley, general sales manager.

Not only did the company break post-war records and those of the boom period of 1920, but October was also the biggest month the company has had in its 25 years of experience, with the single exception of one month in 1918, during the height of the war boom.

Look for These Stories Next Week—

NEXT week's Motor World, the Nov. 22 issue, will contain complete reports of three important conventions of the industry. It is probable that in each of these there will be crystallized many ideas of particular interest to dealers in cars, trucks, equipment and tires.

Read these stories and become acquainted with the bigger problems of your business, as seen by the industry's leaders in these groups.

Watch for these stories:

1—The Automotive Equipment Association Convention and Show in Chicago. A complete story, with illustrations of this big annual gathering of automotive equipment manufacturers and jobbers.

2—The Service Managers Convention in Chicago. Here factory service managers will talk about things that affect every dealer.

3—The National Tire Dealers Convention in Milwaukee. This meeting promises to develop some particularly interesting thoughts on tire merchandising.

MAKERS IN MILWAUKEE FOLLOW OCTOBER PACE

Body Shortage Being Experienced in Car Factories of That District

MILWAUKEE. Nov. 13—Production schedules of passenger car manufacturers in this district not only are maintaining the October rate, but in most instances factories are finding it a struggle to make deliveries on closed car orders from distributors and dealers. The call for open cars has encountered some of the expected let-down which the late fall season always has brought, but it still is surprising how well this demand is being sustained.

Despite the acute railroad freight situation as it affects supplies of materials and shipment of finished products, it appears that the main problem of passenger car factories at this time is in the body shops. Enclosed bodies are at a higher premium right now than they were at any time this year.

More Body Room Next Year

Provision being made by all factories and by the body concerns here has not reached the stage where appreciable relief has been effected. In most cases the additional facilities will not be available until after Jan. 1, because construction and equipment work was late in getting under way, inasmuch as the imperative need did not demonstrate itself until mid-year, or if it did, manufacturers were conservative and delayed such undertakings until absolutely certain that the new capacity would be occupied for a reasonable length of time.

The railroad transportation situation, admittedly serious and acute, presents the grave prospect of the usual winter operating difficulties coming to be superimposed on the handicaps of car and locomotive shortage mainly responsible for the existing condition.

DUFFUS JOINS FIELD STAFF OF N. A. D. A.

ST. LOUIS, Nov. 14—R. O. Duffus has been appointed an assistant general manager of the National Automobile Dealers' Association, further augmenting the association's field staff.

He formerly was manager of the Packard branch at Kalamazoo, Mich., and later of the Lincoln sales department of R. E. Fair, Ford dealer in the same city. He also was acting secretary of the Kalamazoo Automobile Dealers Association. He will begin his service with the N. A. D. A. on Nov. 15, assisting at first in organization work in Indiana.

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Ethics Stressed at Iowa Meeting

ASSOCIATION PLANS TO EDUCATE PEOPLE

Gordon Lee, in Address, Emphasizes Importance of Strong State Organizations

DES MOINES, Nov. 13—Iowa motor tradesmen will make a consistent campaign before the people of the State in the next year to emphasize the ethical standards of the automobile business. In its first annual convention held here Friday, the Iowa Automotive Merchants Association, formerly the Iowa Motor Trades Bureau, gave particular stress to a higher standard of ethics in business. The association proposes to increase its membership to 5000 by May, 1923. At present it has four all-time representatives in the field arousing the automotive dealers of Iowa to the need for stronger unified action.

Gordon Lee, chief of the automotive division of the Department of Commerce, who made the principal address at the convention, emphasized the importance of strong State trade associations. He told the dealers that his department recognized the value of organized effort as shown in the motor trades and hoped to receive appropriations from Congress which would permit the same attention to domestic motor trades as it is now giving to foreign trade.

Saginaw Results Explained

A. V. Comings of Philadelphia told the dealers what the Saginaw plan has meant to dealers there in actual profits on used car business and also explained the California association's emblem and its importance to member dealers.

Walter E. Heller, president of the W. E. Heller Finance Co. of Chicago, said that the automotive finance field was entirely separate from regular banking, as it offered much more flexible arrangements and gave opportunity for creating business.

At its business session the association went on record as being strongly opposed to any attempt to introduce a lien law at the coming session of the Iowa legislature. Resolutions declaring for a strictly cash basis for all repairs and parts were unanimously adopted. The association will fight any attempt to repeal favorable sections of the present highway law and will defend many of the advantageous provisions covering motor vehicles passed at the last session of the Iowa legislature, which was fathered by the Iowa Motor Trades Bureau.

No action was taken as to the position to be assumed by the association on the proposal of State officials made some time ago for material reduction in motor vehicle license fees. Plans for protecting the industry's welfare during the legislative session are well under way.

Designs for an outside emblem to be displayed by members were adopted.

An active publicity campaign to acquaint people generally with high standards of conduct of the motor trades business is to be launched through means of high school contests, public speeches, stickers and co-operative advertising in local papers.

Dean Schooler of Des Moines, Oakland dealer and long-time manager of the Des Moines show, was named president for the ensuing year; C. A. Morris, Cadillac dealer, Waterloo, vice-president, and George Darling, Franklin, Hudson and Essex of Marshalltown, treasurer. Fifteen directors, representing as many districts in the State, also were named.

The Motor Trades Bureau of the Des Moines Chamber of Commerce was host at the banquet addressed by Gordon Lee and Ralph Faxon of St. Louis.

MODEL PREFERENCE ASKED OF OWNERS

NEW YORK, Nov. 13—J. C. Long, secretary of the Educational Committee of the National Automobile Chamber of Commerce, is sending out a questionnaire to 20,000 owners asking them concerning their next purchase.

Long wants to know if they will buy an open or a closed car and why their preference. It is expected that this will produce replies that will be of great help to manufacturers in trying to anticipate the body demands for the coming season.

EARL QUITS COMPANY BEARING HIS NAME

DETROIT, Nov. 13—The resignation of Clarence A. Earl as president and general manager of Earl Motors, Inc., formerly the Briscoe Motors Corp., Jackson, effective Oct. 31, has been accepted by the board of directors, and steps preliminary to a reorganization of the personnel and finances of the company will be taken at a meeting of the board this week. Earl's resignation followed a period of plant inactivity extending back several months.

As it stands to-day the company is cleared of inventory and has a good dealer organization, but is short of working capital. It is declared this now will be provided by the bankers. George C. Scobie, treasurer, has been in Chicago during the week working with bankers on plans for the reorganization.

500 REPRESENTATIVES OPEN A. E. A. MEETING

Nelson H. Oliver Nominated for President to Succeed Howard M. Dine

CHICAGO, Nov. 13—With approximately 500 delegates and alternates present, the seventh annual convention of the Automotive Equipment Association opened in the Coliseum to-day. The convention assembled in the morning. In the afternoon the fourth annual business exhibit of the association got under way.

Eighteen new members were elected, five jobbers and thirteen manufacturers. A. Schrader's Son, Inc., of New York, being among the latter. It was voted to hold the 1923 summer convention at Dixville Notch, N. H.

Nelson H. Oliver, sales manager of the Metal Specialties Manufacturing Co., Chicago, was nominated for president to succeed Howard M. Dine, of the Dine-De Wees Co., Canton, jobber. William E Wissler, manager of the Automotive Equipment Department of the Herring Motor Co., Des Moines, was nominated for vice-president. The election will be held the latter part of the week.

Delegates to the convention from manufacturing and jobbing houses, and sales and purchasing representatives of the manufacturing and jobber members, began arriving in Chicago the latter part of last week and filling the lobbies of the Congress Hotel, registration headquarters.

The Board of Directors, Membership Committee and various other committees held sessions Friday and Saturday of last week. General sessions of the convention are being held on Monday, Thursday and Friday of this week, and the jobbers' divisional and manufacturers' divisional meetings Tuesday and Wednesday.

Willys-Overland Report

TOLEDO, Nov. 14—The report of the Willys-Overland Co. and subsidiaries for the quarter ended Sept. 30, 1922, shows estimated earnings of $4,099,675, from which reserve of $475,000 for balance of price decrease was deducted, leaving a balance of $3,624,675. Shipments for the last quarter were: Overland, Model 4, 27,448; Willys-Knight, Model 20, 8277; Willys-Knight, Model 27, 352; total 36,077.

Lincoln Agreement Ends

DETROIT, Nov. 15—Lincoln Motor Co. has given notice that the stockholders protective agreement dated Nov. 20, 1921, has been terminated.

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MASON TIRE LISTED 5 PER CENT HIGHER

Company, However, Undercut All Competitors in Last Price Reduction

AKRON, Nov. 15—Mason Tire & Rubber Co. of Kent, near Akron has announced a blanket increase of five per cent in prices of all tires, effective today.

Just what effect the Mason move will have upon Akron tire manufacturers is problematical. Tire men here refuse to commit themselves as to whether or not their companies definitely are planning price boosts this month, although many admit that such upward price revisions are logical in view of the steady increase in cost of cotton and crude rubber.

When tire companies, a few weeks ago, engaged in their last price-cutting scrimmage with each other, Mason undercut practically all competitors so that the 5 per cent increase does not put Mason tires at a mark materially higher than the standard list prices on the same size tires of other manufacturers.

OPEN AND CLOSED CAR PRICES CUT BY KING

DETROIT, Nov. 13—Reductions of $300 on the open models, $200 on the coupe and $150 on the sedan are announced by the King Motor Car Co. The new list is as follows:

Model	Old Price	New Price
Roadster	$1,795	$1,495
5-pass. phaeton	1,795	1,495
4-pass. sport	1,795	1,495
Coupe	2,400	2,200
Sedan, regular	2,550	2,400

Moon Sales Gain 390 Per Cent

ST. LOUIS, Nov. 13—The Moon Motor Car Co. reports that its sales for October were 390 per cent greater than sales for October of last year, and were 70 per cent of the sales for last August, which was the largest month in the company's history.

The dropping off of business in some sections of the country has been to a large extent compensated for by an increase in other sections, notably in Texas and California. The November production schedule calls for the same output as in October.

Knox Tire Reorganized

MOUNT VERNON, OHIO, Nov. 13—There has been a reorganization of the Knox Tire & Rubber Co., whose plant here was recently purchased by the reorganization committee for $175,000.

Hudson Earnings

DETROIT, Nov. 11—Net earnings of the Hudson Motor Car Co. for the quarter ending Aug. 31 were $3,656,218, or at the rate of $3 a share on the outstanding stock of the company. Total profits for the quarter were $4,183,327.

SETS SERVICE PRICE FOR ONE FULL YEAR

DETROIT, Nov. 15 — Simons Sales Co., distributor of Willys-Overland cars for Michigan, is offering a year's upkeep on any new Overland car bought from this time on for $25.

The offer includes labor and all parts and equipment, except tires and batteries and also excepts damages due to wrecks. The new offer follows two years' operation of the flat rate system and is a development of this in that it sets a service figure for a whole year in advance and guarantees it.

ALL MONTHS OF YEAR SHOW TRACTOR GAIN

Report of Cleveland Reserve Bank Shows Bright Prospect for 1923

CLEVELAND, Nov. 14—Every month in 1922 so far has shown a substantial increase in tractor sales over the corresponding months of 1921, declares the Cleveland Reserve Bank in its Monthly Business Review. Next year looks even better and production for 1923 is starting with schedules much larger than those of the last two years.

The bank says:

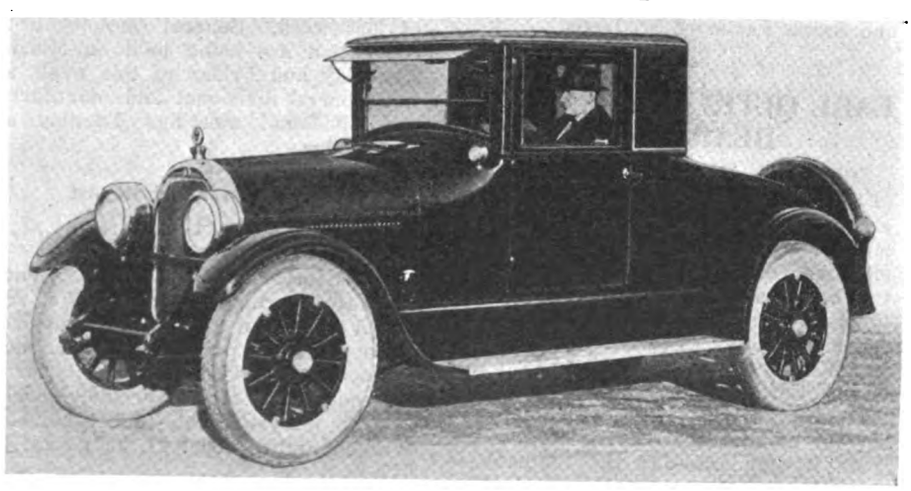
The most hopeful phase of the tractor situation at present is the buying attitude of the farmer. While, broadly speaking, farm products are still out of line in exchange value for the products of other industries, the farmer is looking optimistically to 1923. In fact the farmers are more optimistic than retail dealers, who despite the business now being done with farmers are ordering quite conservatively and cautiously. The most notable improvements in business are from the sections of the country where crops have been best. Probably the South is the most productive of business now, while the poorer section is that where wheat predominates.

There has been some slight restriction of shipments from factories because production has been curtailed by shortage of labor.

Most of the tractor and implement companies have announced prices for 1923 trade. These average about the same as those which have prevailed for the last two or three months. In the new price lines, guarantees against any declines prior to June 1, 1923, are quite general. One of the larger companies, however, is soliciting business under a price less contract.

The atmosphere surrounding the industry is the most hopeful in many months. There are indications that the gradual improvement evident during the last few months will continue throughout the winter and that the selling season of 1923 will find the industry fully recovered from its adversity.

Peerless Brings Out a Roadster Coupe, $3,300



Peerless has added a new body to the line, this a two-passenger roadster coupé to sell for $3,300. The rear and rear side panels are covered with a weatherproof top material and the interior is finished in motor cloth of a neutral shade. The cover on the rear deck lifts high and free and the storage compartment holds a good sized trunk or several suitcases. Standard equipment includes electric rear signal, cowl ventilator, engine driven tire pump, MotoMeter and extension lamp and cord

AUTOCAR INCREASES PRICES DECEMBER 11

ARDMORE, PA., Nov. 14—The Autocar Co. has announced a price increase on all truck models, to take effect Dec. 11. The new prices will be as follows:

SHORT WHEELBASE MODELS

	Old Price	New Price
4 to 6 ton	$3,950	$4,200
2 to 3 ton	2,950	3,100
1½ to 2 ton	1,950	2,200

LONG WHEELBASE MODELS

	Old Price	New Price
4 to 6 ton	$4,100	$4,350
2 to 3 ton	3,075	3,200
1½ to 2 ton	2,050	2,300

Asks to Sell Parker Assets

INDIANAPOLIS, Nov. 13—Permission to sell the assets of the Parker Tire & Rubber Co. of this city has been asked by the receiver, The Bankers Trust Co.

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NEW COMPANY FORMED TO CONTINUE SIMPLEX

Buys Plant and Assets from Mercer Motors—Chassis Lists at $10,000

NEW YORK, Nov. 13—The Crane-Simplex Co. of New York, Inc., with a factory in Long Island City, and executive headquarters at 115 Broadway, has purchased from the Mercer Motors Co. the plant and assets of the old Simplex Automobile Co. and has resumed the manufacture of the Crane-Simplex, discontinued in 1917, when the Government took over the plant for war work.

The new company, which is capitalized at $500,000, all preferred stock, will confine itself to the manufacture of the chassis only, which will list at $10,000 and which will be essentially the old Simplex with a six-cylinder engine with 4.375-in. bore and 6.25-in. stroke, and a wheelbase of 143.5-in.

100 Chassis a Year Planned

It is planned to make 100 chassis a year and the output for the next five years has been taken by a selling organization, the Crane-Simplex Distributing Co., 200 West 59th Street, New York City. In addition the new company also controls the Jephson-Scott body plant at East Orange, N. J., formerly Quinby, and if a customer wishes it a Jephson-Scott body will be fitted, although that is not compulsory.

Officials of the Crane-Simplex company, the manufacturing end, include L. R. Ayer, treasurer of Lawrence Chamberlain & Co., a financial house at 115 Broadway, who has been elected president; J. H. Bawden, who has been with the Mercer company for the past 12 years, vice-president and general manager; Harvey B. Clark, who has been identified with Simplex since 1905, treasurer; Frederick H. Brand, also a Simplex veteran, assistant treasurer, and W. B. Sheahy of the law firm of Breed, Abbott & Morgan, secretary.

Crane Motor Taken Over

In addition this new organization has taken over the Crane Motor Car Co., which has been tied up with Simplex, although H. M. Crane is not identified with the proposition. This deal carries with it the Crane overhead 4 x 6 engine, which will be developed by General Manager Bawden for future use, although it will not be used in the Simplex now being manufactured.

After 1917 the Government held possession for two years, using the plant for the manufacture of the Hispano-Suiza engine. In 1919 the Mercer Motors Co., of Trenton, N. J., bought the assets, and when Mercer separated from Hare's Motors it took the Simplex assets with it. Only recently the deal, in which Bawden played a most prominent part, was consummated, whereby this veteran car rejoins the American automobile family.

57 RADIO STATIONS SENT OUT MESSAGE

ST. LOUIS, Nov. 15—Reports received by the National Automobile Dealers Association show that on the night of Oct. 12 the association's message on "Your Car and Your Dealer" was sent out from 57 radio broadcasting stations. It is estimated that several hundred thousand persons heard this address.

LYCOMING PRODUCES NEW MODEL ENGINE

WILLIAMSPORT, PA., Nov. 10—A new 4-cylinder engine, which will be known as the Model C series, has been put in production by the Lycoming Motors Corp. of this city. Important features of the engine are a five-bearing crankshaft, and a system of force-feed lubrication in which the pressure is controlled by the throttle. The engine is being produced with 3½, 3⅝ and 3¾-in. bore and 5-in. stroke. A complete description of this engine will appear in Motor World of Nov. 22.

REEVES TO HELP WRITE BOOK ON ASSOCIATIONS

WASHINGTON, Nov. 14 — Alfred Reeves, general manager of the National Automobile Chamber of Commerce, has been appointed a member of the General Committee Co-operating on Trade Association activities, by Secretary Hoover.

The purpose of the committee is the compilation of a book on trade association activities embracing more than 4500 trade associations.

The work of the automobile industry, as embodied in the activities of the N. A. C. C. will be shown by Reeves.

FRANKLIN POSTPONES BUILDING LIGHT CAR

Company Says Rising Cost of Material Makes Production Impossible Now

SYRACUSE, Nov. 10—Production of the new Franklin four, which was to sell for about $1,000 and be on the market next April, has been indefinitely postponed by action of the board of directors of the Franklin Automobile Co.

The rising cost of materials, which it said made it impossible to produce the car at the price intended, is the reason for a change in the plans of the company. The sale of additional stock has been discontinued.

The company also announced that it has discharged the force of 300 men which has been working at the experimental plant and only a few engineers will be retained.

The indications are that the new Franklin four will not appear on the market at any time next year. Work on the proposed plant for the new car has not been started, though the company has already purchased a large factory site east of the city.

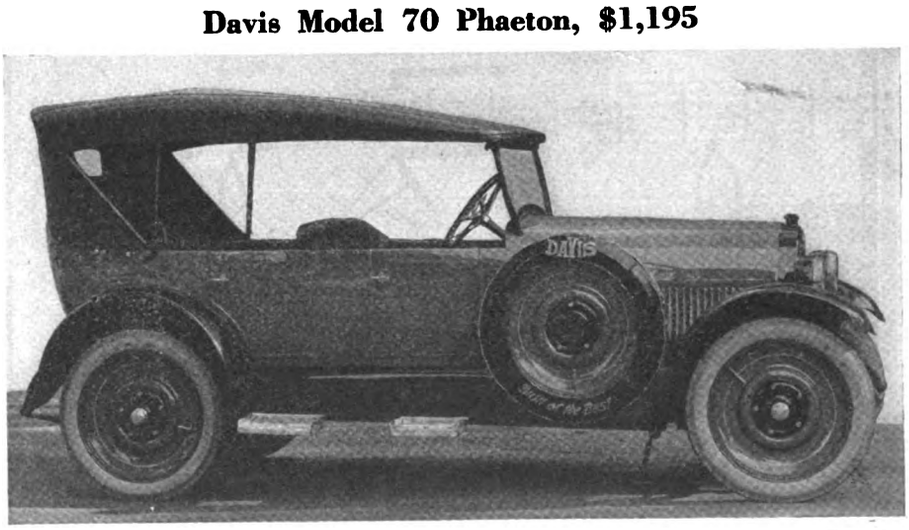
Officials of the company refused to discuss in any way the decision to postpone production, which came as a great surprise in automotive circles here.

The plant for the six cylinder car will continue to operate at its present capacity.

Re-organizing Syracuse Rubber

SYRACUSE, Nov. 14—Re-organization of the Syracuse Rubber Co., maker of the Syra-Cord, is underway, following the appointment by Federal Judge Cooper of William Rafferty of this city as receiver for the company. The company consented to the appointment of a receiver.

Davis Model 70 Phaeton, $1,195



The new phaeton is mounted on the 71 chassis. The body is finished in Royal blue with brown Spanish leather upholstery. The radiator is nickel plated and the equipment includes disk wheels, military steps, skirt fenders and a one piece windshield. Other models in the line for 1923 are the Legionaire, a four-passenger sport model, $1.495; a coupé, $1,795, and Californian, a car with a year round top. These are in addition to the regular line models

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INTEREST IN A. E. A. WORK ON INCREASE

Comparison of Period Shows Number of Meetings Was Tripled This Year

CHICAGO, Nov. 13 — Remarkable growth of the merchandising campaign of the Automotive Equipment Association is shown by a comparison of the number of meetings and attendance last year and this year. The 1921 campaign got actively under way about Aug. 1, and from that date to the first week in November 37 meetings were held, attended by 1875 people. From Aug. 1 this year to the first week in November, 129 meetings were held and the attendance was 10,757. At the 1921 meetings the moving picture entitled "Ask 'Em to Buy" was exhibited. This year a new film entitled "Shop Profits" was prepared, and at many meetings both pictures were shown.

Several automotive jobbing and manufacturing firms conducted meetings this fall. George A. Brush, representing Ozburn-Abston & Co. of Memphis, held 26 meetings, at which the attendance was 948. Midwest Auto Supply Co., Dubuque, Iowa, held nine meetings. McCauley-Ward Motor Supply Co., Waco, Tex., held 32 meetings with an attendance of 956 Black & Decker Manufacturing Co. held 19 meetings with an attendance of 1977. L. A. Cavanaugh of the Motor Car Supply Co., Calgary, Canada, held 14 meetings, attended by 500 persons.

Two Pacific Coast jobbers recently gave the Merchandising Committee figures representing the increase in business in certain lines which they attribute to the "Ask 'Em to Buy" movement. One company noted the following increases in one year in the lines designated: Motometer, 50 per cent; fan belts, 100 per cent; bumpers, 125 per cent; spotlights, 200 per cent. Increases noted by the other company were: Fan belts, 100 per cent; motometers, 103 per cent; bumpers, 78 per cent; stop signals, 600 per cent; brake lining, 40 per cent; spot lights, 100 per cent.

DORT BLACKSMITH TAKES TRIP EAST

DETROIT, Nov. 8—Accompanying J. Dallas Dort on his trip through the Eastern cities incidental to the showing of the new Dort six models, is "Art" Bickford, a blacksmith in the Dort factory, who has been associated with Dort for the past 32 years.

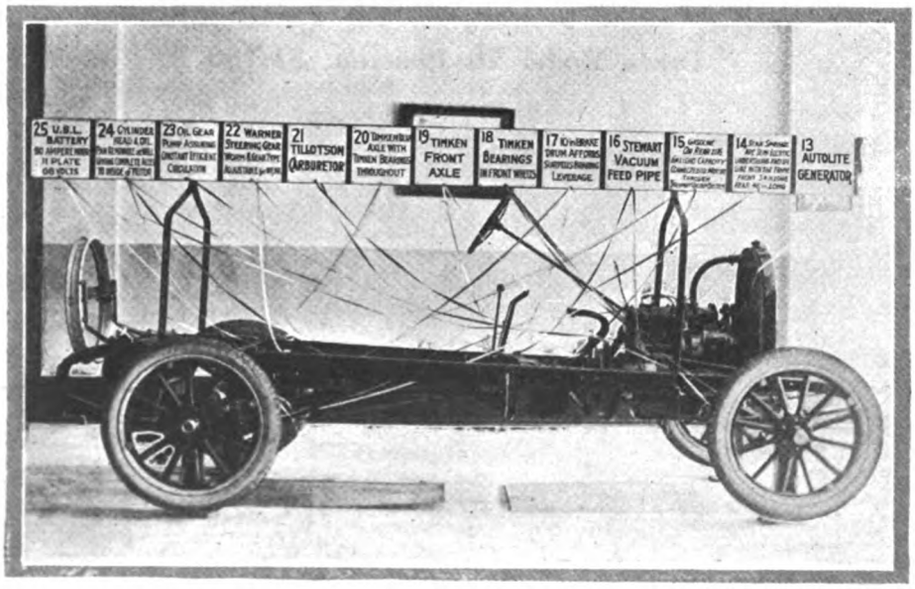
"Art" is only a blacksmith, Dort said, but he might have been superintendent of the plant many years ago if he had wanted to accept better positions as they were offered him. He preferred to remain a blacksmith, though because he didn't want additional responsibilities and he asked "what are you going to do with a man as happy as that."

Everywhere Dort goes, Bickford goes.

He is going to be his companion throughout the Eastern trip, seeing most of the cities for the first time.

Bickford received $1,950 of the undivided profits of the Durant-Dort Carriage Co. in 1917 when it became the Dort Motor Car Co. He was one of the many employees receiving a reward for long service.

Introducing a New Car



A display that attracted hundreds and was particularly effective in impressing spectators with the units that are used in the Star car was staged by the Conant Automobile Co., Houston, upon the introduction of the Star car in Texas by that distributor. Each unit of the car was numbered and ribbons ran from the units to a sign held above the car with an iron bracket which identified it

$2,115,828 EARNED BY PACKARD IN YEAR

Current Assets Reported Seven and One-Half Times Current Liabilities

DETROIT, Nov. 13—Re-electing all directors and officers, stockholders of the Packard Motor Car Co., at their meeting here, received the annual report showing net profits for the fiscal year of $2,115,828 on factory sales of $38,000,000. The earnings were all in the last six months, the first six showing a loss. Net current assets are seven and one-half times the current liabilities. The total assets are five times the total liabilities, including the company's outstanding bonds.

President Alvan Macauley, in a statement to the stockholders, said:

The company prepared during the depression for better times by improving its working personnel, decreasing its inventories, improving its facilities and developing a new product with the result that we now are producing cars and trucks at the rate of 1800 a month. Our program calls for a production of approximately 2250 a month, commencing in December. This is the greatest output in the company's history, and it is being accomplished with a smaller organization and a much reduced inventory.

Company's Balance Sheet

The general balance sheets show total assets of $56,308,090, a reduction of about $2,400,000 from last year, principally represented by the reduced inventory. The company's cash position has improved by almost $6,000,000. The surplus of $17,004,438 represents an increase of about $11,000,000; current and accrued liabilities have been increased about $6,000,000, and reserve for continuances has been cut from $2,500,000 to $750,000. Debentures outstanding have been reduced $2,453,000. No change has been made in preferred stock outstanding which totals $14,789,800. Total common stock is $11,885,100.

JACKSON PREPARING TO MAKE NEW MODELS

DETROIT, Nov. 10—Jackson Motors Corp., a division of Associated Motor Industries, is employing about 60 men in the development of tools, jigs, etc., for new models which are expected to be introduced some time around the first of the year, according to C. L. Halliday, vice-president and general manager.

Definite production plans have not been formed, but the plant at Jackson will be used principally for the manufacture of Jackson cars and will also be used in part for body building for Jackson and other cars in the Associated line.

No fundamental changes from the former Jackson models are expected according to Halliday, except that the cars will be refined both as to chassis and bodies to bring them up to latest developments in the industry.

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SUGGESTS FLAT CARS TO TAKE SHIPMENTS

Dealer, Who Receives Notice, Thinks Tramps Will Be Chief Beneficiary

LOS ANGELES, Nov. 13—The freight situation has become acute with automobile distributors in southern California. Representatives of some of the most popular makes of cars are thirty days behind in deliveries of open models and sixty days behind in closed cars. One company has twenty-two carloads en route from the factory, and trace of them has been lost.

Dealers who are in position to make immediate deliveries are enjoying the business they would not have otherwise. This is because of the large number of cancellations and the customer's determination to buy a car that he can get without delay. One distributor has been notified by his factory that the only way shipments can be made to him will be by using flat cars.

This puts him in a quandary because cars shipped at this time of the year with only a canvas-covering to protect them from the weather usually are damaged in transit. Not only do they suffer from exposure to the weather, but there always is an especially large number of tramps headed for southern California in the winter, and when they steal a rail ride they like nothing better than to occupy the soft upholstery of an automobile.

Usually they are very careless in their habits and enjoy such pastiming as cutting holes in the leather, carving their initials on the instrument board, or scratching them in the finish. This makes the dealers hesitate before ordering shipments by flat car. However, they feel if they do not take this chance they will be without cars.

Railroads acknowledge their inability to meet the situation. It is reported that at one point in Nevada there are approximately 100 carloads of automobiles in the freight yards waiting for motive power to bring them to this city.

RAILROADS BUILDING MORE FREIGHT CARS

NEW YORK, Nov. 10—James S. Marvin, head of the traffic department of the National Automobile Chamber of Commerce, sees relief ahead for the industry in the report he has received that six railroads have ordered 3900 new automobile cars, which will bring the total in service up to 110,000. The new cars have been ordered by the Northern Pacific, Norfolk & Western, A. T. & Santa Fe, 1000 each; C. N. & St. P., 500; C. R. I. & P., 300, and Western Pacific, 100. In addition, the Grand Trunk is figuring on ordering 2000, the C. R. I. & P. and C. N. & St. P. an additional 500 each.

Marvin also calls attention to the fact that the Car Service Division at Washington has sent out another order to all railroads to relieve grain shipping. Box cars are ordered sent West empty from territory west of Pittsburgh, Cleveland and Detroit. Automobile cars are specified as exempt from this, and instructions to send these cars into manufacturing territory are re-stated.

FARMER SEES OLD AD; WANTS "AUTO BUGGY"

CHICAGO, Nov. 10—An advertisement of the International Harvester Co.'s "auto buggy," published in a farm paper in 1908, has just brought a response from a Northern Wisconsin farmer who asked for a catalog. Under date of Nov. 5, 1922, the farmer wrote:

"Will you please send me a catalog of your auto buggy. I am sending you a picture of the auto buggy of which I would like a catalog."

Attached to the letter was a clipping of the advertisement.

The vehicle described in this advertisement was the forerunner of the International Harvester Co.'s present line of International trucks ranging in size from 2000 to 10,000 pounds capacity.

This pioneer vehicle was powered with a two-cylinder air-cooled engine and was cranked at the side. The body followed the lines of the spring wagon, which was useful to the farmer both as a passenger vehicle and for hauling light loads of produce to market. The "auto buggy" was equipped with solid rubber tires and a removable rear seat was provided.

Piedmont Plant Sold

LYNCHBURG, VA., Nov. 14—The plant of the Piedmont Motor Car Co. has been sold at auction under a deed of trust and was bought in by the First National Bank of Lynchburg, beneficiary.

GOOD CROPS HELPING SAN FRANCISCO TRADE

Farmers and Fruit Growers Are Receiving Pay for Year's Production

SAN FRANCISCO, Nov. 11—San Francisco car and truck dealers, and garage and repair men are enjoying a steadily rising prosperity, largely due to the excellent crops of this year, and the fact that the farmers and fruit-growers are now receiving their pay for the year's production. As a result of this influx of money and business, a number of firms are expanding their facilities for handling automotive traffic.

The Clydesdale Motor Truck Co. of California, has opened a garage, service and repair station especially for motor trucks. With 25,000 square feet of floor space, equipment is being installed to service and repair trucks of any size or make, the entire top floor of the building is being reserved for Clydesdale trucks, with 24-hour service.

The Ruckstell axle plant, at Berkeley, making a two-speed axle for Fords, has found its growing business demands larger space, and is increasing the size of the factory to nearly double its present capacity.

The Pacific Nash Motor Co. has expanded its organization considerably to take care of increasing business in central and northern California. Five new men have been added to the sales force, and J. R. Hall of the Pacific Nash organization in Salt Lake City has been brought to San Francisco to be assistant manager of the local establishment.

William L. Hughson, Ford-Lincoln dealer of San Francisco, delivered the first of the radio talks on "How to Buy an Automobile," prepared by the National Automobile Dealers Association. The talk attracted a great deal of attention in the press of all the cities around San Francisco Bay.

Vane of N. A. D. A. Asks Dealers to Help in Returning Freight Cars to Automotive Producing Centers

ST. LOUIS, Nov. 10—Co-operating with the National Automobile Chamber of Commerce in its efforts to relieve the freight car shortage, C. A. Vane, general manager of the National Automobile Dealers Association, has sent out the following letter to members throughout the country:

The natural inability of the railroads to provide freight cars, a result of the strike, is being seriously aggravated, so far as the automobile industry is concerned, by the indifference of the carriers toward returning automobile box cars to the automobile manufacturing territory, particularly Michigan, Indiana and Ohio.

There are thousands of automobile cars that have been shipped from these loading points into the South, West and Southwest and the railroads of those territories are reloading them with cotton, lumber, sand, cement, flour and other such commodities that could just as easily be put in ordinary box cars.

This situation is getting so serious that shipments may have to be seriously curtailed and driveaways resorted to, to keep factories in production.

Will you please take up with your local dealers association the appointment of a committee to call upon the railroads in your territory to desist from this improper use of automobile equipment and get it back immediately to the manufacturing area. If you will report to this office any misuse of this equipment in your territory, we will take it up immediately with the American Railway Association so that proper steps can be taken by them to get the offending carrier in line.

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DORT OPENS BRANCH TO SOLVE PROBLEMS

Will Be Used to Work Out Better Methods of Selling and Servicing Cars

DETROIT, Nov. 14—Dort Motor Car Co. has opened a branch in Detroit under the management of E. J. Poxson, assistant general sales manager at the factory, who will also retain his factory connection, so that there will be a distinct factory tie-up in the conduct of the branch.

It is the plan of the company to use the branch as an experimental studio in which will be worked out methods for improving retail merchandising and servicing of cars. As methods are tested out and found productive, they will be recommended for adoption by all Dort retail establishments.

With the exception of New York, Detroit will be the only city in which a factory branch will be maintained, and this because of the proximity to the factory and the generally close competitive conduct of the market. Very careful investigation and analysis of the market will be made and its particular requirements from both sales and service angles studied.

Specialized Salesman Plan

In its selling plan, the company will operate to a large extent on a specialized salesman plan rather than the districting plan. Salesmen equipped to handle certain types of trade will specialize upon them with the fundamental thought of easy servicing as a common working ground. They will be free to extend their activities to any part of the city where their class of trade may be found. As a dealer organization is built up in the city, the same open privileges will be extended. Only distributor territory will be restricted. Two years' experience has shown the open plan most successful.

On business involving trade-ins the company will make it a policy to accept cars only at a price permitting of ready resale. Where the appraisal price is considered unsatisfactory by the prospective buyer, he will be urged to have the car he already owns reconditioned and operated to a point where he considers it as having given full worth.

Concentrate on Closed Cars

The branch is adopting as one of its most important functions that of maintaining all Dort cars in first class operating condition. In selling cars, Poxson said, he has reached the conclusion that a salesman's efforts should be directed to selling the closed car as the one which will give the most satisfaction to the buyer. The conveniences of the closed vehicle will always be fully detailed, so that a prospect, should he take an open model, may not feel dissatisfied later that the company did not have his interest fully at heart in helping him with his selection.

About 700 persons attended the opening of the branch, at which the first showing in the city of the Dort six was made. All models exhibited were sold and delivered the next day. Similar openings are to be staged in important cities throughout the country, President J. Dallas Dort attending those in Eastern cities in person and J. D. Mansfield, general sales manager, attending those in the West.

TIRE SALESMAN FRAUD, SAYS GARAGE KEEPER

A MAN claiming to represent a company known as the Springfield Tire & Rubber Co., of Springfield, Mo., has been defrauding garage men and tire dealers in Missouri, Arkansas, Kansas and Oklahoma. A garage proprietor at Lockesburg, Ark., writes that on Sept. 21, 1922, he gave this fraudulent salesman an order for six tires, paying a deposit of $6.

The salesman gave a printed receipt bearing the name of the Springfield Tire & Rubber Co., which was represented as the manufacturer. The tires were priced very low. The salesman signed the name "Frank Clayton," but information received is that he has used a number of other names.

The Springfield Chamber of Commerce states that there is no such company as the Springfield Tire & Rubber Co. and that it is doing all in its power to expose this fraud which it has learned has been practiced rather extensively.

DORRIS HAS ADDITION TO 1923 BODY STYLES

ST. LOUIS, Nov. 10—The Dorris Motor Car Co. have added the Pasadena to their line of body styles for 1923. The new body is mounted on the standard chassis and is a 4-passenger sport type. A trunk is mounted on an aluminum rack attached to the frame at the rear of the car, together with a tire carrier for two tires.

Stock colors for the new model are Holland blue, maroon and gun metal gray. A three-quarter inch body molding extends over the hood to the radiator. The upholstery is leather. The top is made of unlined Burbank material with natural wood bows with nickel fittings.

The instrument board is black walnut. A ventilator placed in the cowl is easily controlled from the dash. The windshield stanchions are bronze, nickel plated. Regular equipment is artillery wheels with 33 x 5 in. cord tires.

Lewis-Hall Receiver

DETROIT, Nov. 11—The Federal Court has named the Union Trust Co. of Detroit receiver for the Lewis-Hall Motors Corp., a manufacturer of trucks.

NO BANK ANTAGONISM, DODGE HEAD DECLARES

President Haynes, After Six Weeks' Trip, Sees New Cycle of Prosperity

DETROIT, Nov. 11—Following a six weeks' trip through the Northwest and Pacific Coast territory President F. J. Haynes of Dodge Brothers declared that the general business condition is "healthy from the feet up." With John A. Nichols, Jr., general sales manager of the company, he visited Dodge Brothers dealers, bankers and other merchants in all important cities getting first-hand impressions.

A new cycle of prosperity has started, Haynes said, which is sound and healthy and has none of the aspects of boom times. Bankers and merchants everywhere regard it as substantial, permanent improvement. They are content to witness a gradual improvement because they have just seen a tragic example of the other kind of development—the kind that accumulates so much momentum that the brakes of good business judgment are useless in an emergency.

Haynes said the improved conditions were most noticeable in the cities and larger towns, but that the purchasing power and inclination to buy in the rural sections are improving appreciably. Both Haynes and Nichols were impressed with the absence of antagonism which has been attributed to bankers by automobile men in some parts of the country.

In almost every State there was declared to be less evidence than ever before of the usual winter slow-down in business. This condition was declared to be reflected at the factory, which is maintaining production at a point approximating the high-pressure marks of earlier in the year.

JOBBERS IN NEW YORK TO MEET DURING SHOW

NEW YORK, Nov. 11—Automotive equipment jobbers of New York, Brooklyn and Newark are planning for a big merchandising meeting in New York during show week. The date has been tentatively set for Wednesday of that week.

The general arrangements, which have not been worked out in detail, provide for engaging a hall or theater to accommodate 1500 to 2000 dealers and salesmen. The "Ask 'em to Buy" and "Shop Profits" films are to be shown, and Ray W. Sherman, merchandising director of the Automotive Equipment Association, will be asked to deliver the principal address.

Franklin Oversold

SYRACUSE, Nov. 14—The Franklin Automobile Co. reports that the number of unfilled orders now on hand is equivalent to all of November production and one-third of December production as well.

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NASH SAYS DEALERS SHOULD STOCK CARS

Believes Railroad Situation Will Get Worse During Winter Months

BOSTON, Nov. 14—"If any motor dealer could make a survey of the railroad situation as I have made it they would go to their bankers to-day and make arrangements to stock up with cars right away for Spring delivery," Charles W. Nash, president of Nash Motors Co., told the 160 dealers, comprising the C. P. Rockwell organization, when they gathered for the annual fall conference.

He said:

"Railroad officials tell me that while conditions are mighty poor now they are nothing to what they are going to be this winter. And rather than have our Nash cars subjected to being driven overland through snow in the winter, making the cars second-hand before delivered to buyers, I would close the plants for a couple of months. We could struggle along.

"Motor cars are going to be built. They are going to be sold. The public wants cars. And those who do not order them now are going to find that when the spring rush comes along they will be waiting and wailing. That will be their own fault."

Nash told the dealers that there was going to be a greater call for trucks, due to the railroad situation.

8 NEW BODY MODELS ANNOUNCED BY STUTZ

INDIANAPOLIS, Nov. 11—Eight new body models have been announced by the Stutz Motor Car Co. The new line will be known as the Speedway Four Series. No changes have been made in the chassis. Prices on the new models are as follows:

7-pass. Phaeton	$2,640
4-pass. Sportster	2,790
2-pass. Roadster	2,450
De Luxe Bearcat Roadster	2,760
7-pass., California top....	3,015
4-pass., California top....	3,165
4-pass Coupe	3,490
5-pass. Sportsedan	4,450

These prices are substantially the same as those of the old line.

NEW LOCOMOBILE MODEL HAS NO BODY CHANGE

BRIDGEPORT, CONN., Nov. 13—A new model Locomobile to be known as the Series 8 is now ready for production. The chassis remains practically the same as before, the improvements being in the nature of refinements rather than radical departures from Locomobile traditions.

The changes include the use of a Delco battery ignition system of the two-spark type with two independent units, each with its own coil, breaker and distributor, a new type clutch and a new arrangement of timing gears.

The springs are more resilient, and the manifolding is hot-water jacketed. The bodies show no changes and the prices remain the same as before, ranging from $7,600 for the phaeton to $11,000 for the sedan. The chassis price is $6,800.

LOW RATE TIRE OFFER CAUSES MAN'S ARREST

MINNEAPOLIS, Nov. 11—Post-office inspectors attracted by the large amount of mail delivered to the Edlund Tire Co., arrested Joseph Schwindemann, a boiler maker, on a charge of using the mails with intent to defraud. Some $25,000 in checks and money were found. It is said that circulars had been sent out by Schwindemann in the name of the company, bankrupt, offering various standard makes of tires at low rates. The circular recited the tires would be sent on approval, but $1 must be sent to cover crating charges, only six tires to a customer. The inspectors found no tires in the rooming house where the letters were delivered. Schwindemann said a man in Chicago had promised to send the tires if he got the orders. Hundreds of letters have been received since the arrest was made. One dealer, from Shell Rock, Iowa, drove 12 hours to Minneapolis, intending to buy out the company that could make such tire offers.

I. M. Lewis Leaves Bessemer

GROVE CITY, PA., Nov. 14.—I. M. Lewis has resigned from the Bessemer Motor Truck Co.

RECEIVER WILL SELL CHALMERS PROPERTY

Maxwell, Holding Most of Notes and Claims, Will Probably Be Purchaser

DETROIT, Nov. 14—The plant and properties of the Chalmers Motor Corp. will be sold at receiver's sale on Dec. 7 under the terms of a final decree entered in Federal Court on the petition filed by the Fisk Rubber Co. and the Metropolitan Trust Co. of New York for the appointment of a receiver. William S. Sayres has been named special master to conduct the sale, the upset price on the entire property being fixed at $1,987,500.

Most of the notes and claims outstanding are held by Maxwell. Though technically the sale is open to the highest bidder, the conditions are such that it is practically limited to the Maxwell interests, and the property will be bought in by this company at a reasonable market figure as part of its plan to merge the two companies and rejuvenate the Chalmers line.

Pending the sale, the affairs of the Chalmers company are being directed by B. E. Hutchinson, treasurer of Maxwell, as receiver. Limited production is being carried on until full control is vested in Maxwell when it will undertake an extensive expansion. The Chalmers plant will be continued as the six-cylinder car plant and will be further used to extend the manufacturing requirements of the two cars.

Further Cut in Gasoline

CHICAGO, Nov. 14.—Another cent has been taken from the price of gasoline by the Standard Oil Co. of Indiana. The service station price in Chicago is now 20 cents a gallon.

View of Montreal Closed Car Show



Sales made and prospects secured justified the holding of a show this fall in the Canadian city. The exhibits were arranged with plenty of aisle space and room around the cars and particular attention was paid to the decorations of the Drill Hall, where the show was held

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FENN ADVISES MILK SHIPPERS ON TRUCKS

Tells Convention of Importance of Motor Transport in Distribution

SPRINGFIELD, MASS., Nov. 14—At the annual meeting of the National Milk Producers' Federation here, the question of improving facilities of distribution and reducing transportation costs occupied a prominent place in the discussions. This side of the dairyman's business has become a serious problem because of the rising costs of production and the uphill battle for lower railroad rates.

In opening the discussion President Milo D. Campbell of Coldwater, Mich., spoke of the scant encouragement that the milk associations received from the Interstate Commerce Commission at a recent meeting in Washington, when the question of lower freight rates was argued.

City Using Trucks

F. W. Fenn, of the National Automobile Chamber of Commerce, spoke on the importance of motor transport in milk distribution. He told of the impetus given to the motor truck handling of milk by the World War and ensuing conditions, until now the proportion of the milk supply transported by motor trucks amounts to 97 per cent for Cincinnati, 90 per cent for Atlanta, 80 per cent for Indianapolis, and 40 per cent for Kansas City. While this method has demonstrated its superiority especially on hauls of 60 miles and less, the advantages are found to hold good on longer hauls.

Motor truck service may be made available to the farmers throughout a given territory, he explained, either by carrying the product in horse-drawn vehicles or small trucks to pickup points, or by a joint arrangement which may consist simply of a single farmer making the deliveries for a group, enabling the rest to be engaged in other work at home, or through a co-operative association.

As means of promoting efficiency and profit in moving milk with motor trucks, he mentioned, first, the equipping of the trucks with glass-lined thermos tanks which secures a lower acidity test, better temperature en route, freedom from churning en route, no appreciable shrinkage, less ice per gallon, elimination of storage capacity before pasteurization, and a large saving of labor.

Favors Use of Trailers

The moving of milk by truck may be further facilitated, he explained, by the introduction of trailers with tanks mounted on them and equipped with solid rubber tires eight inches in diameter, front and rear.

A big saving factor, Fenn said, is to be found in standardization, securing mechanical units, spare parts and supplies that will be interchangeable. This enables purchases to be made in quantities, promotes labor-saving and helps to develop a trained personnel, capable of giving the same efficient service wherever the standardized practice is in force.

Answering the contention that the motor trucks should pay more in taxes for the support of highways, Fenn stated that motor cars and trucks are now paying $350,000,000 yearly to the Government for this object, or about one-half the total maintenance cost.

H. R. Leonard of St. Paul, manager of the Twin City Milk Producers' Association, said that out of 10,000,000 pounds of milk sent by his association into St. Paul and Minneapolis monthly, 8,000,000 are transported by trucks.

BOSTON OFFERS PRIZE TO HALT CONGESTION

BOSTON, Nov. 13—Automobile dealers of Boston are interested in the offer made by Mayor James M. Curley to the Massachusetts Institute of Technology in an effort to solve the problem of congested traffic here. The dealers realize that less congestion would result in more sales and lessen accidents, not to mention saving a great amount of time wasted in trying to get through the crooked, narrow streets of the city.

Mayor Curley announces a prize of $500 to the student who furnishes him with the best practical working plan or plans for unsnarling Boston's acute vehicle traffic congestion, for improved methods of keeping public highways clean and for correcting and minimizing the unsanitary condition arising from certain types of industrial and commercial establishments within the city limits.

CLOSED BODIES BIG NEED OF FACTORIES

(*Continued from page* 36)

is continuing steadily at about 2000 monthly. Lincoln is at capacity, but the production facilities are low, and will continue so until the completion of plant extensions now under way. Wills St. Claire is operating at approximately 20 cars daily.

Oakland and Oldsmobile sales are continuing high, production at the factory showing increases in October with probable further gain in November. Both are operating in excess of 100 cars daily. Reo is building in excess of 100 a day, this total including cars and trucks. Columbia is building about 50 daily.

Dort is building about 100 cars daily. Durant is making 100 Durant fours daily at the Lansing plant, and is starting in on a production of more than 100 a day on the Star car. Gray is now building about 100 cars daily and is making additions to its dealer organization steadily. Earl Motors is building about 1000 a month.

CANNOT USE SOCONY PUMP FOR OTHER FUEL

Utilities Corporation Restrained in Suit Instituted by Standard Oil Co.

NEW YORK, Nov. 13—An injunction has been granted by Supreme Court Justice O'Malley to the Standard Oil Co. of New York which restrains the Utilities Oil Corp. from delivering its petroleum products to customers who use only the pumps and equipment bearing the Socony mark.

In other words, so long as Socony furnishes the equipment for the use of the dealers in retailing gasoline and oil, those dealers cannot use it in handling petroleum products of other companies. The Standard Oil Co. of New York is required to give a bond of $10,000 to the defendant to pay any damages the latter may be found to have sustained if the injunction is vacated by a higher court.

Justice O'Malley holds that the decision will not prevent the use by dealers and garage owners of their own storage tanks to which are attached pumps or equipment other than that owned by the Socony people and which do not bear the Standard label.

The defendants contended that the Standard was seeking to obtain a virtual monopoly by means of the suit, but Justice O'Malley decided that even customers of the Standard have the right to sell oil of other brands as long as they do not use the Standard equipment and do not represent the products sold to be those of the plaintiff.

NEW JERSEY APPROVES HIGHWAY BOND ISSUE

NEWARK, Nov. 11—The people of New Jersey having approved a highway building program at the recent election by a majority of nearly 10,000 votes, steps are being taken toward making permanent the association of more than 80 cities and commercial organizations which sponsored the project.

The program adopted provides for the raising of $40,000,000 in the next five years to complete the State highway system at a rate of $8,000,000 a year. In this State the revenues from motor vehicle regulation can be used only for highway maintenance. New Jersey is the twenty-fourth State to establish a good roads' movement.

The association has established a permanent headquarters in Newark and will devote its energies particularly to assisting the State authorities in the investment of the money to the best interests of all concerned.

The officers are: John L. Brock, automotive dealer, Trenton, president; George Caddock, State Highway Commissioner, vice-president; Horace A. Barnell, automotive dealer, Newark, treasurer; Harry Meixell, National Automobile Chamber of Commerce, secretary.

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CHANGES IN THE TRADE

Kelly Springfield Motor Truck Co. has opened a Pittsburgh branch.

H. S. Hamilton has resigned as manager of the Chicago office of **Rolls-Royce of America, Inc.**

James M. Malone has been appointed sales manager of **R. C. Cook Co.**, Chicago distributor of Velie, King and Flat.

International Harvester Co. has opened a used truck department at Nashville, Tenn., with Joseph Chemig in charge.

Stutz-Graves Motor Co., Nashville, Tenn., is now distributing the Cleveland for central Tennessee and southern Kentucky.

Murray Page has been appointed to succeed **W. S. Porter** as manager of the Chicago branch of the **Locomobile Co.**, on Michigan Avenue near Twenty-third Street.

Frank E. Witt has been appointed assistant general manager of the **W. C. Auble Motor Car Co.**, Chicago Durant and Star agency. He was formerly sales manager.

Thomas R. Brown, Jr., formerly office manager of the Howe Rubber Corp., New York, has been appointed New York district manager.

The Temple Auto Supply Co., New Haven, Conn., has been organized with **Bennet D. Lear** as president and treasurer and **Mabel Lear** as secretary.

W. E. Stalnaker and **A. S. Johnson** have purchased the franchise for the Earl car in Chicago and surrounding territory from the **Brown Moriarty Co.**, 2634 S. Michigan Avenue.

T. J. Turley, formerly implement jobber and dealer of Owensboro, Ky., has become associated with the **J. I. Case Plow Works Co.** as division manager of the southeast division.

W. J. Millar has been appointed distributor for the Kissel Kar and trucks in the Sangamon County, Illinois, territory, and has opened a sales agency and service station in Springfield, Ill.

Schultz & Goodman, formerly tractor distributors at Bondville, Ill., have removed to Champaign, Ill., where they will distribute the Durant and Star cars in the Champaign County territory.

Black & Decker Manufacturing Co.'s Philadelphia branch office and service station, formerly located at 318 North Broad Street, has relocated, the new address being 824 North Broad Street.

J. B. Van Noy, pioneer automotive dealer and distributor for the Overland car in 1915 and 1916 in Oklahoma City, Okla., has become associated with the **Elbert S. Hatcher Co.** at Springfield, Ill.

Fulenwider Brothers of Birmingham, Ala., have bought the interests of the **Burk Automobile Co.**, Ford agents in several north Alabama towns, thus acquiring at least four Ford agencies in the State.

J. C. Anderson has resigned as secretary and business manager of **Lahr Motor Sales Co.** of Bismarck, N. D., after a service covering the last six years. Anderson is as yet undecided as to business plans.

Dr. D. E. Thatcher, physician and druggist at Dallas, Wis., has disposed of his practice and business to engage in the automotive trade at Chippewa Falls, Wis., having purchased an interest in the **G. E. Dick Motor Co.**, of which he becomes sales manager.

H. H. Balcom, formerly manager of the **Bay State** sales organization, Hartford, Conn., has joined the sales department of the **Oldsmobile Co.**, Hartford, Conn. The latter company has taken over the **Hoadley Garage** for a parts and service station.

Buick Repair Station, Hartford, Conn., formerly located in the **Hartford Buick Co.** sales and service building, has severed all connections with the Buick agency and taken over the former Pierce Arrow service station. **Fred G. Hadley**, the proprietor, has added to the working force.

W. Howard Metcalf



President of the Automobile Accessories Business Association of Philadelphia, who has been elected a member of the Pennsylvania Legislature.

F. J. Wildes, formerly with the **E. W. Clark Motor Co.**, Milwaukee, Wisconsin distributor of the Maxwell and Chalmers, has been appointed retail sales manager of the **Chidester-Frint Co.**, Milwaukee, State distributor of the Durant and Star. Wildes will supervise sales in Milwaukee city and county.

Columbia-Kissel Motor Co. has been formed to take on the distribution of the Columbia Six and the Kissel Kar lines in Philadelphia. The officers of the company are as follows: **E. J. Finkelstein**, president, and **Samuel F. Levy**, secretary and treasurer. **A. C. Rowland** is retail salesmanager, and **J. W. Turner**, wholesale salesmanager.

Miles Piston Ring Sales Co. has been organized in New York City as the eastern direct factory representatives for the **Miles Piston Ring Co.** of Chicago, taking over the exclusive sales work for the States of New York, New Jersey, Connecticut and Rhode Island. The work will be under the direction of **L. M. Zach** and **V. Steinfeld.**

Kalamazoo Implement Co., **Otis J. Boylan**, proprietor, handling the Reo line, has bought out the **Kalamazoo Auto Exchange**, Kalamazoo, Mich., and will occupy the establishment with a used car department. **R. J. Bixler**, former proprietor of the exchange, and **W. J. Davidson** will have charge of this department in the future.

St. Cyr Auto Repair Co., Hartford, Conn., has added to its line by taking on the Westcott, handling the car business under the name of the **St. Cyr Auto Co.** The concern has the agency for Hartford County. **H. H. Sexton**, formerly of the Overland and Bay State sales organizations, has joined the company as manager of the Westcott sales department.

Swain-Hickman Co., for six years distributor in the Philadelphia territory for Republic trucks, has entered the business of supplying truck replacement parts, as factory representative for a number of parts makers. Distribution will be made to distributors, dealers and repair concerns. The company's territory will include eastern Pennsylvania, southern New Jersey and Maryland.

Emmet V. Pollard of the sales organization of the **General Tire & Rubber Co.**, who has been a special representative in New York territory for some time past, has been transferred to Texas, where he will be manager of the Dallas branch of the company. Pollard has been in tire sales for the past eight years, half of which have been in the service of General. **Tom Moore** continues as southern district manager.

John D. Carmody, formerly a territory manager for the **Champion Spark Plug Co.** and more recently a district manager of the **Wainwright Engineering Co.**, has been appointed middle western manager for the **Columbus McKinnon Chain Co.** of Columbus, manufacturer of Dreadnaught tire chains. Carmody will have his headquarters in Chicago and will cover Illinois, Iowa, Missouri, Minnesota, Wisconsin, Kansas, Nebraska, North and South Dakota.

G. H. Hilbish has been appointed special factory representative out of Akron by the **Star Rubber Co., Inc.**, of that city. Hilbish served with the B. F. Goodrich organization in various capacities for nine years, and later with Goodyear for approximately eight. With the latter company he had charge of the Akron branch, was afterward connected with its Cleveland and Grand Rapids branches and more recently served as manager of Goodyear's Toledo branch.

DE PALMA MAY DRIVE PACKARD IN CONTEST

LOS ANGELES, Nov. 13—Considerable speculation has been aroused in Pacific Coast racing circles by the announcement that Ralph De Palma will drive in the annual Thanksgiving Day 250-mile classic on the Beverly Hills speedway. This is due to the fact that while making public the announcement of his intention, De Palma refused to divulge the identity of the car he will drive.

Recently the Packard factory made known the fact it intends to re-enter racing. De Palma always has been very close to the Packard organization, and some of his greatest achievements have been accomplished with cars of that make. The driver's only comment on the subject is that he understands the Packard company expects to have its cars ready for the Memorial Day event at Indianapolis, but there are many who believe at least one of the cars may receive its try-out in the Thanksgiving Day event.

Nash Output

CHICAGO, Nov. 14—Nash Motors at Kenosha is producing about 192 sixes and fours daily at its Kenosha and Milwaukee plants.

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ASSOCIATION ACTIVITIES

Indiana State Convention

INDIANAPOLIS, Nov. 10—At a meeting of the Indianapolis Automobile Trade Association directors, decision was reached to join with the Indiana Automotive Trade Association in its plans to hold a convention and banquet here early in December, and to offer substantial co-operation to make the convention a success and of great value to the dealers of the entire State.

Matters of moment to the automotive trade are expected to be considered by the next Indiana State legislature, which meets early in 1923, and it is felt important that the trade of the entire State get together and discuss problems that may arise at that time.

This is not the first time that the local association has rendered valuable service to the State organization, for when the automotive trade body of the State was organized some two years ago the local trade group financed the organizing convention. At that time a large portion of all State distributors had headquarters in this city, but since then, due to general changes in distribution plans of many companies, this city no longer is the only important distributing center.

Criticisms and Suggestions Asked

CHICAGO, Nov. 10—Members of the Chicago Automobile Trade Association have been requested by the association to suggest new activities they would like to see undertaken or to offer any criticism they believe to be justified. The letter making this request was accompanied by a headed sheet of paper upon which to write the suggestion or criticism.

Detroit Breaks Even on Show

DETROIT, Nov. 15 — Detroit automobile dealers were given some first hand information on the sale of stocks and bonds at the monthly meeting of the association by Charles A. Nyman, sales manager of the First National Co. of Detroit, as part of a series of talks on various forms of merchandising which Manager H. H. Shuart has arranged for the monthly get-togethers.

A report on the closed car show just concluded showed that the association broke about even on the expense of holding it, and that it had resulted very satisfactorily from a business standpoint for dealers. Winter show plans were discussed, but no definite action was taken owing to the lack of a satisfactory building at this time.

Three new companies were elected to membership, the Marmon Detroit Co., Cunningham-Richards Co. and the Detroit Franklin Co. Application for membership from Pungs-Schmittdel Co. was received. Two changes in distributorships in the Detroit district were noted, Pungs-Schmittdel relinquishing a dealership of Studebaker to take on Stutz distribution, and Miller-Judd Co. changing from Liberty to Nash.

Allied Industries Formed

MINNEAPOLIS, Nov. 14 — Formation of the Allied Automotive Industries of Minneapolis has been completed at a second meeting. The initial meeting was Oct. 17. Members of the board of trustees chosen are as follows: At large—Frank L. Cochran of the Standard Oil Co., F. C. Moyer of the Goodyear Tire & Rubber Co., A. L. A. Spitler of the Northwest Oldsmobile Co., A. C. Reinhard of Reinhard Bros. Co., John Hancock of the Pure Oil Co. and Joseph Donnelly of the Mack Truck Co.

Minneapolis Automobile Trade Association —Harvey E. Mack of the Harvey E. Mack Co. and William Eggleston of the Northwest Automobile Co.

Minneapolis Garage Men's Association — W. R. Vashro of the B. L. Eckes Co. and W. J. Potts of the Potts Motor Co.

Tire Dealers Association—Henry Alden of the Minneapolis Rubber Co. and E. E. Bullis of the Northern Tire Service Co.

Northwest Tractor Trade Association — W. R. Biggs of the Avery Co. and J. E. Gardner of the J. I. Case Threshing Machine Co.

Vehicle Men's Association — Frederick Ritzinger of the Wallis Coach and Carriage Co. and L. K. Ritchie of the Boyd Transfer & Storage Co.

The officers are also members of the board, and two are to be named for the battery men's organization.

An amendment to the by-laws permits firm as well as individual membership.

Harry E. Pence said the organization may properly make known its wishes to the city council, members of whom are framing a wheelage ordinance for taxation purposes.

Joseph Chapman of the L. S. Donaldson Co. said that a movement for a convention hall can be accelerated by the allied organization. J. H. W. Mackie of the Payne Motor Co., president, was chairman of the meeting.

Syracuse Adopts Used Car Plan

SYRACUSE, Nov. 14—The Syracuse Automobile Dealers Association has adopted a co-operative used car market value information plan similar to that in use in Boston and a number of other cities. Under the plan actual selling prices of used cars and models are reported to the association by co-operating dealers and this information is compiled and relayed on a master report to all dealers.

A slight departure from other plans is found in the printing of cars not represented in Syracuse in red ink, for purposes of distinction.

Closed Cars as Christmas Gift

CHICAGO, Nov. 15—Thomas J. Hay, president of the Chicago Automobile Trade Association, has issued a statement, given considerable publicity in the daily press, calling attention to the suitability of the closed automobile as a Christmas gift, and stating that the inquiries for cars for that purpose this year are more numerous than ever before.

The New Car and Truck Description Index

Giving the date and page number on which they appeared

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Calendar of Trade Events

CONVENTIONS

Chicago.....Nov. 13-18
Annual Meeting of the Automotive Equipment Association, Annex to the Coliseum.

Harrisburg.....Nov. 20-21
Annual Convention of the Pennsylvania Automotive Association, George G. McFarland, president; L. H. Haberling, secretary and general manager.

Toledo.....Dec. 6-8
Annual Convention of the Ohio Automotive Trades Association.

Chicago.....Jan. 29-31
Annual Meeting, Automotive Electric Service Association, Congress Hotel.

SHOWS

Houston.....Nov. 8-18
South Texas Fair.

Jersey City.....Nov. 11-18
Third Annual Show, Fourth Regiment armory, under the auspices of the Hudson County Automobile Trade Association.

Los Angeles.....Nov. 11-19
Automobile Show, Motor Car Dealers Association, Burt Roberts, manager.

Chicago.....Nov. 13-18
Annual Show of Automotive Equipment Association.

Cincinnati.....Nov. 22-29
Second Annual Automobile Accessory and Radio Exposition, Music Hall, under the auspices of the Cincinnati Automotive Trade Association.

Bridgeton, N. J......Nov. 25-Dec. 2
First Closed Car Show, Martin Dye Building, under the auspices of the Bridgeton Automobile Dealers Association, J. W. Acton, manager.

New York.....Dec. 3-9
Eighteenth Annual Automobile Salon, Commodore Hotel.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, auspices of the Automobile Body Builders Association.

Oakland, Cal......Jan. 13-20
Fifth Annual Automobile Show, Civic Auditorium, under the auspices of the Alameda County Automobile Trade Association, Robert W. Martland, Manager.

Cleveland.....Jan. 20-27
Annual Automobile Show, New Public Auditorium, under the Auspices of the Cleveland Automobile Manufacturers and Dealers Association, Herbert Buckman, Manager.

Milwaukee.....Jan. 20-27
Fifteenth Annual Automobile Show, Auditorium, under the auspices of the Milwaukee Automotive Dealers Association, Bart J. Ruddle, Manager.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Salon, Drake Hotel.

Ann Arbor, Mich.....Jan. 29-Feb. 2

Minneapolis.....Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Portland, Ore.....February
Annual Automobile Show, under the auspices of the Portland Automobile Dealers Association.

Atlanta.....February
Annual Southern Automobile Show, Atlanta Auditorium, under the auspices of the Atlanta Automobile Association, Virgil W. Shepard, manager.

Troy, N. Y......Feb. 3-10
Ninth Annual Automobile Show, State Armory, under the auspices of the Troy Used Car Sales Corp., Frank M. Baucus, manager.

Charlotte, N. C......Feb. 5-10
Annual Automobile Show, Made-in-Carolinas Exposition Building, under the auspices of the Charlotte Automotive Trade Association.

Lansing, Mich.....Feb. 5-10

Toledo.....Feb. 5-10
Annual Automobile Show, Terminal Auditorium, under the auspices of the Toledo Auto Shows Co., H. V. Buelow, Manager.

Waterbury, Conn......Feb. 5-12
Third Annual Show at the New State Armory, under the auspices of the Waterbury Automotive Dealers Association. Passenger Cars and Accessories. M. A. Doolittle, Chairman of the Show Committee.

Cincinnati.....Feb. 7-14
Automobile Show, under the auspices of the Cincinnati Automobile Dealers Association, Harry T. Gardner, manager.

Kansas City, Mo......Feb. 10-17
Annual Automobile Show, under the auspices of the Kansas City Motor Car Dealers Association, George A. Bond, Secretary.

Kalamazoo and Flint, Mich.....Feb. 12-17

San Francisco.....Feb. 17-24
Seventh Annual Pacific Automobile Show, under the auspices of the San Francisco Motor Car Dealers Association, Exposition Auditorium, George A. Wahlgreen, Manager.

Grand Rapids and Mt. Clemens, Mich. Feb. 19-24

Louisville, Ky......Feb. 19-24
Fifteenth Annual Automobile Show, under the auspices of the Louisville Automobile Dealers Association, George T. Holmes, secretary.

Brooklyn, N. Y......Feb. 24-Mar. 3
Annual Automobile Show under auspices of the Brooklyn Motor Vehicle Dealers Association, 23rd Regiment Armory.

Des Moines.....Feb. 25-March 5
Fourteenth Annual Automobile Show, Coliseum, Passenger Cars and Accessories only, under the auspices of the Des Moines Automobile Dealers Association, Dean Schooler and C. G. Van Vliet, managers.

Muskegon, Mich.....Feb. 26-March 3

Syracuse.....Feb. 26-Mar. 3
Annual Automobile Show under auspices of the Syracuse Automobile Dealers Association.

Springfield, Mass......Feb. 26-March 3
Annual Automobile Show under the auspices of the Springfield Automotive Dealers Association.

Bay City, Mich.....March 5-10

Newark, N. J......Mar. 10-17
Annual Automobile Show under the auspices of the New Jersey Automobile Exhibition Co., Claude E. Holgate, manager.

Washington, D. C......March 10-17
Third Annual Spring Show of Passenger Cars and Accessories, Convention Hall, under the auspices of the Washington Automotive Trade Association, Rudolph Jose, Chairman of Show Committee.

Port Huron, Mich.....March 12-17

Battle Creek, Mich.....March 19-24

Alpena, Mich.....April 2-7

CLOSED CAR WEEK

Louisville, Ky.....Nov. 20-25

RACES

Los Angeles.....Nov. 30

San Diego.....January

Comet Assets $461,000

DECATUR, ILL., Nov. 13—Assets of the Comet Automobile Co. of this city amount to $461,000 and the total ascertained liabilities, other than the $250,000 of bonds held as collateral security by the Farmers State Bank & Trust Co., are considered to be less than half the assets.

The future of the company is uncertain. The receivers will make no effort to operate the plant. They are now taking an inventory. The parts department is open in order that owners of Comet cars can purchase spare or extra parts if they require them. The receivers will probably also order the completion of a number of cars which were nearly ready at the time the plant closed.

Ogren Increases Capital

MILWAUKEE, Nov. 13—An increase in authorized capitalization from $500,000 to $1,000,000 is one of the final steps taken by the Ogren Motor Car Co. of Milwaukee in a general reorganization program. The company was established about five years ago and manufactures the Ogren six, a custom built car. Fred G. Smith, formerly of Cleveland, one of the original stockholders, has been made president and general manager.

Earnings of Mack Trucks

NEW YORK, Nov. 14—Mack Trucks, Inc., reports net earnings of $1,205,738, after charges for depreciation, maintenance and repairs, for the quarter ended Sept. 30, 1922. This is equal to $3.25 a share on 283,108 shares of common stock. This is in marked contrast to the same quarter of 1921, when the company reported net profits of only $12,633.

For the nine months ended Sept. 30 net profits totaled $2,766,564, equal to $6.79 a share on the common. Total current assets as shown by the financial statement of Sept. 30 are $22,052,844; liabilities, $32,428,940.

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾–1	$1650a	3¾x5	34x5n	34x5n	W
Acason RB	1½	1950	3¾x5¼	36x3½	36x6	W
Acason H	2½	2750	4⅜x5¾	36x4k	36x8k	W
Acason L	3½	3450	4⅜x5¾	36x5k	36x10k	W
Acason M	5	4350	5 x6¼	36x6	40x12	W
Ace 30	1½–1½	2400	3¾x5	34x3½	34x6	W
Ace 40	2	2850	4⅛x5¼	36x4	36x7	W
Ace 60	2½–3	3400	4⅛x5¼	36x4	36x8	
Acme 20	1	....	3¾x5	35x5n	35x5n	W
Acme 30	1½	....	3¾x5	34x3½	34x5	W
Acme 40	2	....	3¾x5	34x3½	34x5	W
Acme 60	3	....	4⅛x5¼	36x4	36x7	W
Acme 60L	3	....	4⅛x5¼	36x4	36x7k	W
Acme 90	4½	....	4½x5½	36x5	40x10	W
Acme 125	6½	....	4¾x6	36x6	40x12	W
American 25	2½	3350	4 x6	36x4k	36x4dk	W
American 40	4	4275	4½x6	36x5k	36x5dk	W
American 50	5	4500	4½x6	36x5	36x12	W
Armleder 20	1	....	3¾x5¼	34x3½k	34x6k	W
Armleder 21	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder 40-B	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder 40-C	1½	....	4¼x5¼	34x3½k	34x6k	W
Armleder HW-B	2½	....	4¼x5½	36x4k	36x7k	W
Armleder HW-C	2½	....	4½x5¼	36x4k	36x7k	W
Armleder KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder KW-C	3½	....	4½x5½	36x5k	36x5dk	W
*Atlas 22	1	1495	3⅜x5⅛	34x4½n	34x4½n	W
*Atlas 41	1½–2	1950	3⅜x5⅛	36x6n	36x6n	W
Atterbury 20R	1½	2475	3¾x5	34x3½	34x5	W
Atterbury 22C	2½	3375	4⅛x5¼	36x4	36x4d	W
Atterbury 22C	2½	3475	4¼x5¼	36x4	36x4d	W
Atterbury 22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury 22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury 8E	5	4975	4¾x6	36x5	40x6d	W
Atterbury 8E	5	5125	4¾x6	36x5	40x6	W
Autocar 21UF	1½–2	2200	4⅝x4 1½t	34x4k	34x6	D
Autocar 21UG	1½–2	2300	4⅝x4 1½t	34x4k	34x6	D
Autocar 27H	2–3	3100	4 x5½	34x5	36x7	D
Autocar 27K	2–3	3200	4 x5½	34x5	36x7k	D
Autocar 26Y	4–6	4200	4¼x5½	34x6	36x12	D
Autocar 26-B	4–6	4350	4¼x5½	34x6	36x12	D
Available H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available H2	2	2775	4 x5	36x3½k	36x6k	W
Available H2½	2½	3160	4 x5	36x4k	36x8k	W
Available H3½	3½	4175	4½x5½	36x5	40x5d	W
Available H5	5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x4s	34x5n	34x5n	1
Beck A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	1
Beck B-30	1½	1350	3¾x5	34x5	36x6	
Beck C-40	2	1550	3¾x5	36x6	36x6	
Beck D-50	2½	1950	4⅛x5¼	38x7	40x8	
Bell M (Iowa)	1	1495	3⅝x5⅛	35x5	35x5n	W
Bell E (Iowa)	1½	2100	3¾x5¼	34x3½	34x5	I
Bell O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Bessemer G	1	....	3½x5	35x5n	35x5n	I
Bessemer H-2	1½	....	3¾x5	36x5	36x5	D
Bessemer J-2	2½	....	4⅛x5¼	36x4	36x4d	D
Bessemer K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem GN	2	1795	4 x5¼	34x4	34x6k	D
Bethlehem GN	3	2495	4 x6¼	36x4k	36x8k	D
Bridgeport A	1½	....	3¾x5½	34x3½	34x6	W
Bridgeport B	2½	....	4½x5½	36x4	36x4d	W
Bridgeport C	3½	....	4½x6	36x5	36x10	W
Brinton C	2	2500	3¾x5	34x4	34x5	W
Brinton D	3	2975	4½x5¼	36x4	36x7	W
Brockway E	1	....	4 x5	33x5n	33x5n	B
Brockway S-5	1½	....	4 x5	36x4	36x6	W
Brockway SK	1½	....	4⅛x5¼	36x4	36x6	W
Brockway KR	2½	....	4½x5½	36x4	36x8	W
Brockway K-5	2½	....	4⅛x5¼	36x4	36x8	W
Brockway RT	3½	....	4¾x6	36x5	36x10	W
Brockway R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway T-4	5	....	4¾x6	36x6	40x6d	W
*Buick	½	945b	3⅜x4¾	31x4n	31x4n	B
Case	2	....	4¼x5¾	36x6	38x7	1
*Chevrolet	¼	510b	3⅛x4	30x3½n	30x3½n	B
*Chevrolet G	¾	650	3⅛x4	31x4n	34x4½n	B
*Chevrolet T	1	1095	3⅛x5¼	33x4n	35x5n	W
Chicago C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago C3½	3½	....	4½x5½	36x5	36x10	W
Chicago D5	5	....	4½x5½	36x6	40x12	W
Clydesdale 10	¾–1½	1485	3¾x5	34x5n	34x5n	B
Clydesdale 10A	¾–1½	1535	3¾x5	34x5n	34x5n	B
Clydesdale 15	¾–1½	1890	3¾x5	34x5	34x5	W
Clydesdale 20	1–1½	2385	3¾x5	34x5	34x5k	W
Clydesdale 42	1½–2	2475	3¾x5	36x3½	36x6	W
Clydesdale 65X	2½–3	3250	4⅛x5¼	36x4	36x8	W
Clydesdale 65EX	2½–3	3450	4½x5½	36x4	36x8	W
Clydesdale 90	3½–4½	4100	4½x5½	36x5	36x10	W
Clydesdale 120	5–6	4500	4¾x6	36x6	40x12	W
Comet T	1½	1950	3¾x5	34x4	34x4	W
Commerce 9	¾–1½	1150	3½x5	32x4½n	32x4½n	B
Commerce T	¾–1½	1450	3¾x5	34x4½n	34x4½n	B
Commerce 10	¾–1½	2500	3¾x5	33x5n	33x5n	B
Commerce 12	1½	1695	3¾x5	34x3½	34x4	I
Commerce 12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce 16	2	1995	3¾x5	34x4	34x6	I
Commerce 16	2	2150	3¾x5	35x5n	36x6n	I
Commerce 18	2½	2150	4⅛x5¼	36x4	36x7	I
Commerce 18	2½	2495	4⅛x5¼	36x6	36x7	I
Cook 51	2½	3600	4 x5⅛	36x6n	40x8n	W
*Corbitt	¾–1	1250	3½x5	33x5n	33x5n	
Corbitt E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt D-22	1½	2200	3¾x5	34x3½	34x5	W
Corbitt C-22	2	2600	4⅛x5¼	36x3½	36x7	W
Corbitt B-22	2½	3000	4¼x5¼	36x4	36x7	W
Corbitt R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt A-22	3½–4	3800	4½x5½	36x5	36x10	W
Corbitt AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder D	2	2400	4⅛x5¼	36x4	36x7	W
Day-Elder C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn E	1	1600	3⅝x5⅛	35x5n	35x5n	W
Dearborn FX	1½	2300	3¾x5⅛	34x4	34x5	W
Dearborn F	1½	2180	3¾x5⅛	34x4	34x5	W
Dearborn 48	2	2590	3¾x5⅛	34x4½n	34x7	W
Defiance G	1	1525	3¾x5	35x5n	35x5n	B
Defiance D	1½	1815	3¾x5	35x5n	36x6n	I
Defiance E	2	2075	3¾x5	35x5n	38x7n	I
Denby 31	1¼	1485	3¾x5	35x5n	35x5n	B
Denby 33	1½	2145	3¾x5	35x5n	38x7n	I
Denby 35	2½–3	2795	4¼x5¼	36x4	36x7	I
Denby 27	4	3895	4½x5½	36x5	36x5d	I
Denby 210	5	4295	4½x5½	36x6	40x6d	I
Dependable A	¾–1	1650	3⅝x5⅛	34x5n	36x6n	W
Dependable C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable D	2½	2650	4 x5½	34x5	36x6	W
Dependable E	3	2950	4¼x5½	36x4	36x7	W
Diamond T O-3	1–1¼	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T U	2–2½	2650	4 x5¼	36x4	36x7	W
Diamond T K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T S	5	4500	4¾x6	36x6	40x6d	W
Deane	2½	4100b	4¼x5¾	36x5	36x7	C
Deane	3½	5100b	4⅜x5¾	36x5	36x6d	C
Deane	6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers	¾	730	3⅞x4½	32x4n	32x4n	B
Derris K-2	1	2490	4 x5½	33x5n	33x5n	B
Derris K-4	2–2½	3400	4¼x5½	36x4	36x7	W
Derris K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort 103	½	685a	3½x5	31x4n	34x4n	B
Double Drive B	3	4000	4¼x5½	36x6	36x6	W
Duplex A	2	2775	4 x5¼	35x5n	38x7n	W
Duplex E	3½	3500	4¼x5½	36x8	36x8	I
Duty 22	2	1590	3½x5	34x3½	34x5	I
Eagle 101	1½	1875	3⅝x5⅛	34x5	34x5	I
Eagle 100-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D. B	3	4200	4¾x5½	36x6	36x6	B
Fageol 1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol 2½	2½	3900	4⅜x5¾	34x4	36x7	W
Fageol 3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol 5	5	5700	4½x6¼	36x6	40x6d	W
Fargo R	2	1700	3¾x5	36x4	36x6	I
*Federal	1½	1375	3¾x5	—x5n	—5n	
Federal SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal TE	1½	2175	4⅛x5¼	36x3½	36x5	W
Federal UE	2–2½	2425	4⅛x5¼	36x4	36x7	W
Federal WE	3½–4	3150	4½x5½	36x5	36x5d	W
Federal X2	5–6	4500	4¾x6	36x6	40x6d	W
*Ford TT	1	380	3¾x4	30x3½n	32x4½n	W
Front Drive C	1½	2800	3¾x5½	36x6	36x6	W
G.M.C. K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C. K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K-41T	5†	2450	4 x5½	36x4	36x8	W
G.M.C. K-71A	3†	3600	4½x6	36x5	40x5d	W
G.M.C. K-71B	3†	3700	4½x6	36x5	40x5d	W
G.M.C. K-71T	10†	3700	4½x6	36x5	40x12	W
G.M.C. K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C. K-101T	15†	4050	4½x6	36x5	40x14	W
G.M.C. K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W.	1½	1850	3¾x5½	35x5	35x5	I
*Garford 15	1	1590	3⅝x5⅛	34x5n	34x5n	W
Garford 25-B	1½	1990	3¾x5⅛	36x3½	36x5	W
Garford 70-H	2½	2750	4¼x5½	36x4	36x8	W
Garford 77-D	4	3750	4½x6	36x5	36x5d	W
Garford 68-D	5	4500	5 x6½	36x6	40x5d	W
Garford 150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary F	1–1½	1775	3¾x5	36x3½	36x5	W
Gary I	2	2450	4 x5½	36x3½	36x6	W
Gary J	2½	2850	4¼x5½	36x4	36x8	W
Gary K	3½	$3790	4½x6	36x5	40x5d	W
Gary M	5	4450	5 x6½	36x6	40x6d	W
Gersix M	1½	3100	4 x5½	36x3½	36x7	W
Gersix K	2½	3500	4½x5½	36x4	36x8	W
Gersix	3½	4500	4½x6	36x5	40x12	W
Gotfredson 20	1	2075	3¾x5½	34x5	34x5	W
Gotfredson 31	1½–2	3000	4 x5½	36x6	38x7n	W
Gotfredson A	2½	3375	4 x5¼	36x4	36x7	W
Gotfredson B	3½–4	4475	4½x5½	36x5	36x10	W
Gotfredson 100	5–6	5500	5 x6½	36x6	40x14	W
Graham Bros.	1	1265	3⅞x4½	33x4½n	34x5n	B
Graham Bros.	1½	1325	3⅞x4½	33x4½n	36x6n	B
1Gramm-Pion. 10	1	1245	3½x5	33x5n	33x5n	B
1Gramm-Pion. 15	1½–2	1750a	3¾x5	36x3½k	36x5k	I
1Gramm-Pion. 65	1½–2	2250a	3¾x5	36x3½k	36x5	W
1Gramm-Pion. 20	2–2½	2475a	4¼x5¼	36x4k	36x7k	W
1Gramm-Pion. 30	3	3300a	4¼x5½	36x5k	36x5dk	W
1Gramm-Pion. 75P	3½	4225a	4½x5½	36x6n	42x9n	W
1Gramm-Pion. 40	4	3850a	4½x5½	36x5	36x5dk	W
1Gramm-Pion. 50	5–6	4450a	4¾x6	36x6	40x6dk	W
Hall 1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall 2½	2½	3275	4⅛x5¼	36x4	36x6	W
Hall 3½	3½	4100	4½x5½	36x5	36x5d	W
Hall 5	5	5100	4½x5½	36x5	40x6d	W
Hall 7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey W OA	2	2650	4¼x5½	34x4	34x7	W
Harvey WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye O	1	1375	3⅝x5¼	34x5n	34x5n	
Hawkeye K	1½	1645	3¾x5½	34x3½k	34x5k	I
Hawkeye M	2	2145	4¼x5	36x4k	36x6k	I
Hawkeye N	3½	3700	4½x6¾	36x5k	36x10k	I
Hendrickson O	1½	2200	3⅝x5¼	36x4n	36x5n	W
Hendrickson N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson M	3½	3000	4¼x5	36x5k	36x5dk	W
Hendrickson K	5	4000	5 x6¼	36x6	40x6	W
Huffman B	1½–2	1795	3¾x5	34x3½	34x6	W
Huffman C	1½–2	1695	3¾x5½	36x3½	36x6	I
Huffman D	2–3	2895	4¼x5½	36x4	36x7	
Hurlbert A-A	1–1½	1950	3¾x5	34x5n	34x5n	W
Hurlbert B-B	2–2½	2800	4¼x5¼	36x4	36x4d	W
Hurlbert C-C	3–3½	3475	4¼x5½	36x5	36x5d	W
Hurlbert D-D	4–4½	4150	4½x6	36x5	36x6d	W
Hurlbert E-E	6–6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa) B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa) G	1½	2040	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.) H1	2½	2940	4½x5¼	36x4	36x7	I
*Indiana 10	1	....	3¾x5¼	34x5n	34x5n	B
Indiana 12	1½–2	....	3¾x5¼	34x3½k	34x5k	W
Indiana 20	2	....	4½x5½	36x4k	36x7k	W
Indiana 25	2½–3	....	4½x5½	36x4k	36x8k	W
Indiana 35	3½–4	....	4⅝x5½	36x5k	36x5dk	W
Indiana 51	5–7	....	5 x6¼	36x5k	40x6dk	W
*International S	1	1250	3½x5	32x4½n	32x4½n	I
International 21	1	1550	3½x5½	36x3½k	36x3½	I
International 31	1½	1650	3½x5½	36x3½k	36x5k	I
International 41	2	2100	3½x5¼	36x3½k	36x6k	I
International 52	2½	3500	4¼x5	36x6n	36x6dn	I
International 61	3	2400	4¼x5	36x4k	36x7k	I
International 62	3	2600	4¼x5	36x4	36x7	I
International 101	5	3600	4¼x5	36x5	40x12k	I
International 102	5	3800	4½x5	36x5	36x12	I
Jackson 4WD	3½	3850	4½x5½	36x7	36x7	B
K-Z 1	1	1750	3½x5	34x3½	34x5	W
K-Z 1½	1½	2075	3¾x5	36x4	36x6	W
K-Z 2½	2½	2550	4¼x5¼	36x4	36x8	W
K-Z 3½	3½	3350	4½x5½	36x5	40x10	W
K-Z 5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo G-1	1½	1800	3½x5	34x4	34x5	W
Kalamazoo LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo HN	3	3145	4 x6	36x5	36x10	W
Kalamazoo HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo SK	4	3845	4¼x6	36x5	36x12	W
Kalamazoo OK	5	4350	4½x6	36x6	40x6d	W
2Kelly-S. K-31	1½	2700	3¾x5¼	36x3½	36x6	C
2Kelly-S. K-34	1½	2700	3¾x5¼	36x3½	36x6	W
2Kelly-S. K-38	2½	2900	3¾x5¼	36x4	36x4d	W
2Kelly-S. K-35	2½	2900	3¾x5¼	36x4	36x4d	C
2Kelly-S. K-40	3½	3900	4½x6½	36x5	40x5d	C
2Kelly-S. K-41	3½	3900	4½x6½	36x5	36x10	I
2Kelly-S. K-42	3½	3900	4½x6½	36x5	40x5d	W
2Kelly-S. K-50	5	4400	4½x6½	36x6	40x6d	C
2Kelly-S. K-60	6	4600	4½x6½	36x6	40x7d	C
2Kelly-S. K-61	5–7	4800	4½x6½	36x6	36x7d	I
Kimball AB	2	3675	4 x6	36x4	36x7	W
Kimball AC	2½	3975	4¼x6	36x4	36x8	W
Kimball AK	3	4500	4½x6	36x4	36x10	W
Kimball AE	4	5000	4¾x6	36x5	40x12	W
Kimball AF	5	5500	5 x6	36x6	40x7d	W
*Kissel Express	1	1585	3⅞x5½	34x5n	34x5n	W
Kissel Utility	1½	1975	3⅞x5½	36x3½	36x6	W
Kissel Freighter	2½	2875	4¼x5½	36x4	36x8	W
Kissel H.D.	4	3675	4¼x5½	36x5	36x12	W
Kleiber AA	1	2200	4¼x5¼	34x3½k	34x5k	W
Kleiber A	1½	3100	4½x5¼	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor. †Capacity with semi-trailer.

1—Gramm Pioneer. 2—Kelly-Springfield.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5½	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....D	1½	2150	3½x5	34x3½	34x5	W
Koehler.....M	2½	3175	4 x5½	36x4	36x7	W
Koehler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Koehler.....F	3½	4470	4½x5½	36x5	36x10	W
Koehler,MT.Trac	5	3275	4 x5½	36x4	36x7	W
Krebs.....23	¾	1360	3¾x5	34x4½	34x4½	B
Krebs.....24	1	1675	3¾x5	34x5	34x5	W
Krebs.....45	1½	2275	4½x5½	36x4	36x7	W
Krebs.....75	2½	2550	4½x5½	36x4	36x8	W
Krebs.....110	3½	3175	4½x5½	36x5	40x10	W
Krebs.....140	5	....	4¾x6	36x6	40x6d	W
Larrabee.....X-2	1	1925	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2400	3¾x5	34x3½	34x5	W
Larrabee.....J	1½–2½	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½–3	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½–3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½–5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5–7	4800	4¾x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5½	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5–6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack...AB D.R.	1½	3450	4 x5	36x4k	36x3½dk	D
Mack...AB Chain	1½	3000	4 x5	36x4k	36x3½dk	D
Mack...AB Chain	2	3300	4½x5	36x4k	36x4dk	C
Mack...AB D.R.	2	3750	4½x5	36x4k	36x4dk	D
Mack...AB D.R.	2½	3850	4½x5	36x4k	36x4dk	D
Mack...AB Chain	2½	3400	4½x5	36x4k	36x4dk	C
Mack...AC Chain	3½	4950	5 x6	36x5k	40x5dk	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4½x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Maplesleaf....	1½	3000	3¾x5½	34x5n	36x6n	W
Maplesleaf...AA**	2	3600	4 x5½	36x4	36x7	W
Maplesleaf...BB**	3	4050	4½x5½	36x4	36x4d	W
Maplesleaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Maplesleaf...DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x6	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4½x5½	34x4	36x8	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x8	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac..DDT	6	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3½x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1–1¼	2000	3¾x5	34x3½	36x5	W
Menominee....H	1½	2475	4 x5	36x3½	36x5	W
Menominee....D	2–2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	36x5	36x10	W
Menominee....J-3	5	4250	4¾x6	36x6	40x12	W
Moline.....10	1½	1985	3½x5	34x5n	36x6n	I
3Moreland...R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5½	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½–5	4600	4¾x6	36x6	40x6	W
Nash.....2918	1–1½	1595	3¾x5½	34x4	34x5	I
Nash.....3018	2–2½	2150	3¾x5½	34x4k	34x7k	I
Nash.....Quad.	2–2½	2750	4¼x5½	36x6	36x5k	I
Nash..3018, LWB	2–2½	2200	3¾x5¾	34x4k	34x7k	I
Nash.Quad. LWB	2–2½	2800	4¼x5½	36x6	36x6	I
Nash.....5018	2½	2250	3¾x5½	34x4k	34x7k	I
4Nelson.....G2	1½	....	4½x5½	36x3½	36x6	W
4Nelson.....G3	2½	....	4½x5½	36x4	36x7	W
4Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
4Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5½	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Nilse.....E	2	3000	4½x5½	36x4k	36x7k	W
Noble.....A21	1¼	1750	3½x5½	34x5	34x5	W
Noble.....B31	1½–2	2395	3¾x5½	36x4	36x7	W
Noble.....D51	2½–3	2795	4¼x5½	36x4	36x8	W
Noble.....E71	3½–5	3495	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3¾x5½	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4½x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4½x5½	34x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E.Spec	1½	2285	3¾x5½	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	36x3½	36x5	W
Ogden.....E	2½	....	4½x5¼	36x4	36x8	W
Old Hickory...W	1	$1775	3¾x5	36x3½k	36x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4½x6	34x4	36x4d	W
Old Reliable....C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4¾x6	36x6	40x6d	W
Old Reliable.KLM	7	6000	4¾x6½	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5½	35x5n	35x5n	I
Olympic.....A	2½	3200	4½x5½	36x4	36x8	W
Oneida.....B9	2½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	3½	3200	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	2485	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	2585	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3485	4 x5⅛	38x7n	38x7n	B
Oshkosh.....BB	2½	3585	4 x5⅛	38x7n	38x7n	B
*Overland.....4	½	425	3¾x4	30x3½n	30x3½n	B
Packard.....EC	2–3	3100	4½x5½	36x4	36x7	W
Packard.....EX	2–2½	3100	4½x5½	36x6n	40x8n	W
Packard.....ED	3½x4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5–7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5½	34x3½	34x5	W
Paige.....54-22	2½	2420	4½x5½	34x4	34x8	W
Paige.....51-18	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3½x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4½x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot....Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot....Lincoln	2	2050	4 x5¼	34x4	34x6	W
Patriot....LS-800	2	2175	4 x5½			
Patriot..Washgt'n	3	2900	4½x5½	36x5	36x7	W
Pierce-Arrow....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher.....	1½–2	3000	3¾x5	36x4	36x6	W
Pittsburgher.....	3	3860	4½x5¼	36x5k	36x7	W
Power.....F	2	3150	4 x5¼	36x5	36x7	W
Power.....C	3½	....	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-26	2	....	4½x5¼	34x4	34x6	W
Rainier.....R-29	2½–3	....	4½x5¼	34x4	34x7	W
Rainier.....R-15	3½–5	....	4½x5½	36x5	36x5d	W
Rainier.....R-25	3½–5	....	4½x5½	36x5	36x5d	W
Rainier.....R-17	5–6	....	4¾x6	36x6	40x6d	W
Rainier.....R-27	6	....	4¾x6	36x6	40x6d	W
Ranger..TK-28-2	1½	1450	3¾x5	36x6n	38x7n	W
*Reo.....F	¾–1½	1185	4½x4½	34x4½n	34x4½n	B
Reliance.....10A	1½	2400	4 x5½	36x3½	36x5	I
Reliance.....20B	2½	3100	4½x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3¾x5	34x3	34x4	I
Republic...10 Exp	1	1695	3¾x5	34x5n	34x5n	I
Republic.....11X	1½	1795	3¾x5	34x4	34x6	I
Republic.....19	2½	2195	4½x5½	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rowe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rowe.....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rowe.....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rowe.....G.P.W.	3	5250	3½x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4½x6	36x5	36x6d	W
Rowe.....F.W.	5	4850	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Sameen.....15	¾	....	4–3½x4	32x4n	32x4n	B
Sameen.....25	1½	....	4–3½x5½	35x5n	35x5n	B
Sanford....W-15	1½–2	2150b	3¾x5	36x3½k	36x5k	
Sanford.....25	2½–3½	....	4½x5½	36x4	36x4d	W
Sanford.....35	3½–5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5–7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ten	2	3200	4½x5½	36x4	36x7	W
Schacht....3-Ten	3	3800	4½x5½	36x5	36x5d	W
Schacht....4-Ten	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ten	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ten	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5¼	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½–2½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½–2½	3350	4½x5¼	34x5n	38x7n	W
Selden.....50	2½–3½	3250	4½x5¼	36x4	36x7	W
Selden.....51	2½–3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½–5	$3750	4½x5½	36x5	36x10	W
Selden.....90	5–7	4950	4¾x6	36x6	40x12	W
Seneca.....M	½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3½x4½	32x4½n	32x4½n	B
*Service.....25	1½	....	3¾x5½	34x5n	34x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4½x5½	35x5n	38x7n	W
Service.....52	3	....	4½x5½	36x4	36x8	W
Service.....72	3½	....	4½x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	1450	3¾x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5½	34x4	36x6	W
Signal.....J	2½	2375	4½x5½	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x5d	W
Signal.....R	5	3900	4¾x6	36x6	40x6d	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½–3	2400	4½x5½	36x4k	36x8	W
Standard.....66	3½–5	3150	4½x5½	36x5	36x12	W
Standard.....5-K	5–7	4400	4¾x6	36x6	40x14	W
*Star.....	½	610b	3½x4¼	30x3½n	30x3½n	
Sterling.....1½	1½	2885	4 x5¼	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5¾	36x4k	36x6k	W
Sterling.....2½	2½	3290	4¾x5¾	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6½	36x5k	40x5dk	W
Sterling... 5-W	5	4950	5 x6½	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6½	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6½	36x6	40x7d	C
*Stewart...Utility	¼–1½	1245	3¾x5½	34x4½n	34x4½n	I
Stewart.....15	1½–1½	1445	3¾x5½	35x5n	35x5n	I
Stewart.....9	1½–2	1790	3¾x5	34x3½	34x6	I
Stewart.....7-X	2½–3	2390	4¼x5½	34x4	34x8	I
Stewart.....10-X	3½–4	3190	4½x6	36x5	36x10	I
*Stewart.....	1¼	1245	4–3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1095	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3¾x5½	34x5n	34x5n	W
Stoughton.....B	1½	2150	3¾x5½	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....F	3	3150	4¼x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4¼x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Theomart.....	1¼	1795	4 x5½	34x5	34x5	C
Tiffin.....GW	1½	2100	4½x5½	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5½	36x4	36x3½d	W
Tiffin.....PW	3½	3600a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4¼x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4½x5½	35x5n	38x7n	W
Tower.....H	2½	2475	4½x5½	36x4	36x7	W
Tower.....G	3½	3475	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595a	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595a	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3¾x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5½	34x3½k	34x5k	I
Transport.....35	2	1885a	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5½	36x4k	36x8k	I
Transport.....60	3½	2585	4½x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Traylor.....B	1½	2390	3¾x5½	34x3½	34x5	W
Traylor.....C	2–2½	2850	4 x5½	36x4	36x7	W
Traylor.....D	3–3½	3300	4¼x5½	36x4	36x8k	W
Traylor.....F	5–6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3¼x5	34x4½n	34x4½n	I
Triangle.....A	1½–2	1965	3¾x5½	34x3½k	34x6k	I
Triangle.....C	2–2½	2285	3¾x5½	36x4k	36x7k	I
Triangle.....B	2½–3	2585	4 x5¾	36x4k	36x7k	I
Twin City...B.W.	2	2400	4 x5½	36x6	40x8	I
Twin City...A.W.	3½	3500	4½x6	36x5	40x5d	W
5Twin City.....B	3½	....	5½x6	36x6	36x6	I
5Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4½x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4½x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4½x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4½x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
United.....A	1½	2445	3¾x5½	36x3½k	34x5k	W
United.....B	2½	3150	4½x5½	36x4k	36x7k	W
United.....C	3½	3975	4½x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States..U	1¼	1800	3½x5½	34x5n	34x5n	B
UnitedStates..NW	1½–2	2375	3¾x5	36x5	36x3½	W
United States...N	1½–2	2175	3¾x5	36x3½k	36x5k	I
United States...R	3	3300	4 x5½	36x4	36x4d	W
United States...S	4	4075	4½x5½	36x5	36x5d	W
United States...T	5–7	4975	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Velie.....53	2½	2185	4 x5½	36x4k	36x7k	I
Veteran.....M**	1½	2699	3¾x5½	35x5n	35x5n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾–1	$1650a	3¾x5	34x5n	34x5n	W
Acason...RB	1½	1950	3¾x5½	36x3½	36x6	W
Acason...H	2½	2750	4⅜x5¾	36x4k	36x8k	W
Acason...L	3½	3450	4⅜x5¾	36x5k	36x10k	W
Acason...M	5	4350	5 x6¼	36x6	40x12	W
Ace	1½–1¾	2400	3⅝x5	34x3½	34x6	W
Ace	2	2850	4½x5½	36x4	36x7	W
Ace	2½–3	3400	4½x5¼	36x4	36x8	
Acme	1	....	3¾x5	35x5n	35x5n	W
Acme	1½	....	3¾x5	34x3½	34x5	W
Acme	2	....	3¾x5	34x3½	34x5	W
Acme	3	....	4½x5½	36x4	36x7	W
Acme	4	....	4½x5½	36x4	36x7k	W
Acme	4½	....	4½x5½	36x5	40x10	W
Acme	6½	....	4¾x6	36x6	40x12	W
American	2½	3350	4 x6	36x4k	36x4dk	W
American	4	4275	4½x6	36x5k	36x5dk	W
American	5	4500	4½x6	36x5	36x12	W
Armleder	1	....	3¾x5½	34x3½k	34x6k	W
Armleder	1½	....	3¾x5½	34x3½k	34x6k	W
Armleder...40-B	1½	....	4½x5½	34x3½k	34x6k	W
Armleder...40-C	1½	....	4½x5½	34x3½k	34x6k	W
Armleder..HW-B	2½	....	4½x5½	36x4k	36x7k	W
Armleder..HW-C	2½	....	4½x5½	36x4k	36x7k	W
Armleder..KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder..KW-C	3½	....	4½x5½	36x5k	36x5dk	W
*Atlas	1	1495	3¾x5½	34x4½n	34x4½n	W
*Atlas...41	1½–2	1950	3¾x5½	36x6n	36x6n	W
Atterbury...20R	1½	2475	3¾x5	34x3½	34x5	W
Atterbury...22C	2½	3375	4½x5½	36x4	36x4d	W
Atterbury...22C	2½	3475	4½x5¼	36x4	36x4d	W
Atterbury...22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury...22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury...8E	5	4975	4¾x6	36x5	40x6d	W
Atterbury...8E	5	5125	4¾x6	36x5	40x6	W
Autocar...21UF	1½–2	2200	4¾x4 ½t	34x4k	34x6	D
Autocar...21UG	1½–2	2300	4¾x4 ½t	34x4k	34x6	D
Autocar...27H	2–3	3100	4 x5½	34x5	36x7	D
Autocar...27K	2–3	3200	4 x5½	34x5	36x7k	D
Autocar...26Y	4–6	4200	4½x5½	34x6	36x12	D
Autocar...26-B	4–6	4350	4½x5½	34x6	36x12	D
Available...H1	1½	2475	4 x5	36x3½k	36x5k	W
Available...H2	2	2775	4 x5	36x3½k	36x6k	W
Available...H2½	2½	3160	4 x5	36x4k	36x8k	W
Available...H3½	3½	4175	4½x5½	36x5	40x5d	W
Available...H5	5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x4s	34x5n	34x5n	I
Beck...A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	I
Beck...B-30	1½	1350	3¾x5	34x5	36x6	
Beck...C-40	2	1550	3¾x5	36x6	36x6	
Beck...D-50	2½	1950	4½x5½	38x7	40x8	
Bell...M (Iowa)	1	1495	3½x5½	35x5	35x5n	W
Bell...E (Iowa)	1½	2100	3¾x5½	34x3½	34x5	I
Bell...O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Bessemer...G	1	....	3½x5	35x5n	35x5n	I
Bessemer...H-2	1½	....	3¾x5	36x3½	36x5	D
Bessemer...J-2	2½	....	4½x5½	36x4	36x4d	D
Bessemer...K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem...KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem...GN	2	1795	4 x5½	34x4	34x6k	D
Bethlehem...GN	3	2495	4 x6¼	36x4k	36x8k	D
Bridgeport...A	1½	....	3¾x5½	34x3½	34x6	W
Bridgeport...B	2½	....	4½x5½	36x4	36x4d	W
Bridgeport...C	3½	....	4½x6	36x5	36x10	W
Brinton...C	2	2500	3¾x5	34x4	34x5	W
Brinton...D	3	2975	4½x5½	36x4	36x7	W
Brockway...E	1	....	4 x5	33x5n	33x5n	B
Brockway...S-5	1½	....	4 x5	36x4	36x6	W
Brockway...SK	1½	....	4½x5½	36x4	36x6	W
Brockway...KR	2½	....	4½x5½	36x4	36x8	W
Brockway...K-5	2½	....	4½x5½	36x4	36x8	W
Brockway...RT	3½	....	4¾x6	36x5	36x10	W
Brockway...R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway...T-4	5	....	4¾x6	36x6	40x6d	W
*Buick	½	945b	3⅜x4¾	31x4n	31x4n	B
Case	2	....	4¼x5¾	36x6	38x7	I
*Chevrolet	¼	510b	3⅛x4	30x3½n	30x3½n	B
*Chevrolet...G	¾	650	3⅛x4	31x4n	34x4½n	B
*Chevrolet...T	1	1095	3⅛x5¼	33x4n	35x5n	W
Chicago...C1	1½	....	4 x5	36x3½k	36x5k	W
Chicago...C2	2½	....	4 x5	36x4k	36x7k	W
Chicago...C3	3½	....	4½x5½	36x5	36x10	W
Chicago...D5	5	....	4½x5½	36x6	40x12	W
Clydesdale...10	¾–1¼	1485	3¾x5	34x5n	34x5n	B
Clydesdale...10A	¾–1¼	1535	3¾x5	34x5n	34x5n	B
Clydesdale...15	¾–1¼	1890	3¾x5	34x5	34x5	W
Clydesdale...20	1–1½	2385	3¾x5	34x5	34x5k	W
Clydesdale...42	1½–2	2475	3¾x5	36x3½	36x6	W
Clydesdale...65X	2½–3	3250	4¼x5½	36x4	36x8	W
Clydesdale..65EX	2½–3	3450	4½x5½	36x4	36x8	W
Clydesdale...90	3½–4½	4100	4½x5½	36x5	36x10	W
Clydesdale...120	5–6	4500	4¾x6	36x6	40x12	W
Comet...T	1½	1950	3¾x5	34x4	34x4	W
Commerce...9	¾–1¼	1150	3¾x5	32x4½n	32x4½n	B
Commerce...T	¾–1¼	1450	3¾x5	34x4½n	34x4½n	B
Commerce...10	¾–1¼	2500	3¾x5	33x5n	33x5n	B
Commerce...12	1½	1695	3¾x5	34x3½	34x4	I
Commerce...12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce...16	2	1995	3¾x5	34x4	34x6	I
Commerce...16	2	2150	3¾x5	35x5n	36x6n	I
Commerce...18	2½	2150	4¼x5¼	36x4	36x7	I
Commerce...18	2½	$2495	4½x5¼	36x6n	40x8n	I
Commerce...25	2½	2425	4½x5¼	36x4	36x7	W
Commerce...25	2½	2770	4½x5¼	36x6	40x8n	W
Cook...51	2½	3600	4 x5½	36x6n	40x8n	W
*Corbitt	¾–1	1250	3½x5	33x5n	33x5n	
Corbitt...E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt...D-22	1½	2200	3¾x5	34x3½	34x5	W
Corbitt...C-22	2	2600	4½x5½	36x3½	36x7	W
Corbitt...B-22	2½	3000	4½x5¼	36x4	36x7	W
Corbitt...R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt...A-22	3½–4	3800	4½x5½	36x5	36x10	W
Corbitt...AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder...AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder...B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder...D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder...C	2½	2750	4½x5½	36x4	36x7	W
Day-Elder...F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder...E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn...E	1	1600	3⅝x5¼	35x5n	35x5n	W
Dearborn...FX	1½	2300	3⅝x5⅛	34x4	34x5	W
Dearborn...F	1½	2180	3⅝x5⅛	34x4	34x5	W
Dearborn...48	2	2590	3⅝x5⅛	34x4½n	34x7	W
Defiance...G	1	1525	3¾x5	35x5n	35x5n	B
Defiance...D	1½	1845	3¾x5	35x5n	36x6n	I
Defiance...E	2	2075	3¾x5	35x5n	38x7n	I
Denby...31	1¼	1485	3¾x5	35x5n	35x5n	B
Denby...33	1½	2145	3¾x5	35x5n	38x7n	I
Denby...35	2½–3	2795	4½x5¼	36x4	36x7	I
Denby...27	4	3895	4½x5½	36x5	38x5d	I
Denby...210	5	4295	4½x5½	36x6	40x6d	I
Dependable...A	¾–1	1650	3⅝x5½	34x5n	36x6n	W
Dependable...C	2	2350	3¾x5½	34x3½	34x5	W
Dependable...D	2½	2850	4 x5½	34x5	36x6	W
Dependable...E	3	2950	4½x5½	36x4	36x7	W
Diamond T...O-3	1–1¼	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T...T	1¼	2250	3¾x5¼	36x3½	36x5	W
Diamond T...U	2–2½	2650	4 x5¼	36x4	36x7	W
Diamond T...K	3½	3750	4½x5½	36x5	36x5d	W
Diamond T...EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T...S	5	4500	4¾x6	36x6	40x6d	W
Deane	2½	4100b	4¼x5¾	36x5	36x7	C
Deane	3½	5100b	4⅜x5¾	36x5	36x5d	C
Deane	6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers	¾	730	3⅞x4½	32x4n	32x4n	B
Derris...K-2	1	2490	4 x5½	33x5n	33x5n	B
Derris...K-4	2–2½	3400	4½x5½	36x4	36x7	W
Derris...K-7	3½	4400	4½x5½	36x5	36x10	W
*Dort	103	½	685a	3½x5	31x4n	34x4n	B
Double Drive...B	3	4000	4½x5½	36x6	36x6	W
Duplex...A	2	2775	4 x5½	35x5n	38x7n	W
Duplex...E	3½	3500	4½x5½	36x8	36x8	I
Duty...22	2	1590	3½x5	34x3½	34x5	I
Eagle...101	1½	1875	3⅝x5½	34x5	34x6	I
Eagle...100-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D...B	3	4200	4¾x5½	36x6	36x6	B
Fageol...1½	1½	3000	3¾x5½	34x3½k	34x6k	W
Fageol...2½	2½	3900	4⅜x5¾	34x4	36x7	W
Fageol...3½	3½	5000	4½x6½	36x5k	40x5dk	W
Fageol...5	5	5700	4½x6½	36x6	40x6d	W
Fargo...R	2	1700	3¾x5	36x4	36x6	I
*Federal	1½	1375	3¾x5	—x5n	—5n	
Federal...SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal...TE	1½	2175	4½x5¼	36x3½	36x5	W
Federal...UE	2–2½	2425	4½x5¼	36x4	36x7	W
Federal...WE	3½–4	3150	4½x5½	36x5	36x5d	W
Federal...X2	5–6	4500	4¾x6	36x6	40x6d	W
*Ford...TT	1	380	3¾x4	30x3½n	32x4½n	W
Front Drive...C	1½	2800	3¾x5½	36x6	36x6	W
G.M.C...K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C...K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C...K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C...K-41T	5†	2450	4 x5½	36x4	36x8	W
G.M.C...K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C...K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C...K-71T	10†	3700	4½x6	36x5	40x12	W
G.M.C...K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C...K-101T	15†	4050	4½x6	36x5	40x14	W
G.M.C...K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W	1½	1850	3¾x5½	35x5	35x5	I
*Garford	1	1590	3⅝x5½	34x5n	34x5n	W
Garford...25-B	1½	1990	3¾x5½	36x3½	36x5	W
Garford...70-H	2½	2750	4¼x5½	36x4	36x8	W
Garford...77-D	4	3750	4½x6	36x5	36x5d	W
Garford...68-D	5	4500	5 x6½	36x6	40x5d	W
Garford...150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary...F	1–1½	1775	3¾x5	36x3½	36x5	W
Gary...I	2	2450	4 x5½	36x3½	36x6	W
Gary...J	2½	2850	4¼x5½	36x4	36x8	W
Gary...K	3½	$3790	4½x6	36x5	40x5d	W
Gary...M	5	4450	5 x6½	36x6	40x6d	W
Gersix...M	1½	3100	4 x5½	36x3½	36x7	W
Gersix...K	2½	3500	4½x5½	36x4	36x8	W
Gersix	3½	4500	4½x6	36x5	40x12	W
Gotfredson...20	1	2075	3¾x5½	34x5	34x5	W
Gotfredson...31	1½–2	3000	4 x5¼	36x6	38x7n	W
Gotfredson...A	2½	3375	4 x5½	36x4	36x7	W
Gotfredson...B	3½–4	4475	4½x5½	36x5	36x10	W
Gotfredson...100	5–6	5500	5 x6½	36x6	40x14	W
Graham Bros	1	1265	3⅞x4½	33x4½n	34x5n	B
Graham Bros	1½	1325	3⅞x4½	33x4½n	36x6n	B
[1]Gramm-Pion...10	1	1245	3½x5	33x5n	33x5n	B
[1]Gramm-Pion...15	1½–2	1750a	3¾x5	36x3½k	36x5k	I
[1]Gramm-Pion...65	1½–2	2250a	3¾x5	36x3½k	36x5	W
[1]Gramm-Pion...20	2–2½	2475a	4½x5½	36x4k	36x7k	W
[1]Gramm-Pion...30	3	3300a	4½x5½	36x5k	36x5dk	W
[1]Gramm-Pion.75P	3½	4225a	4½x5½	36x6n	42x9n	W
[1]Gramm-Pion...40	4	3850a	4½x5½	36x5	36x5dk	W
[1]Gramm-Pion...50	5–6	4450a	4¾x6	36x6	40x6dk	W
Hall...1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall...2½	2½	3275	4½x5¼	36x4	36x6	W
Hall...3½	3½	4100	4½x5½	36x5	36x5d	W
Hall...5	5	5100	4½x5½	36x5	40x6d	W
Hall...7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey...W OA	2	2650	4½x5½	34x4	34x7	W
Harvey...WFA	2½	2950	4½x5½	36x4	36x7	W
Harvey...WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye...O	1	1375	3⅜x5½	34x5n	34x5n	
Hawkeye...K	1½	1645	3¾x5½	34x3½k	34x5k	I
Hawkeye...M	2	2145	4¼x5	36x4k	36x6k	[1]
Hawkeye...N	3½	3700	4½x6⅜	36x5k	36x10k	I
Hendrickson...O	1½	2200	3⅝x5½	36x4n	36x5n	W
Hendrickson...N	2½	2690	4¼x5⅜	36x4k	36x7k	W
Hendrickson...M	3½	3000	4½x5	36x5k	36x5dk	W
Hendrickson...K	5	4000	5 x6¼	36x6	40x6	W
Huffman...B	1½–2	1795	3¾x5	34x3½	34x6	W
Huffman...C	1½–2	1695	3¾x5½	36x3½	36x6	1
Huffman...D	2–3	2895	4¼x5½	36x4	36x7	
Hurlburt...A-A	1–1½	1950	3¾x5	34x5n	34x5n	W
Hurlburt...B-B	2–2½	2800	4¼x5½	36x4	36x4d	W
Hurlburt...C-C	3–3½	3475	4½x5½	36x5	36x5d	W
Hurlburt...D-D	4–4½	4150	4½x6	36x5	36x6d	W
Hurlburt...E-E	6–6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa)..B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa)..G	1½	2040	3⅜x5¼	34x3½	34x5	I
Indep'd't(Ia.)...HI	2½	2940	4¼x5½	36x4	36x7	I
*Indiana	10	1	....	3⅜x5¼	34x5n	34x5n	B
Indiana	12	1½–2	....	3¾x5¼	34x3½k	34x5k	W
Indiana	20	2	....	4½x5½	36x4k	36x7k	W
Indiana	25	2½–3	....	4½x5½	36x4k	36x8k	W
Indiana	35	3½–4	....	4¾x5½	36x5k	36x5dk	W
Indiana	51	5–7	....	5 x6¼	36x5k	40x6dk	W
*International...S	1	1250	3½x5	32x4½n	32x4½n	I
International...21	1	1550	3½x5¼	36x3½k	36x3½	I
International...31	1½	1650	3½x5¼	36x3½k	36x5k	I
International...41	2	2100	3½x5¼	36x3½k	36x6k	I
International...52	2½	3500	4¼x5	36x6n	36x6dn	I
International...61	3	2400	4¼x5	36x4k	36x7k	I
International...62	3	2600	4¼x5	36x4	36x7	I
International..101	5	3600	4¼x5	36x5	40x12k	I
International..102	5	3800	4¼x5	36x5	36x12	I
Jackson...4WD	3½	3850	4½x5½	36x7	36x7	B
K-Z...1	1	1750	3½x5	34x3½	34x5	W
K-Z...1½	1½	2075	3¾x5	36x4	36x6	W
K-Z...2½	2½	2550	4½x5¼	36x4	36x8	W
K-Z...3½	3½	3350	4½x5½	36x5	40x10	W
K-Z...5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo...T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo...G-1	1½	1800	3⅜x5	34x4	34x5	W
Kalamazoo...LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo...NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo...HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo...SK	4	3845	4¼x6	36x5	36x12	W
Kalamazoo...OK	5	4350	4½x6	36x6	40x6d	W
*Kelly-S...K-31	1½	2700	3¾x5¼	36x3½	36x6	C
*Kelly-S...K-34	1½	2700	3¾x5¼	36x3½	36x6	W
*Kelly-S...K-38	2½	2900	3¾x5¼	36x4	36x4d	W
*Kelly-S...K-35	2½	2900	3¾x5¼	36x4	36x4d	C
*Kelly-S...K-40	3½	3900	4½x6½	36x5	40x5d	C
*Kelly-S...K-41	3½	3900	4½x6½	36x5	36x10	I
*Kelly-S...K-42	3½	3900	4½x6½	36x5	40x5d	W
*Kelly-S...K-50	5	4400	4½x6½	36x6	40x6d	C
*Kelly-S...K-60	6	4600	4½x6½	36x6	40x7d	C
*Kelly-S...K-61	5–7	4800	4½x6½	36x6	36x7d	I
Kimball...AB	2	3675	4 x6	36x4	36x7	W
Kimball...AC	2½	3975	4¼x6	36x4	36x8	W
Kimball...AK	3	4500	4½x6	36x4	36x10	W
Kimball...AE	4	5000	4¾x6	36x5	40x12	W
Kimba I...AF	5	5500	5 x6	36x6	40x7d	W
*Kissel...Express	1	1585	3⅞x5½	34x5n	34x5n	W
Kissel...Utility	1½	1975	3⅞x5½	36x3½	36x6	W
Kissel...Freighter	2½	2875	4¼x5½	36x4	36x8	W
Kissel...H.D.	4	3675	4½x5½	36x5	36x12	W
Kleiber...AA	1	2200	4½x5¼	34x3½k	34x5k	W
Kleiber...A	1½	3100	4½x5¼	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.

r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor. †Capacity with semi-trailer.

1—Gramm Pioneer. 2—Kelly-Springfield.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5¼	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....D	1½	2150	3½x5	34x3½	34x5	W
Koehler.....M	2½	3175	4 x5½	36x4	36x7	W
Koehler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Koehler.....F	3½	4470	4½x5½	36x5	36x10	W
Koehler,MT.Trac	5	3275	4 x5⅛	36x4	36x7	W
Krebs.....23	¾	1360	3¾x5	34x4½	34x4½	B
Krebs.....24	1	1675	3¾x5	34x5	34x5	W
Krebs.....45	1½	2275	4½x5¼	36x4	36x7	W
Krebs.....75	2½	2550	4½x5½	36x4	36x8	W
Krebs.....110	3½	3175	4½x5½	36x5	40x10	W
Krebs.....140	5	....	4¾x6	36x6	40x6d	W
Larrabee.....X-2	1	1925	3¼x4½	34x5n	34x5n	B
Larrabee.....U	1½	2400	3¾x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4½x5¼	36x4	36x7	W
Larrabee.....K-5	2½-3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5-7	4800	4¾x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5¼	36x4	36x6	W
Maccar.....H-A	2	....	4½x5¼	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack.....AB D.R.	1½	3450	4 x5	36x4k	36x3½dk	D
Mack.....AB Chain	1½	3000	4 x5	36x4k	36x3½dk	D
Mack.....AB Chain	2	3300	4¼x5	36x4k	36x4dk	C
Mack.....AB D.R.	2	3750	4¼x5	36x4k	36x4dk	D
Mack.....AB D.R.	2½	3850	4¼x5	36x4k	36x4dk	D
Mack.....AB Chain	2½	3400	4¼x5	36x4k	36x4dk	C
Mack.....AC Chain	3½	4950	5 x6	36x5k	40x5dk	C
Mack.....AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack.....AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack.....AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac.....AB	5	3400	4¼x5	36x4	36x4d	C
Mack Trac.....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac.....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac.....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac.....AC	15	6000	5 x6	36x7	40x7d	C
*Mapleleaf.....**	1½	3000	3¾x5½	34x5n	36x6n	W
Mapleleaf...AA**	2	3600	4 x5½	36x4	36x7	W
Mapleleaf...BB**	3	4050	4½x5½	36x4	36x4d	W
Mapleleaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Mapleleaf...DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x6	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4½x5½	34x4	36x8	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x8	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3½x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1½	2000	3¾x5	34x3½	36x5	W
Menominee....H	1½	2475	4 x5	36x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4¾x6	36x6	40x12	W
Meline.....10	1½	1985	3½x5	34x5n	36x6n	I
†Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2900	4½x5¼	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-5	4600	4¾x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3¾x5½	34x4	34x5	I
Nash.....3018	2-2½	2150	3¾x5½	34x4k	34x7k	I
Nash.....Quad.	2-2½	2750	4¼x5½	36x6	36x5k	I
Nash..3018, LWB	2-2½	2200	3¾x5¾	34x4k	34x7k	I
Nash.Quad. LWB	2-2½	2800	4¼x5½	36x6	36x6	I
Nash.....5018	2½	2250	3¾x5½	34x4k	34x7k	I
†Nelson.....G2	1½	....	4½x5½	36x3½	36x6	W
†Nelson.....G3	2½	....	4½x5½	36x4	36x7	W
†Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
†Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5¼	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5½	36x4k	36x7k	W
Noble.....A21	1¼	1750	3⅜x5½	34x5	34x5	W
Noble.....B31	1½-2	2395	3¾x5½	36x4	36x7	W
Noble.....D51	2½-3	2795	4½x5½	36x4	36x8	W
Noble.....E71	3½-5	3495	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3¾x5¼	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4¼x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4¼x5¼	34x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E.Spec	1½	2285	3¾x5¼	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	36x3½	36x5	W
Ogden.....E	2½	....	4½x5¼	36x4	36x8	W
Old Hickory...W	1	$1775	3¾x5	36x3½k	36x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4¼x6	34x4	36x4d	W
Old Reliable....C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4½x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6½	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5¼	35x5n	35x5n	I
Olympic.....A	2½	3200	4¼x5½	36x4	36x8	W
Oneida.....B9	2½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	2½	3200	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	2485	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	2585	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3485	4 x5⅛	38x7n	38x7n	B
Oshkosh.....BB	2½	3585	4 x5⅛	38x7n	38x7n	B
*Overland.....4	½	425	3¾x4	30x3½n	30x3½n	B
Packard.....EC	2-3	3100	4½x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4½x5½	36x6n	40x8n	W
Packard.....ED	3½	4100	4½x5½	36x5	36x5d	W
Packard.....EP	5-7½	4500	5 x5½	36x4	40x6d	W
Paige.....52-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige.....54-20	2½	2420	4¼x5½	34x4	34x8	W
Paige.....51-18	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot....Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot....Lincoln	2	2050	4 x5¼	34x4	34x6	W
Patriot....LS-800	2	2175	4 x5¼			
Patriot..Washgt'n	3	2900	4½x5½	36x5	36x7	W
Pierce-Arrow.....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow.....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow.....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3¾x5	36x4	36x6	
Pittsburgher.....	3	3860	4½x5½	36x5k	36x7	W
Power.....F	2	3150	4 x5¼	36x5	36x7	W
Power.....C	3½	....	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4½x5¼	34x4	34x6	W
Rainier.....R-29	2½-3	....	4½x5¼	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-25	3½-6	....	4½x5¼	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	36x6	40x6d	W
Rainier.....R-27	6	....	4¾x6	36x6	40x6d	W
Ranger..TK-20-2	1½	1450	3¾x5	36x6n	38x7n	W
*Reo.....F	¾-1½	1185	4½x4½	34x4½n	34x4½n	B
Reliance.....10A	1½	2400	4 x5⅛	36x3½	36x5	I
Reliance.....20B	2½	3100	4½x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3¾x5	34x3	34x4	I
Republic...10 Exp	1	1695	3¾x5	34x5n	34x5n	I
Republic.....11X	1½	1795	3¾x5	34x4	34x6	I
Republic.....19	2½	2195	4½x5¼	36x4	36x7	I
Republic.....29	3½	3095	4½x5½	36x5	36x10	I
Rowe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rowe.....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rowe.....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rowe.....G.P.W.	3	5250	3½x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4¼x6	36x5	36x6d	W
Rowe.....F.W.	5	4850	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4-3½x4	32x4n	32x4n	B
Samson.....25	1¼	....	4-3½x5½	35x5n	35x5n	B
Sanford....W-15	1½-2	2150b	3¾x5	36x3½k	36x5k	
Sanford.....25	2½-3½	....	4½x5¼	36x4	36x4d	W
Sanford.....35	3½-5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5-7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ton	3	3800	4¼x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5¼	34x3½	31x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½-2½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½-2½	3350	4½x5¼	34x5n	38x7n	W
Selden.....50	2½-3½	3250	4½x5½	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	$3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4¾x6	36x6	40x12	W
Seneca.....M	½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3½x4½	32x4½n	32x4½n	B
*Service.....25	1½	....	3¾x5½	34x5n	34x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4½x5½	35x5n	38x7n	W
Service.....52	3	....	4½x5½	36x4	36x8	W
Service.....72	3½	....	4½x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	1450	3¾x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5¼	34x4	36x6	W
Signal.....J	2½	2375	4½x5½	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x5d	W
Signal.....R	5	3900	4¾x6	36x6	40x6d	W
*Standard.....7S	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5¼	36x4k	36x8	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x12	W
Standard.....5-K	5-7	4400	4¾x6	36x6	40x14	W
*Star.....	½	610b	3½x4¼	30x3½n	30x3½n	
Sterling.....1½	1½	2885	4 x5¼	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5¾	36x4k	36x6k	W
Sterling.....2½	2½	3290	4¾x5¾	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6¼	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6¼	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6¼	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6¼	36x6	40x7d	C
*Stewart...Utility	¼-1½	1245	3⅝x5⅛	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3⅝x5⅛	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3¾x5	34x3½	34x6	I
Stewart.....7-X	2½-3	2390	4¼x5½	34x4	34x8	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x10	I
*Stewart.....	1¼	1245	4-3½x5½	34x4½	34x4½	
*Steughten.....C	¾	1095	3½x5	34x4½n	34x4½n	B
Steughton.....A	1	1790	3¾x5¼	34x5n	34x5n	W
Steughton.....B	1½	2150	3¾x5¼	36x3½	36x5	W
Steughton.....D	2	2490	4 x5⅛	36x4	36x7	W
Steughton.....F	3	3150	4¼x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4¼x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Thomart.....	1¼	1795	4 x5¼	34x5	34x5	C
Tiffin.....GW	1½	2100	4¼x5¼	36x3½	36x5	W
Tiffin.....MW	2½	2700	4¼x5½	36x4	36x3½d	W
Tiffin.....PW	3½	3600a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4¼x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4½x5¼	35x5n	38x7n	W
Tower.....H	2½	2475	4½x5¼	36x4	36x7	W
Tower.....G	3½	3475	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595a	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595a	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3¾x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5½	34x3½k	34x5k	I
Transport.....35	2	1885a	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5½	36x4k	36x8k	I
Transport.....60	3½	2585	4¼x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Trayler.....B	1½	2390	3¾x5½	34x3½	34x5	W
Trayler.....C	2-2½	2850	4 x5½	36x4	36x7	W
Trayler.....D	3-3½	3300	4½x5½	36x4	36x8k	W
Trayler.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3½x5	34x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3¾x5½	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5½	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5¾	36x4k	36x7k	I
Twin City...B.W.	2	2400	4 x5½	36x6	40x8	I
Twin City...A.W.	3½	3500	4½x6	36x5	40x5d	W
†Twin City.....B	3½	....	5½x6	36x6	36x6	I
†Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4½x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4½x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4½x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4½x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
United.....A	1½	2445	3¾x5¼	36x3½k	34x5k	W
United.....B	2½	3150	4¼x5½	36x4k	36x7k	W
United.....C	3½	3975	4¼x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States..U	1¼	1800	3⅝x5⅛	34x5n	34x5n	B
UnitedStates..NW	1½-2	2375	3¾x5	36x5	36x3½	W
United States...N	1½-2	2175	3¾x5	36x3½k	36x5k	I
United States...R	3	3300	4 x5¼	36x4	36x4d	W
United States...S	4	4075	4½x5½	36x5	36x5d	W
United States...T	5-7	4975	4½x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Velie.....53	2½	2185	4 x5½	36x4k	36x7k	I
Veteran.....M**	1½	2699	3¾x5½	35x5n	35x5n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

8—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Veteran.....P**	2	$3699	4¼x5½	36x4	36x7	W
Veteran.....R**	3	4200	4¼x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....50	½-¾	995	4 x5	32x4n	32x4n	B
Walker-JohnsonA	2	2500	3¾x5	34x3½	34x6	W
Walker-JohnsonB	3	3000	4¼x5½	36x4	36x8	W
Walter.....M	2½	3850	4½x5¾	36x4	36x8	D
Walter.....S	5	4850	4½x6¼	36x6	40x6d	W
*Watson.....C	1	1465a	3⅝x5½	35x5n	35x5n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2450	4½x5¼	36x3½k	36x5k	W
Western....L1½	1½	2450	3¾x5	36x3½k	36x5k	W
Western....W2½	2½	3250	4½x5¼	36x4	36x7	W
Western....L2½	2½	2450	4¼x6	36x4	36x7	W
Western....W3½	3½	4000	4½x6	36x5	40x5d	W
*White.....15	¾	2400	3¾x5½	34x5n	34x5n	B
White.....20	2	3250	3¾x5⅛	36x4k	36x7k	D
White.....40	3½	$4200	3¾x5¾	36x5	40x5d	D
White.....45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick....E	1	1225	3¾x5	34x5n	34x5n	W
White Hick....H	1½	1375	3¾x5	36x3½	36x5	W
White Hick....K	2½	1675	4⅛x5¼	36x4	36x5	W
Wichita.....K	1	1875	3¾x5¼	36x3½	36x4k	W
Wichita.....M	2	2400	3¾x5¼	36x3½k	36x6k	W
Wichita.....RX	3	3200	4⅜x5¾	36x4k	36x8k	W
Wichita.....O	4	$3500	4½x6¼	36x5k	36x5k	W
Wilcox.....AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4¼x5	36x4k	36x3½dk	W
Wilcox.....E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox.....F	5	4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¾x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4½x5¼	36x4	36x7	W
Wilson.....G	3½	3685	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin....A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin.....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin.....C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin.....D	3½	3000	4¾x5¾	36x6n	40x8	W
Wisconsin.....E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin.....F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will.....N	1½	2450	3¾x5	36x3½k	36x6k	W
Witt-Will.....P	2½	2900	4½x5¼	36x4k	36x8k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.

r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders; Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P.	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm...	15-25	1185	4	Midw.	4-4½x5¼	Gas.	3
Allis-Chalm...	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm.	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork...2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork.....C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T,...	15-30	1900	4	Clim.	4-5 x6½	G,K,D	4
Aultman-T,...	22-45	2800	4	Own	4-5½x8	G,K,D	6
Aultman-T,...	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Automot...B-3	12-21	1250	4	Herc.	4-4 x5½	Gas.	2-3
Avery,SR.Cul	5-10	....	4	Own	4-3 x4	G,K	..
Avery Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4⅜x6	G,K,D	2-3
§Avery.....	....	....	*	Own	4-4x5½	G,K,D	3-4
Avery.....	19-25	....	4	Own	2-6½x7	G,K,D	2-3
Avery.....	14-28	....	4	Own	4-4⅞x7	G,K,D	3-4
Avery.....	18-33	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7¾x8	G,K,D	8-10
Bates Mule.H	15-25	....	4	Midw.	4-4½x5¼	Gas.	3
Bates Mule..F	18-25	....	*2	Midw.	4-4½x5¼	Gas.	3
‡BatesMule.G	25-35	....	*2	Midw.	4-4½x6	Gas.	..
Bear.....	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman Jr..	¼-1½	180	2	B&S	1-2½x2½	Gas.	..
¶Beeman...G	2-4	240	4	Own	1-3½x4½	Gas.	..
Best.....	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best.....	60	....	*2	Own	4-6½x8½	G,K,D	8-9
¶Bolens.....	....	....	4	B&S	1-2½x2½	G.	..
Boring.....	5-10	395	4	LeR.	4-3½x4½	G.	..
Boring...1921	....	1850	3	Wauk	4-4⅜x5¾	GorK	2
**Bryan.....	15-30	....	4	Own	2-4 x5	K.	3
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	2-3
Case.....	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case.....	22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case.....	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T35	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar..5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur.....	5-2½	315	2	N Way	2-4½x4½	GorK	1
Cletrac.....F	9-16	595	*2	Own	4-3¼x4½	G,K,D	2
Cletrac.....W	12-20	1345	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Do-It-All,Baby	1	237	..	Own	1-2¾x2¾	Gas.	1
Do-It-All.....A	3-6	495	..	Own	1-4½x5	Gas.	1
Do-It-All, Jack	6	395	..	Own	1-3⅜x3⅞	Gas.	1
Do-It-All....6	12	495	2	Own	2-3⅜x3⅞	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	GorK	4-5
E-B.....AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol.....D	9-18	1175	4	Lyc.	4-3½x5	Gas.	2
Farm Horse.B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Fitch..4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	395	4	Own	4-4 x5	G,K	2
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt...A	18-36	$2150	4	Wauk.	4-4¾x6¾	GorK	4
Gray.....	20-36	1975	3	Wauk.	4-4½x6¼	Gas.	4
Gray.....	22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. WesternSt	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr..20	20	865	4	Own	2-5¼x6½	K,D.	2
Hart-Parr..30	30	1045	4	Own	2-6½x7	K,D.	3
‡Hart-Parr...	....	1395	4	Own	6½x7	K,D.	..
Heider.....D	9-16	628	4	Wauk.	4-4¼x5¾	G,K	2
Heider.....C	12-20	725	4	Wauk.	4-4½x6¾	G,K.	3
Heider...Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light.4	12-25	985	4	Wauk.	4-4½x5¾	GorK	3
Huber Super 4	15-30	1885	4	Midw.	4-4½x6	Gas.	3
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International..	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5¼x8	G,K,D	4
¶Kinkade....	1½-3	190	1	Own	1-3 x3	Gas.	..
La Crosse....	12-24	985	2	Own	2-6 x7	G,K	3
Lauson.....5	12-25	1295	4	Midw.	4-4⅛x5¼	Gas.	3
Lauson.....21	15-30	1675	4	Beav.	4-4¾x6	GorK	3-4
‡Lauson Road	15-30	2000	4	Beav.	4-4¾x6	K	..
Leader.....B	12-18	685	4	Own	2-6 x6¼	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K.	3-4
‡Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Little Giant..B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant..A	26-35	3300	4	Own	4-5½x6	K	6
Lombard.1922	85-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2⅝x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	GorK	3
Minne..Gen.P	17-30	1600	4	Own	4-4¾x7	GorK	3-4
Minne. Med.D	22-44	2650	4	Own	4-6 x7	GorK	5-6
MinneHeavyD	35-70	3850	4	Own	4-7¼x9	GorK	8-9
Mohawk .1922	8-16	650	2	Light	4-3½x4½	KorG	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch..	9-18	....	2	Own	4-3½x5	Gas.	2-3
‡Monarch....	20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Motor Macult.	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	375	4	Own	2-3¾x4	Gas.	1
Nichols-Shep..	20-42	2650	4	Own	2-8 x10	GorK	3-6
Nichols-Shep..	25-50	3000	4	Own	2-9 x12	GorK	4-8
Nichols-Shep..	35-70	3650	4	Own	2-10½x14	GorK	8-12
Nilson Senior.	20-40	1975	5	Wauk.	4-5 x6¼	G,K	4
OilPull.....K	12-20	....	4	Own	2-6 x8	K,D	3
OilPull.....H	16-30	....	4	Own	2-7 x8½	K,D	4
OilPull.....G	20-40	....	4	Own	2-8 x10	K,D	5-6
OilPull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar...K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Pioneer.....G	18-36	....	4	Own	4-5½x6	G,K,D	4
Pioneer.....C	40-75	....	4	Own	4-7 x8	Gas.	10
Reliable.....	10-20	390	4	Own	2-6 x7	Ker.	2
Russell.....	12-24	1500	4	Own	4-4¼x5¾	GorK	2-3
Russell.....	15-30	2200	4	Own	4-5x6½	GorK	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	GorK	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	GorK	8-10
Samson....M	....	445	4	Own	4-4 x5½	G,K	2
Sandusky....J	10-20	1250	4	Own	4-4¼x5¼	G,K,D	2
Sandusky....E	15-35	1750	4	Own	4-5 x6½	G,K,D	4
¶Shelby.....	1	150	3	B & S	1-2½x2½	G	..
Shelby.....D	15-30	....	4	Beav.	4-4¾x6	G,K	3
Shelby.....C	9-18	....	4	Wauk.	4-3¾x5¼	GorK	2
Toro Cultivator	6	750	3	LeR.	4-3½x4½	Gas.	2
ToroTractor'22	6-10	495	3	LeR.	4-3½x4½	Gas.	2
Townsend....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend....	25-50	2500	2	Own	4-8½x10	Ker.	4-8
TractionMotor	40-50	....	4	....	8-3¼x5	Gas.	4-5
Traylor....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar...10	25-40	3750	*2	Wauk.	4-5 x6¼	GorK	4
TwinCity.....	12-20	1200	4	Own	4-4¼x6	H,K	3
Twin City....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City....	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle SamC20	12-20	1295	4	Weid.	4-4 x5½	G	2-3
Uncle SamB19	20-30	1985	4	Beav.	4-4¾x6	GorK	3-4
Uncle SamD21	20-30	1895	4	Beav.	4-4¾x6	GorK	3-4
Utilitor....501	2½-4	295	4	Own	1-3½x4½	G	1
Utilitor...501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	....	4	Own	4-4¼x5¾	G,K	3
Waterloo....N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore21-22	12-25	1185	4	Wauk.	4-4 x5¾	G,K	3
Whitney....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin...E	16-30	1850	4	Clim.	4-5 x6½	GorK	3
Wisconsin...F	20-40	2050	4	Wauk.	4-5 x6¼	GorK	4
Wisconsin...H	22-40	2550	4	Clim.	4-5½x7	GorK	4-6
Yuba....12-20	12-20	2400	*2	Wauk.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4¼x6	G,K,D	..
Yuba....20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba.....	25-40	4750	*2	Yuba	4-5¼x7	D	..

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont.—Continental. Dom.—Domas. Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor. ¶Garden Tractor. **Steam Tractor.

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (N.A.C.C.)	NAME AND MODEL	Carburetor	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle Type and Make	†Gear Ratios
.....	$4500c	$4500	.....	.....	$6500	136	33x5	Cont..	6-3⅝x5¼	31.54	Ambassador.....R	Strom...	West.....	Bosch.....	m-d B-L.....	B-L.....	f Norwalk..	F Tim..	4.45
$1995c	1785	1850	$1885c	.....	2485	127	33x4½	H-S...	6-3½x5	29.40	American.....D-66	Strom...	G-D.....	A-K.....	s-p B&B....	B & B ..	m Hartford..	F Salis..	4.50
.....	1650	.....	.....	.....	.....	127	33x4	Own..	2-	.....	American.....Steamer	None...	L-N.....	L-N	None.....	None...	.....	Own..	1.75
.....	1195	.....	.....	$1450c	.....	114	32x4	Cont..	6-3⅛x4¼	23.44	Andersen...Aluminum 6	.....	West.....	West.....	s-p B&B....	.....	.....	Salis..	.....
{1495 {1785p	1495	1595	{1595c {1945c	1995c	1995d	120	33x4	Cont..	6-3⅝x4½	27.34	Anderson.....Series 40	Rayfield.	Remy.....	Remy.....	s-p B&B....	Durston.	f Snead.....	¾F Salis..	4.50
.....	2620	2645	.....	3625	3695	130	34x4½	Own..	8-3¼x5	33.80	Apperson.....8-21-S	Johnson.	Bijur.....	Remy.....	m-d Own....	Own....	m Sterling...	½F Own..	4.25
1575	1475	1545n	{1895n {1995n	2275	2345	121	32x4	Cont..	6-3⅝x4½	27.34	Auburn.....6-51	Strom...	Remy.....	Remy.....	s-p B&B....	G-L.....	m Universal..	F Salis..	4.75
.....	1395	.....	.....	.....	1850d	118	32x4	Cont..	6-3½x4¼	23.44	Barley.....	.....	Delco .	Delco.....	s-p B&B	Fuller...	f M&E.....	Col.....	.....
1800	1800	.....	.....	2400	2500	121	32x4	Cont..	6-3¼x4½	25.35	Bay State.....	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Spicer....	¾F Col...	4.67
2950	2950c	.....	.....	3950	3950	121	32x4	Buda.	4-3⅝x5½	22.50	Biddle.....B1 & B5	Zenith..	G-D.....	Simms.....	s-p Warner .	Warner..	m Spicer....	½F Std...	4.50
5000	5000	.....	.....	.....	7000	125	32x4½	Own..	4-4 x5½	25.60	Brewster.....91	Zenith..	USL.....	Bosch.....	c Own....	Own....	F Own.....	F Own..	3.92
865	885	725g	.....	1175	{1395 {1325	109	31x4	Own..	4-4⅜x4¼	18.23	Buick..1923-34-5-6-7-38	Marvel..	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	¾F Own..	4.66
1175	1195	975g	.....	1935	1985	118	33x4	Own..	6-3⅝x4½	27.34	Buick....1923-41-4-5-47	Marvel..	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	¾F Own..	4.60
.....	.....	1435	{1625a {1675c	1895	2195	124	34x4½	Own..	6-3⅝x4½	27.34	Buick.1923-48-9-50-4-55	Marvel..	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	¾F Own..	4.90
3100	3150	3150	.....	{3875a {3925d	4100	132	33x5	Own..	8-3½x5½	31.25	Cadillac.....61	Own....	Delco.....	Delco.....	m-d Own....	Own....	m Spicer....	F Tim...	4.50
1750	1790	.....	.....	2480	2575	122	32x4½	Cont..	6-3⅜x4½	27.34	Case.....X	Rayfield.	Delco.....	Delco.....	m-d Own....	Own....	f Snead	½F Col...	5.25
.....	1990	2250	1950	2480	2975	129	34x4½	Cont..	6-3⅝x5¼	31.54	Case.....W	Rayfield.	Delco.....	Delco.....	m-d Own....	Own....	f Arvac.....	¾F Col...	4.45
1185	1185	.....	.....	1595	2295	117	32x4	Own..	6-3¼x4½	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own....	m Hardy.....	½F Adams	5.13
.....	.....	1345	.....	.....	.....	122	32x4	Own..	6-3¼x4½	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own....	m Hardy.....	½F Adams	5.13
1495	1495c	1645	1595a	1995c	{2295d {2375f	123	33x4	Own..	6-3½x5	29.40	Chandler.....Six	Rayfield.	Bosch.....	Bosch.....	s-p B&B....	Own....	f Own.....	F Own..	4.45
510	525	425g	.....	{ 840c {680k	860	102	30x3½	Own..	4-3 11/16x4	21.53	Chevrolet.....Superior	Zenith . Holley .	A-L.....	Remy.... A-L.....	c Own....	Own....	m Own.....	½F Own..	3.66
1085	995	.....	1260	1295d	1495	112	32x4	Own..	6-3 1/16x4½	22.50	Cleveland.....41	Strom...	Bosch.....	Bosch.....	s-p Own....	Own....	m Mech.....	¾F Own..	4.45
2685	.....	2685	2685c	3285b	{3285c {3685 f	127¼	33x5	Nort..	8-3⅜x4½	39.20	Cole.....890	Johnson.	Delco.....	Delco.....	c North...	North...	m Spicer....	F Col...	4.46
1475	1475	.....	1475c	1925c	1995d	115	32x4	Cont..	6-3⅛x4½	27.34	Columbia.....Elite	Strom...	A-L.....	A-K.....	s-p B&B....	Durston.	m Spicer....	¾F Tim...	.....
995	985	.....	.....	.....	1395d	115	31x4	Cont..	6-3½x4¼	23.44	Columbia.....Light Six	Strom...	A-L.....	A-L.....	s-p B&B....	Durston.	m Spicer....	¾F Tim...	.....
.....	1985	3085f	.....	2985d	3085f	125	33x4½	Cont..	6-3½x5½	29.40	Comet.....C-53	Strom...	Wagner..	Wagner..	s-p B&B....	Muncie..	m Arvac.....	¾F Col...	4.45
1395	1395	.....	{1495b {1495c	2065b	2165d	116	32x4	Falls.	6-3½x4¼	23.44	Courier.....	Till.....	Bijur.....	A-K.....	s-p B&B....	Muncie..	f Norwalk.	¾F Col...	5.00
3000	3000	3000	.....	.....	4500	122½	32x4	Cont..	6-3⅝x5½	31.54	Crawford.....22-6-60	Strom...	West.....	Bosch.....	m-d B-L.....	B-L.....	Spicer....	½F Tim...	....
.....	.....	.....	3500	.....	.....	135	33x5	Cont..	6-3⅝x5¼	31.54	Crawford-Dagmar...6-60	Zenith..	West.....	Bosch.....	m-d B-L.....	B-L.....	Spicer....	½F Tim...	....
.....	.....	.....	.....	.....	.....	142	33x5	Own..	8-3⅜x5	45.00	Cunningham.....V	Strom...	Delco.....	Delco.....	m-d Own....	Own....	f Snead.....	F Tim...	4.23
4350b	4350c	4350	.....	5250	6000	132	33x5	Own..	8-3½x5½	39.20	Daniels.....D-19	Zenith..	Delco.....	Delco.....	m-d Own....	Own....	m Spicer....	F Tim...	....
.....	1295	.....	1495	1795	1795	114	31x4	Cont..	6-3½x4¼	23.44	Davis.....71	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Peters....	½F Tim...	5.10
1595	1595	.....	1695	2095	.....	120	32x4	Cont..	6-3⅝x4½	27.34	Davis.....61-67	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Peters....	¾F Tim...	5.15
1175	1175	1295c	1245	1545	1595	112	32x4	H-S...	4-3½x5	19.60	Dixie Flyer.....H-S-70	Strom...	Dyneto...	Eisemann..	s-p B&B....	G-L.....	f Hardy.....	F Peru..	4.75
850	880	.....	.....	980b	1195d	114	32x4	Own..	4-3⅞x4½	24.03	Dodge Brothers.....	Stewart..	N.E.....	N.E.....	m-d Own....	Own....	m Own.....	½F Own..	4.16
3350	3950c	3950	.....	4985c	5750f	132	33x5	Own..	6-4 x5	38.40	Derris.....6-80	Strom...	West.....	Bosch.....	m-d Own....	Warner..	m Spicer....	F Tim...	4.23
865	865	.....	{1015a {1015d	{1240 {1020k	{1370 {1070k	108	31x4	D-Ly.	4-3½x5	19.60	Dort.....19-14	Carter..	Bosch.....	Conn.....	m-d Detlaff..	Own....	m Mech.....	¾F Flint..	4.66
990	990	.....	.....	{1145 {1365 {1495	{1195 {1495	115	31x4	Falls..	6-3⅛x4¼	23.44	Dort.....25-20	Carter..	Bosch.....	Bosch.....	m-d Detlaff..	Own....	Mech.....	¾F Flint..	4.66
1275	1275	.....	.....	1650	1975	104	30x3½	Own..	4-2⅝x4¼	11.03	Driggs.....	Zenith..	Bosch.....	Bosch.....	s-p Hoos....	Mech....	m Spicer....	¾F Own..	4.75
6500	6500	6750	.....	7800	7800	134	33x5	Own..	8-2⅞x5	26.45	Duesenberg...Straight 8	Strom...	Delco.....	Delco.....	s-p Own....	Own....	f Own.....	½F Own..	4.81
3000	3200	.....	.....	3800	4000	124	32x4½	Own..	4-3 11/16x5½	24.81	Du Pont.....A	Y&T.....	West.....	Eisemann..	m-d B-L.....	B-L.....	m Spicer....	Col...	4.50
890	890	.....	.....	1365	1365	109	31x4	Cont..	4-3⅛x4¼	24.03	Durant.....A-22	Till.....	A-L.....	A-L.....	s-p Own....	Own....	m,f Spicer..	¾F Adams	4.30
1600	1650	.....	.....	2250	2400	123½	32x4½	Anst..	6-3¼x4½	25.35	Durant.....B-22	Rayfield.	A-L.....	A-L.....	s-p Ansted..	Warner..	m,f Spicer..	½F Tim...	5.15
1485	1095	950g	.....	1395c	1795	112	32x4	Own..	4-3 1/16x5¼	18.91	Earl.....40	Scoe....	A-L.....	Conn.....	s-p B&B....	Own....	f Own.....	½F Own..	3.66
1095	1095	.....	1095	1345	.....	118	33x4	Lyc...	4-3½x5	19.60	Elcar.....K-4	Strom...	Delco.....	Delco.....	s-p B&B....	Muncie..	m Peters....	¾F Salis..	4.50
1395	1395	.....	1395	1975	2065	118	33x4	Cont..	6-3⅛x4¼	27.34	Elcar.....8-R	Strom...	Delco.....	Delco.....	m-d Warner .	Warner..	m Spicer....	¾F Salis..	4.50
1125c	1125	.....	1165	1695	1645	118	33x4	Falls..	6-3⅛x4¼	23.44	Elgin.....K-1	Strom...	West.....	Wagner...	s-p B&B....	Mech....	m Mech.....	¾F Col...	4.66
.....	1045	.....	.....	1145k	{1895 {1245k	108½	32x4	Own..	4-3⅜x5	18.23	Essex.....	Own....	Bosch.....	Bosch.....	m-d Own....	Own....	m Spicer....	½F Own..	4.66
269r	298s	235g	.....	530	{595 {725	100	30x3½	Own..	4-3¾x4	22.50	Ford.....T	Own....	Own.....	Own.....	m-d Own....	Own....	m Own.....	½F Own..	3.63
3900	3900	.....	.....	4900	4900	132	32x4½	Own..	6-3⅝x5	27.34	Fox.....7F	Zenith..	West.....	Bosch.....	m-d B-L.....	B-L.....	Spicer....	½F Tim...	4.45
1900	1950	1750g	.....	2750	2850	115	32x4	Own..	6-3½x4	25.35	Franklin.....10	Own....	N.E.....	A-K.....	s-p B&B....	Own....	m Spicer....	½F Own..	4.73
895	895	.....	.....	1095k	1345d	112	32x4	Lyc...	4-3½x5	29.60	Gardner.....T-R & G	Carter..	West.....	West.....	s-p B&B....	Mech....	m Mech.....	¾F Flint..	4.80
1385	1385	.....	.....	1895	1945	116	32x4	Own..	6-3 1/16x4½	23.44	Grant.....	Strom...	Bijur.....	A-K.....	s-p B&B....	Durston.	m Spicer....	¾F Col...	4.66
490	490	.....	.....	.....	760	100	30x3½	Own..	4-3⅝x4	21.03	Gray.....	Scoe....	West.....	West.....	m-d Own....	Detroit..	m Mech.....	½F Tim...	3.90
2475	2475c	.....	3250	.....	3475	120	32x4½	Weid..	4-3¾x5½	22.50	H.C.S.....Series 4	Strom...	Delco.....	Delco.....	m-d B-L.....	B-L.....	m Spicer....	¾F Own..	.....
.....	.....	2650	.....	3450	3450	125	32x4½	Own..	4-4⅛x4½	27.23	Handley-Knight.....	Till.....	A-L.....	A-L.....	m-d Warner .	Warner..	m Spicer....	½F Tim...	4.90
.....	995	.....	.....	.....	.....	114	31x4	Cont..	6-3½x4¼	25.35	Hansen.....30	Marvel..	Delco.....	Delco.....	s-p B&B....	Detroit..	.....	¾F Tim...	....
1595	1595	1795	.....	2475c	2585	121	32x4	Cont..	6-3⅜x4½	27.34	Hanson.....60	Marvel..	Delco.....	Delco.....	s-p B&B....	Detroit..	.....	¾F Tim...	.....
.....	1345	1345c	.....	1950	1950	115	32x4	H-S...	4-3½x5	19.60	Hatfield.....A-42	Zenith..	Dyneto...	Conn.....	s-p B&B....	G-L.....	m Spicer....	¾F Col...	4.66
2395	2395c	2395	.....	3095d	3395	132	33x5	Own..	6-3½x5 3/16	29.40	Haynes.....75	Strom...	L-N.....	King.....	s-p Warner .	Own....	m Universal..	¾F Own..	4.60
1545	1495	.....	{1895a {1895d	{2035b {2135p	{2395d {2695p	121	32x4½	Own..	6-3½x5	29.40	Haynes.....55	Rayfield.	L-N.....	King.....	s-p Warner .	Own....	m Universal..	½F Own..	4.11
.....	2500c	2500	.....	3300c	3600f	126	34x4½	Own..	6-3½x4¼	29.40	Holmes.....Series 4	Strom...	Dyneto...	Eisemann..	m-d B-L.....	B-L.....	m Spicer....	½F Tim...	4.90
.....	1525c	1575	.....	2570c	{1625k {2295	126	34x4½	Own..	6-3½x5	29.40	Hudson.....Super 6	Own....	Bosch.....	Bosch.....	m-d Own....	Own....	m Spicer....	½F Own..	4.45
1395	1395	.....	.....	.....	2295	120	32x4	Cont..	6-3⅝x4½	27 34	Huffman.....	Strom...	Dyneto...	Conn.....	s-p B&B....	Covert..	.....	F Salis..	.....
{1150 {1025g	1150	.....	1250a	{1635 {1335k	1785	112	32x4	Own..	4-3¼x5½	16.90	Hupmobile.....Series R	Strom...	West.....	A-K.....	m-d Own....	Own....	m Universal..	¾F Own..	4.87
.....	1485	1685c	.....	2985	2985	121	32x4½	Cont..	6-3¼x4½	25.35	Jackson.....638	Strom...	A-L.....	Remy.....	s-p B&B....	Covert..	f Snead.....	¾F Salis..	4.75
995b	995	.....	1095a	1445c	1465d	112	31x4	Own..	6-3¼x5	25.35	Jewett.....Six	Strom...	Remy.....	A-K.....	m-d Long....	Warner..	m Mech.....	½F Tim...	4.45
1895	1795	.....	.....	2785	2485	120	32x4	Own..	6-3 1/16x4¼	26.38	Jordan.....MX	Strom...	Delco.....	Delco.....	s-p Detroit..	Detroit..	m Spicer....	½F Tim...	4.42
.....	.....	.....	2150c	.....	.....	124	32x4	Own..	6-3 1/16x4¼	26.34	Jordan.....H	Strom...	Delco.....	Delco.....	s-p Detroit..	Detroit..	m Universal..	½F Tim...	4.42
.....	985	.....	.....	.....	1450	111	32x3½	Gray..	4-3½x5	19.60	Kelsey.....4	Scoe....	Bosch.....	Bosch.....	f-d Own....	f-d Own..	.....	Own..	4.50
.....	985	.....	.....	.....	1450	111	32x3½	Gray..	4-3½x5	19.60	Kelsey.....4	Scoe ..	Bosch.....	Bosch.....	s-p B&B....	Detroit..	Snead.....	½F Std...	4.75
.....	1525	.....	.....	.....	2175	118	32x4	Walk'r	6-3⅛x4¼	23.44	Kelsey.....6	Strom...	Bijur.....	Bosch.....	f-d Own....	f-d Own..	.....	Own..	....
5000	5000	5250	.....	5000	6000	130	32x4½	Own..	8-3 x5¼	28.80	Kenworthy.....8-90	.....	.....	.....	.....	.....	.....	.....	.....
1795	1795	.....	1795c	2400	2550	120	32x4½	Own..	8-3 x5	28.80	King.....K	Ball&B	West.....	A-K.....	s-p Detroit..	Own....	f Hardy.....	F Col...	4.08
.....	.....	.....	.....	1995	2550f	124	32x4½	Own..	8-3 x5	28.80	King.....K	Ball&B..	West.....	A-K.....	s-p Detroit..	Own....	f Hardy.....	F Col...	4.08
.....	1885	2385	2385c	2975c	3075	124	32x4½	Own..	6-3 1/16x5½	26.38	Kissel.....45	Strom...	Remy.....	Remy.....	m-d Warner .	Warner..	m Spicer....	F Own..	3.92
1690	1690	1690	1890	2750	2890	121	33x4	Cont..	6-3⅝x4½	27.34	Kline Kar.....6-55-K	Rayfield.	Wagner...	Conn.....	s-p B&B....	G-L.....	f Snead.....	½F Std...	4.75

MISCELLANEOUS

a—2 Passenger,
b—3 Passenger,
c—4 Passenger,
d—5 Passenger,
e—6 Passenger,
f—7 Passenger,
g—Chassis Price,
h—All Metal Type,
k—Soft Top Type,
n—Tire Size 32x4½,
p—Sport.
r—Price without starter and demountable rims. Price, complete, $364
s—Price without starter and demountable rims. Price, complete, $398.
†Standard Phaetons.

ENGINE

Anst—Ansted
Cont—Continental
D.-Ly—Dort Lycoming
H-S—Herschell-Spillman
Lyc—Lycoming
Nort—Northway
Walk'r—Walker
Weid—Weidely

CARBURETOR

Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg
Y & T—Yale & Towne

CLUTCH

f-d—Friction drive
c—Cone
m-d—Multiple disc
s-p—Single plate
B & B—Borg & Beck
B-L—Brown-Lipe
North—Northway

STARTING, LIGHTING IGNITION

A-L—Auto Lite
G-D—Gray & Davis
L-N—Leece Neville
N. E.—North East
West—Westinghouse

GEARSET

f-d—Friction Drive
B-L—Brown-Lipe
G-L—Grant-Lees
Mech—Mechanics
North—Northway

UNIVERSAL

f—fabric
m—metal
M &E—Merchant & Evans
Mech—Mechanics

REAR AXLE

F—Floating
½F—Semi-Floating
¾F—Three-Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
Tim—Timken

The following price changes have been announced since the above table was compiled: King, K roadster $1,495, 5-passenger phaeton $1,495, 4-passenger sport $1,495, coupe $2,300, sedan (regular) $2,400.

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (N.A.C.C.)	NAME AND MODEL	Carburetor	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle: Floating, Semi-Floating, Three-Quarter Floating, Full Floating	†Gear Ratio
$3985	$4090c	$4090	.....	$5500	$5500	132	33x5	Own..	8-3¼x5¼	33.80	LaFayette	Johnson	Delco	Delco	m-d Own	Own	m Own	F Own	4.88
5500	5500	5500	.....	5500	5500	134	32x4½	Own..	6-3¼x5¼	33.75	Leach	Rayfield	Delco	Delco	m-d	Own	m,f	Tim	
1695	1695	1795	$2045d	2345c	2515d	123	32x4½	Anst..	6-3½x4½	25.35	Lexington	Rayfield	G-D	Conn	m-d Ansted	Warner	f Snead	¾F Own	5.10
	1995	2095			2145d														
1575	1395	.....	1575	2085	2245	117	32x4	Own..	6-3½x5	23.44	Liberty 10-D	Strom	Wagner	Wagner	s-p B&B	Detroit	m Spicer	½F Tim	4.80
				1695k															
3800	3800c	3800	.....	4400d	4700d	136	33x5	Own..	8-3½x5	36.45	Lincoln	Strom	Delco	Delco	m-d Own	Own	m Spicer	F Tim	4.58
.....	7600c	7600	.....	10500	11000	142	35x5	Own..	6-4½x5½	48.60	Locomobile 48	Ball&B	West	Delco	m-d Own	Own	m Own	F Own	3.50
3385	3185c	3185	.....	3985	4385	136	32x4½	Own..	6-3¾x5⅛	33.75	Marmon 34	Strom	Delco	Delco	m-d Own	Own	m Spicer	¾F Own	3.75
885	885	.....	.....	985	1335	100	31x4	Own..	4-3¾x4½	21.03	Maxwell	Stewart	A-L	Simms	c Own	Own		¾F Own	4.56
				1235															
6300	6300c	6300	.....	7500	7500	140	33x5	Own..	6-4½x6	48.60	McFarlan 1922	Rayfield	West	Delco	s-p B&B	B-L	m Peters	F Tim	3.50
3950	3950c	3950c	.....	4850	5250	132	32x4½	Own..	4-3¾x6⅜	22.50	Mercer Series 5	Ball&B	West	Eisemann	m-d Own	Own	m Spicer	F Own	3.97
.....	3750	3750	.....	5000	5000	132	32x4½	Own..	6-3¾x5	33.75	Mercer 6	Strom	.....	Eisemann	.....	.....	.....	¼F	3.77
1895	1895	.....	.....	.....	.....	119	32x4	Cont..	6-3½x4½	25.35	Merit	Strom	Delco	Delco	s-p B&B	Muncie	f Snead	F Col	4.60
1490b	1590	.....	1850c	2050c	2275d	120	32x4	Own..	6-3½x5	29.40	Mitchell F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4.42
.....	.....	1690	.....	.....	.....	127	32x4½	Own..	6-3½x5	29.40	Mitchell F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4.42
950	950	.....	.....	.....	.....	115	32x4½	Own..	4-3¼x4½	16.90	Monroe 1922-S-J	Zenith	A-L	Conn	m-d Own	Mech	m Universal	¾F Own	5.30
1295	1195	p1445d	1885c	1585c	1695	115	31x4	Cont..	6-3⅛x4½	23.44	Moon 6-40	Strom	Delco	Delco	s-p B&B	Warner	m Spicer	½F Tim	4.90
1785	1785	1785	1885	2785	2785f	128	33x4½	Cont..	6-3⅝x4½	27.34	Moon 6-58	Strom	Delco	Delco	B&B	B-L	m Spicer	½F Tim	5.09
					2485e														
1210	1240	.....	1395c	.....	2040d	121	33x4	Own..	6-3¼x5	25.35	Nash 691-96-97	Marvel	Delco	Delco	s-p B&B	Own	m Own	½F Own	4.50
.....	.....	1390	1645	1890c	2190f	127	34x4½	Own..	6-3¼x5	25.35	Nash 692-94-95	Marvel	Delco	Delco	s-p B&B	Own	m Own	½F Own	4.50
915	935	.....	.....	1385b	1545d	112	33x4	Own..	4-3⅝x5	19.23	Nash Four 41-4	Schebler	Delco	Delco	s-p B&B	Own	m Own	½F Own	4.88
				1195k	1275k														
2475b	2475c	2375	.....	3250c	3825f	130	32x4½	Own..	6-3½x5¼	29.40	National BB	Rayfield	West	Delco	s-p B&B	B-L	m Arvac	F Col	4.08
		3150		3725e															
2500	2500c	2600c	.....	.....	3500d	128	32x4½	Cont..	6-3¼x4½	25.35	Noma 3C	Claudel	Delco	Delco	s-p B&B	Detroit	m Spicer	½F Tim	4.45
2500	2500	.....	.....	.....	5500	128	33x5	Bea..	6-3½x5¼	29.40	Noma 1D	Zenith	Delco	Delco	s-p B&B	Detroit	f Spicer	½F Tim	4.45
.....	1035	.....	.....	.....	.....	116	32x3½	Lyc..	4-3½x5	19.60	Norwalk 430-KS	Zenith	Dyneto	Delco	s-p B&B	G-L	m Universal	¾F Col	5.00
975	995	795g	1165c	1445d	1545	115	32x4	Own..	6-2¾x4¾	18.99	Oakland 6-44	Marvel	Remy	Remy	c Own	Muncie	m Mech	F Own	4.33
				1185a															
3750c	3750	3850	3750c	4500c	4800f	134	33x5	Cont..	6-3⅝x5¼	31.51	Ogren 6 T D Luxe	Rayfield	Bosch	Bosch	m-d B-L	B-L	m	F Col	4.00
955	975	1350d	1075	1475	1595	115	32x4	Own..	4-3¼x5¼	21.86	Oldsmobile 43 A	Zenith	A-L	Remy	s-p B&B	Warner	m Own	¾F Own	4.33
1735c	1850	1735	.....	.....	.....	122	33x4½	Own..	8-2⅞x4¾	26.45	Oldsmobile 46	Ball&B	Delco	Delco	c Own	Warner	m Own	¾F Own	4.43
1625g	1375	.....	1675	1875	2025	115	32x4	Own..	8-2⅞x4½	26.45	Oldsmobile 47	Johnson	Delco	Delco	s-p B&R	Warner	m Spicer	¾F Own	5.10
525	525	.....	425g	795	875	100	30x3½	Own..	4-3⅜x4	18.23	Overland 4	Till	A-L	Conn	s-p B&B	Own	m Own	½F Own	4.50
2185	2185	2250g	.....	3175	3275	126	33x4½	Own..	6-3⅜x5	27.34	Packard Single-Six	Own	A-K	Delco	m-d Own	Own	f Spicer	½F Own	4.30
.....	2350g	2685	.....	.....	3525	133	33x4½	Own..	6-3⅜x5	27.31	Packard Single-Six	Own	A-K	Delco	m-d Own	Own	f Spicer	½F Own	4.66
3850	3850	3850	.....	5240	5400	136	35x5	Own..	12-3x 5	43.20	Packard Twin-Six	Own	Bijur	Delco	m-d Own	Own	m Spicer	½F Own	4.36
1165	1465	1290g	.....	1995	2245	119	32x4	Own..	6-3¼x5	25.35	Paige 6-44	Strom	Remy	A-K	s-p Long	Own	m Universal	¾F Salis	4.75
2195b	.....	2195	2245	3100	3155	131	33x4½	Cont..	6-3⅜x5	33.75	Paige 6-66	Rayfield	Remy	A-K	s-p Long	Warner	m Mech	½F Tim	4.60
.....	1330	1475	.....	2295	2395	120	32x4½	Cont..	6-3⅜x4½	27.34	Paterson 22-6-52	Strom	Delco	Delco	s-p B&B	Durston	m Hartford	½F Std	4.50
.....	2990c	2990	.....	3300h	3990d	128	33x5	Own..	8-3¼x5	33.80	Peerless 23	Ball&B	Delco	Delco	m-d Own	Own	M Spicer	¾F Tim	4.90
				3100c	4090f														
5250	5250c	5250	.....	6800	6900	138	33x5	Own..	6-4 x5½	38.40	Pierce-Arrow	Own	Delco	Delco	m-d Own	Own	m Spicer	½F Own	3.93
					7000														
2050	2090	2050	.....	2950	3000	126	32x11½	H-S..	6-3¼x5	25.35	Pilot 6-50	Till	Bijur	Conn	s-p B&B	Muncie	m Hartford	¾F Col	4.33
3150	3100c	3250	.....	4300	5100	126¾	32x4½	Own..	6-3⅜x5½	27.34	Premier 6-D	Johnson	Delco	Delco	s-p B&B	Own	m Spicer	¾F	4.58
1095	1095	.....	.....	1750	1825	117	32x4	Falls	6-3⅛x4¼	23.44	Premocar 6-40-A	Strom	Wagner	Wagner	s-p B&B	Mech	m Spicer	¾F	4.66
.....	1665	.....	.....	2385	2475	116	32x4	Own..	4-3¾x5	22.50	R & V Knight R	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	F Salis	4.75
2475	2475c	2475	.....	3015	3105	127	32x11½	Own..	6-3½x4½	29.40	R & V Knight J	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	½F Tim	4.90
1595	1615	1485	1745	2355c	2435f	120	33x4	Own..	6-3⅛x5	24.34	Reo T6 & U6	Rayfield	N.E	N.E	m-d Own	Own	m,f Own	½F Own	4.70
				1835	1885														
3200	3200	3200	.....	.....	4000	131	32x4½	Dues	4-4¼x6	28.90	ReVere C	Strom	West	Bosch	m-d B-L	B-L	m Spicer	¾F Std	4.00
.....	1185	.....	.....	1885	1985	117	32x4	Own	6-3½x4¾	23.44	Rickenbacker A	Strom	Simms	A-K	c Own	Own	m Universal	¾F Own	.....
2695	2485c	2635	.....	3595	3585	128	32x11½	Cont	6-3½x5¼	29.40	Roamer 6-54-E	Strom	Bijur	Bosch	s-p G-L	G-L	f Snead	½F Tim	4.88
3785	3485	3650c	3650c	.....	4650c	128	32x11½	Duc	4-4¼x6	28.90	Roamer 4-75-E	Strom	Bijur	Splitdorf	m-d B-L	B-L	f Snead	½F Tim	3.77
.....	10000	.....	.....	.....	.....	143½	35x5	Own	6-4½x4¾	48.60	Rolls-Royce	Own	Bijur	Bijur	c Own	Own	m Own	F Own	3.25
1195	1195	.....	.....	1795	1795	112	32x4	Own	4-3½x5	19.60	Saxon 125	Strom	Wagner	Wagner	s-p Detiaff	Covert	m Peters	¾F	4.75
1615	1615	.....	.....	2615	2615	118	33x4	Cont	6-3¼x4½	25.35	Sayers Six DP	Strom	Delco	Delco	s-p B&B	G-L	m Arvac	½F Std	4.75
875	875	.....	.....	.....	.....	108	30x3½	Lyc	4-3½x5	19.60	Seneca L-2 & O-2	Zenith	A-L	A-L	s-p B&B	G-L	m Universal	F	4.75
1095	1095	.....	.....	.....	.....	112	31x4	Lyc	4-3½x5	19.60	Seneca 50 & 51	Zenith	A-L	A-L	s-p B&B	G-L	Detroit	F	4.50
980	980	.....	.....	1685	1685	114	32x4	Supr	4-3⅜x5	18.23	Sperling A	Zenith	Bijur	Splitdorf	s-p B&B	Warner	m Hartford	¾F Peru	.....
2150	.....	2395	2395	2750	3200	127	34x4½	Own	8-3¼x5	33.80	Standard 98	Zenith	West	Splitdorf	s-p B&B	G-L	m Arvac	½F Tim	4.45
2750	2750	2750	2425g	3950e	3985f	130	32x4½	Own	2-4 x5	.....	Stanley 740	None	Bijur	None	None	None	None	½F Own	4.50
1765	1765	.....	.....	2750	.....	118	33x4	Cont	6-3¼x4½	25.35	Stanwood Six	Strom	West	A-K	s-p B&B	G-L	m Peters	½F Std	4.50
319r	318s	285g	.....	580	615	102	30x3½	Cont	4-3⅛x4¼	15.63	Star	Till	A-L	A-L	s-p	.....	Spicer	Tim	4.87
2250	2250	2450	.....	3150	3450	125	34x4½	Own	4-3⅜x5⅝	22.50	Stearns-Knight SKL4	Rayfield	West	A-K	m-d Own	Own	f Climax	½F Own	4.50
2700	2700	2850	.....	3500	3700	130	34x4½	Own	6-3⅜x5	27.34	Stearns-Knight :6	Rayfield	West	A-K	m-d Own	Own	f Climax	½F Own	4.50
1575	1585c	1625c	.....	2150	2550	122	33x4½	Own	6-3¼x4½	25.35	Stephens 90	Till	A-L	A-L	s-p B&B	Mech	m Mech	½F Tim	4.90
7250	6900e	6800	6900e	8600	8900e	138	35x5	Own	6-4⅞x5½	47.27	Stevens-Duryea E	Strom	West	Berling	m-d Own	Own	m Own	F Own	3.94
			5600g																
975	975	785g	.....	1225	1550	112	32x4	Own	6-3¼x4½	23.44	Studebaker Light Six	Strom	Wagner	Wagner	s-p Own	Own	f Thermoid	½F Own	4.55
1250	1275	1275c	1000g	1875	2050	119	32x4	Own	6-3½x5	29.40	Studebaker Special Six	Strom	Wagner	Wagner	s-p Own	Own	m Spicer	½F Own	4.00
1275c																			
1300g	1650	.....	1785	2275	2475	126	33x4½	Own	6-3⅞x5	31.01	Studebaker Big Six	Ball&B	Wagner	Wagner	s-p Own	Own	m Spicer	½F Own	3.70
2450	2790c	2640e	2670a	3490	4450	130	32x4½	Own	4-4¾x6	30.63	Stutz KLDH	Strom	Remy	Delco	m-d Warner	Own	m Hartford	½F Own	3.50
	3165c	3015																	
2025	2125	2175c	.....	2650e	2785	118	32x4	Own	4-3⅜x5½	18.23	Templar A-445	Strom	Bijur	Simms	s-p B&B	Detroit	f Snead	¼F Us	4.40
1175	1175	.....	.....	.....	.....	117	33x4	H-S	4-3½x5	19.60	Tuba E-1-2-3	Zenith	Dyneto	Conn	s-p B&B	Muncie	m	F Salis	4.50
1275	1275	.....	1305	1795	1795	115	32x4	Own	6-3⅛x4¼	23.44	Velie 58	Strom	West	A-K	s-p Dooley	Durston	m Thiemer	¾F Own	4.66
.....	1990f	1890	.....	.....	2890	125	32x4½	Cont	6-3⅛x5½	29.40	Westcott D-46	Rayfield	Delco	Delco	s-p B&B	B-L	m Peters	¼F Tim	4.45
.....	1600	.....	1890	.....	2690	120	32x4	Cont	6-3¼x4½	25.35	Westcott B-44	Rayfield	Delco	Delco	s-p B&B	Warner	m Peters	½F Col	4.33
2475	2475	.....	.....	3275	3175	121	32x4½	Own	8-3¼x4	33.80	Wills Sainte Claire A-68	Zenith	Delco	Delco	m-d Own	Own	m Mech	¾F Own	4.45
1235	1235	1375	.....	1795	1950	118	32x4	Own	4-3⅜x4¼	21.03	Willys-Knight 20	Till	A-L	A-L	m-d Own	Own	f Own	¾F Own	4.44
3400	.....	3100	3600	4000	4550	132	33x5	Own	6-3⅜x5½	33.75	Winton 40	Rayfield	Delco	Delco	m-d Warner	Warner	f Climax	¾F Tim	4.66

MISCELLANEOUS
a—2 Passenger, d—5 Passenger
b—3 Passenger, e—6 Passenger,
c—4 Passenger, f—7 Passenger
g—Chassis Price.
h—All Metal Type,
k—Soft Top Type.
n—Tire Size 32x4½.
p—Sport.
r—Price without starter and demountable rims. Price, complete, $414.
s—Price without starter and demountable rims. Price, complete, $443.
†Standard Phaetons.

ENGINE
Anst—Ansted
Bea—Beaver
Cont—Continental
Dues—Duesenberg
H-S—Herschell-Spillman
Lyc—Lycoming
Supr—Supreme

CARBURETOR
Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg

STARTING, LIGHTING IGNITION
A-L—Auto Lite
G-D—Gray & Davis
L-N—Leece Neville
N E.—North East
West—Westinghouse

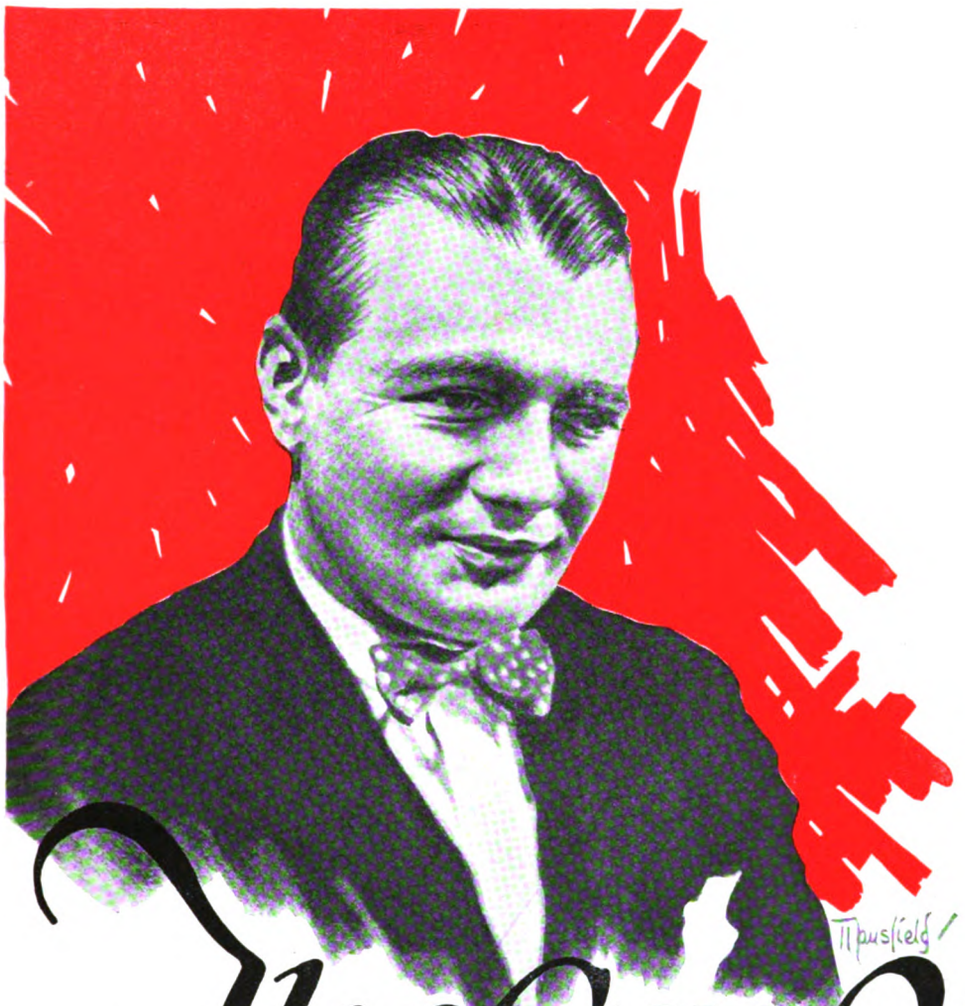
CLUTCH
c—Cone
f-d—Friction drive
m-d—Multiple disc
s-p—Single plate
B & B—Borg & Beck
B-L—Brown-Lipe

GEARSET
f-d—Friction Drive
B-L—Brown-Lipe
G-L—Grant-Lees
Mech—Mechanics

UNIVERSAL
f—fabric
m—metal
M&E—Merchant & Evans
Mech—Mechanics

REAR AXLE
F—Floating
½ Floating—Semi-Floating
¾ F—Three-Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
Tim—Timken

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AHLBERG BEARING COMPANY

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Chandler's Successful History Attracts Successful Dealers

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CLEVELAND

Export Dept., 1819 Broadway, New York
Cable Address, "Chanmotor"

CHANDLER SIX

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

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Champions
For Every Engine Everywhere

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"Yes, I would like to have a Portable Electric Drill, but I can't see my way clear to tying up $85 or $100 right at this time. I wouldn't use the drill enough to make it worth while."

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If you don't want to invest the full amount, you can make a small down payment, and take care of the balance in small monthly payments.

YOU CAN MAKE THE TOOL PAY FOR ITSELF

And when it is paid for, it goes right on earning extra money for you.

THE AMOUNT OF TIME YOU SPEND DRILLING HOLES IS ASTONISHING

A Portable Electric Drill is very much like a hammer. You pick it up and use it for a few seconds and lay it down. You do this thousands of times. You use it more than you realize.

666 USES FOR PORTABLE ELECTRIC DRILLS IN AUTOMOTIVE REPAIR SHOPS

As the result of the Black & Decker Prize Contest we have a list of 666 uses for Portable Electric Drills in Automotive Repair Shops, which we will gladly send you on request.

Because--

It has surplus power and does fast work.

It is light in weight, well balanced and easy to handle.

It is controlled *"With the Pistol Grip and Trigger Switch."*

It is arranged so that the cord can be quickly and easily renewed.

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It has a spindle offset for close corner drilling.

It is unusually accessible. All parts are interchangeable.

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MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

Reg. U. S. Pat. Off.

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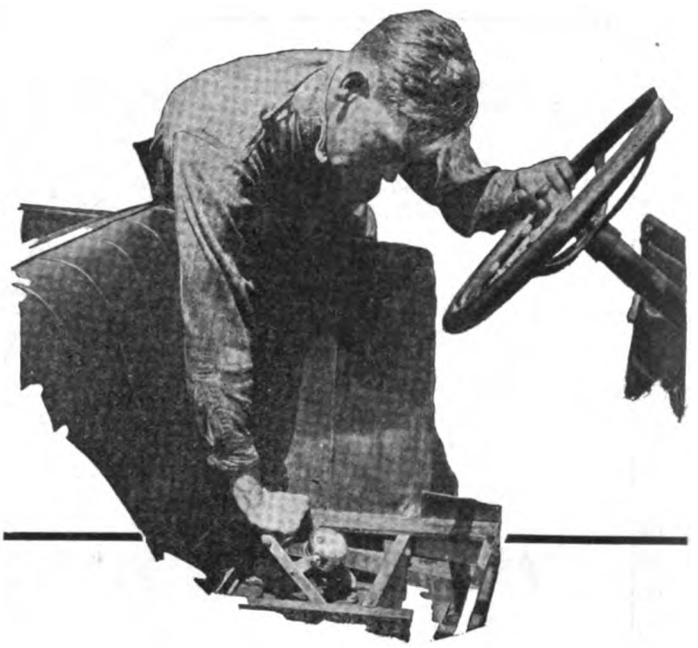
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Leave the Battery In the Car

—the Hoyt Cell Tester will find the weak cell instantly.

No need taking the battery apart or even out of the car when equipped with a Hoyt Cell Tester.

Simply place the two sharp steel prods, one on the positive, the other on the negative terminal of any cell—*and read direct.*

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The high grade "moving coil" voltmeter of the Hoyt, hung on brackets across the two prods, will tell you the battery condition at a glance.

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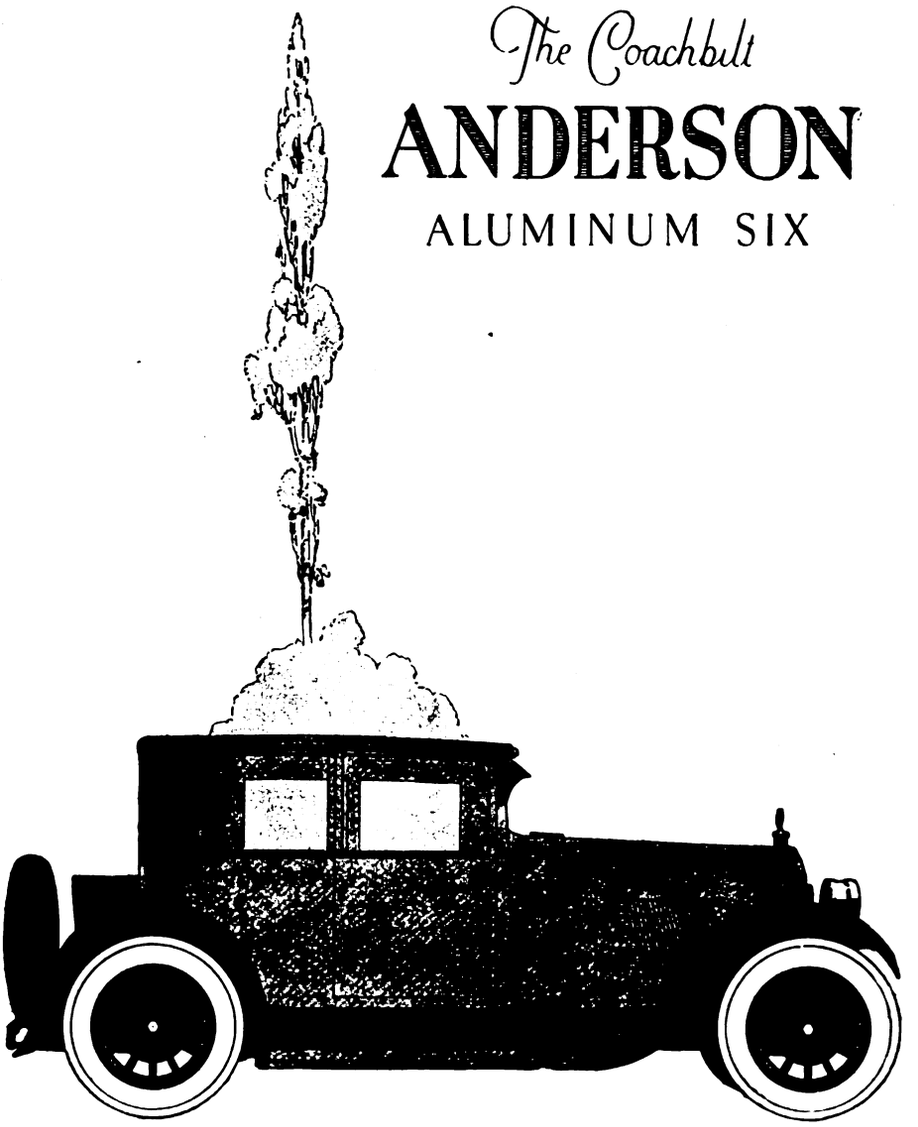
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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXIII New York, U. S. A., Wednesday, November 22, 1922 No. 8

Greatest Equipment Show Is a Business Builder

Exhibit in Chicago Gives Promise of Big Business Gain in 1923—Next Show to Be Closed, but with Modifications —New Push Put Behind Merchandising Campaign

By NEAL G. ADAIR

THE Automotive Equipment Association has just concluded a momentous convention in Chicago. The meeting, attended by 1500 men, saw the greatest exposition of the industry's products ever staged. It revealed prospective business for 1923 which gives every indication of running well ahead of the present year. It united in renewed co-operative efforts the manufacturer and jobber elements in the association, whose divergent views in the early hours of the convention threatened a serious rupture.

The show was the storm center of the convention. It was the association's first closed show, with the doors opening only for members and their representatives. The jobbers wanted the rule continued for the next annual exhibit. The manufacturers insisted on admission of non-member jobbers. Feeling ran high for a day or two but the jobbers saved the day with a compromise offer which the manufacturers unanimously accepted, the compromise making the 1923 show a closed exhibition except to non-member jobbers invited to attend by the board of directors.

THE adoption of the compromise started the convention on a series of harmonious sessions which carried the association to new heights of co-operative action. The merchandising campaign, leading constructive work of the association, was given new endorsement both by manufacturers and jobbers, promising a far broader and more aggressive activity in the next six months than at any time since the inauguration of the movement in the summer of 1921. Nelson H. Oliver, new president of the association, in a keynote address, called merchandising the predominant task of the industry and appealed to the membership to center their energies on merchandising work, for the greater profit of manufacturers, wholesalers and retailers and the greater service to the public.

Association members agreed in large number to get actively into the merchandising campaign, headed by Ray W. Sherman, working to broaden the market for the industry's products by assisting the retailer to realize more fully on the possibilities of service to his public with profit to himself.

Closer Harmony Insured

The convention left the association stronger than at any time in its history. There was wide approval of the suggestion of Howard M. Dine of Canton, Ohio, retiring president that less emphasis be laid on the difference between manufacturer members and jobber members and that all be regarded just as members working for the common good. Commissioner William M. Webster, presiding, did much to aid the process of drawing the two divisions of the membership into closer harmony. The show introduced a large number of new accessory and replacement and shop equipment items which will be described in next week's Motor World.

The convention and show brought together the largest crowd ever assembled at an A. E. A. meeting. At one convention session the doorkeepers counted 1260 men, including a few more than 500 delegates representing the membership. In attendance at the convention and show —manufacturers, jobbers, manufacturers' sales managers and salesmen and jobbers' sales managers, salesmen and buyers—there were fully 1500 persons.

The show, too, set a new record. There were 215 exhibits as compared with less than 200 at last year's show. They presented an inspiring array of the merchandise of the automotive

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equipment industry—garage equipment, including heavy machinery and the lighter tools; accessories for the car and truck, replacement items for all parts of the automobile and tools for resale to the motor vehicle driving public. Billions of dollars of plant investment, hundreds of millions of dollars of annual production were represented in the exhibits, many of them brilliant examples of show merchandising. And in the "audience" —among the jobbers in attendance— there was represented many more millions invested in facilities of distribution.

Show a Business Getter

Even with the restricted attendance of jobbers under the closed show rule, the exhibit was quite generally conceded a better business show than the ones of 1921 and 1920. The smaller attendance gave a greater opportunity for conferences between manufacturers and jobbers and their representatives. The jobbers, because they had initiated the closed show decision, apparently went out of their way somewhat to listen to the sales talks of the exhibitors and, in some cases, to sign distribution contracts and place orders. The bulk of business done, however, and the interest shown by jobbers was not based on sentiment but on the confidence expressed by the majority of jobbers that the gains in business during the past few months are to be continued through 1923.

A few manufacturers complained of light patronage but just as many reported business written far in excess of last year. The bulk of the exhibitors united in terming the show the most successful the association has held.

Next Show Closed "With Modifications"

The manufacturers were not willing, however, to sanction another show with attendance limited to members. Before the exhibit had opened, before there was any opportunity to test the closed show idea, it was seen that the manufacturers were almost unanimously opposed to another exhibit under such rules. As the week wore on and the show presented a vigorous buying interest the manufacturers still stood their ground, contending for the right to show their products to the aggressive jobbers in the trade regardless of their association affiliation or lack of it. They contended that the investment required of the manufacturer for exhibiting entitled him to a larger audience than the less than 200 jobbers in the association. The manufacturers were unwilling, however, to open the show to exhibits of non-member manufacturers should space be available in later expositions.

The jobbers' contention for a closed show was based on their assertion that with hundreds of outside jobbers present the member jobbers are unable to get the attention to which they feel they are entitled from manufacturers and their representatives. Several jobbers told of going home from last year's show without getting a chance to talk with the representatives of several manufacturers whose lines attracted them.

The controversy was deadlocked for awhile, but the jobbers' suggested compromise, contained in a resolution offered by William E. Wissler, the new vice-president of the association, was adopted without opposition and with cheers as soon as it was brought out on the floor.

The fifth annual show, to be held next November in the Coliseum at the same time as the eighth annual convention, will be open for exhibit purposes to member manufacturers only. On the jobbers' side it will be open also to members only except jobbers whose names are approved by the board of directors. Presumably manufacturers and jobbers will submit names of non-member jobbers they would like to have attend, and the list as finally passed upon by the directors will receive formal invitations. This plan will keep the show strictly a wholesale trade show and at the same time will make the attendance more thoroughly representative of the industry than the exhibit just concluded.

Trade Conditions Reported

The gathering of manufacturers and jobbers in Chicago, particularly the assembly of jobbers, gave an opportunity for an interesting check-up on trade conditions.

Allowing for the normal seasonal decline, conditions are improving steadily in nearly all sections of the country. Some of the Rocky Mountain States and a section of the Southwest are still suffering from restricted credit and jobber business has been poor because of dealers' inability to finance purchases either of shop equipment or accessories. In other sections jobbers are still finding it necessary to ship some goods C.O.D., and some business is lost because dealers and garagemen will not buy under this requirement, but generally throughout the country dealers are beginning to get results in "asking 'em to pay," and business this fall is much better than a year ago.

The general run of jobbers at the convention had done 10 to 30 per cent more business, in tonnage, this year than in the same period of 1921. This gave them a dollar and cents result about equal to last year's and in some cases considerably better. Purchases of garage equipment have been on the upgrade for several months.

The New A. E. A. Leaders

The A. E. A. chose its new president from Chicago. He is Nelson H. Oliver, general sales manager of the Metal Specialties Mfg. Co., whose plant is in the Illinois metropolis. He is a former member of the board of directors and a present member of the committee which directs the merchandising campaign. The vice-president comes from the ranks of the jobbers. He is William E. Wissler, head of the automotive equipment department of the Herring Motor Co. of Des Moines, an automotive concern with a passenger car dealership and other interests. He also is on the merchandising committee. The new chairman of the board of directors is Earl V. Hennecke, general sales manager of the Moto-Meter Co., with headquarters in Long Island City, N. Y.

The outstanding accomplishments of the convention were the plans for intensifying the merchandising campaign, benefitting the retail as well as the manufacturing and jobbing divisions of the industry, the perpetuation of the annual business exhibit, which is one of the notable merchandising institutions of the automotive field, and the welding of the two elements of the A. E. A. membership into a more effective working unit.

Speakers outside the industry who addressed the convention were Judge James H. Wilkerson of the United States District Court in Chicago and William A. Durgin of the United States Department of Commerce. Wilkerson's address was a plea for universal respect of the law, and Durgin gave an illustrated talk on elimination of waste and simplified practices, which prompted the A. E. A. standardization committee to change its name to the committee on simplified practices and to make preliminary plans for cooperation with the Society of Automotive Industries and other organizations for simplification of manufacturing practices in the equipment field.

Show a Big One and Well Arranged

In addition to being the largest show yet held by the A. E. A., this year's business exhibit was the most attractive. With 215 manufacturers exhibiting, the demand for space was so great that it was necessary to cut down the allotments of the larger exhibitors from four to three and three to two spaces, and there were indications that, if the exhibit grows next year, as it did this, it will be necessary to engage the armory next to the Coliseum and place some exhibitors there, unless a contemplated second floor is built in the Coliseum.

There were numerous exhibits with a high degree of merchandising development in their arrangement. Numerous manufacturers plainly had spent many hundreds of dollars in special display backgrounds, stands and showcases, some of which not only invited the attention of jobbers but contained suggestion for jobber displays to sell retailers and dealer exhibits to win public attention.

Delegates, alternates and guests realized almost as soon as they had stepped inside the Coliseum that this was the best show staged by their association.

Novelties in Exhibits

There was much to attract attention and cause comment in some of the exhibits. The American Hammered Piston Ring Co., which showed a hammering machine finishing its pistons, had a caliphone mounted behind the hammer. The unseen voice, explaining the hammering process, kept the front of the exhibit crowded most of the time. Van Cleef Bros. had a pair of flaxen-haired "Dutch girls" on duty in the exhibit personifying the company's trade mark. The Quality Piston Ring Co. had a silk-gowned girl in a swing, made of a giant ring. Real girls, surely, swing, swing-

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ing and making the men in the aisles think twice about "quality."

Christmas Sales Promoted

The A. E. A. Merchandising Department got attention for its slogan, "Let's Make This an Automotive Christmas," by dressing an automotive equipment Christmas window, which stood at the front of the convention hall, by using a decorated Christmas tree in its exhibit and by hanging one of its red, white and green slogan cards in every exhibit.

There were many exhibits which had demonstrations as well as displays of their products. Quite a few used miniature movies to illustrate the utility or salability of their merchandise.

New Impetus for Merchandising Campaign

The merchandising campaign, which has been in progress 16 months, with vigorous support by only a minority of manufacturer and jobber members, was given a new start in a testimonial hour during one of the general sessions. A number of jobbers told of increased sales in some lines of equipment, running as high as 100 and 200 per cent, as a result of sales promotion co-operation with their dealers. Two dealers, called into the convention as guests, told how they had built big, profitable automotive equipment businesses in small towns after jobber salesmen had shown them the opportunity.

When the testimonial session was over, one old line jobber from an Eastern State exclaimed:

"Hanged if we haven't been slackers," and turning to the man in the next seat, "What about you?"

"Guilty, too," was the reply, and judging from the applause and the showing of hands when Merchandising Director Sherman asked for promises of support of the department, the next six months will witness a much wider activity in sales promotion work than has been seen at any time since the campaign started.

Little Town Dealer a Convention High Light

The presentation of dealer stories by an Iowa and an Illinois dealer, proved to be among the convention high lights.

John Hall, head of the Hall Motor Co., Ford dealer in Ida Grove, Iowa, was introduced to tell how he had made automotive equipment an important and profitable part of his business, but he progressed into a stirring address on ideas, initiative and hard work as the foundation of salesmanship. Hall proved to be an orator, and not only that, but a logical thinker. He asserted that unwillingness to think was the cause of much of the lack of success in salesmanship, in the manufacturing and jobbing as well as the retail fields. His talk, coming from a dealer, was as startling as it was convincing in this assemblage of manufacturers and jobbers and their representatives. It won for Hall one of the most enthusiastic receptions ever given a speaker before the A. E. A.

Hall said he had never believed in the accessory business and never "bothered" with it until a salesman of the Herring Motor Co., Des Moines jobber, convinced him, after months of patient work, that it was worth trying. It didn't take Hall long, he said, to get his accessory business built up to approximately $1,000 a month, and this in a town of 2000 population. He uses advertising, display, demonstration and "Ask 'em to Buy."

Hall was followed by Louis Weiburg, accessory dealer in Pekin, Ill., in the territory of the Washington Auto Supply Co., of Washington, Ill., George Rinkenberger, president. Weiburg, a typical small town dealer, said he had been doing what he thought was a good business until one of Rinkenberger's salesmen showed him the simple steps in selling accessories at the curb by "asking 'em to buy." Weiburg has been practising this for months with his gas and oil customers and has built up his monthly volume of accessory sales more than 50 per cent, he said.

Jobbers' Stories Convincing

Jobbers who told stories of territory-wide results of sales promotion campaigning included N. F. Ozburn of Ozburn-Abston & Co., Memphis, Tenn.; L. A. Cavanaugh of the Motor Car Supply Co., Ltd., Calgary, Canada, and C. F. Wright of Ballou & Wright, Portland, Ore., and Seattle, Wash.

Ozburn told the story related in Motor World of Nov. 8 of five meetings a week held in his territory in the last 40 weeks, an activity which, he said, had given a new lease of life and a new opportunity for profits to hundreds of dealers in the southern territory. Ozburn said the effort had been worth all that it had cost, as his firm naturally had shared the profits of its dealers. He said the work, showing both the "Ask 'em to Buy" and "Shop Profits" films, would be continued.

Cavanaugh said results already were becoming apparent of meetings held in the Western Canadian territory only a few weeks ago. "Ask 'em to pay" suggestions, he said, had been particularly

The Automotive Equipment Association's New Officers



Vice-President
WILLIAM E. WISSLER
Manager, Automotive Equipment Department, Herring Motor Co., Des Moines



President
NELSON H. OLIVER
General Sales Manager, Metal Specialties Mfg. Co., Chicago



Chairman of Directors
EARL V. HENNECKE
General Sales Manager, Moto-Meter Co., Long Island City, N. Y.

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helpful to dealers whose credit was tied up by too free accommodation of customers.

One Salesman, One Dealer, One Million Dollars

Wright told of campaigns last spring and this fall along the Pacific Coast, with Merchandising Director Sherman taking part. Gains of 100 to 200 per cent in dealers' business in some popular equipment lines had resulted, he said. He added that dealers were now beginning to apply with profit the lesson of the "Shop Profits" film.

The merchandising director's recommendation to the jobber members was for a campaign to assist dealers in building up their automotive equipment business. He urged that every jobber's sales manager arrange with his salesmen to select one dealer each as a likely prospect for intensified assistance over a six months' period beginning Dec. 1. The salesman would pay special attention to this dealer's sales work, helping him to select seasonably salable merchandise, display and demonstrate and ask motorists to buy it. Sherman said that if 1000 of the 4000 salesmen with jobbing houses of the A. E. A. would carry out the plan suggested, he believed the aggregate increase in business, on a basis of a $1,000 minimum gain for each dealer, would be $1,000,000. He suggested as the slogan for the campaign, "One Salesman, One Dealer, One Million Dollars."

The suggestion met with a hearty reception in the divisional meeting of jobbers. A majority of the sales managers present said they would put the plan in force in their organizations.

When Dealers Profit Jobbers Do, Too

In the divisional meeting Sherman told of results obtained with the "Ask 'em to Buy" and "Shop Profits" phases of the merchandising campaign. He cited numerous cases of jobbers who had made substantial additions to their business by fostering the movement in their territories, in some cases by holding meetings showing the films, in others by individual work with their more aggressive dealers and in others by a combination of the two plans. He called attention, however, to the fact that so far only a minority of the association jobbers had engaged actively in the work, and so only a minority were getting full returns on the investment which all association members have made in the campaign. He said the big job is to get all dealers to realize what some now thoroughly understand, that every car coming to the dealer's or garageman's door is a market both for merchandise and service and can be made a profitable market for the dealer by sales effort.

The merchandising director's statements were supported by C. E. Justus of Justus & Parker Co., Columbus, Ohio; Frank White of the Orr Iron Co., Evansville, Ind., and others, who told stirring stories of added profits for dealers and increased business for their houses brought about by co-operation with the merchandising campaign.

Sherman also urged activity by the jobbers to stimulate their dealers to work for the sale of accessories as Christmas gifts. He mentioned window and counter cards, stickers for mail matter, sales letters and circulars illustrating automotive gift ideas as helps which jobbers can put in the hands of dealers to build holiday business.

Manufacturers to Co-operate

Sherman's talk to the manufacturers' divisional meeting was a request for the support of sales executives to emphasize to the retailer how he can make profits selling or using the manufacturers' product. He made a special plea that every manufacturer member of the association get out at least one piece of printed or illustrated matter in the next six months devoted exclusively to this idea. A showing of hands indicated that a number of manufacturers were prepared to heed the request.

Sherman pointed out that the manufacturers cannot expect to reap the benefits of a successful merchandising campaign if they leave all the work to the jobbers. He cited several instances of manufacturers who had obtained definite results by issuing advertisements and mail literature, in some cases telling the story of the dealer's profit in handling an item of merchandise and in others showing how the use of a piece of shop equipment had built profits. Sherman stressed the fact that specific statements of the profit-making possibilities of an article are necessary to get the retailer actively interested and so supplement the work of the jobber salesman and the broader undertaking of the merchandising movement.

New Universal Catalog

It was decided to get out a second edition of the Universal Catalog, describing products of manufacturer members of the association, in time for the November meeting next year. The new catalog probably will be of loose-leaf rather than bound style.

Relief for Canadians

The manufacturers' division recommended to individual members that refunds for defective goods returned by Canadian jobbers be based on the laid-down price in Canada, that is, including the Canadian import duty. Canadian jobbers have complained of the burden of bearing the customs charge in case of these refunds, a condition which naturally has worked to the advantage of Canadian manufacturers competing with American makers of some automotive lines.

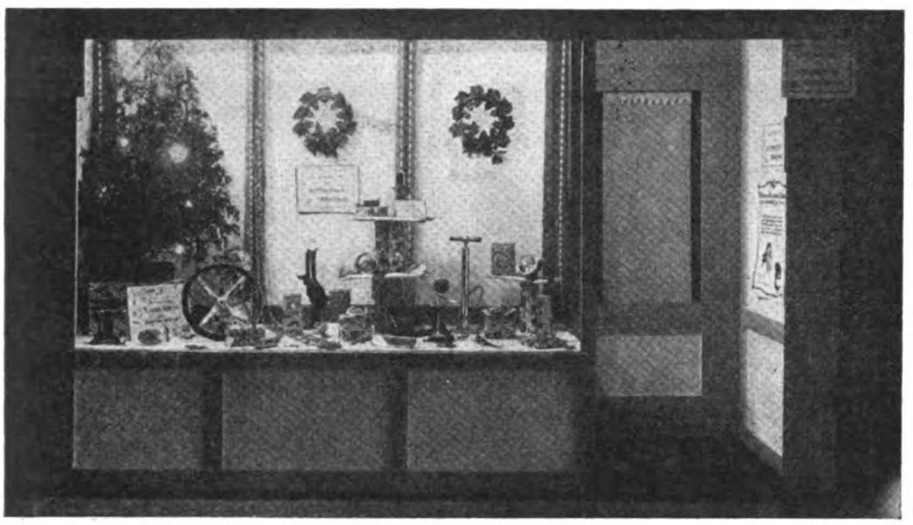
The Social Side

The social side of the convention was seen in numerous large and small dinner and lunch parties and in a dinner-dance-entertainment in the Gold Room of the Congress Hotel, attended by more than 600 members, their families and guests.

Next Meeting in New England

The A. E. A. having held its summer meetings in various sections of the country, including the Pacific Coast, Rocky Mountains and Middle West, decided to go next summer to New England, meeting June 25 to July 1 at the Balsam House, Dixville Notch, New Hampshire. This resort, in the White Mountains, is about 240 miles from New York and 15 miles from the Canadian border. It is reached by train or motor car. It was selected after a survey of New England hotels by Frank T. Chase of the Frank Mossberg Co., North Attleboro, Mass., representing the board of directors. It will accommodate the 600 or more delegates and their families who usually attend the summer convention and in addi-

Any Dealer Can Dress a Window Like This



A real window, presented by the A. E. A. merchandising department, was a feature of the Chicago convention and show. The background is nothing more expensive than crepe paper and the boxes are ordinary holly boxes purchased in a ten cent store with a few special Christmas cartons offered to dealers by a number of manufacturers

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tion to sleeping and dining accommodations, motoring and sports facilities, there is an auditorium large enough for the convention sessions.

Nine New Directors

Nine directors were elected, one to fill a vacancy and eight to fill expired terms. They are: Nelson H. Oliver, Metal Specialties Mfg. Co., Chicago; Wallace G. Page, American Motor Equipment Co., Boston; G. H. Southard, Jr., J. & B. Mfg. Co., Pittsfield, Mass.; C. C. Hillis, Electric Appliance Co., San Francisco; R. J. Cahall, Cahall Motor Supply Co., Philadelphia; F. B. Caswell, Champion Spark Plug Co., Toledo; N. F. Ozburn, Ozburn-Abston & Co., Memphis; A. H. Bowman, Bowman Bros., Ltd., Saskatoon, Canada; Percival Stern, Interstate Electric Co., New Orleans.

Hold-over members of the board are: C. L. Stebbins, Double Fabric Tire Co., Auburn, Ind.; W. H. Parkin, National Standard Co., Niles, Mich.; S. D. Black, Black & Decker Mfg. Co., Baltimore, Md.; W. E. Wissler, Herring Motor Co., Des Moines; D. A. McConnell, Klaxon Co., Newark, N. J.; H. H. Reinhard, Reinhard Bros., Minneapolis; E. V. Hennecke, Moto-Meter Co., Inc., Long Island City, N. Y.; B. L. Clements, Borderland Auto Supply Co., El Paso; C. F. Hodgson, Weaver Mfg. Co., Springfield, Ill.; A. D. McMullen, Motor Mercantile Co., Salt Lake City; W. C. Hecker, Curtis Pneumatic Machinery Co., St. Louis; W. L. Moncur, Cutten & Foster, Ltd., Toronto; W. T. Morris, American Chain Co., Bridgeport, Conn.; G. Norman Baughman, G. Norman Baughman Co., Tampa, Fla.

New Members

Eight jobbers and fourteen manufacturers were added to the roster, as follows:

Jobbers:

Evans Rubber and Supply Co., Fresno, Cal.; Mossman-Yarnelle Co., Fort Wayne, Ind.; Orgill Brothers & Co., Memphis; Perry & Sherman, Utica, N. Y.; The Ready Auto Supply Co., Inc., Brooklyn, N. Y.; Vermont Hardware Co., Burlington, Vt.; The Walter Tips Co., Austin, Tex.; James Martin Co., New York.

Manufacturers:

B. J. Corp., New York; Burgess-Norton Mfg. Co., Geneva, Ill.; Gladiator Mfg. Co., Auburn, Ind.; Grigsby-Grunow-Hinds Co., Chicago; Kay-Bee Mfg. Co., Los Angeles; Keasby & Mattison Co., Ambler, Pa.; Parker & Waterman Mfg. Co., Los Angeles; Perfection Gear Co., Chicago; Rub-Tex Products, Inc., Indianapolis; Carter Carbureter Co., St. Louis; A. Schrader's Sons, Inc., Brooklyn, N. Y.; The Sunderland Co., Warsaw, Ind.; The Toledo Steel Products Co., Toledo; Williams Brothers Aircraft Corp., San Francisco.

Equipment Men Visit Jackson Plant

JACKSON, MICH., Nov. 18—One hundred and fifty men of the automotive equipment industry, many of them jobbers who have been in attendance at the Automotive Equipment Association convention in Chicago, came here to-day as guests of the Sparks-Withington Co. They arrived on a special train, and after a morning trip through the plant where Sparton horns are made, went to Ann Arbor for the Michigan-Wisconsin football game.

New Trade Body to Promote Use of Shop Equipment

CHICAGO, Nov. 18—The Service Equipment Associates, an organization to promote education as to the proper understanding and use of equipment in automotive maintenance establishments, was organized at the Congress Hotel last night. G. W. Brogan of the Black & Decker Mfg. Co., presided.

The organization had its beginning last May when a group of equipment manufacturers agreed upon a plan of pooled advertising of the promotional or educational sort. This advertising was planned to promote improved equipment and has centered about the slogan "The well equipped shop gets the business." This advertising was first placed in *Motor Age* and MOTOR WORLD and later extended to other publications. Not all of the group joined in the advertisements in all of the papers.

There was no formal organization back of this plan but several months trial had convinced most of the participants that it was worth while and Nov. 10 a meeting of all who had participated was called and a more formal organization was discussed and a committee named to draft the plan. This plan was placed before the members of the groups and some invited guests last night. Short talks were made by William Webster, Commissioner of the A. E. A. and Ray W. Sherman, merchandising director.

The organization name of Service Equipment Associates was decided upon. Three members of an executive commission were elected as follows: For three years, G. W. Brogan, The Black & Decker Mfg. Co.: For two years, S. V. Wood, Mid-West Mfg. Co.; for one year, Charles F. Hodgson, Weaver Mfg. Co.

Four meetings will be held each year, two of which will be on the occasion of the Automotive Equipment Association meetings. All meetings are to be of the round table order and promotion of the use of better and more complete equipment is to be the only objective. The member firms, three of which were elected to membership last night are: T. R. Almond Mfg. Co., American Bureau of Engineering, The Black & Decker Mfg. Co., The Burton Rogers Co., Continental Auto Parts Co., Greenfield Tap & Die Corp., Jacobs Mfg. Co., Manley Mfg. Co., Micro Machine Co., Mid-West Manufacturing Co., Frank Mossberg Co., Oxweld Acetylene Co., Weaver Mfg. Co., Joseph Weidenhoff, Wright Mfg. Co., Bonney Forge & Tool Works, Stevens & Company, Kellogg Manufacturing Co.

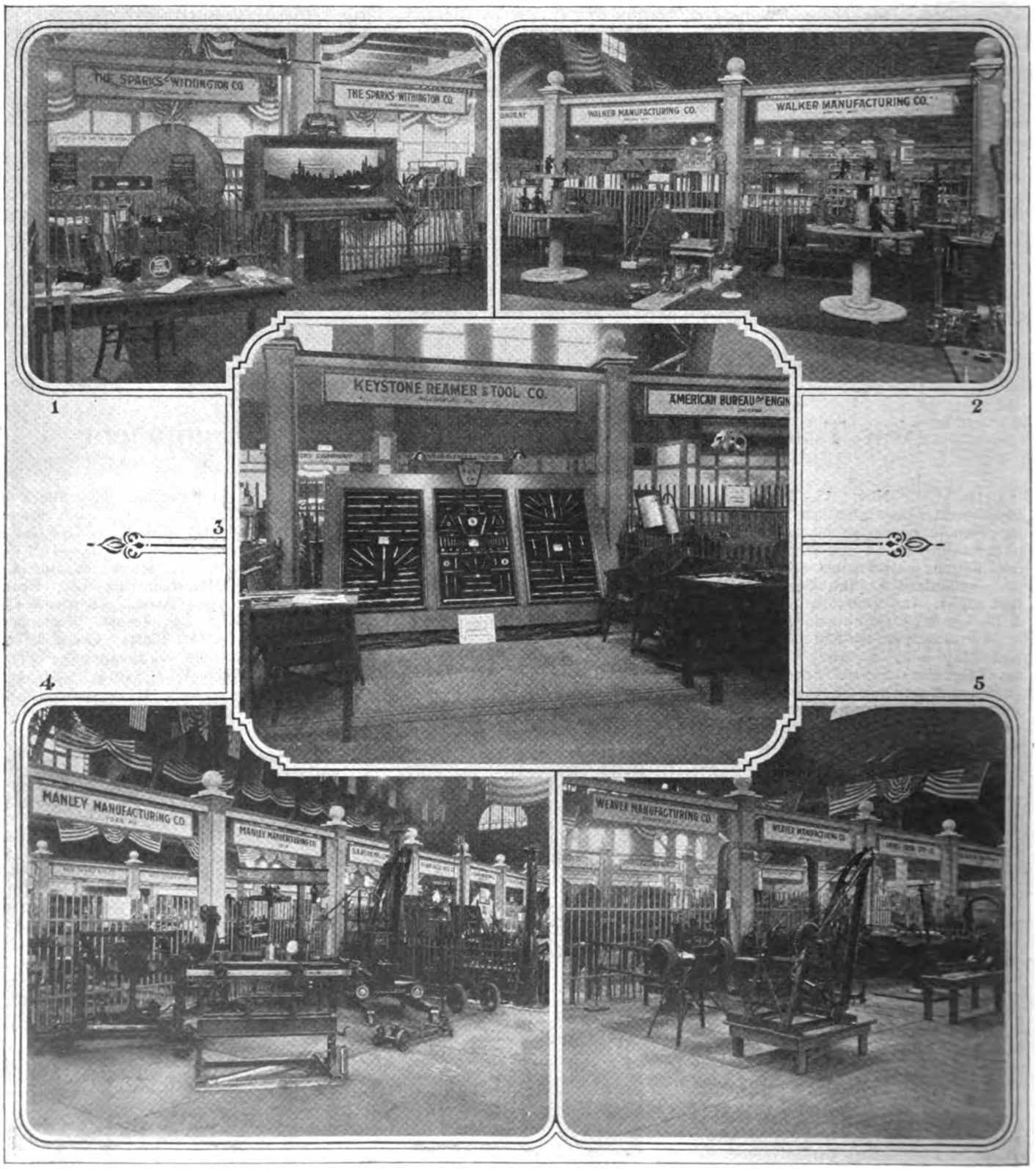
A Glimpse of the A. E. A. Show



The Chicago Coliseum all dressed up with the finest exhibit in the history of the automotive equipment industry

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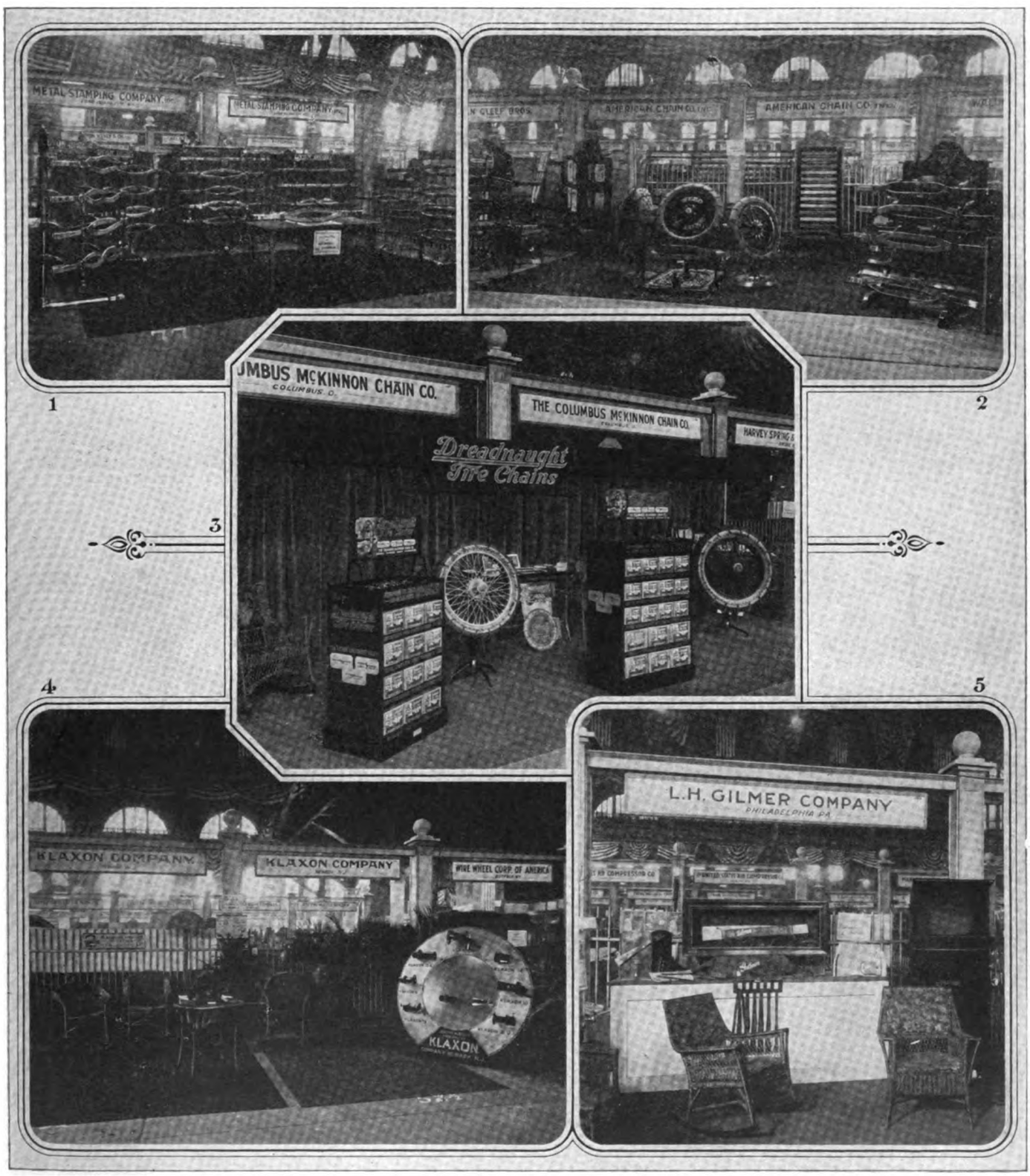
Many Beautiful Exhibits Attracted



1—One of the high spots of the show was the lighted night scene presented by Sparks-Withington. 2—Jacks finished in blue and shown on light grey display standards made the Walker exhibit attractive. 3—A display of beauty and dignity was seen in the Keystone exhibit with its arrangement of tools on a blue velvet background. 4—The Manley exhibit tied itself up with the "Shop Profits" campaign. 5—Weaver had one of the commanding displays of garage equipment

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Buying Interest at the A. E. A. Show



1—The nickeled surfaces of its bumper products made the Metal Stamping exhibit a bright spot in the show. 2—American Chain had display ideas for the jobber and dealer in its exhibit. 3—Heavy velvet hangings made the Columbus-McKinnon display cabinets stand out in bold relief. 4—A man's size lighted display board was a striking feature of the Klaxon exhibit. 5—Gilmer had one of its belts in a lighted display cabinet and, at the right, a miniature motion picture show showing the selling story of the Gilmer line

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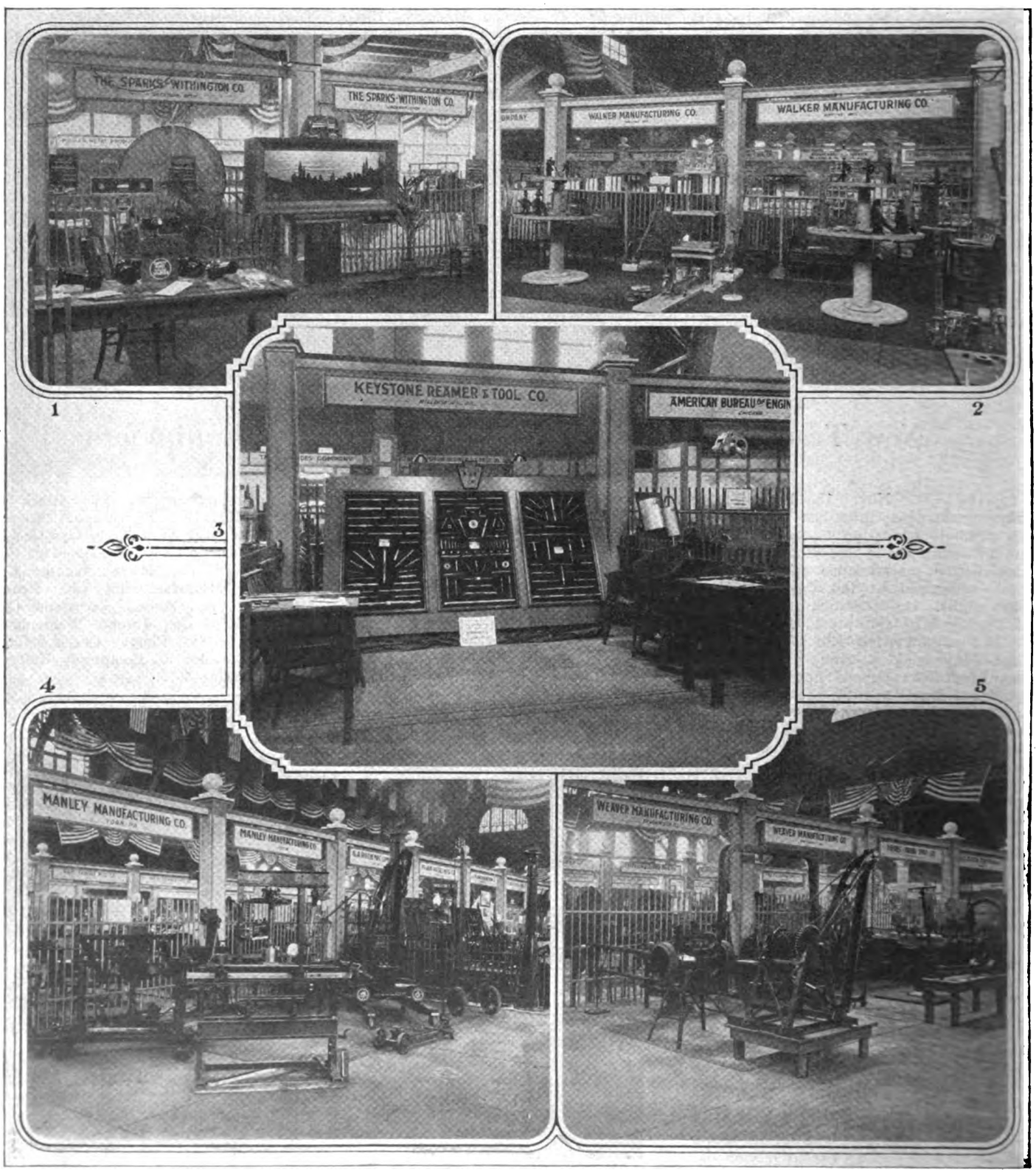
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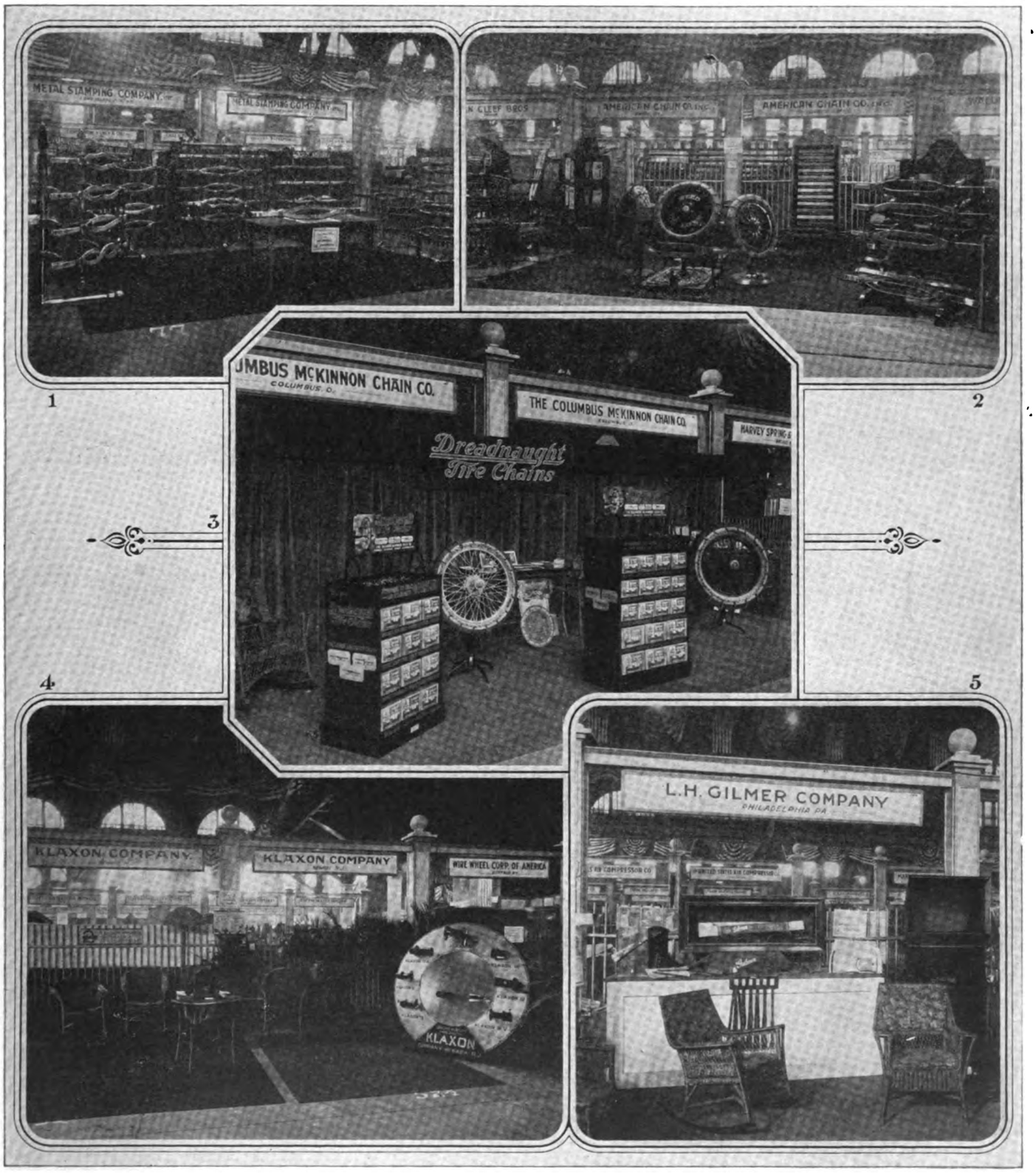
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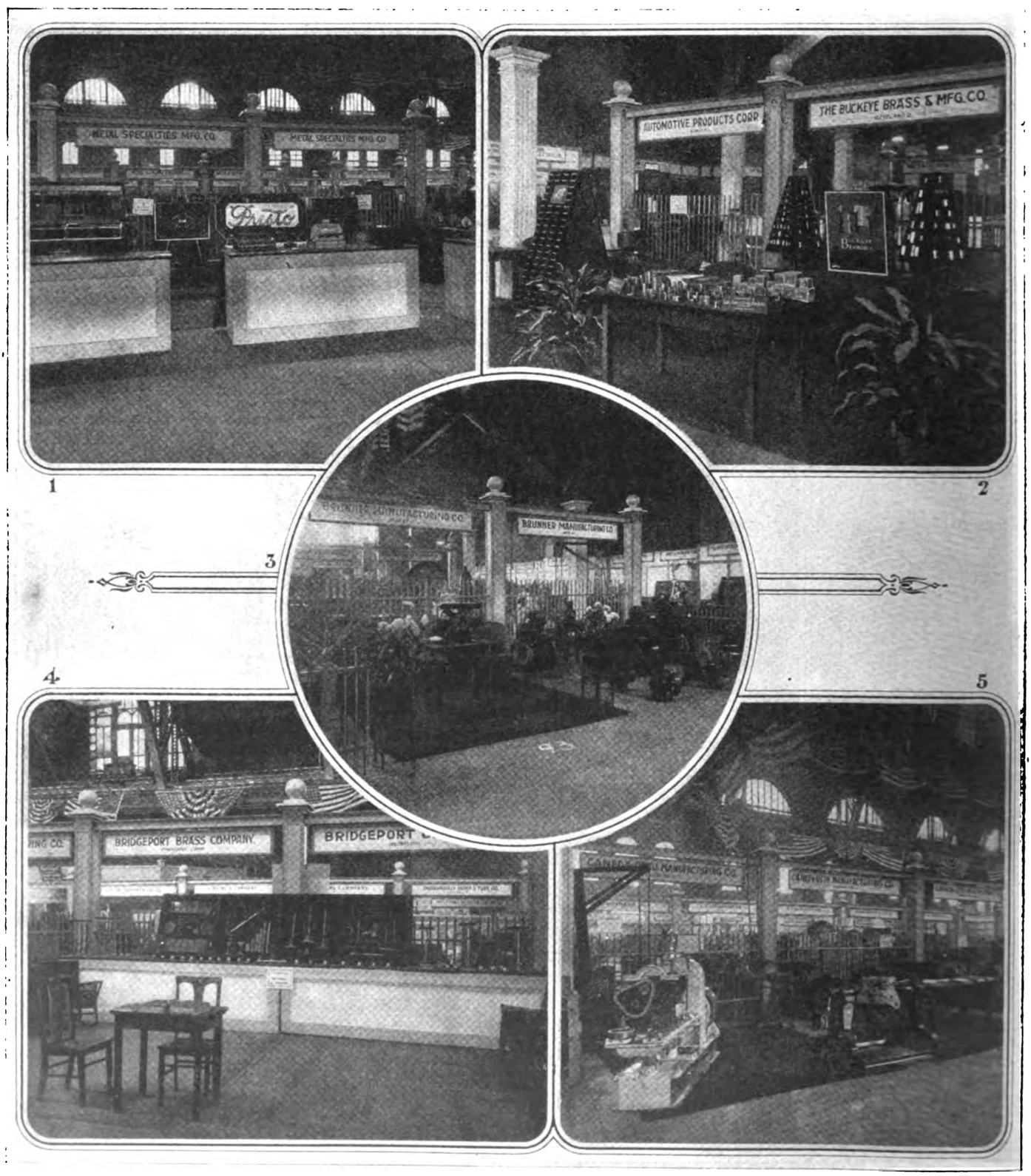
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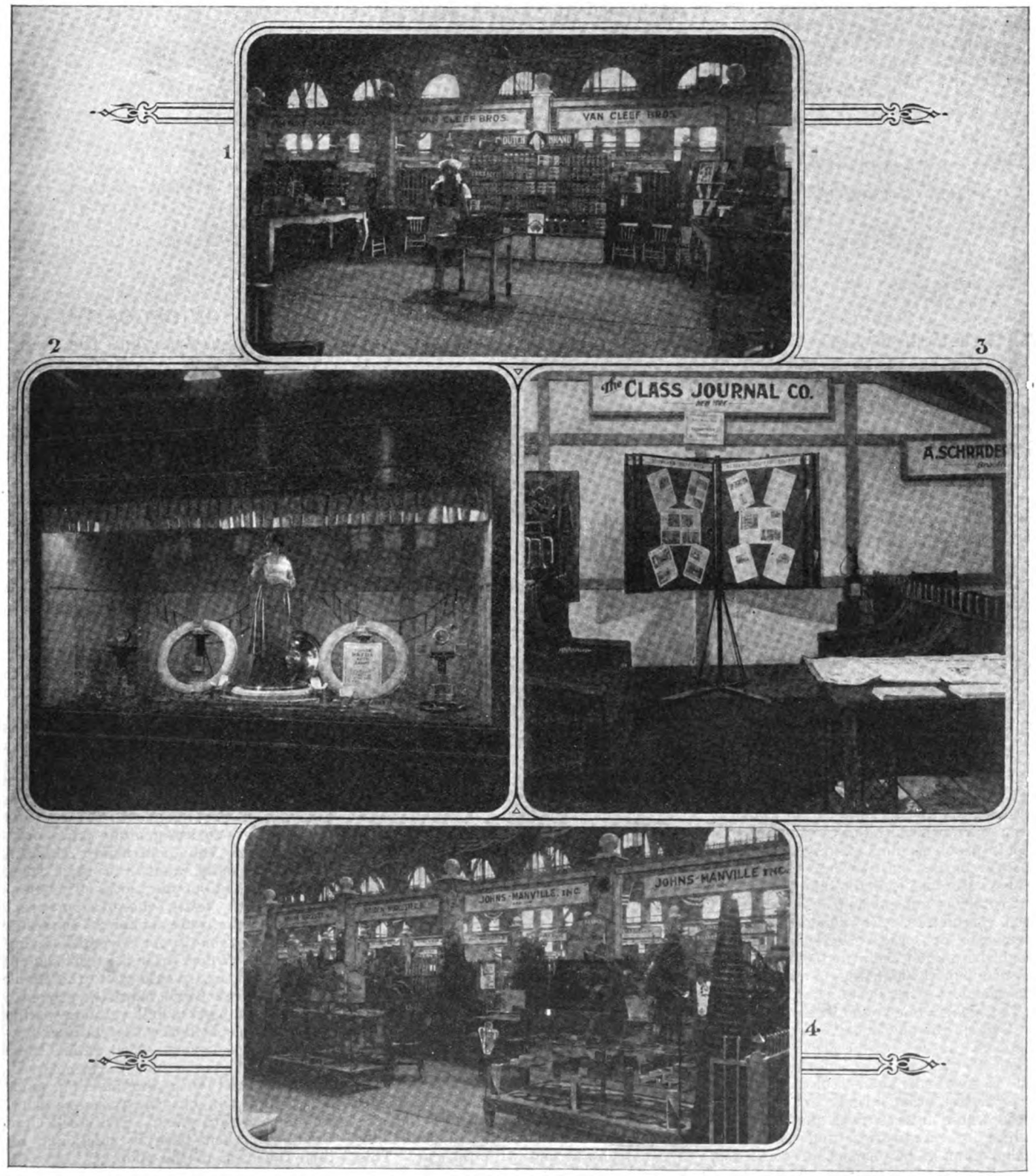
There Were Good Display Suggestions



1—A red trade mark sign that flashed on and off called attention to the Metal Specialties booth. 2—Buckeye Brass and Automotive Products had their products displayed on black velvet backgrounds. 3—Flowers and a rug relieved the display of machinery in the Brunner booth. 4—Brass and nickel products on a black velvet background attracted attention to the Bridgeport Brass exhibit. 5—Canedy-Otto worked the demonstration idea into its exhibit of shop equipment

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in All of the Booths at Chicago



1—Real girl?—Sure thing, and she or her "sister" were always ready to welcome visitors in the attractively arranged Van Cleef exhibit. 2—A miniature window brilliantly lighted was the central drawing card of the Edison Lamp exhibit. 3—Typical pages from Motor World and Motor Age were shown in The Class Journal Co. exhibit. 4—Johns-Manville brought the atmosphere of the high class retail store into its exhibit

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Makers Endorse Local Service Associations

Factory Service Managers Put Stamp of Approval on Local Service Association Idea—Seek Uniform Factory Policies Covering Parts Sales—Convention Very Favorable to Flat Rate System

By J. HOWARD PILE

CHICAGO, Nov. 16.

THE local service association and its activities, its relation to the dealer, the car owner and the manufacturer formed the major topics of discussion at the semi-annual convention of N. A. C. C. factory service managers held at the La Salle Hotel Nov. 14 and 15. The entire second day was devoted to these subjects alone and the importance of the growing movement of organization among local service men was given the recognition that it has earned. The other subjects taken up were about equally divided between problems of factory shipping, accounting and handling, and policies affecting distributors, dealers and local service stations.

The service association is no new topic at these conventions, which have been held in May and November since 1919. In fact some mention has been made at each convention. At first the subject was admitted with evident distrust and a feeling that the time devoted to it was an intrusion on subjects nearer the hearts of the delegates. Later more time was given to it and the feeling generally toward the movement was much improved. The culmination was the absolute endorsement of the movement by a unanimous vote in favor of the local association and an overwhelming sentiment favoring every possible help in maintaining those in existence and in assisting in the formation of others.

THE day devoted to the service association was started off with a three-cornered discussion presenting the viewpoints of the car owner, the dealer and the manufacturer. Alexander Johnston, Editor of *Motor*, addressed the delegates from the viewpoint of the car owner. He cited the thousands of letters received by his publication annually from car owners requesting advice on repair problems and making complaints of overcharges on the part of service shops. He said that the adoption of the flat rate was a great help in checking up such complaints. He thought that the formation of local service associations would be a great help to the car owner, particularly through the co-operation of the factories with these associations.

The dealer viewpoint was presented by Eugene Silver, Chicago distributor of the Cole. He told of the attempt to form a service association before the war, but it was not successful because its membership was largely made up of those whose interest was primarily the selling of accessories and equipment rather than a betterment of service to the car owner. During the period of the war nothing was done, but after business began to settle down a bit after the war another effort was made to form such an association. The former lines of endeavor were discarded altogether and the membership was confined entirely to dealers' service managers.

Dealers Educated

Almost from the start the dealers began to find out things through their service managers' organization, and some of the things surprised them. For instance, they found that dealers generally were not getting the insurance business that they should be getting. An investigation by the service association showed that the reason they were not getting it was that they were being consistently underbid by a certain class of repairshops that seemed able to turn the work out at prices below the dealers' costs. Still further sleuthing revealed the fact that these shops secured parts to complete the insurance jobs by buying worn out parts from the dealers' back doors as junk. The insurance companies of course knew nothing about this deception and the car owner did not know anything about it till something began to go wrong with the car. This evil was overcome by a meeting with representatives of the insurance companies and an agreement among the dealers to mutilate their worn out parts before selling the metal. The result has been that the dealers have been able to compete favorably in getting insurance business.

Another evil that was discovered was the fact that dealers and distributors of cars and trucks were actually carrying pirate parts in their own stock bins and selling them to customers although carrying on propaganda to the car and truck owners to use genuine parts only. Many dealers could not believe this until they actually went into their stock bins and found out the truth. The channels through which these parts crept into the bins were simple. It seems that certain small repair shops, having secured an order to make repairs on, say, a Blank car, would go to the Blank dealer, get the parts required, pay cash for them and get a bill to show to the car owner as evidence that he was getting genuine parts. Then later, these shops would return such parts not positively marked with the maker's name or trade mark, but the parts returned would be pirate parts. The stock clerk would put them back in stock and return the cash to the shop.

Silver told of other evils that were discovered through the local service association and further spoke highly of the flat rate system, and said that in his belief every dealer in Chicago would

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be operating on the flat rate system by the first of the year.

The point of view of the manufacturer was admirably handled by B. B. Bachman, chief engineer of the Autocar Co. and president of the Society of Automotive Engineers. He reviewed briefly the history of the development of the automobile and said that necessarily the designing engineer was the first in the field because there could be no problems of service, production or selling until the vehicle had first been laid down and built. After the design had been worked out, the next class of engineer to come to the front was the production engineer, whose problems are those of directing machine and hand processes so that the vehicle can be produced economically in quantities sufficient to meet the demand. Bachman said that although the service problem had started as soon as the first automobile was on the road, that the developing of engineers to keep the car running had not kept pace with the rest of the industry, and he felt that the time was now ripe for the development of a high class of service engineers. After telling of the great benefits derived by associations of other classes of engineers, he could not help feeling that the local service association would do much to build a higher grade of car and truck service.

C. A. Vane, general manager of the National Automobile Dealers Association, made a short address supplementing what Silver had said, and went on record as emphatically endorsing the service association movement. F. A. Bonham of Durant felt that the local service association bore somewhat the same relation to automobile service as the fair trade leagues bear to general business. They put the business on a higher plane and remove or considerably reduce suspicion on the part of the buyer.

Having disposed of the theoretical value of service associations, their practical application was demonstrated by short talks by local association representatives from different parts of the country. J. Howard Pile, representing the New York association, told of the formation of the organization, the quality of the membership and some of its accomplishments during its three years of existence. The improvement in the labor situation due to the personal acquaintance of the employers was one of the points brought out. Other helpful things were made possible through this personal acquaintance which had never been possible before the formation of the association. The formation of the Vigilance Committee and its several successful actions against gyps were cited.

Work of Associations

Fred M. Smith, secretary of the Brooklyn association, gave a brief history of his organization, and told of the overcoming of strikes and labor trouble, the successful conclusion of which was brought about by the fact that the members of the organization stood together and refused unjust demands and carried on helpful education to mechanics. A great deal of interest was shown in the campaign for winter repair business, which was successfully carried out by the Brooklyn association last fall through the expenditure of some $3,000 in newspaper advertising and the distribution of over 50,000 printed folders, stickers and other propaganda, all designed to get car owners to bring their cars in for repairs during the fall and winter. No such campaign could ever be carried out by dealers acting independently, but by joining forces they had been able to put the idea over in such a big way that the results were more than satisfactory.

Herbert Buckman, representing the Cleveland Automobile Merchants and Manufacturers Association, made a snappy address in which he told of the great benefits the local organization had been to the dealers in Cleveland. A rather amusing but serious situation was brought to light in this city. The several dealers had come to the conclusion that it was more economical to have each car traded in reconditioned at the shop of the dealer in that car. For instance, the Buick dealer, taking an Overland car in trade, would have the car reconditioned at the Overland shop, which would have all the trained mechanics and special tools necessary to conduct the repairs in the most efficient manner. It came to light, however, that through a difference of factory policies, certain companies would grant discounts and extend credits to other companies, while certain other companies could not break factory rules and were compelled to demand cash and no discount. The result has therefore not been very equitable. Buckman asked that serious consideration be given by the factories to the formation of uniform policies covering these points.

LOCAL service associations consisting of men directly interested in service to the car owner came into their own at the Chicago convention of the factory service managers. The convention unanimously indorsed the work of these associations and pledged the assistance of the factories in the organization of new ones and in the development of those already in existence. They recommended the adoption by these associations of a standard form of emblem and a code of ethics. Speakers before the convention stressed the value of the work done by these associations to the car owner, the dealer and distributor, and the factory.

Other experience talks were given by H. H. Shuart of the Detroit organization and Fred Lundgren of the Cincinnati organization. Following the "experience meeting" typical motion pictures used at service association meetings were shown, one of these being "The Making of an Automobile" produced by the Bureau of Mines and the Studebaker Corp., and the other the "Shop Profits" film of the Automotive Equipment Association. Clyde Jennings, Editor of *Motor Age*, in a talk typifying an address made at a local service association meeting, stressed the importance of the contact between the car owner and the shop. He said that the trouble shooter and the mechanic were making satisfactory strides, but that the diplomatic equipment of the service salesman was not developed sufficiently to keep pace with the rest of the organization.

Unanimous Endorsement Voted

Following the complete presentation of the local service association from every conceivable angle, the factory delegates took the following action:

1—They unanimously endorsed, by vote, the work of the local service associations, voted to continue propaganda through the service division tending to the formation of new associations and to assist in every way possible the twenty-five existing associations.

2—They approved and recommended the A. S. A. emblem which is now being used for lapel buttons, stationery and advertising by the New York, Brooklyn, Newark and Philadelphia associations.

3—They recommend the adoption of some sort of pledge or code of ethics by the members of the several associations and offered the pledge used by the Brooklyn association as a possible form.

4—They agreed to use all possible factory organization to assist in the successful operation of present associations and to help other organizations to get started.

The subjects relating to factory service departments were handled on the first day of the convention. The sessions were opened with an address by Thomas J. Hay, president of the Chicago Automobile Trade Association, being followed by H. J. Leonard, vice-president and general manager of the Stephens Motor Car Co. Hay welcomed the delegates to Chicago and referred to the part service had played in the success of his own organization.

The subject of pirate parts, which comes up at every meeting, is still going strong, but at this convention less time was given to experiences of different factories with the problem and, after the reading of a committee report asking the continued influence of factory and sales departments toward the use of genuine parts, a suggestion was made that some general propaganda be carried to the car owner through various mediums to have him insist on genuine parts and advising him to take his repair work to authorized shops where such parts could be procured.

Much general information was obtained in the discussion of the shipment of parts in carload lots. This is of importance to both owner and dealer because it means a considerable saving of transportation costs. In many cases the shipment of new cars does not fill a box

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car to its minimum capacity, and the dealer has to pay a less than carload rate or the carload rate when the car is not full. The additional weight can, in many cases, be made up with parts shipments which bring the cost down considerably. The dealer can profit by this by placing his orders sufficiently in advance so that the factory can make the shipments to fill the cars at least to their minimum capacity and sometimes to their maximum capacity.

Considerable confusion exists in the matter of which parts are taxable and which are non-taxable. It is almost impossible for any factory or any dealer to properly classify the parts to conform to the rulings of the Federal Government. Many factories have, therefore, sent duplicate copies of their parts book to the Tax Bureau for the marking of taxable parts. It has been observed that there is no seeming uniformity in the markings when the books are returned, a pet cock, for example, which may be used in several places on the car, being taxable when used one place and non-taxable when used in another place. The practice among dealers in charging the tax on parts could not be ascertained, but much difference in practice existed among the factories.

A. Crosley, manager of the parts department of the Autocar factory, warned of the necessity of extending the tax returns on the invoices so that at any time the amounts of the taxes could be determined by a government inspection. He said that no matter how carefully the handling of the tax problem was conducted, there was always a possibility of unknowingly breaking the law, and the only protection was to record the amount of the tax and who paid it, so that it could be returned to conform to a tax ruling. It was brought out that three manufacturers absorb the tax, and in such a case there was a technical question of whether the amount of the tax absorbed should be stated on the invoice. It was generally considered that it should be stated. A comparison of taxable parts showed that some companies ran as low as 19 per cent and some as high as 50 per cent.

Discounts to Independents

The question of granting parts discounts to independent shops is another one of the regular debates. Nothing at all new was brought out on this subject, but the discussion showed a much more liberal attitude on the part of practically all manufacturers. Some makers are allowing a regular discount in all open territory and allowing the distributor or dealer to use his own judgment as to the granting of the discount in the territory in his jurisdiction.

At least one manufacturer has a very constructive policy of granting service contracts to approved independents in open territory. It has been the experience of this manufacturer that such contracts are very often the means of selling cars and sometimes ripen into sales contracts. In periods of abnormal turnover in car dealerships these service contracts are very valuable to the manufacturer to maintain the cars already in the territory and to take care of parts distribution and service in adjacent territories. C. D. Cowles, parts manager for Pierce-Arrow, said that he thought there was a direct parallel between the selling of completed vehicles and service parts in this matter of granting discounts.

A very interesting sidelight on the service industry was given by W. L. Wise of the National Cash Register Co. While the products of this company are distributed and serviced by branches and agents, all of which are under the direct control of the factory, Wise said that much the same problems of pirate parts, lubrication and repair service had to be met and that the organization had to be fully equipped to handle all cases with expedition.

CHEAPER and better service for the owner seemed to be in the minds of the factory service managers at the Chicago convention. The shipment of parts with cars to avoid freight expense was one money saving idea brought out. The subject of stronger and lighter packing and boxing was also discussed. The factories seemed to be more inclined to be liberal in the matter of granting parts discounts to independent shops.

The boxing and crating of parts for shipment is a subject that has not heretofore been brought out at any convention, nor has there ever been very much opportunity to exchange views between service men. Jefferson Caylor, of the General Box Co., Chicago, gave some salient facts regarding the boxing of parts and vehicles for export and showed instances in which savings could be effected by study of the boxing problem. He said that there was hardly a box or crate that could not be reduced in weight by a real study. In many cases savings of 50 per cent tare weight have been effected. This means a great deal to the dealer in the reduction of costs as he has to pay the expense unless he can charge it back to the customer. It is distinctly to the advantage of the factory and the car owner to reduce this cost, because every decrease in cost removes just so much sales resistance. Caylor advocated boxes which would not be over a weight to be readily handled by two men.

A wide difference in policy exists between manufacturers in the matter of goods for export. One maker charges 25 cents per cubic foot, another 3 per cent of the invoice and another allows 5 per cent less discount on export vehicles and parts. Others come at many points between these. The expense on fenders can be greatly reduced by placing at least three fenders to the crate as such a crate does not cost any more than one or two fender crates. There is some tendency for car makers to buy at least some of their boxes and crates from concerns making a specialty of packing and shipping containers. As far as could be learned, none of them buy all of their boxes and only about a dozen make all their own boxes.

Flat Rates Idea Established

It may seem strange that not a great deal of discussion was given to the subject of flat rates. The reason is, however, that there were practically no opponents to the system, what argument there was being as to the best form in which to present the flat rate to the car owner. From practically a universal objection to the plan three years ago, the service managers have gradually come to accept it as THE thing, with the exception of two or three makers who have special conditions under which such a system does not satisfactorily operate. R. A. Shelly, Dort service manager, stated that a recent census of dealers throughout the country indicated that over 75 per cent were in favor of flat rates. He spoke of the growing tendency of the use of the piece work system in connection with flat rates, and W. R. Webster, Overland service manager, confirmed the truth of the success of the plan and stated that some of the Overland branches were working the plan out with satisfaction to all parties.

Lubrication and inspection policies did not show a great divergence, but several ideas that are worth noting were brought out. W. M. Warner, Cadillac service manager, said that the Chicago distributor uses a small paster which is stuck on the speedometer. On this paster is noted the mileage reading at which the car should be brought into the shop for inspection. When the season mileage and the figures on the paster agree, there is a direct reminder to the owner. The period of free inspection varies from the usual 90 days upward, and some dealers are making a flat charge for inspection, oiling and adjustment for six months or a year, this charge running anywhere from $10 to $50. The Simons Sales Co., handling the Overland in Detroit, has such a service for one year for $25.

New Jersey Good Roads Association to Meet

NEWARK, Nov. 18—The New Jersey Good Roads Association, which has become a permanent organization composed of leading automotive and other business men of the State since the approval of the $40,000,000 highway building program by the voters on election day by a majority of more than 16,000, will hold its first annual dinner at the Robert Treat Hotel here on Dec. 5.

Among the speakers will be Alfred Reeves, general manager of the National Automobile Chamber of Commerce, Senator Edge and Governor-elect Silzer.

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Tire Dealers and Makers Pledge Support Toward Uplift in Merchandising

National Convention in Milwaukee Prepares the Way for Strong Dealer Body—Membership Campaign to Be Launched

MILWAUKEE, Nov. 17.

GEORGE J. BURGER of New York was elected president of the National Tire Dealers Association at the second annual convention, held in Milwaukee, Nov. 14 to 16. Burger is president also of the Greater New York Tire Dealers Association. He succeeds R. F. Valentine of Cleveland, who guided the destinies of the association during the first year of its active existence.

Frank Zeman of Chicago was re-elected vice-president. Directors include Sam A. Rowe, Milwaukee, secretary of the Milwaukee and the Wisconsin Tire Dealers Associations; Valentine, the retiring president, and L. E. Long, Sterling, Ill.

The executive committee, consisting of the officers and directors, will select a secretary and treasurer later. It was decided to employ a paid executive on a whole-time basis, and the committee will take time to comb the field to find a man who meets all of the qualifications necessary to build up a large and influential membership.

"We tire dealers must work in harmony with the manufacturers in order to achieve the best results possible for dealer, maker and consumer," was the keynote of this year's convention as enunciated in an address by the new president, Mr. Burger. Discussions during the various sessions developed clearly that the dealers recognize that, if the tire business is to be purged of evils and nuisances, the dealer must first put his house in order and then he may expect and be assured of the utmost co-operation of the manufacturer.

Many Makers Present

Virtually every representative tire manufacturing concern in the country was represented, and a most friendly attitude and a helpful tone pervaded every expression made by them on the floor of the convention.

While it was discovered to be the main idea of some members in the past to attempt to work upon the manufacturing interests rather than among themselves to eradicate acknowledged evils, at this convention the thought was dominant that it is essential that a strong, powerful body of dealers, committed to ethical practices, be built up, and to such an organization the assistance of the manufacturing group was gladly promised.

Standards of qualifications for eligibility to membership are being formulated, and it is believed that within a relatively short time dealers will be seeking membership in the association instead of requiring strong urging and persuasion to join. Like all new organizations, the tire dealers, since their association was formed a year ago, have waged an uphill fight to make the general body of dealers recognize the importance of belonging to the association and making themselves a part of its work.

Membership Qualifications

At present the qualifications, which will be effective until Jan. 1, are that an applicant for membership must be a bona-fide dealer in tires, whose principal business is the merchandising of tires and whose practices and policies subscribe to the generally accepted principles of legitimate, fair and honorable dealing. The dues of $6 a year will be increased to $15, and as soon as the new secretary is able to put under way a membership campaign, the standards of eligibility will be strengthened. While the association desires a large membership, it intends to make no sacrifice of quality to quantity, for it desires to stand before the manufacturers and the public as a body of high grade merchants whose policies are entirely lacking in any ulterior motive and will command the respect of all concerned.

Briefly the aims of the association, as enunciated at the Milwaukee convention, are:

1. The sale of blemished and seconds to bona-fide dealers instead of "gyps" and brokers.
2. The discontinuance of basing equipment accounts on five instead of four tires.
3. The absorption of the war tax.
4. The reducing of direct sales to national and commercial accounts.
5. The enactment of ordinances, already accomplished in 25 cities, prohibiting spurious advertising and misrepresentation.
6. Increased margin of profit to the dealer.
7. Abolition of mileage adjustments.
8. Mutilation of all tires returned for adjustment.

That an advance of 5 to 10 per cent in the price of tires is to be looked for was the statement made by a number of dealers on the floor, although no direct intimation of increased tire prices was given by representatives of manufacturers in public expressions.

A tour of inspection of the plant of the Federal Rubber Co. at Cudahy, a suburb of Milwaukee, was a feature of the Wednesday morning session. Of interest was a tire-changing contest in the open air in the parking space at the rear of the Hotel Pfister. "Charlie" Paine, the present champion, was defeated by Fred Schmidt of Milwaukee, but his world's record, recently made, was not broken. Schmidt was timed at 3 min. 31 sec. in jacking up a Ford car equipped with standard clincher tires, removing one tire, putting on a new casing and tube, pumping it up with a single action hand pump and releasing the jack.

Farm Equipment Makers See Upward Turn in 1923

CHICAGO, Nov. 18.

THE National Association of Farm Equipment Manufacturers tractor and thresher department's two-day convention at the Auditorium Hotel opening on Nov. 16 was featured with lively discussions.

Perhaps the most important step taken at the meeting was the approval of the National Institute of Progressive Farming. Guy Hall, the mainstay of this department made a brief report of the progress of the institute in the past year, presenting reproductions of the vast amount of publicity which had been given the industry as a result of the work of the institute and explaining the value of newspaper publicity in selling the power farming idea.

The finance committee, assigned to find a means of financing the progressive farming department, asked that the association base contributions of members on sales, with $100 being the minimum

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and $3,000 the maximum contribution. It was decided, too to send requests to affiliated associations for financial assistance to promote this work.

"Selling the Tractor Idea" was the subject of Dave Darrah of the Hart-Parr Co. who dwelt on the need of confidence on the part of the farmer in the industry and in power farming. He told how this confidence could be gained by honest educational advertising, warning against the wrongful use of publicity and branding carelessness in carrying the power farming idea to farmers as harmful to the industry.

Darrah spoke of the vastness of the power farming industry, calling attention to the fact that its mission was to sell to the largest industry in the world a better means of obtaining a livelihood. He also went on record as indorsing wholly, the work of Hall and the Institute of Progressive Farming, stressing particularly the necessity of favorable publicity for the tractor.

He cited five advertisements which were run recently by the First National Bank of Omaha as proof that the banks recognized the great importance of the power farming industry. The ads referred to by Darrah were presented by Hall and were wholly in the interests of power farming machines. A letter from the vice-president of the bank asked for an expression from the members on the ads and it was decided that each one would write a letter of approval and comment to the bank.

In another discussion it was decided that no national tractor demonstrations and no national tractor shows be held under the auspices of the department. Instead, "Power Farming Day" at the leading state fairs was indorsed by the organization with the provision that all exhibits be confined to State grounds. Definite arrangements for the 1923 fairs were left to Guy Hall who will take the matter up with the State Fair Association at the Toronto convention in January.

The proposed tractor show to be held during the Farmer's Week at the Ohio State University, Jan. 27-31, 1923, was approved so far as the show was concerned, but tractor tests were left optional to the individual manufacturer. The show and demonstration committee was appointed to look after the details of the Columbus event.

In commenting on the 1923 outlook, Floyd R. Todd of the Deere Co. predicted that 1923 would be the turning point in the industry and that 1924 would witness the greatest selling period the industry has ever known.

"What Kind of Tractor Advertising Pays Best" was talked on by H. E. Orr of the Cleveland Tractor Co. with subsequent discussion led by A. C. Seyfarth of the International Harvester Co. who urged that the power farming idea be more prominent in the advertising copy of the manufacturers and that they see the importance of "hooking up" the national advertising with the dealers'.

Representatives of the Federal Reserve Bank addressed the meeting, asking for monthly figures on sales and production from every manufacturer, to aid them in compiling charts and tables which would readily show the condition of the industry. It was pointed out that such a plan would aid materially in the selling end of the business as reports issued by the bank would show where the effort was needed. The bank men also stated that strict secrecy and confidence were regarded for any manufacturer's figures, explaining that the purpose of the reports was to arrive at an average of sales and production of the industry as a whole.

J. P. Bartholomew read a report on foreign trade on the first day and W. H. Strackhouse delivered a talk on "Industrial Freedom." Finley P. Mount was re-elected chairman of the tractor and thresher group for the coming year.

An Unusual Lesson in Salesmanship

A CLEVER object lesson in salesmanship which would pay other organizations to follow was staged recently by L. J. Hannah, manager of the Hannah-Miles Co., Louisville distributor for Dodge Brothers cars.

Hannah was holding an important conference in his office the other afternoon, when a salesman called at the desk of his private secretary just outside the door and asked to see the manager. The door was slightly ajar and the salesman was overheard by Hannah, who called out that he was very busy at that moment. Immediately the salesman began in an inoffensive way to make it a point to see Hannah, at the same time edging to the door.

Before the Dodge Brothers' dealer realized it, the man had actually gained admittance to the room, and so interesting and persuasive was the visitor that a happy thought struck Hannah. For a long time he had been trying to drive home to his salesmen the idea of not letting the prospective buyer of Dodge Brothers' motor vehicles put them off too easily. So Hannah told the visiting salesman that on the following evening he had a meeting of all the salesmen in his territory scheduled, and if the caller would gain entrance to the meeting and sell him the proposition before his men he would sign an order. The salesman took him up. Before his departure the Dodge Brothers' dealer warned him that he would make everything connected with the affair as difficult for the visitor as possible.

The salesman was selling motion picture advertising. A contest was to be placed on the screen at one of the city's leading movie houses, and the plan was to sell different business men pictures of themselves taken in poses that would be difficult to recognize. A second picture was to be shown after the prizes were decided, showing front views of the business men and their establishments.

On the following evening the sales organization of the Hannah-Miles Co. met in a secluded room on the second floor of the building. A short time later the night watchman was at the door knocking, stating that a man was outside demanding to see Hannah on business of the utmost importance. The latter insisted that he could not be disturbed, but the visitor was even more persuasive —at no time making himself obnoxious, however—than he had been the previous afternoon.

Eventually he gained access into the room and immediately presented his proposition to Hannah in the presence of his salesmen. The motion picture representative was on to his job. He had put in his spare time studying up on the early history and achievements of Dodge Brothers and used this to great advantage. Hannah used every argument he could think of to reject the proposition, but at every point was kept on the defensive by the visitor. Secretly the dealer was glad of this, because he had been continually warning his automobile salesmen to always keep their prospects on the defensive. In the end Hannah signed the order to enter the contest. He then explained the circumstances to his organization and invited the motion picture representative to make a talk on salesmanship, and the latter made a splendid one, too.

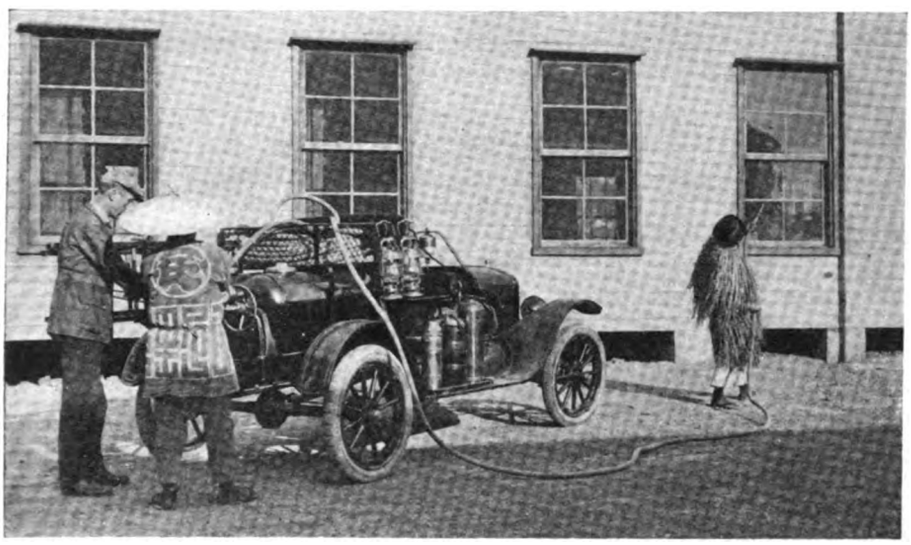
The motion picture advertising cost the Hannah-Miles Co., $25, but Hannah said it was worth a great deal more to his firm.

Selling Accessories to Truck Owners

A SPECIAL drive directed at the owners of trucks to get them to equip their trucks with complete sets of extra spark plugs, with spotlights and with visors, with fire extinguishers, etc., has been a profitable undertaking for some accessory dealers. Every truck owner who hasn't a complete equipment of accessories on his truck is making it harder for the driver to be efficient and is, consequently, losing money. Make a note of all the trucks seen in the city which aren't completely equipped with accessories and then, each morning, as a part of the day's business routine, call up the owners of these trucks and sell them the accessories they should have.

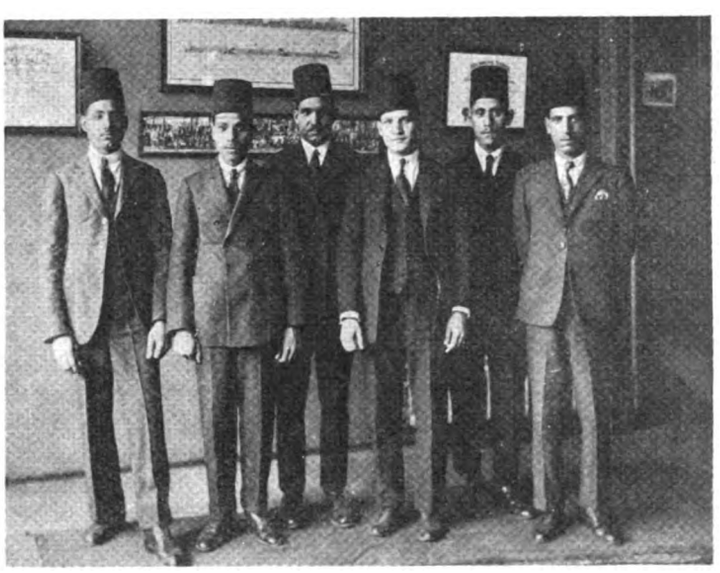
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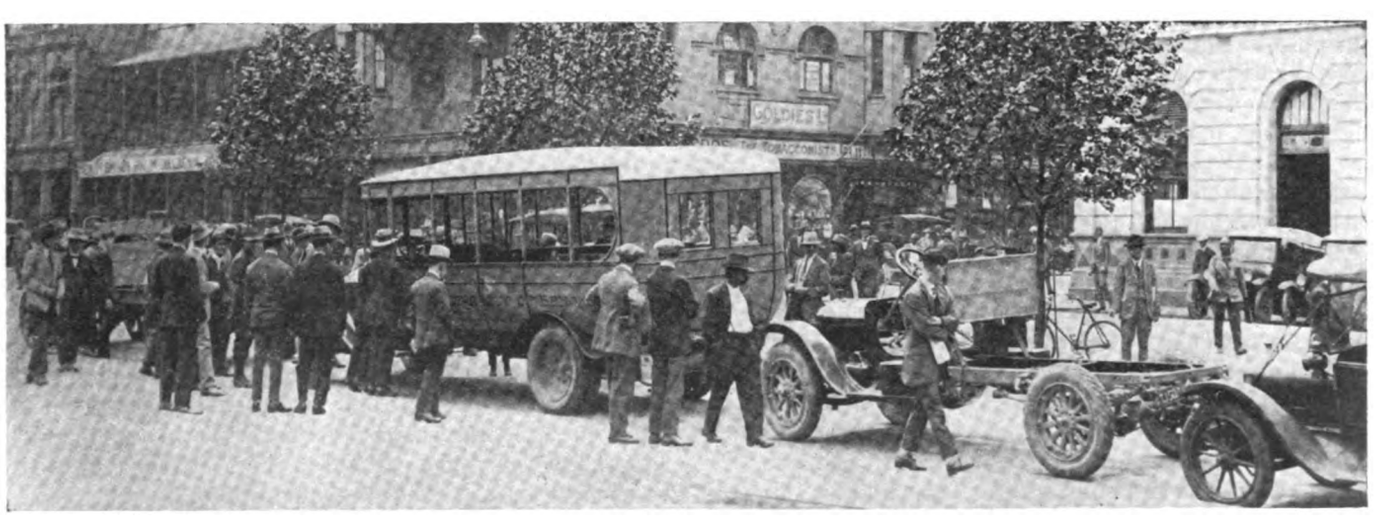
Interesting Things Automotive



American automotive products are rapidly establishing themselves as necessities in all parts of the world. Japanese firemen in Osaka are shown in this picture trying out a Ford "fire wagon" recently imported

Considerable interest has been occasioned by the arrival in this country of six officials of the Egyptian government who have been sent here to study the automotive industry. They are representatives of the Ministry of Transport and Communication. They will spend the greater part of their three years' stay in Detroit, the first year of which will be at the Michigan State Automobile School





This scene in one of the principal streets of Johannesburg was enacted recently when the South African city's first dealer procession of automotive products was held. The parade was staged by the White dealer and was composed of White bus and truck models

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Editorial Notes

Not Quite Enough New Cars

ANYONE searching for an "answer" to the used car situation will find the final phrase of it in the words, "Not quite enough new automobiles."

Correct buying and intelligent selling of used cars can accomplish much toward lightening the worries and reducing the losses of the trade but these commendable practices combined will not cure the condition that many hundreds of dealers find themselves in to-day, with considerable stocks of used cars on hand and the certainty that they will have to carry some of them through the winter, restricting their ability to invest in new cars.

Dealers in a number of cities are making a questionnaire inquiry, through their associations, to determine what has stopped the sale of used cars, generally speaking. The approach of winter logically is the chief reason but these dealers seem to think there is another reason for so nearly complete a halt in used car business as is reported in some centers. These dealers are quite likely to find part of the reason, at least, if they will look carefully for it, in the ease with which the public can get most of the makes of new cars it wants, except some closed models, and in the prevailing low price levels.

It is interesting to note that in Boston, where a minimum allowance co-operation plan, vigorously administered, has effected a notable reduction in used car losses, dealers are confronted with an uncomfortably heavy accumulation of used cars. Cars bought far below the maximum figures, in some cases, and so priced for resale at low levels, are not finding buyers, most likely because of some of the conditions noted in preceding paragraphs. This statement should not be taken to indicate any dissatisfaction on the part of participants with the Boston plan. An analysis of a statement of more than 5000 used cars bought and sold under the Boston plan this year shows a gross profit of more than 1 per cent, after conditioning costs are accounted for. This has not yielded a net profit because there are selling, storing, insuring and other handling charges, which put the final result on the loss side of the ledger, possibly as high as 10 or 15 per cent, but a year ago, without co-operation, the Boston dealers had a gross loss on used cars running into hundreds of thousands of dollars. The difference between that and a gross profit, even one that has no "pay dirt" of net profit, is enough to make the Hub merchants energetic supporters of their co-operation plan.

The situation in Boston and far less favored communities emphasizes the fact that used car co-operation is calling for another essential co-operator, the manufacturer. When every manufacturer, and his dealers with him, like a few that need not be mentioned, figures territorial allotments on the foundation of combined new and used car requirements we shall have not quite enough new automobiles to meet the desires of every buyer who wants one on a few hours' or a few days' notice. Then, too, we shall have a healthier market for used cars.

About Legislators

A MAINE attorney, addressing a convention of automobile dealers of his State, made a suggestion that well could be applied by automotive tradesmen anywhere. "Be friendly with your local senators and representatives," he said. "It will go a long way toward getting them on your side when subjects concerning your industry are up for legislation." This is a good thought. The average legislator is neither ignorant nor crooked. He resents an unnecessary fighting attitude on the part of a group of men, automotive men or any other class, favoring or opposing proposed legislation. He is one of an assemblage of men overwhelmed with bills on subjects with which they are not familiar. He would welcome help, friendly help. The automotive trade association or committee that goes before a legislature with many of its members friendly with individual automotive men in their home territories has its battle for justice to the industry and the motor vehicle using public half won.

Do you know your Senator or Representative? Are you showing a friendly interest in his job and his ambitions as a legislator? If you don't can you get acquainted with him and what he hopes to do? Can you get a chance to tell him the automotive story? Legislatures in nearly all the States will convene soon. Better get busy.

A Banker's Advice

A BANKER who spoke at an automobile dealers' convention urged his audience to remember two things:

Get closer to your banker.

Don't pay more for used cars than you can sell them for.

Sound advice!

The banker said the average man in his business despairs sometimes over aloofness of his automobile dealer customers. They don't confide in him enough to permit his giving the advice he would be glad to give. Tell your banker your manufacturer's demands, he said; tell him about the attitude of your customers; tell him why you need funds, not just when you need them; let him suggest how you can get in the position to meet your notes on time and conserve your profits.

Many an automotive business man could learn something from his banker.

Try it.

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Some Interesting Car Merchandising Thoughts

Ohio Writer Discusses Some of the Industry's Selling Problems—Suggests Change in Method of Paying Used Car Salesmen

EDITOR, Motor World:

The growth of the automobile industry has been phenomenal. To-day it is still at the height of prosperity, yet the student of the automobile business knows that it is now on the threshold of a new era, and that the industry if it still goes forward will do so along the lines of new ideas, new efforts and new conditions.

Almost from the beginning, the industry has been more a problem of production than anything else, but conditions are arising continually which show that there are problems which are gradually superseding that of production.

The first cloud in the horizon occurred during the fall of 1920 and the year 1921. How was it met? Why, the "buck was passed" entirely to the sales department. Articles were written, much was said about the time having arrived when the salesmen could no longer sit around and wait for the orders to come over the transom.

This was good as far as it went but why stop at the salesmen? It should have applied to every other division of the business also, particularly the management. The greatest difficulty to be overcome in the business to-day is the fact that the men managing the business have done so for so many years under the conditions existing that these conditions have become so much a part of them, that it is almost impossible for them to understand new conditions and work out remedies.

The time has come when the wise men of the industry will go outside to secure men who are highly developed in the powers of merchandising and, having secured them, will subserve their own ideas, and let the "Moses lead them out of the wilderness." A mighty good example of this is the experience of the manufacturer of a popular priced automobile ranging in the $1,000 to $2,000 class, who went outside of the industry to get men of this type, placed them in charge of various branches and the result was that the period from fall 1920 to spring 1922 was the most prosperous of their career, and this manufacturer jumped into one of the foremost positions of those in his class.

It is certainly amusing to read the cures suggested for solving the "used car problem." The fact of the matter is that there should not be a used car problem. Records will probably show that somewhere between sixty and seventy per cent of the deals involve tradeins, that means that there are only sixty to seventy per cent as many used cars to sell as new cars, and there are more prospects for them. To illustrate, a new car lists at $1,000. After the first year of usage it is worth $750; after the second year, say, it is worth $500. At $750 it should be the equal of any new car selling for $750, and at $500 it should be the equal of any new car selling for $500 with the advantage of having the appearance of a higher class car. If this were not true, there would be no justification in listing it at $1,000 originally. We must agree that there are more buyers who can spend $750 than those who can spend $1,000, and at $500 there is still a larger field of buyers. Under good, sensible methods of business then, there should be no difficulty in moving the used cars at their actual values.

What then is the trouble? Simply that the dealer himself through wide publicity has stamped the Used Car as undesirable merchandise. He has told the public time and again: "For heaven's sake, come take these used cars away, I am sick of looking at the old things,—no down payment—no interest —no insurance—five days free rides—bring 'em back if you don't like them—anything at all to get rid of them—only take them out of my sight." Turn to the used car ads in almost any newspaper.

What then is the answer? The dealer through this publicity has made the used car the very foundation on which he will have to build if he wants to stay in business. This outcast child of his has become the most important factor in his business. In view of all this, a check upon the reputable automobile dealers of Cleveland revealed this fact, that a high powered salesman who could sell 100 used cars could earn the princely salary of $200 a month, while a new car salesman selling the same number of cars for the same companies would earn from $500 to $700 a month. Right there lies the answer to the whole problem. First the dealer must advertise and give publicity to the used car which will place it where it of right belongs, and then he should build a sales organization by a plan of compensation which will be at least as attractive if not more so to the used car salesman as compared with the new car salesman.

Then there is the question of advertising. A prominent magazine man said "It's a good thing we have not taken into our heads to censor motor car copy for sense and intelligence or rather the lack of it. On that basis about ninety per cent of the automobile copy would be left out of magazines and newspapers, at least that's the reflection we get via the mails from our subscribers." Sad but only too true. The trouble is this. The factory engineer gets the idea, then he gets enthused, the management is called in, the advertising man is also called in and perhaps the agency man is there too, and soon the engineer's enthusiasm pervades all of them in his wonderful creation, but they all overlook the fact that the "hick down in Squeedunk," who may be a potential buyer of the car, is not thinking in the same channels that they are.

The time has come when the wise advertising manager is going to get out and mingle with this self-same "hick of "Squeedunk," the workman at the bench, the busy man of the store, and the professional man at his office. He is going to learn their language and then he is going to go back to his factory and make his advertising talk to them in that language.

These are just a few ideas of one who is watching the developments most interestedly. If there is anything worth while in it, I feel that I have been repaid for the effort in writing it.—Ohio Dealer.

Write to Motor World About It

This page every week is devoted to discussions of topics of the trade by Motor World readers. Have you a suggestion to overcome a difficulty or improve some condition within the industry? Write to Motor World about it.

The Real Salesman

One who has a steady eye, a steady nerve, a steady tongue and steady habits.

One who understands men and who can make himself understood by men.

One who turns up with a smile and still smiles if he is turned down.

One who is silent when he has nothing to say, and also when the buyer has something to say.

One who keeps his word, his temper and his friends.

One who wins respect by being respectable and respectful.

One who can be courteous in the face of discourtesy.

One who has self-confidence, but does not show it.

One who is loved by his fellow men.—The Salt Seller.

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New Engine Has Five Bearing Crankshaft

Smooth Operation, Power and Flexibility Secured in New Four-Cylinder Lycoming Engine

UNUSUALLY smooth operation at all speeds has been secured in the new Lycoming four cylinder engine through the use of long connecting rods and light reciprocating parts. The performance of the new engine is highly satisfactory from the standpoints of power and flexibility. For test purposes, one of the new engines was installed in a car weighing about 2700 lbs. with a rear axle gear reduction of 4.8 to 1. It is claimed that a speed of 65 m.p.h. has been obtained with this car and that it will accelerate from 5 to 25 m.p.h. in eight seconds. A stiff five-bearing crankshaft and a system of force feed lubrication, in which the pressure is controlled by the throttle, are important constructional features, which undoubtedly will contribute much to durability of the engine. The new engine will be known as the Model C Series and is offered with 3½, 3⅝ or 3¾ in. bore and 5 in. stroke.

Cylinders Cast in Block

The cylinder block, the upper half of the crankcase and the detachable cylinder head are all gray iron castings. The lower half of the crankcase is of pressed steel. The water jackets are integral with the block and water passages are provided around all valve ports, spark plug bosses and over the combustion chamber. The crankcase is stiffened by webs carrying the main bearings. The flywheel housing is an integral part of this casting.

The five-bearing crankshaft is drop forged and heat treated. All bearing surfaces are ground and the shaft is drilled for force feed lubrication. The finished shaft is tested for dynamic balance. Either Lynite, an aluminum alloy, or cast iron pistons may be had with this engine. Three piston rings are used, all located above the pin. The piston pins are made of case hardened steel, drilled hollow and ground. Full floating piston pins are used in the Lynite pistons. The connecting rods are bronze bushed. When the cast iron pistons are used, the pins are clamped in the connecting rods, the bearing being in the bosses.

Long Connecting Rods

The connecting rods are 12 in. long. They are drop forgings of I-beam sections. Bronze backed, babbitt lined bearings are used in the big end bearings as well as in the main bearings. No shims are used to fit the bearings.

The valves are interchangeable and have cast iron heads welded to steel stems. The tappets are hardened and ground, and fitted with hardened steel adjusting screws and locknuts.

The camshaft is a drop forging, case hardened and ground. It is carried in four removable bronze bushings. A spring operated plunger bearing on a hardened steel button on the front end of the camshaft takes the end thrust and automatically adjusts for wear in the timing gears, which are helically cut. The crankshaft and generator gears are fibre and the camshaft gear cast iron.

The flywheel is semi-steel, machined all over and tested for dynamic balance. It is bolted to a flange forged integrally with the crankshaft. Teeth for the starting motor are cut in the periphery of the flywheel.

The intake and exhaust manifolds are an integral casting which is held in position by clamps. A hot spot is provided to assist in the vaporization of the fuel.

Cooling is by thermo-syphon. The fan drive pulley is mounted on the front end of the crankshaft and the fan is carried on an adjustable bracket attached to the front end of the block. Provision is made for mounting the ignition unit at the front end of the gear case over the timing gears. It is driven by the camshaft gear.

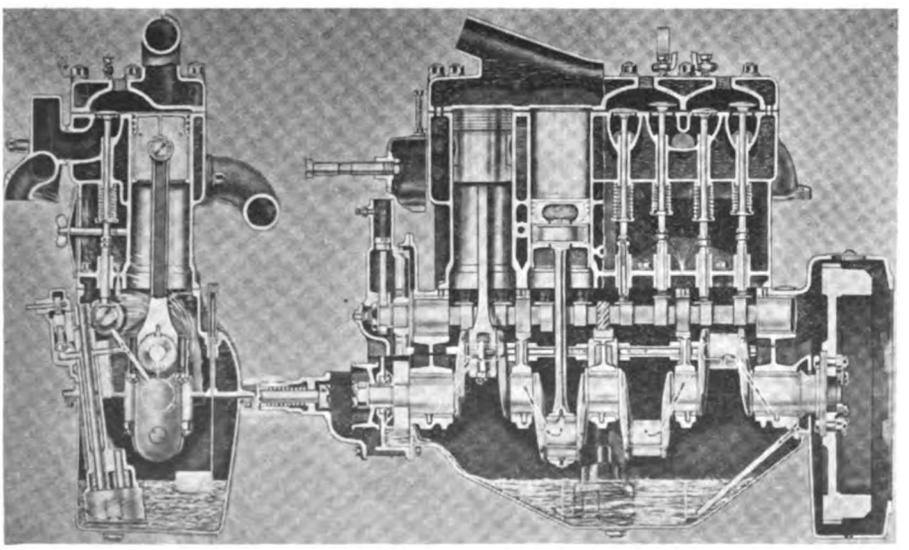
Pressure lubrication is used. Oil is carried under pressure to all main, connecting rod, big end and camshaft bearings. The entire circulating system is contained in the upper half of the crankcase. The gear type of oil pump is driven at camshaft speed by spiral gears located at the center of the camshaft. It is supported by the upper half of the crankcase but extends down into the oil reservoir. This construction permits removal of the oil pan without interference with other parts of the lubrication system. The pump intake is always immersed in oil and requires no priming.

The pump discharges directly into the distributor tube cast into the upper half of the crankcase. This tube is connected by holes drilled through the webs to all camshaft and main bearings. A nozzle on the front end of the distributor tube directs a continuous stream of oil onto the timing gears. Valves, push rods, pistons and piston pins are lubricated by oil thrown off the crankshaft.

Oil Pressure Depends on Load

The oil pressure varies from 2 to 5 lbs. at idling speeds up to 25 lbs at wide open throttle. A pressure relief valve is provided which discharges into a bypass leading back to the oil reservoir. This relief valve is connected to the throttle. In this way the oil pressure is regulated to conform to the load on the engine. Maximum pressure is secured with wide open throttle and minimum with closed throttle. An oil strainer is provided at the pump inlet. The oil level indicator is operated by a cork float and is in plain view on the side of the engine.

The engine is designed for three-point suspension. The front support is a trunnion on the crankshaft center line. The two rear support pads are cast on the flywheel housing. The bell housing flange is either No. 3 or No. 5 S.A.E. standard size. Provision is made for the installation of a two-unit starting-lighting system.



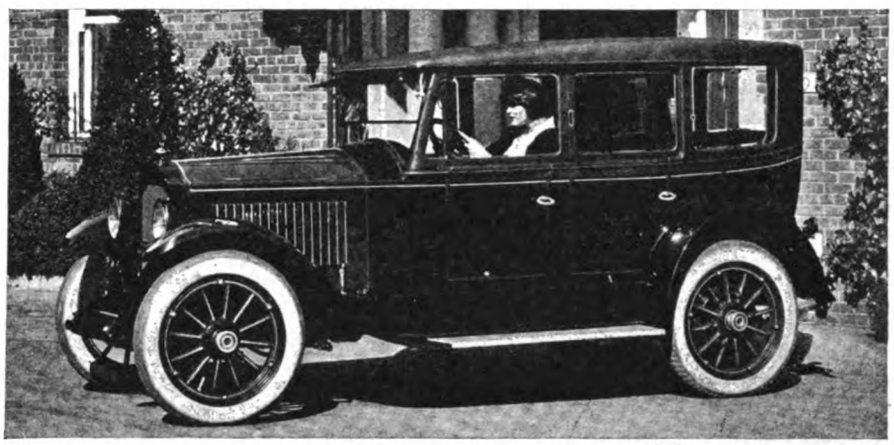
Transverse and longitudinal sectional views of the new Lycoming engine. Among the features of this engine are the five bearing crankshaft, the long connecting rods and the pressure lubrication system.

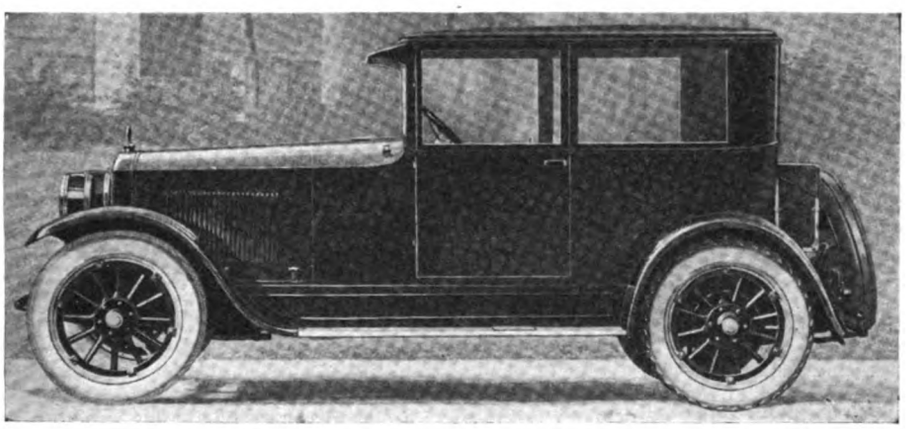
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Some Interesting New Top and Body Offerings

Larkins All Weather Top

This top is of the permanent type with sliding windows. The frame is of ash and the covering is Fabrikoid. There are numerous color options. A dome light is installed in the top over the tonneau. The top is fitted with a drip molding and a lock is installed by means of which the car may be locked



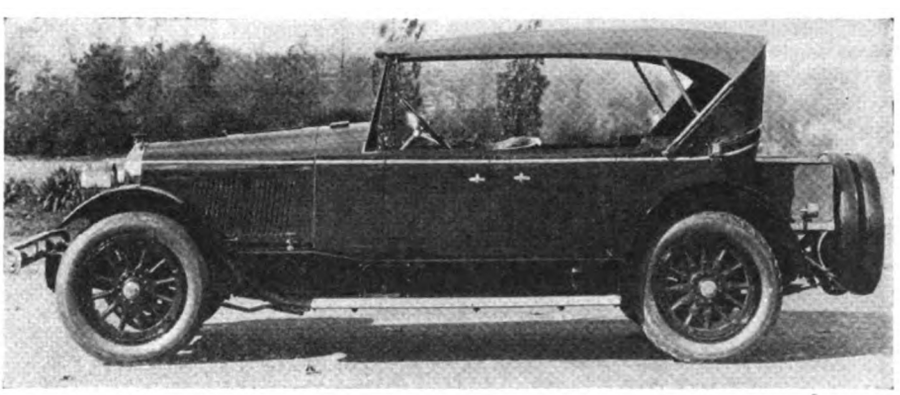


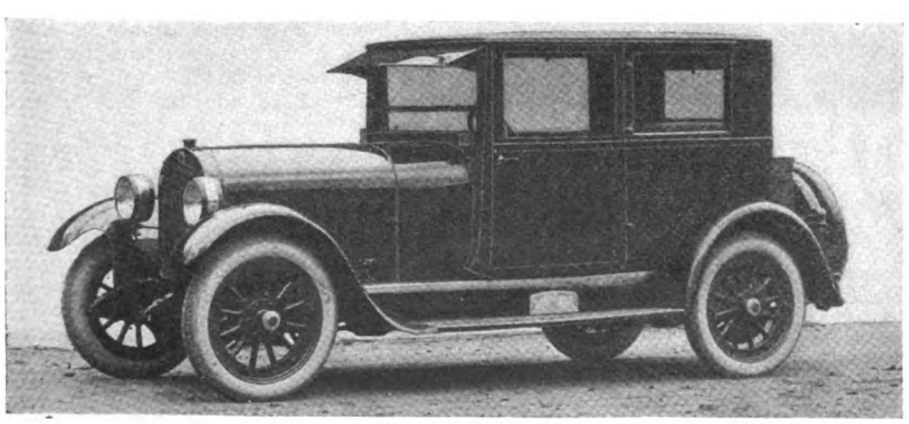
New Auburn Four-Passenger Closed Model at $2,060

This new close-coupled, four-passenger, two-door sedan type will be known as the Brougham. The right front seat is of the tilting style to permit easy entrance to the rear seat. The trunk and rack at the rear are regular equipment

The Pasadena—A New Dorris Sport Model

This is the new four-passenger Dorris sport job. Stock colors are Holland blue, maroon and gun metal gray. The body molding extending over the hood to the radiator shell is ¾ in. wide. The windshield stanchions are of bronze nickel plated. The top bows are in natural wood with nickel plated fittings. The trunk rack at the rear is of aluminum





A New Westcott Closed Model

This new Westcott body model is priced at $2,490. The body is hung low and the hood lines are unusually long. The touring trunk at the rear is included in the equipment

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Fair Canvassers Get Ford Prospects

Girls on Straight Salary and Small Bonus for Sales Declared Best Yet by Detroit Dealer

THE problem of maintaining an adequate list of prospects for his salesmen is one that every dealer must solve. This different dealers do in different ways, many of them going to the extent of employing junior salesmen to canvass from house to house or to call possible prospects on the telephone.

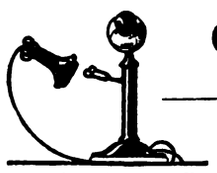
Johns Brothers, Detroit Ford dealer, operates a plan which is declared to produce much better results than any other, that of employing girls to canvass from house to house.

Each girl is assigned a certain territory and is sent out to gather information. It is her task to learn whether the one on whom she calls is interested in buying a Ford, and if so whether he now has a car and what kind it is. This information she notes on a prospect slip, which she turns in at the end of the day. If the prospect is interested at the time, a salesman goes out to call on him at once; if he reports that he will be in the market later, the slip is filed to come up at that time; if he is not interested at all, the girl at least leaves a Johns Brothers card with him.

The principal advantage of the plan, according to Henry Johns, one of the proprietors, is that a girl or woman can gain entrance to a home and obtain information much more readily than can a man. This is due, he explains, to the fact that the husband is usually away from home during the day and that it is to the wife that the canvasser must talk when he calls. The housewife, not expecting callers, is very likely to be in deshabille and to feel a hesitancy in admitting a male caller or even in talking to him at the door, while, on the other hand, she has little or no objection to admitting one of her sex, as the latter "knows how it is."

The girls are paid straight salaries of $20 to $25 a week and are, in addition, paid a bonus of $5 on each sale resulting from their canvasses.

Johns Brothers has employed as many as twelve girls at a time for this work, but the number naturally varies in accordance with the need of prospects.



CALL!

who fulfil the transportation needs of their business by using Traffic Truck.

We prefer others to tell you what Traffic Truck means to the Business Trade of Philadelphia.
Sold and Serviced by a Direct Factory Branch

Speedboy Complete $1695
4000 Lb. Chassis ..... 1595 F. O. B.
6000 Lb. " ..... 1895 Factory
6000 Lb. Dual Chassis 1995

THE TRAFFIC TRUCK SALES CO., OF PHILADELPHIA
Direct Factory Branch
Poplar 8490 2212-14-16 SPRING GARDEN STREET Race 1309
M A LIST OF PHILA. TRAFFIC OWNERS SENT ON REQUEST

A Truck Selling Idea

The blotter shown above is a novel piece of advertising that has brought good results in retail sales for The Traffic Truck Sales Co. of Philadelphia. After a salesman has called on a prospect, one of these blotters is immediately forwarded to him with the name, address and telephone number of a Traffic truck user, in the same business, typewritten on the line directly under "Call." It is one of the few direct pieces of advertising that in the majority of cases escapes the waste-basket, until its performance as a blotter has served its purpose

Prospect Report Form Used by Girl Canvassers

JOHNS BROS. DETROIT, MICH. 7811 GRATIOT

Report of Call by: Mary Abbot Salesman

Date October 31 1922

Firm Name: William Springer

Address: 4312 Garland

Buyers Name: Grinnell

Party Interviewed: Mrs. Springer

Make of Machine now using: F. Touring

Interested: F. Sedan

Call Back Date: after holidays

Remarks: Mrs S. says they're sure to get F. Sedan, but want to wait till after X'mas.

Here is a fac-simile of the prospect report form used by Johns Brothers, Detroit Ford dealer. Women do the canvassing in a house-to-house effort, and all promising reports are followed up by salesmen. The women are paid $20 and $25 a week salary and $5 for each sale that results

Selling Open Car Comfort

IN selling open cars in the winter time it is always a splendid talking point to tell the prospect about how tightly the curtains fit. In fact, this is one of the very best winter sales arguments for open cars. And, since this is the case, the dealer who demonstrates cars in his salesrooms with curtains all in place is always sure to get the early and eager interest of the prospect.

When Closed Cars Are Scarce

"WHEN, in December or January, I find a prospect wants a closed car, and I can't deliver one to him," said a successful middle western dealer, "I point out to him the fact that in three or four months the open car season will again be with us, and that, during the meantime, his side curtains will make a car snug and cosy and warm for the rest of the winter. Quite often this fact that spring is only a comparatively short distance away enables me to sell open cars to folks who have thought they wouldn't want anything but closed jobs. But, of course, it is only when I can't get closed jobs that I use such an argument."

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Accessory Store in Waiting Room Gets Sales

Attractive Display Proves Big Profit Producer in Service Station of Los Angeles Studebaker Dealer

TEN-FOLD increase in the sale of accessories in a seven months' period. This is what Paul G. Hoffman, Studebaker dealer in Los Angeles, has accomplished.

Accessories were formerly displayed at the Hoffman establishment in a very conservative way in corners in the general sales room or in a nook in the service department. About seven months ago, Hoffman installed an accessory shop at the left of the main entrance to the service department. The store is separated from the service floor by an all-glass partition. Every motorist entering or leaving the service floor cannot help seeing the complete line of accessories on display in the accessory department. Furthermore, the "waiting room" for all service customers is in the accessory store.

All automobile salesmen employed by Hoffman are required to bring customers to the accessory shop after making a sale. It has been found that the new car purchasers are the largest buyers at the Hoffman store.

"Proper display is the keynote to our success with accessories," said Sales Manager Carpenter. "The remarkable increase in our sales of accessories in such a short period shows what display means."



This is the accessory store operated by Paul G. Hoffman, Studebaker dealer in Los Angeles, in his building, which has been a source of additional profit for his business

A Good Selling Slogan

"WE have a slogan at our store that helps us considerably in remembering to do the things that will help us get more business," said a successful middle western accessory dealer. "Our slogan is this: 'Every accessory purchaser a gasoline user, and every gasoline patron an accessory customer.' In other words, when a man buys gasoline from us we solicit him to buy accessories and when we sell an accessory to a man we solicit him to buy his gasoline and oil from us. All of which helps considerably in getting more business."

License Numbers Identify Cars in Garage

INSTEAD of placing the name of an automobile owner above his stall in The American Garage, Evanston, Ill., W. F. MacDonald, the manager, substitutes the State license number.

This plan makes it easy for the washer at night to return a car to the proper space if he does not know all the cars in the garage, which has a capacity of almost 100. It is meeting with approval of the garage patrons, too. Many owners do not wish their names in letters five inches high posted above their spaces in the garage.

Another unique idea in this garage is that the floor slopes toward the outside, causing all water and grease to drain back and not to the center, where, in many garages, it is annoying to car owners who are obliged to wade through damp spots to leave the building. The floor of The American Garage pitches to the north and to the south. Troughs alongside the walls pitch to the east and to the west, and thence water and grease flow into a drain pipe. This is less expensive, too, than the usual scheme, because there is only one grading.

Tagging Helps Sales



The effectiveness of tags hung on the steering wheel or radiator cap of cars to sell a product was demonstrated recently in a special campaign conducted by "X" Laboratories in Ohio. A picture of the tags used is shown above. Special representatives of the company distributed the tags which were placed on cars in garages and other places where large numbers gathered, and by special canvassers

Vacuum Cleaner Helps Filling Station Sales

THE Corey Filling Station, Hartford, Conn., has added a vacuum cleaning outfit to its equipment, and the installation has paid very well. When the customer drives into the yard, he sees a large sign on the wall, which says:

Just Say
"Take Care of It"
And We Will Be Valets to Your Car.
Closed Cars
Vacuum Cleaned
While You Wait
50 Cents

The sign has done more than was expected of it. Owners spotting the suggestion of a vacuum cleaning of car interiors readily consented to have the trick performed. This little item has been the means of adding business, according to the management. In cases where cushions were badly soiled, the Corey station turned them over to a dyeing and cleaning house on the opposite side of the street.

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How Priority Lien Rights Differ in States

Legal Editor Points Out Necessity of Knowing Your State's Lien Law When Priority Questions Arise

EDITOR Motor World:—We are very much interested in the article on page 30 of the Oct. 4 issue of Motor World, entitled "Date of Lien Fixes Priority in Michigan."

We have two cases at the present time of cars financed on the installment plan in the State of New Jersey on the conditional sale plan. The cars have been sent to garages for repairs. The buyers have not the money to pay for these repairs amounting to $300 and $400—and the garagemen will not release the cars until the bills are paid.

Due to the fact that the cars are tied up the buyers are not able to use them, which means that the monthly payments will not be made to us.

We asked the garagemen to release the cars but they refuse to do so until their bills are paid. Cars were repaired without our consent. Will you kindly advise us what our rights are in these cases? Under the conditional sales contracts the title to the car remains in our name until we issue a release. The garagemen's liens date a number of months after our conditional sales contracts took effect. —C. F. Corporation, Hackensack, N. J.

Answer:—The article you refer to is a case decided under the law of Michigan. Your case must be decided under the law of New Jersey in which State garagemen's liens are given priority to the liens of vendees under conditional sales contracts. The only practical thing for you to do is pay the repair charges, have your attorney get the repairman's liens assigned to you and then foreclose your respective liens. Do not pay any attention to the law of any other State than your own in this matter. The following table shows the respective priorities under various claims of lien in the different states so far as they can be determined at this time:

Where repairman's lien has priority: Arkansas, California, Maryland, Mississippi, New York, New Jersey, Kansas, Oregon, Wisconsin.

Where lien of holder of chattel mortgage or conditional bill of sale has priority: Connecticut, Georgia, Idaho, Illinois, Nebraska, Nevada, Oregon, Tennessee, Texas, Washington, West Virginia.

In many states, like Virginia, there is no special statutory garagemen's lien law but only the general common law lien of artisans and mechanics. In these states the holders of conditional bills of sale or chattel mortgages have a lien prior to that of garagemen who repair cars.

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

How Insurance Is "Short Rated"

EDITOR Motor World:—We recently had occasion to cancel a fire insurance policy which we had taken out for a year when it had only run six months. Now instead of giving us back 50 per cent of the premium we paid, the broker tells us the policy was "short rated" and wants us to take about 30 per cent for the remaining six months when we will not have that insurance and although we only did have that insurance for six months. Please tell us is this legal and right, and how do they get that way?—K. C. Co., Rochester, N. Y.

Answer.—It seems to be correct. When a policy is taken out by you and subsequently cancelled, you do not get a pro rata return of the premium you paid, but as you say, the premium is "short rated"; that is, you pay the following percentage for the following number of days the policy has been in force:

Days	*Per Cent*
1	2
2	4
3	5
4	6
5	7
6	8
7	9
8	9
9	10
10	10
11	11
12	11
13	12
14	13
15	13
16	14
17	15
18	16
19	16
20	17
25	19
30 (1 mo.)	20
35	23
40	25
45	27
50	28
55	29
60 (2 mos.)	30
65	33
70	36
75	37
80	38
85	39
90 (3 mos.)	40
105	46
120 (4 mos.)	50
135	56
150 (5 mos.)	60
165	66
180 (6 mos.)	70
195	73
210 (7 mos.)	75
225	78
240 (8 mos.)	80
255	83
270 (9 mos.)	85
285	88
300 (10 mos.)	90
315	93
330 (11 mos.)	95
345	98
360 (12 mos.)	100

Care in Copying Car Number Is Necessary

That a person purchasing a Ford Car No. 2558516 was not bound by the fact that a mortgage on the car had been recorded giving the number of the car as No. 355816 or put under the obligation of inquiring whether through some mistake the two numbers were intended to identify the same car was the decision in the Iowa case of First Mortgage Loan Co. vs. Durfee, reported in 188 Northwestern Reporter, pg. 777.

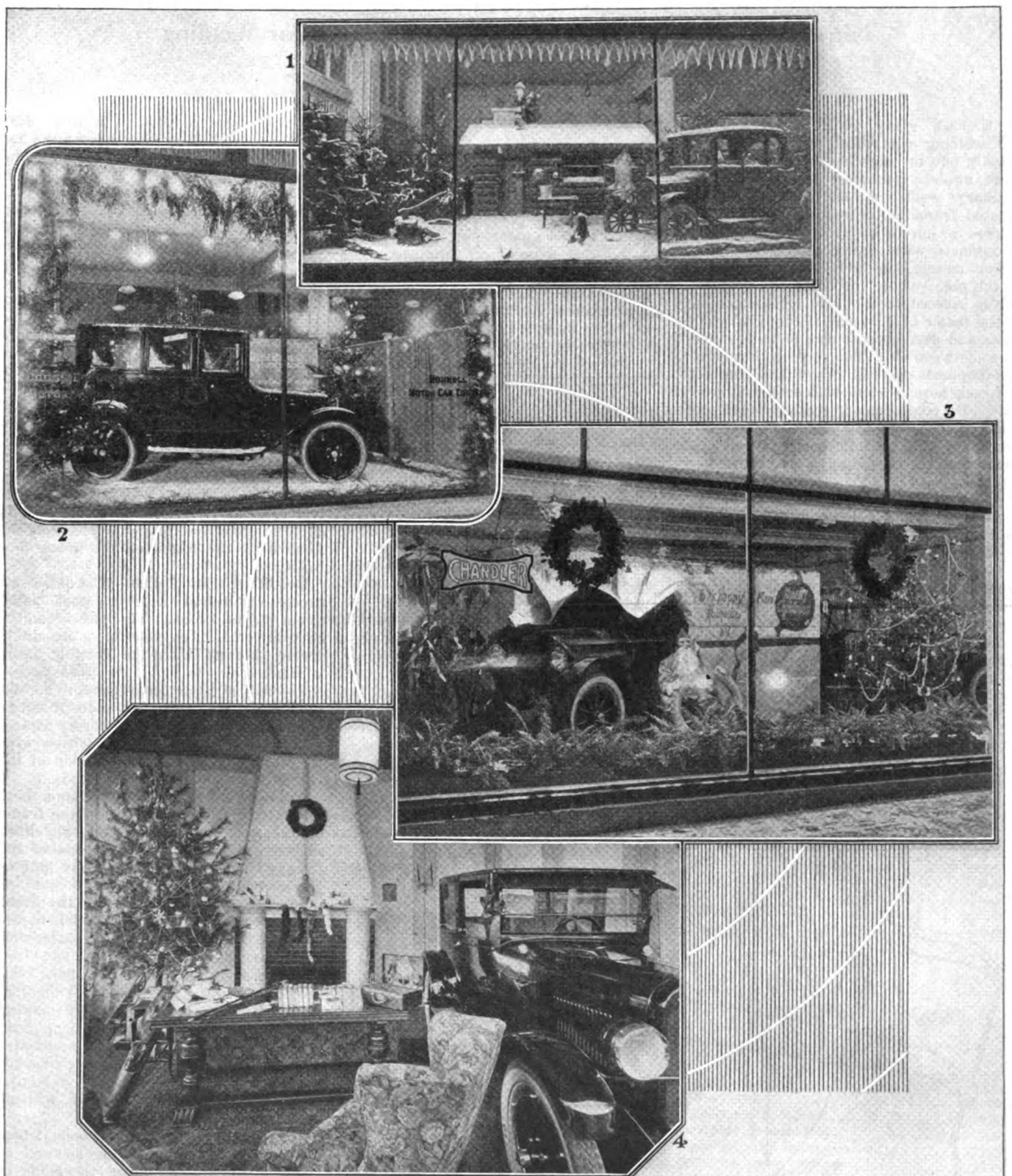
The court said that a record of a chattel mortgage which fails to show the true number of a car, but gives a different number which it does not bear, does not put a purchaser on inquiry.

Law Implies Warranty

The Alabama courts decided in a recent case that in the absence of an express warranty the law implies a warranty on the part of the seller of an automobile that it is reasonably adapted to the uses for which it was made and sold, and that it is a reasonably good automobile, its class and price considered.—Franklin Motor Car Co. vs. Ratleff. 92 Southern Reporter, pg. 450.

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Christmas Display Ideas for the Car Dealer



Here are some clever Christmas displays that present the motor car as a gift suggestion: 1—*A log cabin scene with Santa Claus about to climb down the chimney was cleverly made by the Francis Motor Car Co., Ford dealer in Portland, Ore.* 2—*Holiday trimmings and some artificial snow made a pretty setting for the Dodge sedan used as a Christmas display by the Bonnell Motor Car Co. of Newark, N. J.* 3—*Strong Motors, Inc., Chandler distributor in Rochester, N. Y., made a particularly attractive "car in a Christmas package" display last Christmas.* 4—*The gift idea was visualized in a display used by Harry J. DeBear when general manager of the Maxwell-Chalmers Distributing Corp. in New York. The car was brought right into the home in a Christmas morning atmosphere*

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How to Weld a Broken Frame

Straightening the Frame—Preparing the Break for Welding —Instructions for Welding

NEARLY every repair shop has a welding equipment, and there are usually one or more mechanics who are more or less proficient in making the ordinary weld. A badly broken and twisted frame is, however, usually considered a job to be sent to the expert or replaced with a new one.

Fortunately, the break usually occurs at the point where the front cross member is riveted to the side member; due to the frame being weakened by the rivet holes and also because this point is midway between the two spring hangers and supports the weight of the engine. A break here is somewhat easier to repair. Of course many frames break at other places but the same method of procedure can be followed in repairing them, and the foregoing is only cited as an example.

A frame properly welded, will never come apart; and a little care and precaution in doing the work will insure a good job.

1.—First block up the car under the frame at the rear of the engine on both sides and remove the radiator, fender, hood sills and front spring.

2.—Remove the rivets which hold the front cross member and fender braces in place, and if the frame is out of line force it back to its original position by heating with the welding torch and using a large wrench.

3.—To test the alignment, pass a piece of round steel the same size as the front spring bolts, through the shackle holes in the front of the frame. Measure from both ends of this rod to the floor and compare with the measurements from the frame to the floor. This will tell whether to bend it up or down. The fact that the rod passes through both ends of frame shows no twist present.

4.—Scrape or file all paint or rust from the vicinity of the break and weld all around on the outside, being sure that the filler does not extend above the surface. This may seem a little difficult at first, but by starting at the top and gaging the flame carefully the metal will flow together with but little filler rod added.

5.—In welding the vertical seam start at the bottom and heat the steel until it sparkles freely and flows together. In the meantime, keep the filler rod near the flame and at a welding heat. When the edges flow together, apply the rod. Keep the flame directed upward, rotate the torch gently in little circles and move slowly toward the top. Do not add more filler than will incorporate in the weld or it will have a tendency to flow out. The periodic addition of the rod and the oscillating motion of the torch will form the welded seam in little waves or ripples.

6.—Welding the bottom seam is really easier than the vertical as the metal will drop off if not properly united. In this as, in all welding, do not add the filler until the edges of the break flow together.

7.—After the frame is welded all around reinforce with a steel patch about $\frac{3}{16}$ in. thick. Flat steel can be bought for this purpose on a discarded frame, cut up with the cutting torch, is ideal.

8.—Cut a piece long enough to extend 4 or 5 in. on each side of break and wide enough to wrap entirely around the frame. Bolt this in position over the weld, flat against the outside of the frame and weld the vertical ends.

9.—With a rather large flame, heat the patch along the top line of the frame and hammer it down to a snug fit; clinch the edge of it over the top edge of the frame; heat and bend the lower half of patch and fit the same.

10.—At the intersection of the front cross member, either cut a notch in the steel or heat and stretch to place with a ball pein hammer.

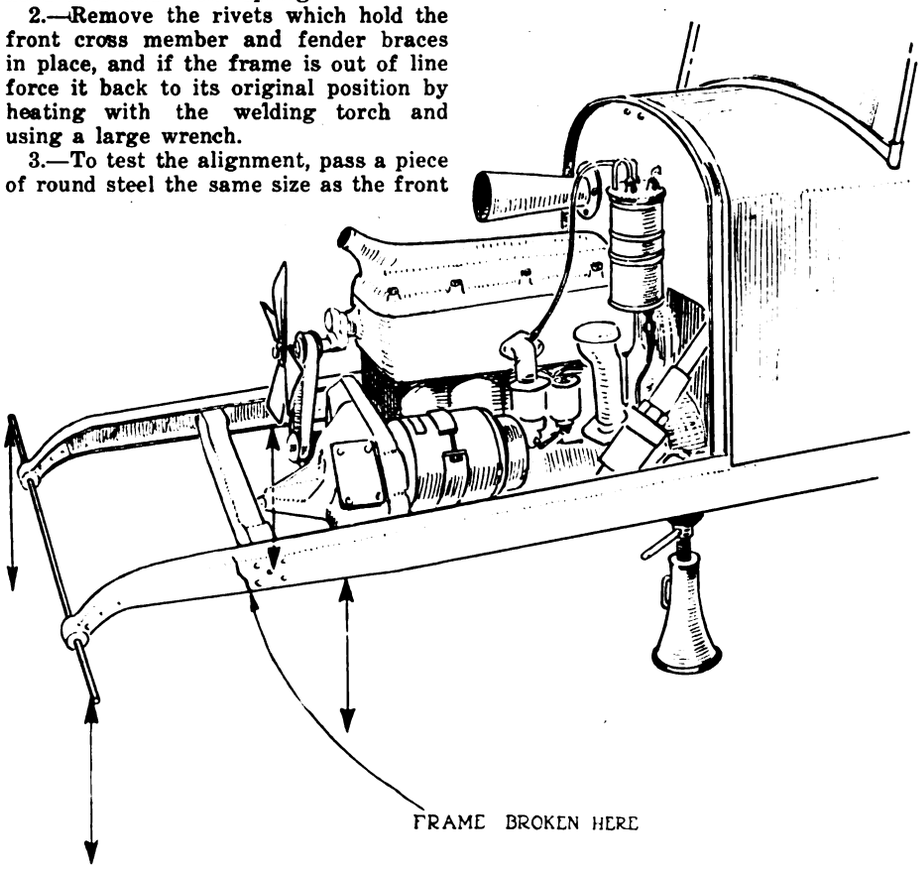
11.—Weld the re-inforcement all around; using, preferably, vanadium steel rod and proceeding as in making the first weld. If properly done very little filler rod will be found necessary. After the job is done heat the surrounding metal to an even cherry heat and allow to cool naturally, that is, without covering or draughts.

12.—When cool, hold the fender irons, etc., in place and mark the location of holes and drill. To bring the irons in the same location as before the $\frac{3}{16}$ in. piece was added it may be necessary to bend them a little. This may be done after they are fastened in place by heating with the torch. Sometimes the forgings are heavy enough that the proper amount can be ground off of the flat

Better Mechanics

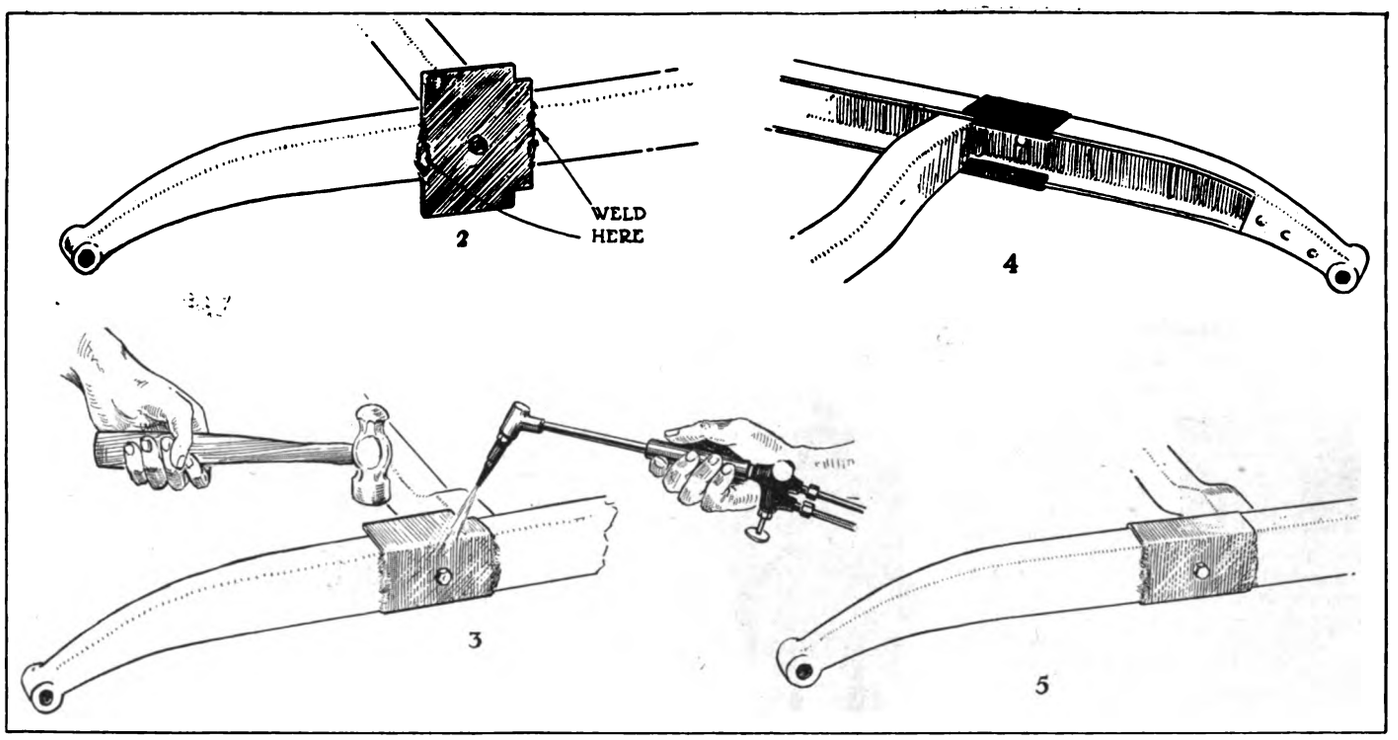
ARTICLE No. 266

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.



1—*A round steel bar is passed through the holes for the spring bolts to test the alignment of the frame. This bar should be the same size as the bolts*

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2—The frame is reinforced at the break with a steel patch. 3—The patch is heated and hammered to a snug fit. 4—The ends of the patch are clinched. 5—The finished patch

surface where they are attached.

13.—A break at practically any place in the frame can be re-inforced, but in case it is under the body sills it will only be necessary to loosen the body bolts and raise it enough to allow the steel to be placed in position without welding the top of the frame. There is but very little strain at this point, and with the patch firmly welded at the bottom and sides the contraction in cooling will make it very solid.

14.—Should the repair be at the end of the rear cross member, the re-inforcement may be placed over the rivets without removing them.

15.—Cover all parts likely to be damaged by the heat with several thicknesses of asbestos paper, dampened to hold it in place. When welding near the engine be sure that the carbureter and vacuum tank are drained and place a handful of wet waste over the gas tank filler hole. Of course it will be necessary to remove the gas tank when making repairs at the rear of the frame.—H. V. D. Sweet.

Oakland Lists Service Tools and Equipment

THE Oakland Motor Car Co., in co-operation with a number of manufacturers of service tools and equipment, has brought out a booklet listing recommended service station equipment for small, medium and large sized shops, devoted to Oakland service. The book consists of 36 pages, describing and illustrating the various equipment recommended, and the following list has been compiled from the book:

Equipment C, for a Small Shop

Surface plate 12 x 16 in.	$10.00
Piston vise	7.50
Car jacks	16.00
Engine lifting fixture	1.75
Car lifting hooks	5.00
Front wheel trammer	6.50
Axle straightening bar	5.00
Connecting rod bearing bar	2.50
4 wheel pullers	15.00
Crank and camshaft gear puller	5.00
Generator gear puller	2.50
Wheel bearing sleeve puller	6.50
Clutch wrench	3.50
Cylinder head bolt wrench	3.50
Wrench for pinion shaft outer nut or universal joint	6.50
Socket wrench for water propeller screw	1.50
Spring leaf spreader	1.75
Piston inserter	3.00
Wire wheel wrenches	4.50
Differential bearing sleeve puller	12.00
Universal nut wrench	3.50
Steering wheel puller	5.00
Timing gage for chain drive	.75
Oil deflector driver	1.00
Clutch nut spanner wrench	1.50
Drive shaft bushing spanner wrench	1.00
Drive shaft pinion adjusting spanner wrench	1.00
Camshaft assembly puller	12.00
Universal bushing puller	7.50
Front cam bearing facer	8.50
Cylinder honing outfit	25.00
Piston ring groove tool	9.00
Connecting rod and piston aligners	29.50
Cylinder head holding fixture	12.00
Cylinder testing gage	35.00
Electric valve grinder	45.00
Castor jack	48.00
Reamer set (8)	28.00
Valve seat refacing tool	5.00
Socket and speed wrench set (10)	12.37
Rocker arm lever	.50
Total cost of "C" equipment	$410.62

Equipment B, for a Medium Sized Shop

Includes all items under "C" and the following.

Portable wrecking truck	$40.00
20-ton arbor press	95.00
½-in. electric drill and bench drill stand	130.00
Straightening press with dial indicator	95.00
Ring gear aligning device	12.50
Brake band riveting machine	20.00
Axle stand	60.00
Engine stand	75.00
Car trestles	30.00
Main bearing alignment bar	50.00
Camshaft bearing alignment reamer	45.00
Center main bearing facing tool	30.00
Transmission stand	8.00
Crankpin retruing tool	185.00
Electric bench grinder 6-in	56.00
Total cost of "B" equipment	$931.50
Cost of "C" equipment	410.62
Total cost of "B" and "C" equipment	$1,342.12

Equipment A, for a Large Shop

Includes all items under "C" and "B" and the following:

Bench arbor press	$30.00
Wash tank	110.00
Radiator test tank	60.00
Radiator repair tool	7.50
Grinding and milling machine	217.00
Electric valve refacer	150.00
Portable work bench	48.00
Floor crane	100.00
Chain hoist (1-ton)	35.10
Total cost of "A" equipment	$757.60
Cost of "B" and "C" equipment	$1,342.12
Total cost of "A," "B" and "C" equipment	$2,099.72

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Equipment to Sell

New Devices for the Car and Truck

Ann Arbor Automatic Garage Door Holder

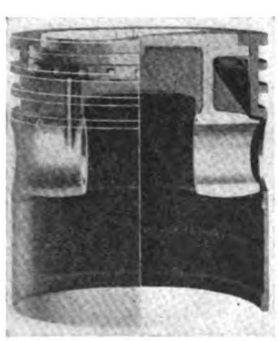
Knowes-Stevenson Co., Ann Arbor, Mich.
Price, $3 per pair



The door holders are for private or public garages. The doors are opened and the holders keep them open against the wind until the driver closes them. The operation of closing is accomplished by opening the door an inch or two wider, thus automatically releasing the gravity latch so that the doors close. They are made of cold rolled steel, with a luster finish, which is rustproof.

Thermolite Composite Piston

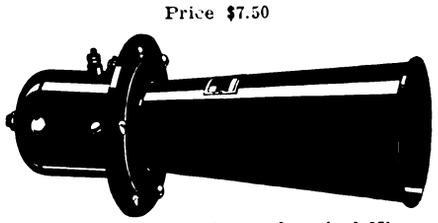
Muskegon Motor Specialty Co.,
Muskegon, Mich.



A composite aluminum and cast iron piston in which the central part of the piston head, the piston pin bosses and the ribbing extending between the two form a separate piece made of an aluminum alloy. The thrust of the explosion is taken directly on this aluminum part and the cast iron part acts merely as a sealing and guiding element. The device for locking the two portions of the pistons together consists of a drawn steel split collar with reinforcing webs for strength and to receive the spanner wrench. The lower face of the locking collar has twelve inclines or cam faces which engage twelve cam faces on the iron skirt, and when locked and pinned, constitute a positive lock. It is claimed that the pistons weigh from 25 to 40 per cent less than cast iron pistons. The pistons are made for replacement as well as for original equipment and the cost is approximately between aluminum and cast iron pistons.

Klaxon-8 Horn

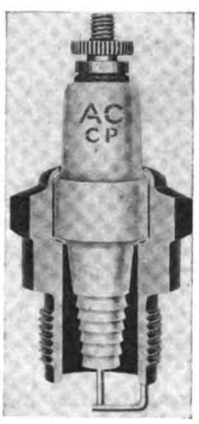
Klaxon Co., Newark, N. J.
Price $7.50



A new ball-bearing horn of typical Klaxon design. The price on the Klaxon-5 has been reduced from $7 to $5.50.

AC Carbon Proof Spark Plug

AC Spark Plug Co., Flint, Mich.
Price, $1



A new line of AC Spark Plugs shows a porcelain of unusual design to prevent the formation of carbon. Around the inner end of the porcelain are molded a series of saw-tooth girdles with sharp edges which contain sufficient heat to burn off oily soot. Since there are several of these fins, the coating cannot become complete and the plug reduces short circuiting by carbon to a minimum. The shell is made in one piece with gaskets between the upper and lower shoulders of the porcelain. Made in all sizes and threads and in lengths to fit various engines.

New Gill Piston Rings

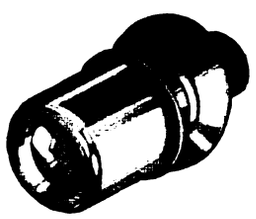
Gill Mfg. Co.,
8300 South Chicago Avenue, Chicago
Prices, 4-in. sizes, Special—50 cents, Servus—40 cents



The Special ring is of the oil-wiping type with a square oil return space around the bottom. The Servus is a step-cut ring. Both types of rings are made from individual gray iron castings.

Check-Lite

Meilicke Mfg. Co.,
940 Wrightwood Avenue, Chicago
Price $1.50



The purpose of this device is to show whether or not the stop signal is operating. It is mounted on the dash and connected in series with the stop signal. When the signal is operated, if this device does not show red, trouble is indicated.

Utility Heaters

Hill Pump Valve Co.,
Belmont & Knox Avenues, Chicago



These heaters are made in register and heelboard styles. A valve is provided so that the heater may be turned on or off. Provision is made for removing dirt. The register heater is finished in polished aluminum or black enamel. Prices ranges from $25 to $15. The heelboard style is furnished in black enamel only. Prices for this style run from $10 to $20.

Philco P. W. M. T. Vehicle Storage Battery

Philadelphia Storage Battery Co.,
Philadelphia



Long life and large capacity are claimed for this new vehicle battery. The diamond grid type of plate is used and the process employed in making the plates is said to give uniform hardness and porosity. Hardwood separators in conjunction with the Philco retainer are used. The positive posts of all cells are solid lead alloy, while the negative posts have projecting threaded studs of brass or other metal with exposed surfaces lead plated. A nut imbedded in the case leaden cap is fitted to the stud of the negative post. The connectors consist of lead plated copper strips with a hole punched on one end and with a lead-alloy head cast on the other end. This construction gives a flexible connector and one that is easily disconnected, as it is only burned at the positive end.

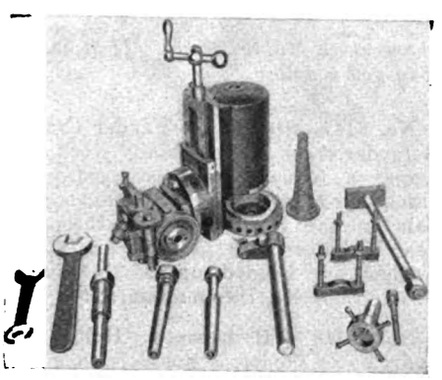
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Equipment for the Shop

New Machinery and Tools

Garrett Millerette Converter

The Production Machine Tool Co.,
629 East Pearl Street, Cincinnati, Ohio



This is an attachment for lathes, planers, shapers and drill presses for milling work. With the lathe, work can be done on a dividing head on which a large range of milling, such as cutting gears, spur and bevel, surface milling, angle cutting, spline and keyward work, etc., can be done. On the drill press the device spaces the holes to be drilled and holds the work and on a planer and shaper it is used as a dividing head. The index head is connected with the change gears, can be quickly set up as only two gears are used at one time and the index plate is complete showing the gears to be used and the required number of turns of the index handle to obtain divisions from 2 to 360. It can be set at any angle, as both the down slide and the index head turn on a swivel.

MacKenzie Visible Gasoline Measure

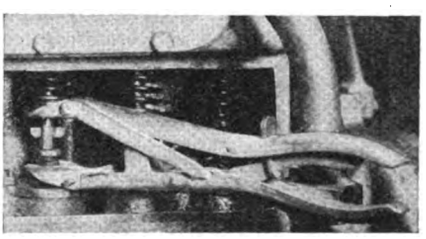
Springfield Mfg. Co.,
Springfield, Ill.



The feature of the system is that there are two glass bowls, each containing one gallon. One of these is filling while the other empties so that the process of delivering gasoline to a car can be made practically continuous. Cylinders can be removed within a few minutes for cleaning or replacement in case of breakage. The operating valve is self-closing and automatic draining as soon as released by the operator. The vacuum system is used to draw the gasoline into the bowls. The telltale shows the operator and purchaser the number of gallons delivered. A small power plant is used for operating, this being cut into any electric circuit.

K-D Parallel Jaw Valve Spring Lifters

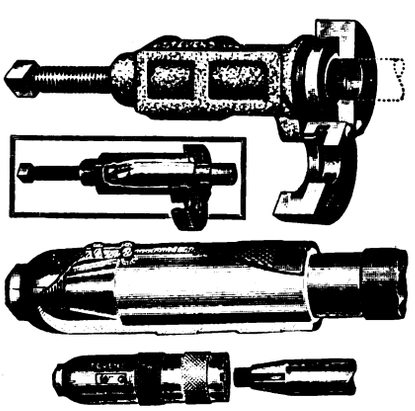
K-D Mfg. Co.,
510-524 North Plum Street, Lancaster, Pa.
Price $2.10; Special for Fords, $1.10.



The valve spring lifter is so made that the jaws are parallel at preventing the spring from slipping off the seat. The jaws are removable and interchangeable by simply removing the fulcrum pin. Each jaw has a different size opening and the combination of these sizes makes the tool adaptable to practically all sizes and types of springs. A locking device between the handles allows for eleven different positions holding the lifter in place when the spring is raised, thus allowing the operator to use both hands if necessary to remove or replace the key. The locking device does not protrude through the handle.

Stevens Puller and Driver for Ford Driveshaft Sleeve No. 2596

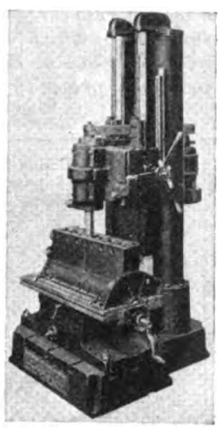
Stevens & Co.,
375 Broadway, New York City.
Price $6.50 for puller only, $8 for puller and driver.



The tool is for removing the Ford driveshaft sleeve, No. 2596. The puller has steel jaws that completely surround the sleeve, so that any desired pressure can be applied through the large steel screw without injury to either sleeve or shaft. The inside is machined to a close fit on the sleeve to prevent the tool from springing out of line or jumping off under pressure. The square bosses on the sides are for securing the tool in the vise. The driver is provided with a sight consisting of a special notch and pin to secure the proper alignment of the keyway slots as the sleeve is driven into place.

Williams Cylinder Grinder

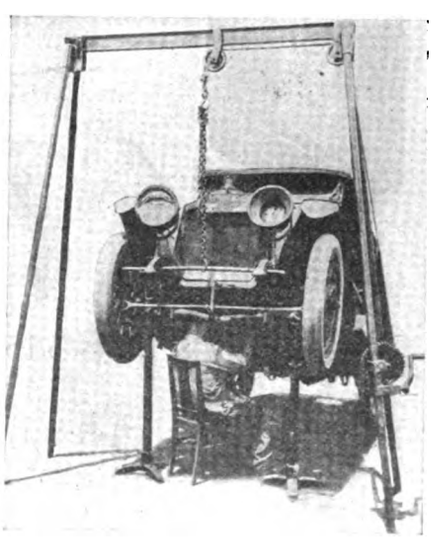
Hy-Way Service Co., 225 South St. Joseph Street, South Bend, Ind.



This is a vertical cylinder grinder, all the mechanism being located above the grinding wheel, so that the abrasive dust drops through the cylinder. The longitudinal table slide has sufficient movement in each direction to provide for positioning the spindle for grinding three cylinders each way. A cross slide allows for accurate positioning. A 2-hp. electric motor supplies the power to drive the grinding wheel, transmit the planetary rotary motion to the spindle unit, and feed the head down. A reverse movement carries the grinding wheel and the head back to the starting position. There are twelve available rates of feed, ranging from .007 to .375 in. per revolution of the grinding spindle.

Kimball's Garage Crane or Hoist

Kimball's,
137 Ashmun Street, New Haven, Conn.
Price $80 for 3-in. cross beam; $85 for 4-in. cross beam. Jacks $15 per pair.



The crane is used for hoisting the front or rear end of a car or truck to a height convenient to the mechanic who is working underneath the car. When the car is raised to position, it is held by jacks on which the front or rear axle rests. With the car on the jacks, the crane can be removed and used on another car.

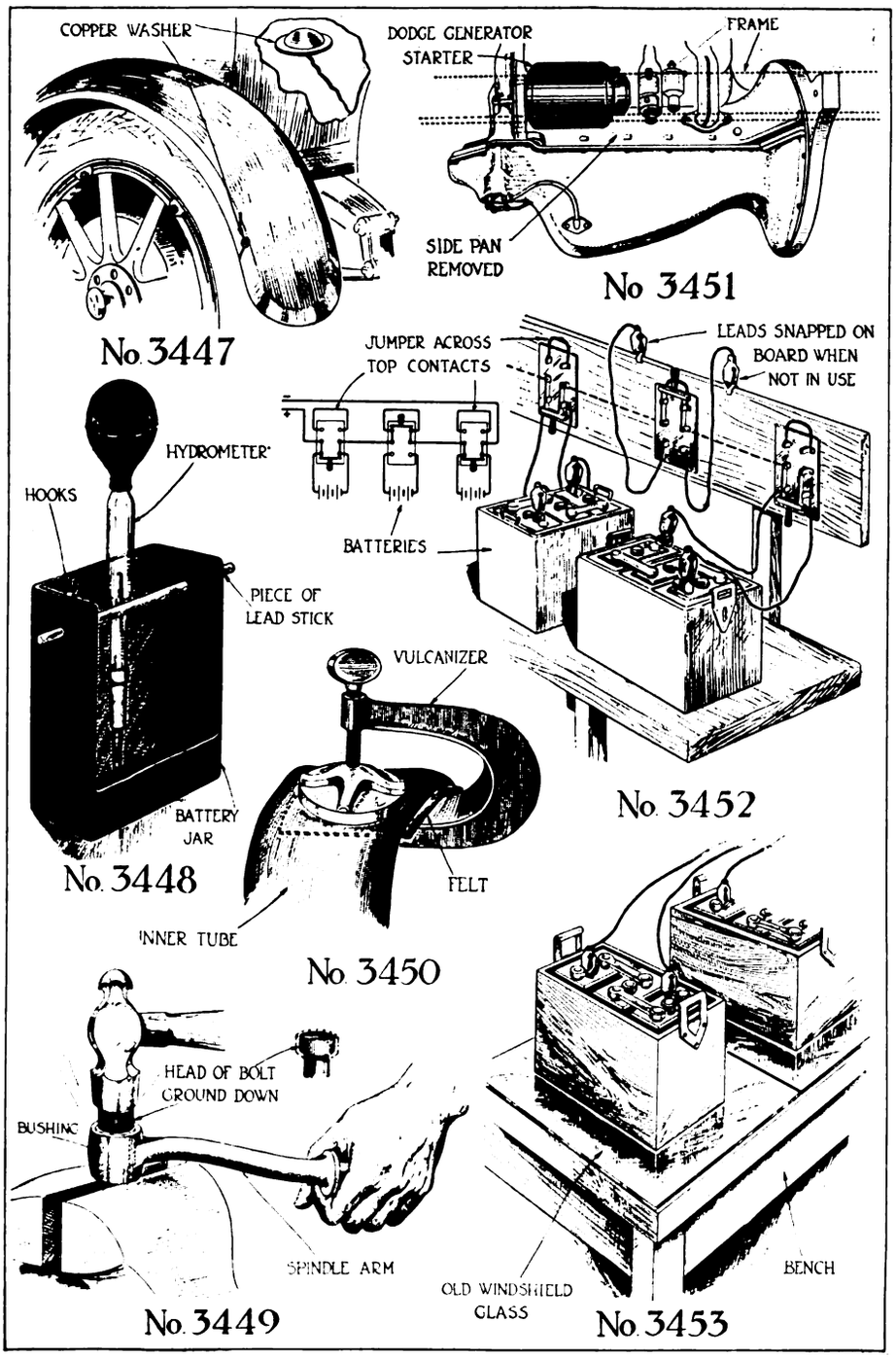
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Repairshop Shortcuts

Use a Claim Check

WHEN an owner leaves a car for transient storage or repairing or washing, give him a claim check. If you have no regular form of claim check, give him a sales slip or something which will identify him. You may not think it necessary but he does most of the time. He hesitates to leave personal property valued at anything from a few hundred dollars up to several thousand dollars with no written or printed slip to prove that he left the car with you. It is good business and produces a good impression, and that is what you want.

Send a repairshop shortcut to Motor World. If it is new and practical, we will pay you a dollar.



No. 3447—Stopping a Fender Crack—A fender crack will gradually work clear across a fender unless stopped. The crack can be stopped by drilling a small hole in the metal through the crack near its outer end. A rivet and copper washer are headed up in the hole.—C. A. Umoselle, Hammonton, N. J.

No. 3448 — Hydrometer Holder — A hydrometer holder is made from a battery jar with one side removed. Holes are drilled through the end of the jar and a strip of burning lead run across.—H. V. D. Sweet, Canajoharie, N. Y.

No. 3449—Removing a Spindle Arm Bushing—A spindle arm bushing is removed by placing a spindle arm across the open jaws of a vise and driving a bolt with the head ground off to pass through the spindle arm.—W. B. Wheatley, Brooklyn, N. Y.

No. 3450—Vulcanizing a Tube—To avoid pinching the edges of the inner tube when vulcanizing, place a piece of felt slightly larger than the patch under the tube.—H. V. D. Sweet, Canajoharie, N. Y.

No. 3451—Replacing Dodge Starter-Generator Brushes—Dodge starter-generator brushes are replaced by removing the left engine side pan by taking out the three front cap screws that hold the side pan and the two stove bolts that hold the side pan to the frame side member. The pan is removed and the lower brush is replaced. The upper brushes are replaced from above.—Frank R. Hartrock, Dodge Brothers Service Station, Warren, Ind.

No. 3452—Battery Charging Board—A charging board which does not require series connectors is made by using double throw, double pole switches. When a battery is removed the switch is thrown up, thus completing the circuit for the remaining batteries.—H. V. D. Sweet, Canajoharie, N. Y.

No. 3453—Glass Covering for Battery Bench—Pieces of old windshield glass are cut to fit the top of the battery charging bench. The glass can be kept dry so that there will be less liability of getting a shock.—C. R. Stoflet, Kobe & Smith Auto Co., Scottville, Mich.

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Along the Automotive Newsway

By Leo Roche



PEDESTRIANS WILL HAVE TO TOE LINE IN NEW YORK. BUREAU OF PUBLIC SAFETY PLANS TO ELIMINATE "JAY WALKING" AND MAKE TRAFFIC SAFER.



SECY. HOOVER APPOINTS ALFRED REEVES TO WRITE ABOUT THE WORK OF THE AUTOMOBILE INDUSTRY FOR BOOK ON TRADE ASSOCIATION ACTIVITIES.



THE A. E. A HELD A MOST SUCCESSFUL CONVENTION AND SHOW AND BROUGHT THE JOBBERS AND MANUFACTURERS INTO A CLOSER UNION THAN EVER.



DURANT GETS NEW PROCESS GEAR PLANT AT SYRACUSE FOR $2,100,000.



JOHN C. LONG OF THE N.A.C.C. SENDS QUESTIONNAIRE TO 20,000 CAR OWNERS ASKING IF THEIR NEXT PURCHASE WILL BE AN OPEN OR CLOSED CAR, AND WHY.



ROLLS-ROYCE PRODUCTION AT SPRINGFIELD PLANT GROWS.

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DRIVEAWAYS WILL AID WINTER'S DELIVERIES

Head of N. A. C. C. Traffic Division Points to Assistance Given in 1920

NEW YORK, Nov. 20—"Given average favorable winter weather and road conditions and the automobile industry can deliver from one-third to one-half its output over the road," says James S. Marvin, head of the traffic division of the National Automobile Chamber of Commerce, discussing the present transportation problems and the future outlook for getting cars into the hands of the dealers.

In reviewing the situation, Marvin says:—

The railroad situation right now is unchanged, but then we have been favored by good weather. Let a few good old-fashioned blizzards come along and see the difference. The railroads are doing fairly well, but they are not improving and we are liable to have a change of weather at any time. I think, however, that we shall be able to meet the traffic emergency and I am looking to driveaways to help materially.

In our record year, 1920, when we made 2,205,197 cars, our manufacturers delivered 470,867 over the roads. Even in the so-called bad winter months of January and February we kept up a rapid pace, showing 29,283 in January and 43,719 in February.

If we could do this two years ago, how much easier will it be this winter, for since 1920 there have been miles and miles of improved highways opened up. In addition, the various States have got busy in the matter of snow removal and our roads this winter will be able to give us service in consequence.

We are not disturbed by the closing of navigation, for the number of automobiles delivered by boats has been small when compared with the monthly production. Not more than 5000 cars a month are shipped by boats even at busy times.

L. G. PEED APPOINTED HEAD OF WILLYS SALES

TOLEDO, Nov. 20—L. G. Peed has been appointed sales manager of the Willys-Overland Co., succeeding A. C. Barber, who goes to Chicago to become president of the Overland Motor Co., the Overland branch in that city. The Chicago position formerly was held by W. H. Taylor, who, it is understood, contemplates moving to California.

Peed has been assistant sales manager for Overland for about a year, coming to the position from Toledo, where he was branch manager. Previous to that he was retail sales manager of the New York branch.

Ford to Expand in Canada

DETROIT, Nov. 20—Ford Motor Co. of Canada, Ltd., is advertising for bids on the construction of the first large building to be added to the Border City's plant. Building operations will start immediately following the awarding of contracts. The first building will be 1000 x 588 ft. A machine shop and tool shop are to follow, the first 288 x 688, the other 75 x 200. The building program calls for $6,000,000 in three years.

Look for These Stories Next Week—

NEXT week's Motor World will present a particularly timely story containing many real practicable ideas for bringing more Christmas business into the automotive dealer's store and shop. It will help you "Make This an Automotive Christmas."

This issue also will contain:

1—Maximum and minimum time estimate schedule covering electrical repairs, a particularly interesting system worked out and used by an eastern electrical service station.

2—Descriptions of the interesting new automotive equipment for the shop and to sell shown at the Automotive Equipment Association show, held in conjunction with the recent Chicago convention.

3—Several stories describing practical merchandising methods used successfully by some dealers in selling automotive products in winter.

All of these will be in addition to the regular weekly features, including new car, truck and tractor descriptions, law, better mechanics, Repairshop Shortcuts, news of the industry, etc.

Do you read Motor World EVERY week?

ROLLS-ROYCE PRICES MADE ON BODY MODELS

SPRINGFIELD, MASS., Nov. 20—Rolls-Royce of America announces prices on its 12 body models, showing a range of from $10,900 to $13,500, as follows:

	Number of Passengers	Price
Roadster	2-3	$10,900
Phaeton	4-5	10,900
Phaeton	6-7	10,950
Enclosed drive cabriolet	5	12,800
Limousine	6-7	12,850
Sedan	4-5	13,150
Sedan	7	12,900
Enclosed drive limousine	6-7	12,900
Town brougham	6-7	12,850
Suburban limousine	7	12,900
Salamanca cabriolet	4-5	12,950
Full cabriolet	6-7	13,500

Grant Continuing Trucks

CLEVELAND, Nov. 20—The Grant Motor Car Co., which is being operated by Receiver Joseph C. Hostetler, is manufacturing trucks for which there has been a good demand since the receivership. The company for the present is not making new passenger cars. The parts and service departments are being operated so that dealers are enabled to hold the good will established by the car. The work of making an inventory and appraisal is progressing.

MILWAUKEE BECOMES BIG SHIPPING PORT

Made So by Railroad Situation —Driveaways Start There for Distant Centers

MILWAUKEE, Nov. 20—For many dealers in Milwaukee, the problem of getting deliveries from factories remains at least as much if not more important than the actual merchandising of passenger cars. The sale of cars, while not nearly so active as earlier in the fall, still is well sustained at a much better average than in any past November period. There was never a time when selling effort was so intensive as it is at present. Solicitation work has been finely organized and the thorough manner in which dealers are combing prospects is the matter of daily comment in the trade here.

Daily Shipments Made

The freight car shortage is making Milwaukee one of the leading shipping centers for north and western distribution by Michigan manufacturers especially. Great Lakes transit lines are carrying a relatively enormous number of passenger cars from Detroit, Flint, Lansing and even Toledo. Crosby Line steamers have been carrying between 60 and 75 new cars to Milwaukee every day from Muskegon, Mich., to which point the cars are driven from factories for cross-lake transit, to be driven from Milwaukee to Wisconsin, Minnesota, Iowa, Dakota and even Montana.

The Père Marquette Line, which does not ordinarily call at the Muskegon port, has been bringing several boatloads each week since late in October. As an accommodation to Buick, two shipments of 40 cars each were brought from Muskegon to Milwaukee last week by the Père Marquette.

The Crosby Line is planning to put on another steamer for the Muskegon-Milwaukee run, principally to handle motor cars. Officials say they have been requested to provide trans-lake shipping facilities for this purpose all winter and well into the spring. Reports from Muskegon are that warehouses are kept filled with cars awaiting crosslake shipment.

Due to Car Shortage

This is due mainly to the car shortage and the effort to avoid the congestion at the Chicago gateway. Traffic promises to increase by lake when navigation officially closes Dec. 1, due to the closing of the Straits of Mackinac by ice. Some manufacturers who have been shipping cars entirely by water from Lake Huron and Erie points to Superior-Duluth, will then be obliged to take the Muskegon-Milwaukee water route, for with railroad conditions already highly unfavorable, winter operation difficulties now approaching will make all-rail shipments more unreliable and unsatisfactory than they are at present.

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G. M. C. TO DISBURSE DIVIDEND ON COMMON

Means Distribution of $10,275,295 to About 50,000 Stockholders

NEW YORK, Nov. 20—A special dividend of 50 cents a share on common stock, decided upon by the directors of the General Motors Corp. means the distribution of $10,275,295 to about 50,000 stockholders. This sum comes out of the estimated earnings of $55,000,000, after all deductions for charges and taxes, for the year 1922. The chief beneficiary will be E. I. du Pont de Nemours & Co., Inc., which, through its subsidiaries, is the largest individual holder of G.M.C. common, with 7,400,000 shares, so it will get $3,700,000 of the dividend.

This is the first dividend on General Motors common stock since the last quarter of 1921 in which year the corporation paid at the rate of $1 a share quarterly. The action of last Thursday, however, does not mean that common will be placed on a regular quarterly dividend basis, the directors being of the opinion that however encouraging the outlook appears to be for the future, the consideration of the question should be deferred until the results and capital requirements of future operations can be satisfactorily ascertained.

At the directors' meeting it was reported that, even after paying the special dividend, the corporation will have a surplus in excess of $40,000,000 at the end of the year. The financial situation is thoroughly satisfactory, directors were told, the indebtedness to banks having been entirely discharged since the first of the year. The liabilities have been reduced by upward of $45,000,000 and the corporation now has no indebtedness other than payrolls, supplies, etc. A comparison of balance sheets of Sept. 30, 1920 and Sept. 30, 1922, shows a reduction of $110,000,000 in liabilities.

LEE TIRE OPENING BRANCHES ON COAST

LOS ANGELES, Nov. 20—Deciding to market its product on the Pacific Coast under the direct jurisdiction of the parent concern, the Lee Tire & Rubber Co. will open branches in the larger cities on Jan. 1, when the Chanslor & Lyon Co. will relinquish the franchise which it has held for 10 years.

The San Francisco branch will be under the management of Tom H. Wilkinson, for many years manager for the United States Rubber Co. In Seattle the Lee branch will occupy its own building and will be in charge of C. C. Miller, formerly manager of the Goodyear branches in Seattle, Spokane and Butte. The branch in Portland will be under the management of D. L. MacPhee, who has resigned as credit manager of the Portland branch of the United States Rubber Co. to accept the position. In Spokane the Lee interests will be represented by G. B. Kemp and R. S. McClintock of the Inland Battery Co., and in Butte, Mont., P. E. Crawley, proprietor of the Broadway Garage, will assume the distribution in eight counties.

A strong Los Angeles connection is being established by the Lee company which will complete the extensive reorganization of their Pacific Coast affairs.

CHICAGO JOBBERS PLAN TO HOLD BIGGEST A. E. A. MEETING IN MEDINAH TEMPLE

CHICAGO, Nov. 21—Ten automotive supply jobbers of this city have combined to hold the largest "Ask 'Em to Buy" and "Shop Profits" meeting in the history of the Better Merchandising Campaign. The committee representing the jobbers has rented the Medinah Temple, which seats 5000 persons for the night of Dec. 6. The promoters confidently expect to fill the hall that evening.

The program will be a talk on "Better Merchandising and More Profits" by Ray Sherman, merchandising director of the Automotive Equipment Association, and the showing of the two films, "Ask 'Em to Buy" and "Shop Profits," which the merchandising committee has produced. A trailer film on "Electrical Trouble Shooting" by the American Bureau of Engineering, Inc., will also be shown. A pipe organ concert will precede the meeting.

The following jobbers are promoting the meeting:

Sheridan Auto Supply Co.	Beckley-Ralston Co.
E. D. Kimball Co.	The Automobile Supply Co.
Universal Automotive Equipment Co.	The Chicago Automotive Supply Co.
Electric Appliance Co.	The Chicago Auto Equipment Co.
Motor Supply Co.	American Bureau of Engineering, Inc.

At a dinner on Thursday, attended by representatives of these firms, the following executive committee was appointed: H. Edsal Olson, chairman; J. C. Ralston and T. M. Brooks.

This will be the first opportunity for the Chicago retail dealers and their employees to see this film. All persons engaged in any branch of automotive retail distribution will be invited.

COMPANY ORGANIZED FOR DURANT BODIES

NEW YORK, Nov. 20—Incorporation of the Hayes-Hunt Corp. at Dover, Del., with authorization to issue 1,000 000 shares of capital stock without nominal or par value marks the debut of a Durant subsidiary which will build about 200,000 closed bodies a year for the big holding organization. It also means the construction of body building plants in connection with the six Durant and Star car-building plants.

Plans have been completed to begin operations first in Elizabeth, where space has been set aside in the big plant formerly owned by the Willys Corp. and now part of the Durant interests. In all likelihood it will be necessary to build plants at Lansing and Oakland, and it is expected that all six body-building factories in various parts of the country will be in full operation by March or April. Work at first will be concentrated in the production of Star closed bodies.

Maxwell-Chalmers Conference

DETROIT, Nov. 18—Seventeen district supervisors of the Maxwell-Chalmers Corp. are guests of the local Maxwell-Chalmers factories this week while in semi-annual conference. In addition to the supervisors W. H. Farrington, general manager of the Maxwell-Chalmers Sales Co., Chicago, was also in attendance.

RICKENBACKER GETS DETROIT SHELL PLANT

DETROIT, Nov. 20—The Rickenbacker Motor Co. has taken over the former plant of the Detroit Shell Co. where shells and ammunition were made during the war. The building adjoins the Rickenbacker property. It will be at least two months before the building will be ready for use. It will be connected with the present Rickenbacker factory by a 60 foot archway, giving the organization approximately 500,000 sq. ft. of floor space.

The new addition will house a continuation of the assembly line and will be the finishing end of the production line.

Other building activity at the Rickenbacker factor, which soon starts its second year of production, include an addition to the office building, an enlarged experimental department, the installation of a complete factory service station for Rickenbacker tourists.

NEW EQUIPMENT BODY CONSIDERS BY-LAWS

CHICAGO, Nov. 18—A business meeting of the Association of Automotive Equipment Manufacturers, attended by 135 members and prospective members, was held at the Congress Hotel to discuss the proposed constitution and by-laws drafted and approved by the board of directors. The constitution was taken up by sections and unlimited discussion was permitted. A number of minor changes were suggested, and when it appeared that the work could not be completed at that meeting it was voted to refer the instrument back to the committee of the board of directors.

Further suggestions will be received up to Nov. 22, and at the association's regular meeting, Nov. 27, final action will be taken. Following this week's meeting, 12 new applications for membership were received.

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WYOMING LAUNCHES FIRST STATE SHOW

Casper Proud of Achievement in Staging Highly Successful Exhibit

DENVER, Nov. 18—Automotive distributors for the Rocky Mountain territory are highly elated over the attendance and sales results of the First Annual Wyoming State Automobile Show, held at Casper. And Casper itself is as proud of this new proof of its prominence on the motor map as it is of the fame and wealth it has gained in recent years as center of an internationally known oil field.

"Casper is the livest towns of 25,000 people that I ever saw," began one report to the Motor World correspondent in Denver. "It has about 5000 automobiles, including practically every make from a Rolls-Royce to a Ford. The show proved a tremendous success, and the dealers are delighted because they sold a large number of cars. This is the biggest event ever pulled off in Casper, and visitors attended from all over the State, and also from Nebraska and Colorado points."

Each Booth With Two Cars

Seventeen car dealers took part in the show, each having space for two cars. But those two cars didn't stand in their place all through the show in accordance with automotive show custom and tradition. Far from it. That is all right in New York or Chicago or any other city that takes motor shows as a matter of course, but not in pioneer Casper, where things have to be done differently. Each dealer changed his exhibit completely every day, thus being able to display all his different car models and at the same time treat the public to a new show every day. That this feature proved popular was shown by the heavy repeat attendance and by the favorable comments of visitors attending more than one program of the event.

Another innovation was a system of having each car carry in the lower left-hand corner of the windshield a card six inches square, with the Casper-delivered price neatly marked thereon. This feature won compliments from visitors who have attended so many shows that they feel justified in claiming to be expert judges.

Decorations Elaborate

The show was held in the Arkeon Dance Hall, which was decorated with ferns and flowers, several hundred Japanese lanterns and a score or more of Japanese umbrellas and with autumn leaves in such abundance that the ceiling look like a wildwood bower.

Beside the car exhibits, there were several accessory displays. And while there was a continuous musical and vaudeville program, with a radiophone in addition, the crowds made sure to see all there was to the show proper. The crowds were substantial all the way through also, the paid admissions running as high as 1300 in a single evening, beside a good-sized crowd fortunate enough to be favored by the show committee's rather liberal distribution of passes.

The entertainment features were arranged so that they did not interfere with easy talking between exhibitors and interested visitors. There is already talk of a still bigger event next year.

UNIVERSITY TO GIVE COURSE ON TRACTORS

MADISON, WIS., Nov. 20—Three courses in the operation, care and maintenance of tractors will be conducted by the department of agricultural engineering of the University of Wisconsin. The first course opens Dec. 4, the second on Jan. 8, and the third on Jan. 29. Each class will be limited to 20 pupils and is open to any person, although tuition for residents of Wisconsin is free. Registration and laboratory fees for residents are $15, while non-residents pay $10.34 additional as tuition.

Prof. F. W. Duffee, who directs the work, in a recent bulletin made suggestions to tractor owners to keep their machines busy during the winter. Grinding feed, sawing wood, hauling manure and shelling corn are some of the duties suggested for the tractor after the usual summer and early fall field work is completed. The use of tractors during severe cold weather is not recommended, due to difficulties in starting engines and maintaining proper lubrication.

TIME PAYMENT PLAN ADOPTED BY MILBURN

TOLEDO, Nov. 18—Announcement of a time payment plan has been made by the Milburn Wagon Co., manufacturers of Milburn electric trucks. One arrangement embraces payments over a 12 months' period, the second, payments over 21 months. Substantially all other details of the plan are the same.

The first payment is made when the order is signed and amounts to 10 per cent of the total purchase price; the next payment is made on delivery of the truck and amounts to 15 per cent of the purchase price, freight and war tax being paid at this time. This leaves a balance of 75 per cent which is divided into equal monthly installments and is spread over the 12 or 21 months' period, at the option of the buyer.

Interest at 6 per cent per annum on unpaid balances is charged, thus an amount varying from $75 to $220 to cover the cost of time-financing and insurance, the difference being due to the size of truck and length of time credit is required.

PRICE OF GASOLINE DROPS IN CALIFORNIA

Move Believed to Be Part of Plan to Keep Out Competing Companies

LOS ANGELES, Nov. 21—Without assigning any reason, the retail price of gasoline has been reduced one cent a gallon. This is the first change in price for approximately one year. Despite the enormous quantities produced in this State, California motorists have been paying more for fuel than those in some other parts of the country. By some it is claimed the price reduction is a move on the part of the biggest producers to keep new competition out of this field.

The Shell Oil Co. recently bought out a number of so-called independent concerns and has entered upon a program of expansion. The Associated Oil has gradually advanced its service stations from Northern California to within 40 miles of Los Angeles, and is known to intend to operate here eventually.

At present the Union and Standard companies are the largest operators. The General Petroleum is a big producer, but does not market its product to the retail trade.

Record Consumption in State

Gasoline is now enjoying its record consumption in California. The market is at its best and gasoline is the only oil product of the industry which does not have a surplus stock at this time. Under date of Sept. 1 a report was issued stating that gasoline stocks were 19,000,000 gallons less than on the same date a year ago. This amount is said to be barely a sufficient cushion to protect adequately the industry from a temporary gasoline shortage should any extraordinary circumstances arise to increase the demand.

The production of oil is gaining daily and it is said refineries are reluctant to increase the manufacture of gasoline at this time because of the necessity for accumulating other residue stocks, such as fuel oil, which is produced as a matter of course when gasoline is manufactured.

For every gallon of gasoline it is found that other residuum products, principally fuel oil, are developed at the rate of three to four times the amount of gasoline made. With enormous quantities of crude oil going into storage and new wells being brought in daily, also the demand for gasoline increasing constantly, refineries are at a loss for a market for fuel oil and are hoping to develop a foreign export business.

Clark Heads Tyer Rubber

ANDOVER, MASS., Nov. 20—Myron H. Clark has been elected president of the Tyer Rubber Co., maker of Tyrian tires. Walter E. Piper, formerly manager of the Boston Rubber Co., has been chosen vice-president.

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LOS ANGELES USING FOUR TENTS AT SHOW

More Than 300 Cars and 50 Trucks Included in Business Getting Exhibit

LOS ANGELES, Nov. 16.—As a business getter, the automobile show being staged this week undoubtedly is proving the best of its kind ever held here. This is particularly true for those lines which have introduced their 1923 models.

Because of lack of adequate housing facilities, four enormous tents are in use to provide 135,000 sq. ft. floor space making this the biggest show Los Angeles ever saw. More than 300 passenger cars and 50 trucks are included in the exhibit. Accessories have a remarkable display.

Dealers report a very pronounced demand for closed cars. Some say that the bulk of show sales will prove to be of this type. Attendance is exceeding all past records with paid admissions for the first five days doubling the same period in any previous show.

As this is the first showing of the new Star car and it is being offered in several models it is providing one of the chief objects in attending. The way orders are being taken indicates that the public is interested.

In contrast with the Star there are being shown a Rolls-Royce limousine and a British Sunbeam.

New Fort Worth Buildings

FORT WORTH, Nov. 18—Fort Worth dealers, nearing the close of a prosperous year, are investing some of their earnings in new buildings. Within the last week, the Mitchell Auto Co. and the George-Crossman Co. have announced the purchase of property and plans for extensive improvements. The Mitchell company, handling Jordan, Cadillac, Cleveland and Chandler cars, will erect a four-story structure of its own. George-Crossman, handling the Studebaker, has purchased its present home and will make many changes at once.

EMERGENCY IN FUEL SHORTAGE IS OVER

WASHINGTON, Nov. 20—Continued improvement in conditions relating to fuel supply has made unnecessary the continuance of the surveys and reports which the United States Chamber of Commerce has been collecting to cooperate with the Federal fuel distribution agency, according to the president of that body, Julius H. Barnes.

He declares that the downward movement of prices and the increase in available supplies has removed the necessity for apprehension over the winter's fuel supply.

Oakland Ships by Express

PONTIAC, MICH., Nov. 20—Oakland Motor Car Co. has shipped several carloads of closed models into the New York territory by express to overcome delays occasioned by freight movement in getting cars into buyers' hands. The company reports it is the first express shipment of cars in two years. The Oakland company now is in full production of its closed models, and regular shipping schedules are starting at once.

CLOSED CARS ATTRACT JERSEY CITY INTEREST

Sixty Per Cent of Models Shown at Annual Exhibit Are of That Type

JERSEY CITY, N. J., Nov. 18—The annual show of the Hudson County Automobile Trade Association has been in progress all this week in the Fourth Regiment Armory in this city. The attendance has been good, and dealers report a satisfactory number of sales from the floor and large numbers of new prospects listed. There is also a healthy demand for cars for spring delivery. The interest is confined largely to closed cars, as might be expected at this season of the year. About 60 per cent of the cars on the floor are of the closed type.

The show presents a bright, cheery appearance, and most of the exhibits are well arranged, although there are a few overcrowded booths. None of the booths have any special decorations or furniture other than what the management furnishes. This condition detracts considerably from the attractiveness of the individual exhibits.

The show has been extensively advertised in the local newspapers as well as in the New York dailies. The management is conducting a voting contest to determine the most popular woman driver in the county. One vote goes with each ticket. To get the ladies out in the afternoon, there is a daily fashion show at 3 p. m. Twelve mannequins have been secured to display the latest in feminine wear. One of the exhibitors is offering a prize for the best 200-word description of the cars he has on display. The show has also been advertised with car cards, window cards and bills.

The Jersey City Show—One of the First of the Year



The Jersey City show, in the Fourth Regiment Armory, presented a bright, cheerful appearance. The booths were not crowded, and this with the wide aisles was a distinct selling feature

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COAST TRADE BACKS TOURISTS' HOTEL

CALIFORNIA BUILDING WILL COST $400,000

Is Completely Financed and Should Be Ready Late in Spring of 1923

SANTA BARBARA, CAL., Nov. 18—Members of the automotive industry of California are showing that they have the interests of the motorist as well as themselves at heart, and, incidentally, are making life more attractive for the touring motorist in this State by erecting in this city, at a cost of $400,000, a European plan hotel, especially designed to care for motorists and their cars. The idea originated with C. M. Glover, secretary and treasurer of the Santa Barbara Automobile Trade Association, a local organization of the California Automobile Trade Association.

Members of the local branch got behind the idea with money and personal support, and their work put it across. As a reward for their efforts, the new Mission Tavern, when completed early next year, will be designated as the official headquarters of the California Automobile Trade Association in the Santa Barbara district. Work has been commenced on the structure, which has been completely financed, and if the average progress in construction is maintained, it should be ready for service late in the spring of 1923.

Located in Heart of City

The hotel is located in the heart of the city, occupying a tract 180 x 182 feet, three stories in front and four or five in the rear, containing 250 rooms. There will be garages ample to accommodate the cars of all guests, with a service and equipment station on the first floor and a repair plant in the rear.

A touring bureau will be maintained, where free road-maps, guide-books and similar information may be obtained. A telegraph, telephone and radio office will be on the first floor, and arrangements have been made for motor stage lines to make the hotel their starting point for tours along the coast and through the mountains of this part of California.

A large assembly hall will be provided for meetings of the local and State automobile organizations and the trade associations as well. This is the first hotel on the coast to be erected especially for the automotive trade.

Gramm-Bernstein Receiver

CLEVELAND, Nov. 20—The United States District Court at Toledo has appointed E. G. Kirby, Toledo banker, receiver for the Gramm-Bernstein Motor Truck Co., at Lima, in order to protect the interests of stockholders, creditors and dealers.

Through the appointment of the receiver, the company plant will be operated under the protection of the court. The assets of the corporation are placed at $2,500,000, and the liabilities at $1,600,000.

After being appointed, Kirby visited Lima, went over the assets of the corporation and deputized B. A. Gramm and Max Bernstein as managers of the property. They will continue operating the plant until a reorganization now under way is perfected.

ELECTRIC TAXICABS APPEAR IN NEW YORK

NEW YORK, Nov. 20—A new type of taxicab went into service in New York when the Electrotaxi Corp. placed a fleet of electric cars in operation last week. These are the first electric taxicabs that New York has had since the old electric hansoms of more than 20 years ago. Finished in two tones of gray, the new cabs are in sharp contrast with the color schemes usually employed by public vehicles.

It is the intention of the Electrotaxi Corp. to work the cabs in double shifts, keeping them on the streets from 18 to 20 hours a day. Two sets of batteries are to be used and the battery compartments are specially designed for rapid changing, so that an exhausted battery may be removed and a fresh one substituted in less than 10 minutes. By thus changing the battery, the cars will have an operating radius of approximately 120 miles and a maximum speed of 25 miles per hour.

KISSEL IS ENLARGING ITS PLANT FACILITIES

MILWAUKEE, Nov. 20—The Kissel Motor Car Co. of Hartford, Wis., which is erecting and equipping a new steam generating plant costing $150,000, is preparing to initiate several other projects to provide larger capacity because of the inroads made upon its reserve manufacturing facilities by a constantly enlarging distribution organization.

The program will be put into effect now that the demand for motor vehicles for the transportation of freight as well as passengers is approaching that settled condition when there will be a continuous, steady demand for cars, necessitating a dependable source of supply fully equal to the increased buying demands, officials of the Kissel company said.

LOUISIANA EXPANDS ITS PLAN FOR PARKS

Dealers of State Expect Strong Impetus to Sales Will Follow Action

NEW ORLEANS, Nov. 20—Automobile dealers and motor enthusiasts generally predict unprecedented impetus to sales in Louisiana during the next few years as a result of the formation of the Louisiana State Parks Association on a permanent basis and dedicated to the work of establishing tourist parks in every parish in the state. The association's first convention here was attended by nearly 100 good roads boosters from every part of the state.

Tentative sites for tourist parks already have been selected in several parishes, and many beautiful preserves probably will come under the control of the parks association. Altogether, the movement is seen as the beginning of what very well may be the finest system of state parks in the country.

As the initial effort of the association after its organization, a tract of ten acres in New Orleans' finest park was turned over to the association by the city's commissioner of public property. Formal dedication of the tract was made immediately, and the association's work was well under way.

The state parks program comes as a sequel to the recent announcement that Louisiana is building more miles of highways than any other state.

NEW SALES BUILDING ERECTED IN NEW YORK

NEW YORK, Nov. 18—A new factor has entered New York's automobile row—the Harriss Colonnade Building, covering the block bounded by Broadway, Eighth Avenue, 57th and 58th Streets, which will be ready for occupancy eary next month. Already two prominent makes of cars are represented in the tenantry.

Harry Haupt, president of the Hudson Motor Car Co. of New York, with the end in view of segregating the Hudson and Essex sales department, has taken place in the Harriss Colonnade for the Essex, securing 60 ft. on Broadway and 108 ft. on 57th Street, at an annual rental of $60,000 for more than 6000 sq. ft. The Hudson agency will remain in the Circle Building.

Rolls-Royce also has taken space in the Harriss Colonnade, leasing the large store on the Eighth Avenue and 58th Street corner. At present Rolls-Royce is on Fifth Avenue between 59th and 60th Streets.

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NEW YORK STATE DEALERS ORGANIZING

FIRST STEPS TAKEN AT ALBANY MEETING

Report of Committees Will Be Made to Members at National Automobile Show

ALBANY, Nov. 21—Nine special committees named at the initial meeting of the New York State Automobile Merchants Association, held here last week, will report at the meeting of state automotive dealers at the time of the national automobile show in January.

The session was merely formative, and discussion was general of the problems which face automotive dealers of the State. Arrangements were made to develop a strong State organization, which will deal with legislation, finance, used cars, traffic and employment problems.

C. W. Bull, treasurer of the Syracuse Automobile Dealers Association, was elected temporary chairman to hold office until the January meeting. George Ostendorf of Buffalo was named first vice chairman, and Edwin B. Jackson, of New York City, second vice chairman.

Special Committees Named

Nine special committees which will report at the January meeting are as follows:

Used cars—H. Barcroft White of Syracuse; John B. Payne of Troy and Harry Gason of New York.

Legislation—W. Carpenter, Albany; Albert Hirst, New York and M. Sputhwrath, Albany.

Insurance — George Lewis, Brooklyn; Edward Bull, Buffalo and John Van Venschoten, Poughkeepsie.

Finance—E. D. Dean, Binghamton; George Stow, New York and L. R. Mack, Albany.

Traffic—L. J. Eastman, New York; W. E. Jordan, Oswego and J. A. Harden, Schenectady.

Employment—E. H. Baker, Buffalo; A. G. Jones, Norwich and L. M. Champaign, Ithaca.

Publicity—E. A. Jackson, New York; Joseph Haas, Brooklyn and W. R. Schiller, Utica.

The dealers discussed proposed legislation to require automobile owners to register with the county clerk, and in this way make each owner produce a bill of sale. The measure is designed to curb automobile stealing.

The association, as soon as it is officially organized, will start a campaign to organize the dealers in the smaller cities of the State.

Few Changes in Velie

MOLINE, ILL., Nov. 20—Daily production of between 30 and 40 cars is being continued by the Velie Motors Corp. About 30 per cent of this output is closed cars. Officials of the company state that they expect to continue indefinitely production of the present models. The Velie-built engine, which they have been using about a year, has given unusual satisfaction, they say, and they have worked out comfortable and well-appearing body designs, which they expect to continue. The only changes likely to be made are minor refinements, it is stated.

N. A. D. A. POSTER



Prepared by the National Automobile Dealers Association for use on windshields

REO CLUB HAS HARDY, OF OLDS, ADDRESS IT

LANSING, MICH., Nov. 16—A. B. C. Hardy, president of the Olds Motor Works, spoke last week to the Accelerator Club, composed of executives of the Reo Motor Co., on economic phases of factory administration. This is the first time the club has had as its speaker the president of a competing company.

October was the second largest October Olds has had. During the month 414 cars were shipped to San Francisco, and this number would have been exceeded but for freight car congestion and oversale of closed models. New York took 248 cars, and 360 unfilled orders were reported carried over. Wholesale sales in the Minneapolis territory doubled sales for the same month in the past two years. The Willys-Overland Building in Spokane has been taken over by the Oldsmobile distributor there.

New Motometer Models

LONG ISLAND CITY, N. Y., Nov. 17—The Motometer Co., Inc., has brought out three new Motometer models. They are the Midget for Fords at $4; the Aristocrat, incorporating the Midget with a locking device, at $7, and a type with a dial attached to steering column and applicable to air and water-cooled cars. The price on the latter type has not been fixed, but it is expected to be about $15.

TO BUILD SPEEDWAY IN ATLANTIC CITY

Work Expected to Be Completed in Time for Meet July 4, 1923

ATLANTIC CITY, N. J., Nov. 20—Automobile racing will be one of the attractions of this resort next summer, plans having been completed for the construction of a one and one-half mile board speedway by the International Speedway Association.

Concrete grandstands capable of holding 150,000 people will be built at an estimated cost of $2,700,000; another half million will be spent on the track, while it is estimated that the cost to fill in the 400 acres of meadowland which has been selected as the site will reach $160,000. The location selected is between the Pennsylvania Railroad and the Absecon Boulevard, about one and one-half miles from the boardwalk.

Work on the track will start Jan. 1 and it is hoped to complete it in time for the first meet, set for July 4, which will be conducted under sanction of the American Automobile Association.

John S. Prince, builder of many automobile board speedways in this country, is the designer of the new venture. In this one, however, he has deviated from his usual practice in that he plans an inner track one-quarter mile in circumference, which will be used for motorcycle racing and athletic events. In addition it is planned to utilize the infield for baseball, horse shows, etc.

$6,000,000 Company

The International Speedway Co. is incorporated for $6,000,000 of which $4,000,000 probably will be used in building the plant. At present more than a half million has been subscribed, it is said, and it is claimed that the rest of the money is in sight. C. H. Berlekamp, of Cleveland, well known in the tire manufacturing field, is president of the company and Prince is vice-president. The general manager is E. F. Corcoran, while among the directors are Harry Holloway, superintendent of the Briar Hill Steel Co., of Youngstown, Ohio, and Herbert S. Fray, of the James Connolly Construction Co., of Cleveland, and formerly with the International Harvester Co.

New Auburn Light Six

AUBURN, IND., Nov. 17—The Auburn Automobile Co. will shortly bring out a new light six model. It will be smaller than the present six cylinder model, which will be continued. The new model will be furnished with both open and closed bodies.

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FEW SIGNS OF SLUMP APPEAR IN NEW YORK

Demand for Closed Cars Continues Strong—No Stocking by Dealers

NEW YORK, Nov. 17—There is little evidence of a seasonal slump in passenger car sales in the metropolitan district. Present indications are that sales for November will closely approximate the totals for October. Open car sales have undergone a seasonal slump, but the strong demand for closed models has counterbalanced any losses from this reason.

In some lines closed car sales are being materially hampered by the inability of dealers to get cars from the factory. Open cars are, in most cases, available for immediate delivery, although dealers do not expect to start stocking for spring delivery until next month or perhaps not before January.

In the low and medium price classes, there has been no noticeable slump. Closed cars represent about three-quarters of the sales. In the higher price ranges, there has been some falling off in sales, but, at that, the volume is satisfactory for this season of the year.

The monthly sales analysis published by Sherlock & Arnold shows that in the low and medium price ranges October sales were less than two per cent behind September, and in the higher price class, sales during October were about 30 per cent ahead of September. Total sales for all price classes in October were greater than in November. As compared with October, 1921, October of this year shows an increase of about 30 per cent.

The summary of registrations for the ten months is as follows:

Month	Medium and Low Price	High Price Class
January	2014	283
February	2230	273
March	6352	632
April	8428	862
May	8467	961
June	8203	865
July	7816	678
August	5921	516
September	4592	511
October	4518	665
Total	58541	6246

Ternstedt Increases Space

DETROIT, Nov. 20—The Ternstedt Manufacturing Co., builders of body hardware and metal stampings exclusively for automobile manufacturers, has completed the construction of three new buildings which will add about 300,000 feet of floor space to its former half million, and will give it capacity for practically double its former output. The company declares its expansion required by the certainty of greatly increased automotive activity in 1923 and the immediately following years.

BLACK LINE CENTERS WISCONSIN HIGHWAYS

MILWAUKEE, Nov. 20—Within a year it is expected that every mile of concrete highway in Wisconsin will be marked with a black line running along its center as a promotion of safety. The idea was first tried out in Milwaukee county last spring and has proved so successful that the State highway commission adopted it and has even gone to the expense of building special machinery to paint the line on the road. There is behind the idea a bit of psychology that leads drivers to keep to the right of the "black margin of safety."

The black line in no wise is an obstruction to traffic, but on the other hand is believed to have effected a decrease in the number of highway accidents, although definite figures are not yet available.

CENTRAL OHIO SALES INDICATE NO LET-UP

COLUMBUS, Nov. 20—There is no appreciable let-up in the demand for passenger cars in Columbus and central Ohio territory. The season has been an extra busy one. Passenger cars in both open and closed types are selling briskly.

Closed cars are in greater demand as the cold weather approaches. Cars selling from $1,400 to $2,500 are in the best demand, although there are frequent calls for higher-priced sedans and coupés.

Dealers believe that winter business will be more active than in former seasons and have made preparations accordingly. The open fall so far has aided in the good business, while the constant extensions to the good roads in central Ohio are stimulating winter business.

High Priced Cars Selling

DETROIT, Nov. 18—Verne E. Burnett, advertising manager of the Cadillac Motor Car Co., following a trip through New England and the Middle Atlantic States, reports sales of better priced automobiles in that territory to be running high.

Conditions were quiet in some cities, he said, but in others dealers were having the largest business they have ever had. A large number of medium-price car owners are graduating into the better priced car class, he stated.

Correction

In a shop profits story by L. K. Bridgman, service manager, O. L. Huntting Co., Springfield, Mass., in the October 18 issue of Motor World, he is quoted as saying, "Our aim is to bring a car in for inspection at the end of each 100 miles of travel." This obviously is an error. It should have read: "at the end of each 1000 miles."

HINKLEY ADOPTS NEW MERCHANDISING PLAN

Will Sell Its Engines Direct to Truck Owners on Replacement Basis

DETROIT, Nov. 21—Selling engines direct to fleet owners and individual truckmen on a replacement basis is the new merchandising idea just adopted by Hinkley Motors, Inc., of Ecorse, Mich., maker of Hinkley heavy-duty automotive engines.

Figuring that any good heavy-duty truck should wear out at least three engines, the Hinkley company plans to furnish new engines to the truck owner direct, to replace the worn-out power plant. This does not apply wholly to trucks originally powered by Hinkley, either, for by a new system of motor support a Hinkley installation can be made in any truck of the front-radiator type regardless of the depth of the frame.

It is claimed that owners of Hinkley-motored trucks can economize by this replacement through being able to trade in their worn-out engines as part payment for a rebuilt engine, thus saving time usually lost in an overhaul as well as money.

Seventeen truck manufacturers who now are using Hinkley engines as standard equipment are reported to have indorsed the plan. In preparation for carrying out, the company has appointed the following replacement plan distributors: Buffalo, Standard Welding & Manufacturing Co., 1156 Main Street; New York City, Gorey Automotive Parts Co., 354 West 50th Street; Pittsburgh, Parts Engineering Co., 3371 Bigelow Boulevard; Detroit, MacEwan & Shapley, 3169 East Jefferson Avenue.

MAY BASE INSURANCE ON ACCIDENT RECORD

PHILADELPHIA, Nov. 20—Representatives of companies writing automobile insurance have appointed a special committee to investigate the possibility of grading automobile rates based upon the accident record of individual drivers. This committee has under advisement a plan whereby a motor vehicle operator after a year without accidents could reinsure at lower rates because of his good showing.

These underwriters declare that if compulsory insurance prevailed, a reduction of 50 per cent in the rate would be possible because, at the present time, 80 per cent of the cars in Pennsylvania are uninsured.

Perfection Tire Receiver

WILMINGTON, DEL., Nov. 20—Charles C. Keedy has been appointed receiver for the Perfection Tire & Rubber Co., a Delaware corporation, having its principal offices in Fort Madison, Iowa. The petitioner is the Nemours Trading Co.

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TRUCK SAVED NATION IN RAIL BREAKDOWN

Head of U. S. Chamber of Commerce Says General Collapse Was Prevented

DETROIT, Nov. 21—If the 2,600,000,000 tons of freight transported by railroads in the last year had not been supplemented by the 1,400,000,000 tons carried by motor vehicles, there probably would have been an utter collapse in the United States, Julius H. Barnes, president of the Chamber of Commerce of the United States and of the Transcontinental Development Co., said in an address at the Board of Commerce here.

In the field of motor transport the play of natural law of supply and demand has saved the day, he said. The advantage of the motor transport with its flexibility of delivery and its elasticity of road service is clearly apparent, he stated, as long as the public highways afford roadbeds free and open to its operation.

It certainly is true, he observed, that part of the railway channels of to-day never would have been built in competition with the more liquid motor transport, if that transport had been in existence then. This suggests again the vast potentiality of the motor industry in those sections of the world where vast tonnage is to-day awaiting only reasonable access to market. He cited Russia, Asia, Africa and South America as awaiting only highways for development and prosperity.

Comparative decrease in agricultural population in the last twenty years was taken by Barnes as a favorable omen, in that it showed greater efficiency and the use of machinery rather than man power.

H. D. HOWELL LEAVES MARYLAND FOR COAST

BALTIMORE, Nov. 20 — After ten years of successful merchandising, during which he built one of the largest automobile businesses in the state, H. D. Howell, owner and manager of The Howell Motor Co., Maryland distributor for Reo, has sold his business at a figure close to a quarter of a million dollars. Within the next few months, Howell expects to reenter the automobile business in California, possibly in the vicinity of Los Angeles.

It was with reluctance that Howell decided to withdraw from the Maryland field. The health of his family has made the change necessary. Howell, for years, has been an active worker for the best interests of the industry in Maryland and was particularly active in the Baltimore Automobile Dealers Trade Association, where he has filled many offices.

Most of the real estate and equipment of The Howell Motor Co. was purchased by Louis Lambert, of the Lambert Automobile Co. of Baltimore, Hudson and Essex distributor. The Reo account, and all stocks, parts, etc., was bought by E. R. Meyers, president of The Motor Car Co., Baltimore, Overland and Stearns-Knight distributor. Meyers also takes over the Howell Motor Co.'s organization.

TO MAP OUT PATHS FOR "JAY WALKERS"

NEW YORK, Nov. 20—The Bureau of Public Safety, the newest branch of the New York Police Department, has been put into commission under the direction of Special Deputy Police Commissioner Barron Collier, with Marcus Dow as the working head of the bureau. Dow was director of safety for the New York Central Railroad for 10 years and is president of the National Safety Council, which has 3500 industries, employing 7,000,000 men, in its membership.

Dow will start out to educate the public as to the dangers of traffic. One of the first steps to be taken will be to install paths painted in white lines at crossings to prevent "jay walking." Dow also believes motorists need educating, and he will insist that they start more slowly at crossings, following the go-ahead signal of the traffic cop. He believes many accidents are caused in the rush of drivers to get up to speed in a short distance.

OIL CLASSIFICATION AGREEMENT REACHED

WASHINGTON, Nov. 18—Members of the Society of Automotive Engineers, the Government Interdepartmental Petroleum Specifications Committee and representatives of the American Petroleum Institute joined here in discussing specifications for engine lubricating oils prepared by the Lubricants Division of the S. A. E. Standards Committee with a view to reconciling these with present Government specifications.

Most of the discussion dealt with the classification of oils in respect to viscosity and the temperature at which this viscosity should be measured. The S. A. E. and A. P. I. representatives finally agreed on a classification.

It was the sense of the meeting that acidity and emulsion tests of engine oils are of such questionable value as indicating the value of the lubricant that they should not be included in specifications.

Oil men who attended the meeting favored an increase in carbon residue allowable in Conradson test, but a motion to this effect was voted down by automotive and Government representatives.

Case Dividend

RACINE, WIS., Nov. 20—The J. I. Case Threshing Machine Co. has declared the regular quarterly dividend of $1.75 a share on the preferred stock, payable Jan. 1 to stock of record Dec. 11.

GOVERNMENT BEGINS ROAD SURFACE TEST

Experimenting at Arlington to Determine Cause of Bituminous Waving

WASHINGTON, Nov. 20—A series of road tests has been begun by the Bureau of Public Roads at the Arlington Experiment Station here to determine the cause of waving in bituminous road surfaces. A circular track is being used, composed of 27 sections of asphaltic concrete of different mixtures.

Profile measurements of the circular road were made before the tests were begun. Measurements will be taken at frequent intervals as the tests progress in order to determine the rate of formation of inequalities in the surface.

The tests are being made under solid rubber-tired wheels loaded with 600 pounds per inch of width of tire or approximately that of a 5-ton truck, travelling at a speed of 20 m.p.h. The device used will be guided by wheels traveling on rails and is electrically driven, the power being transmitted to one of the wheels used to represent the traffic, which will make the wheel act in exactly the same manner as the drive wheel of a truck.

The wear test of the circular track consists of 61 sections of concrete and the result of the tests will show not only what causes waves in bituminous road surfacing but the best mixtures of concrete and other road material. The tests will require six months to complete, and it is planned to run the machine ten hours a day.

FORD TO BUILD NEW PLANT IN ST. LOUIS

ST. LOUIS, Nov. 18—Construction of a new Ford plant in St. Louis to cost approximately $5,000,000 is projected for next year, according to a statement made by Henry Ford in Detroit.

Ford said that the new plant, which will be five times as large as the present Ford assembly plant here, would be built primarily for assembly, but would have facilities for expansion for the manufacture of parts. The plans as drawn contemplate a main plant, one story high, 1500 feet long by 300 feet wide. Auxiliary plants for wood working and production of certain parts are contemplated.

Revere Motors Sold

INDIANAPOLIS, Nov. 21 — Revere Motors has been sold at judicial sale for $52,000 to a reorganization committee. Henry A. Kraut of Logansport is trustee for the proposed reorganized company. Adolph Munson of Logansport, C. H. Barnes of Chicago and Kraut represented the stockholders. Later they petitioned for a court order asking that the receiver make out a deed to the buyer. This was the only bid for the plant.

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DIPLOMACY CAN CURB HIGHWAY ACCIDENTS

Saves Time Over Use of Force —Connecticut Conditions Told S. A. E.

NEW YORK, Nov. 20—As illustrating the difference between brute force and diplomacy in handling traffic and how modern methods of efficiency are working out, Alden L. McMurtry, until recently consulting engineer of the Connecticut State Motor Vehicle Commission, declares that one traffic officer can stop and warn fifty motorists of violations of regulations in the time it would take him to make one arrest and carry the case through the courts.

McMurtry made this statement during his address to the members of the Metropolitan Section of the Society of Automotive Engineers held at the Automobile Club of America.

Old Idea Must Go

The small-town constable idea must go, declared McMurtry, who believes the success of traffic regulation should be measured by the results attained in reducing the number of accidents and not by the number of arrests made. A system of traffic warning is best in that it secures greater co-operation from the motoring public with those who are working to make the highways safer. This idea has proved a success in Connecticut where headlight regulations are enforced with but few arrests. McMurtry believes that enforcement of traffic laws by arrests often works a hardship on the operators.

Connecticut analyzing the highways accidents has found that 81.33 per cent of the accidents in 1921 were due to the operation of the vehicles; 14.6 per cent, to pedestrians and 3.44 per cent to car equipment. Of the accidents caused by operation it is found that 37.9 per cent were because of carelessness of the operator and 19 per cent because of recklessness of the driver. Disregard of the right of way caused 21.9 per cent and loss of control 3 per cent.

Majority Due to Motor Vehicles

Continuing the analysis Connecticut found that 66.2 per cent of the accidents last year involved motor vehicles alone; 15.3 per cent motor vehicle and pedestrians; 12 per cent motor vehicle and other vehicle and 2.9 per cent motor vehicle and stationary object.

Of all the highway accidents 70.33 per cent were passenger cars, 22.3 per cent motor trucks and 7.37 per cent motorcycles.

Reviewing the situation, the Commission believes that it is possible to reduce the number of accidents greatly by scientific methods. Proper police control, it thinks, can cut the percentage 47 per cent, while educational work will reduce it an additional 43.38 per cent. Apparently there is no remedy for the remaining 9.62 per cent.

McMurtry finds that accidents on the road, due to intoxicated drivers, is on the increase and he declares that at no time in the history of motoring has there been so much danger from this source.

Following McMurtry's address David Beecroft, directing editor of the Class Journal Co., urged that more effort be made to make the highways themselves safer through scientific construction. He also urged that the color of highway signals be standardized.

WILL BORROW TRUCKS FOR CHRISTMAS MAIL

WASHINGTON, Nov. 21—Two thousand automobile trucks will supplement the regular mail service during the Christmas rush of mails, it is announced by the Postmaster General, who has arranged for the use of this number of War Department trucks to augment the department's 4400 trucks. In addition, authority has been granted for the rental of several hundred trucks in areas not adjacent to the source of government supply.

NASH NOW BUILDING 75 "FOURS" DAILY

MILWAUKEE, Nov. 20—"More than $20,000,000 worth of products have been shipped out of the four-cylinder Nash passenger car works since this industry was established in Milwaukee less than three years ago," said Ben W. Twyman, general manager of the division, in a talk before the Tripoli Shriners' Luncheon club.

"Ground was broken just three years ago," he said. "To-day we are rushing to completion additions which will double the original capacity. By March 1 we will be employing about 1800 men, against 1000 at present. In addition, there is being built adjacent to these works a new LaFayette plant which will employ from 800 to 1000 more."

He then said:

Our four-cylinder production now is at the rate of 75 cars a day, and yet we are not able to fill all demands promptly. You may ask, where do all these cars go? When one considers that the Nash organization embraces 2000 or more dealers, in nearly every country on the globe, our present output means that each can get on the average of less than one car a month. It is a pretty poor dealer who can't sell that many—our Nash dealers are obliged to turn down several times that many cars each month due to our inability to make as many as they can sell. When we get to a schedule of 125 or 150 a day about March 1, it will mean that our 2000 dealers will be able to get on an average of only two a month.

Monroe Body Plant Burns

DETROIT, Nov. 18—The plant of the Monroe Body Co., Ludington, Mich., manufacturing commercial bodies for Durant subsidiaries, was destroyed by fire this week with a loss of $150,000.

MOON DISTRIBUTORS GATHER AT FACTORY

Place Orders for 50 Per Cent More Cars in 1923 Than Company Ever Built

ST. LOUIS, Nov. 18—At a meeting of all Moon distributors at the factory here orders were placed, with shipping instructions, for 15,625 cars in 1923, nearly 50 per cent more cars than the Moon company has ever produced in one year.

In addition to contracting for this large number of cars, the distributors agreed, under a co-operative warehousing and financing plan sponsored by the company, to take one-third of their total allotments during the three winter months and the remainder in equal monthly quotas, thus enabling the factory to maintain a steady rate of production throughout the year.

Sales Greater Than Output

The distributors were agreed that last spring and summer they could have sold many more cars than they did if the cars had been available. They did not have large stocks on hand, however, and the factory, having dropped to low production during the winter, was unable to expand immediately to meet the demand. Officials of the company desired to maintain the whole factory personnel intact this winter and keep production at a fairly constant level. They appealed to the distributors to aid by stocking cars in warehouses this winter and the distributors responded to the full extent.

Assistant Treasurer Earl F. Nelson explained the financial co-operation in a short talk at a banquet Tuesday evening. He said distributors should use their credit at their banks and through the commercial automobile financing companies when possible, but that if necessary the Moon company was prepared to see that every distributor got sufficient money to finance his winter purchases.

Prepared to Finance Dealer

The Moon company, he said, is prepared to deposit in the local bank of any distributor the amount of money necessary to finance his purchases, with the understanding that the bank will make loans as needed to the distributor over a period of three months.

The bank must take full responsibility for the credit risk and for releasing cars from the warehouse, but the Moon company agrees to take back within three months any new and unused cars upon which loans have been made and not repaid.

Having reached a peak production of 1018 cars in August, the Moon company has reduced its schedule with the coming of winter, and its output this month will be about 650. Orders for materials, however, have been placed for delivery immediately under the new arrangement, and plans are being made to start Dec. 1 on a monthly schedule of 1250 cars.

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CHANGES IN THE TRADE

Hughes Motor Car Co., Milwaukee, has been appointed distributor of the Fox air-cooled car.

Henne-Miller Tire Co., Columbus, has remodeled its store and opened an accessory department.

Springfield (Mass.) Durant Co. has appointed **W. J. McCann** as manager of its truck sales division.

A. M. Cheek, for two years Studebaker car agent in Aledo, Ill., territory, has added the Gray car to his agency list.

A. S. Johnson Motor Co., Streator, Ill., has been appointed distributor for the Nash car in the La Salle County territory.

Service Motor Sales Co., Rock Island, Ill., has been named agent for the new Star car in Rock Island and Henry counties.

William Kumpf of Delhi, a suburb of Cincinnati, has joined the **Cincinnati-Oakland Motor Co.** in an executive and sales capacity.

M. J. Flanigan, Ottawa, Ill., has moved to Galesburg, Ill., and will take the Knox and Warren County agency for the Wills Ste. Claire.

McKinley-Gregg Auto Co. has been selected as the agency for the Hudson and Essex motor cars in Allegheny County, of which Pittsburgh is a part.

C. P. Beechinor has taken the agency for the Rickenbacker in Greenfield, Mass., and will have sales and service quarters in **Voetsch Bros.' Garage.**

Schmidt Motor Co., Milwaukee, distributor of the Sayers Six and Clydesdale truck, has been appointed to act in a similar capacity for the **Ames Body Co.**

Alphonse G. Heringhaus of **Lafayette Motors Corp.** has resigned to become associated with the **Fisher Body Corp.** He will travel from the Detroit office of that concern.

James D. Kerr, formerly sales manager of the **MacDougal Motor Car Co.**, has become connected with the **Norton Motor Co.**, Pittsburgh distributors of the Stephens cars.

Bell-Korfmann Co., Milwaukee, has been organized by **R. Ellsworth Bell** and **Calvin Korfmann** to become State distributor of the Rolls-Royce in Wisconsin and Upper Michigan.

Franklin Automobile Co. has appointed the following new dealers: **Motors Limited**, Quebec, P. Q.; **Barnes Motor Co.**, Wilson, N. C.; **North Shore Franklin Co.**, Great Neck, N. Y.

Gardner Motor Co., Oshkosh, Wis., has been appointed Durant and Star dealer in Winnebago County, and has opened a branch at Neenah, under the management of **D. J. McDonald.**

Harold Dunlap, Jacksonville, Ill., has been appointed distributor for the Cadillac car in the Morgan County territory. He will also be distributor of the Exide battery in the same territory.

Heeter & Heeter, Inc., is the name of a new Racine, Wis., corporation to do a general automotive sales and service business. The principals are **Robert L., Terry E.** and **Louis M. Heeter.**

Rewerts & Ehlers, Urbana, Ill., have bought out **Porter & Watkins**, Decatur, Ill. The purchase of this garage and salesroom includes transfer of the Hupmobile car agency in the territory.

Cocoa Garage Corp. has been organized at Cocoa, Fla., and will establish a large service station in that city. Incorporators are **A. G. Porcher**, president; **Horace Bruen, A. C. Fiske** and **H. W. Bell.**

Jackson Auto Co. has been organized and incorporated at Cochran, Ga., and will establish an automobile agency, service station, etc. **Guy D. Jackson** and **J. B. Thompson**, both of Cochran, are the incorporators.

Motor Truck Co. has been organized and incorporated at Greensboro, N. C., by **S. G. Rudd** and **J. A. Hedges.** The company will handle motor trucks and is now preparing to construct a service station at Greensboro.

Seminole Auto Co. has been organized at Sanford, Fla., and will establish an automobile agency and service station in that city. **J. D. Hood**, of Sanford, is president. Other incorporators are **Porter E. Pitts** and **George E. Wells.**

Peter S. Steenstrup, at one time vice-president and general manager of the **General Motors Export Co.**, has located in San Francisco as district sales manager of the **Buick Motor Co.**, with headquarters in the Balfour Building.

Green Brothers is the name of a new company organized at Daytona, Fla., to establish an automotive agency and service station. **S. B. Green** is president, **R. G. Green**, vice-president and treasurer, and **M. J. Green**, secretary.

J. H. Graham, for the past two years distributor of the Case and Davis in Oregon, with headquarters in Portland, has joined the **C. L. Boss Automobile Co.** of Portland as wholesale man, and will cover the State for Hudson and Essex cars.

Charles H. Minogue, formerly associated with **Frank J. Pierson** in the tire and auto accessories business, has opened a store of his own in Springfield, Ohio. He will carry a complete line of automobile accessories and parts for Ford cars.

Bethlehem Motors Corp. has named distributors and dealers of Bethlehem trucks as follows: **Ebert Motor Truck Co.**, Philadelphia; **Merchants Automotive Corp.**, Newark, N. J., and Bethlehem Motor Dept., **Pacific Land Co.**, Los Angeles, Cal.

Tri-City Nash Co., Neenah, Wis., has opened a second branch house at Appleton, Wis. It maintains a branch in Menasha, Wis., as well. **F. W. Abendschein**, president of the Tri-City Nash Co., has been elected president of the Neenah Business Men's Association.

Paul M. Lockwood has become general sales manager of the automotive division of the **Rossendale-Reddaway Belting & Hose Co.**, with mills in Newark, N. J., and general sales office in the Woolworth Building, New York. He was formerly with the **Lockwood Manufacturing Co.**, Kansas City.

A. L. Gifford, for several years in the employ of the Maxwell and Chalmers distributor in Boston and more recently directing the Rhode Island agency for these cars, has become sales manager for the **Norcross-Cameron Co.**, Maxwell, Chalmers and Peerless distributors in Springfield, Mass.

Hopkins Automobile Equipment Co., recently announced formed in Atlanta, has been incorporated under Georgia laws with **W. D. V. Hopkins**, president. Several salesmen will be on the road in the southeastern territory for the new company, which will handle all lines of accessories and equipment.

Charles A. Tway Co. has been organized and incorporated in Atlanta to establish an automobile distributing branch. **Charles W. Tway** and **G. P. Downing** are the incorporators. Tway has been a distributor of the Haynes in Atlanta territory for several years, and is well known in Southern automobile circles.

Motive Parts Co. of Pennsylvania has been formed in Pittsburgh as distributor of parts for Torbensen axles, Buda engines and Russel axles. **E. M. Sheehan**, who has been appointed general manager of the firm, has been identified with the truck business since 1914 as American buyer for H. G. Buford & Co., Ltd., of London.

Walter D. V. Hopkins, formerly vice-president and sales manager of the **Alexander-Seewald Co.**, of Atlanta, one of the largest Southern jobbers of automotive equipment, has resigned his position and organized the **Hopkins Auto Equipment Co.**, in Atlanta, of which he is president and manager. The company will cover Southern territory as jobbers.

Dugas Motor Co. has been organized and incorporated in Atlanta, having a franchise with the **Ford Motor Co. Graham C. Dugan** is president of the company. He was formerly in the automobile business in Atlanta, entering the air service at the beginning of the World War as a private, and being retired as a major. He was decorated during the war for valiant services.

Belle Isle-Street Co. has been organized in Atlanta by **A. L. Belle Isle** and **E. S. Street**, and has taken over distribution in Atlanta territory of Ford and Lincoln cars. Belle Isle has conducted a large Ford agency in Atlanta for several years, and is one of the best known automobile men in the State. Street has been operating a Ford agency at Dublin, Ga., and one at McRae, Ga.

Emmet V. Pollard, of the sales organization of the **General Tire & Rubber Co.**, who has been a special representative in New York territory for some time past, has been transferred to Texas, where he will be manager of the Dallas branch of the company. Pollard has been in tire sales for the past eight years, half of which have been in the service of General. **Tom Moore** continues as Southern district manager.

Springfield Automobile Co. has been appointed distributor of Winton and Velie cars in the Springfield, Mass. territory. **Herbert A. Clark** and **Charles Pettis**, formerly of the **Clark & Breck Co.**, which has handled these products for several years, have gone to the new distributor as sales and service manager, respectively. The Springfield Automobile Co. is said to be the oldest automobile dealer establishment in this State, with a continuous career of 22 years to its credit. During the entire time **Fred G. Jager** has been at the head.

Haynes Automobile Co. announces the appointment of two district sales managers, who will work in the Southern territory recently released from the selling franchise of the **Charles W. Tway Co.**, Haynes distributors at Atlanta. **Oscar G. Woolverton**, associated with the **General Motors Truck Co.** for 11 years, is organizing Texas as a separate selling unit, while **H. M. Fletcher**, another veteran in the automobile industry, has been assigned to Kentucky, Tennessee, Alabama, Mississippi, Louisiana and Arkansas. **Harry Lane Morris**, formerly of the **Morris Motor Sales Co.** of Chicago, will travel for the Haynes company in the Northwest. His territory will include Minnesota, North and South Dakota, Nebraska, Montana, Wyoming, Idaho, Oregon, Washington and 36 counties in Iowa.

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ASSOCIATION ACTIVITIES

Ohio Prepares for Convention

TOLEDO, Nov. 19—The program of the sixth annual "Get-Together" convention of the Ohio Automotive Trade Association, to be held here Dec. 6, 7 and 8, provides for the discussion of the following subjects:

Wednesday, Dec. 6 — Present laws and pending legislation affecting registration taxes, restrictions, etc.; how local associations are handling used cars and other co-operative activities (to be led by six local association secretaries).

Thursday, Dec. 7—Truck service and sales: operation of garages; battery service sales and practices; "What's wrong with the tire business?" Service and sales problems as applied to the passenger car.

Friday, Dec. 8—Equipment merchandising; accounting.

The annual business session, including election of officers and transaction of other business, will be held on Friday. Among the interesting features of the program aside from the business session will be the luncheon, entertainment and visit of delegates at the Champion Spark Plug Co., and the regular annual banquet and trip through the plant with the Willys-Overland, Inc., as host.

Georgia May Operate from Atlanta

ATLANTA, Nov. 17—Preparations are being made by members of the Georgia Automotive Dealers Association to resume activities for the welfare of the industry over this State from a central office to be located in Atlanta, following a brief period of inactivity occasioned by the resignation a few months ago of Percy Megahee, executive secretary of the association for several years.

Volney Williams of Savannah, Ga., president, has been conducting Megahee's duties personally, but at a State meeting to be held probably early in 1923 another secretary will be named, if present plans materialize. One thing planned by the association during 1923 is an extensive newspaper advertising campaign to "sell" the automotive industry to the public, and the association to all dealers.

Association Helps Utah Dealers

SALT LAKE CITY, Nov. 18 — Through the efforts of the Intermountain Automotive Trades Association of this city Secretary of State Crockett is contemplating the issue of temporary permits to persons purchasing cars in Utah and driving them to the state line. Heretofore "transit license" cards were issued for this purpose but they were subject to abuse. In consequence of this the cards were withheld with the result that outside customers of local dealers were put to considerable inconvenience unless they obtained a Utah license which had to be paid for at full rates. Crockett says he "will probably" follow the suggestion. It is also likely legislation will be passed in this connection in the new year.

A. E. A. Scranton Meeting

SCRANTON, PA., Nov. 18—Automotive dealers of Scranton and vicinity were present at the first showing in this part of the State of the A. E. A. films "Ask 'Em to Buy" and "Shop Profits." The meeting, which was held in the Elks Club here, was preceded by a dinner. In addition to the A. E. A. films, the dealers saw the Multibestos film "Tell 'Em," which shows the new Multibestos method of relining brakes.

Credit Bureau Helps Michigan

DETROIT, Nov. 17—The Michigan Automotive Trade Association has made arrangements with the Merchants' Credit Bureau to recover rental batteries and collect dead accounts for the members of its battery chapter. This service will also be extended to non-members for a period of fifteen days in order to demonstrate to them the advantages of membership in the association. The Merchants' Credit Bureau is one of the most powerful organizations of its kind in Detroit.

CHANGES IN THE TRADE

The White Co. has established a local sales agency at Hartford, Conn.

E. M. Read, Hartford, Conn., has been appointed service manager of the **Hartford Buick Co.**

Garth Motor Co. of Birmingham has been appointed distributor for the Gray automobile in north Alabama. The company is also distributor for the Rickenbacker.

Hurley Motors Co. of Washington and the **Wilson Nash Motors Co.** of Baltimore have been awarded direct distributing contracts by the **Nash Motors Co.** Territory allotted the Hurley company comprises the District of Columbia and Virginia. The Wilson Nash company controls territory in Maryland.

D. S. Eddins has been appointed regional manager of the Atlantic Coast region of the **Chevrolet Motors Co.,** comprising the following zones: Tarrytown, N. Y. (including the New England district), Buffalo, Pittsburgh, Baltimore and Atlanta. He will supervise all sales operations and all matters pertaining to sales and will have charge of all distribution of production from Tarrytown and Buffalo plants. Headquarters of the new regional manager will be at the Tarrytown plant.

R & V Increasing Force

EAST MOLINE, ILL., Nov. 20—The R & V Knight Motor Co., manufacturer of the R & V Knight four and six cylinder cars, is gradually increasing its force in preparation for greater production.

The New Car and Truck Description Index

Giving the date and page number on which they appeared

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Chandler Town Car.....Sept. 27, 1922-11
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Calendar of Trade Events

CONVENTIONS

Toledo.....Dec. 6-8
Annual Convention of the Ohio Automotive Trade Association.

Indianapolis.....Dec. 12
Second Annual Convention and Get-together Dinner of the Indiana Automotive Trade Association.

Chicago.....Jan. 29-31
Annual Meeting, Automotive Electric Service Association, Congress Hotel.

Quincy, Ill.....March 19
Annual Meeting of the Illinois Automotive Trades Association.

SHOWS

Cincinnati.....Nov. 22-29
Second Annual Automobile Accessory and Radio Exposition, Music Hall, under the auspices of the Cincinnati Automotive Trade Association.

Bridgeton, N. J.....Nov. 25-Dec. 2
First Closed Car Show, Martin Dye Building, under the auspices of the Bridgeton Automobile Dealers Association, J. W. Acton, manager.

New York.....Dec. 3-9
Eighteenth Annual Automobile Salon, Commodore Hotel.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, auspices of the Automobile Body Builders Association.

Oakland, Cal.....Jan. 13-20
Fifth Annual Automobile Show, Civic Auditorium, under the auspices of the Alameda County Automobile Trade Association, Robert W. Martland, Manager.

Buffalo.....Jan. 13-20
Twenty-first Annual Automobile Show, 174th Regiment Armory, under the auspices of the Buffalo Automobile Dealers Association, Carl Proctor, Executive Secretary.

Hudson, N. Y.....Jan. 16-20
Hudson Automobile Show, State Armory, under the auspices of Company M, J. M. Callahan, Manager.

Cleveland.....Jan. 20-27
Annual Automobile Show, New Public Auditorium, under the Auspices of the Cleveland Automobile Manufacturers and Dealers Association, Herbert Buckman, Manager.

Milwaukee.....Jan. 20-27
Fifteenth Annual Automobile Show, Auditorium, under the auspices of the Milwaukee Automotive Dealers Association, Bart J. Ruddle, Manager.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Salon, Drake Hotel.

Ann Arbor, Mich.....Jan. 29-Feb. 2

Minneapolis.....Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Portland, Ore.....February
Annual Automobile Show, under the auspices of the Portland Automobile Dealers Association.

Atlanta.....February
Annual Southern Automobile Show, Atlanta Auditorium, under the auspices of the Atlanta Automobile Association, Virgil W. Shepard, manager.

Troy, N. Y.....Feb. 3-10
Ninth Annual Automobile Show, State Armory, under the auspices of the Troy Used Car Sales Corp., Frank M. Baucus, manager.

Charlotte, N. C.....Feb. 5-10
Annual Automobile Show, Made-in-Carolinas Exposition Building, under the auspices of the Charlotte Automotive Trade Association.

Lansing, Mich.....Feb. 5-10

Toledo.....Feb. 5-10
Annual Automobile Show, Terminal Auditorium, under the auspices of the Toledo Auto Shows Co., H. V. Buelow, Manager.

Waterbury, Conn.....Feb. 5-12
Third Annual Show at the New State Armory, under the auspices of the Waterbury Automotive Dealers Association. Passenger Cars and Accessories. M. A. Doolittle, Chairman of the Show Committee.

Cincinnati.....Feb. 7-14
Automobile Show, under the auspices of the Cincinnati Automobile Dealers Association, Harry T. Gardner, manager.

Kansas City, Mo.....Feb. 10-17
Annual Automobile Show, under the auspices of the Kansas City Motor Car Dealers Association, George A. Bond, Secretary.

Kalamazoo and Flint, Mich.....Feb. 12-17

San Francisco.....Feb. 17-24
Seventh Annual Pacific Automobile Show, under the auspices of the San Francisco Motor Car Dealers Association, Exposition Auditorium, George A. Wahlgreen, Manager.

Grand Rapids and Mt. Clemens, Mich.
Feb. 19-24

Louisville, Ky.....Feb. 19-24
Fifteenth Annual Automobile Show, under the auspices of the Louisville Automobile Dealers Association, George T. Holmes, secretary.

Brooklyn, N. Y.....Feb. 24-Mar. 3
Annual Automobile Show under auspices of the Brooklyn Motor Vehicle Dealers Association, 23rd Regiment Armory.

Des Moines.....Feb. 25-March 5
Fourteenth Annual Automobile Show, Coliseum, Passenger Cars and Accessories only, under the auspices of the Des Moines Automobile Dealers Association, Dean Schooler and C. G. Van Vliet, managers.

Muskegon, Mich.....Feb. 26-March 3

Syracuse.....Feb. 26-Mar. 3
Annual Automobile Show under auspices of the Syracuse Automobile Dealers Association.

Springfield, Mass.....Feb. 26-March 3
Annual Automobile Show under the auspices of the Springfield Automotive Dealers Association.

Bay City, Mich.....March 5-10

Newark, N. J.....Mar. 10-17
Annual Automobile Show under the auspices of the New Jersey Automobile Exhibition Co., Claude E. Holgate, manager.

Washington, D. C.....March 10-17
Third Annual Spring Show of Passenger Cars and Accessories, Convention Hall, under the auspices of the Washington Automotive Trade Association, Rudolph Jose, Chairman of Show Committee.

Port Huron, Mich.....March 12-17

Battle Creek, Mich.....March 19-24

Alpena, Mich.....April 2-7

CLOSED CAR WEEK

Louisville, Ky.....Nov. 20-25

RACES

Los Angeles.....Nov. 30

San Diego.....January

To Sell Union Truck Plant

DETROIT, Nov. 20—Property of the Union Motor Truck Co. of Bay City will be sold by the referee in bankruptcy on Dec. 12. The plan of the former stockholders to reorganize was abandoned when it was shown that one-fifth of the $100,000 raised would be required to pay the fees of trustees and receiver and court costs.

Want Syra-Cord Continued

SYRACUSE, N. Y., Nov. 20—Creditors of the Syracuse Rubber Co. which recently went into the hands of a receiver will make every effort to save the firm by reorganization.

Approximately $250,000 additional capital will be necessary to effect a reorganization, the creditors believe. None of the creditors is said to favor liquidation of the company and a petition will be sent to Federal Judge Cooper asking permission for the receiver, William F. Rafferty, to continue the business.

May Dissolve Ohio Tractor

COLUMBUS, Nov. 20—The Ohio Tractor Co., which has been manufacturing farm tractors, may soon be dissolved if the plans of the officials are carried out. The concern was reorganized about three years ago, and the name changed from the Columbus Tractor Co.

Receiver for Motors Mortgage

PITTSBURGH, Nov. 16—An ancillary receiver was appointed here yesterday for the Motors Mortgage Corp. The company is engaged in the purchase of bailment leases and conditional sale and chattel mortgage contracts, and in loaning money and financing automobile sales and purchases.

Louis E. Rood Dies

CHICAGO, Nov. 21—Louis E. Rood of Allison-Rood Co., Lincoln and Ford dealers here, died suddenly of heart disease. Funeral services were largely attended by members of the Chicago Automobile Trade Association.

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾–1	$1650a	3¾x5	34x5n	34x5n	W
Acason....RB	1½	1950	3¾x5¼	36x3½	36x6	W
Acason....H	2½	2750	4⅜x5¾	36x4k	36x8k	W
Acason....L	3½	3150	4⅜x5¾	36x5k	36x10k	W
Acason....M	5	4350	5 x6¼	36x6	40x12	W
Ace	1¼–1½	2400	3⅝x5	34x3½	34x6	W
Ace	2	2850	4½x5¼	36x4	36x7	W
Ace	2½–3	3400	4½x5¼	36x4	36x8	
Acme	1	....	3¾x5	35x5n	35x5n	W
Acme	1½	....	3¾x5	34x3½	34x5	W
Acme	2	....	3¾x5	34x3½	34x5	W
Acme	3	....	4½x5¼	36x4	36x7	W
Acme	60L	3	....	4½x5½	36x4	36x7k	W
Acme	90	4½	....	4½x5½	36x5	40x10	W
Acme	125	6¼	....	4¾x6	36x6	40x12	W
American	25	2½	3350	4 x6	36x4k	36x4dk	W
American	40	4	4275	4½x6	36x5k	36x5dk	W
American	50	5	4500	4½x6	36x5	36x12	W
Armleder	20	1	....	3¾x5¼	34x3½k	34x6k	W
Armleder	21	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder	40-B	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder	40-C	1½	....	4½x5¼	34x3½k	34x6k	W
Armleder	HW-B	2½	....	4¼x5½	36x4k	36x7k	W
Armleder	HW-C	2½	....	4½x5¼	36x4k	36x7k	W
Armleder	KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder	KW-C	3½	....	4½x5½	36x5k	36x5dk	W
*Atlas	22	1	1495	3¾x5⅛	34x4½n	34x4½n	W
*Atlas	44	1½–2	1950	3¾x5⅛	36x6n	36x6n	W
Atterbury	20R	1½	2475	3¾x5	34x3½	34x5	W
Atterbury	22C	2½	3375	4½x5¼	36x4	36x4d	W
Atterbury	22C	2½	3475	4½x5¼	36x4	36x4d	W
Atterbury	22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury	22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury	8E	5	4975	4¾x6	36x5	40x6d	W
Atterbury	8E	..	5125	4¾x6	36x5	40x6	W
Autocar	21UF	1½–2	1950	4¾x4½	34x4k	34x6	D
Autocar	21UG	1½–2	2050	4¾x4½	34x4k	34x6	D
Autocar	27H	2–3	2950	4 x5½	34x5	36x7	D
Autocar	27K	2–3	3075	4 x5½	34x5	36x7k	D
Autocar	26Y	4–6	3950	4½x5½	34x6	36x12	D
Autocar	26-B	4–6	4100	4½x5½	34x6	36x12	D
Available	H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available	H2	2	2775	4 x5	36x3½k	36x6k	W
Available	H2½	2½	3160	4 x5	36x4k	36x8k	W
Available	H3½	3½	4175	4½x5½	36x5	40x5d	W
Available	H5	5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x4s	34x5n	34x5n	I
Beck	A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	I
Beck	B-30	1½	1350	3¾x5	34x5	36x6	
Beck	C-40	2	1550	3¾x5	36x6	36x6	
Beck	D-50	2½	1950	4⅛x5¼	38x7	40x8	
Bell	M (Iowa)	1	1495	3⅝x5⅛	35x5	35x5n	W
Bell	E (Iowa)	1½	2100	3¾x5¼	34x3½	34x5	I
Bell	O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Bessemer	G	1	....	3½x5	35x5n	35x5n	I
Bessemer	H-2	1½	....	3¾x5	36x3½	36x5	D
Bessemer	J-2	2½	....	4⅛x5¼	36x4	36x4d	D
Bessemer	K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem	KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem	GN	2	1795	4 x5¼	34x4	34x6k	D
Bethlehem	GN	3	2195	4 x6¼	36x4k	36x8k	D
Bridgeport	A	1½	....	3¾x5⅛	34x3½	34x6	W
Bridgeport	B	2½	....	4½x5½	36x4	36x4d	W
Bridgeport	C	3½	....	4½x6	36x5	36x10	W
Brinton	C	2	2500	3¾x5	34x4	34x5	W
Brinton	D	3	2975	4½x5¼	36x4	36x7	W
Brockway	E	1	....	4 x5	33x5n	33x5n	B
Brockway	S-5	1½	....	4 x5	36x4	36x6	W
Brockway	SK	1½	....	4½x5¼	36x4	36x6	W
Brockway	KR	2½	....	4½x5½	36x4	36x8	W
Brockway	K-5	2½	....	4½x5¼	36x4	36x8	W
Brockway	RT	3½	....	4¾x6	36x5	36x10	W
Brockway	R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway	T-4	5	....	4¾x6	36x6	40x6d	W
*Buick	....	½	945b	3⅜x4¾	31x4n	31x4n	B
Case	....	2	....	4¼x5¾	36x6	38x7	I
*Chevrolet	....	¼	510b	3⅛x4	30x3½n	30x3½n	B
*Chevrolet	G	¾	650	3⅛x4	31x4n	31x4½n	B
*Chevrolet	T	1	1095	3⅛x5¼	33x4n	35x5n	W
Chicago	C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago	C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago	C3½	3½	....	4½x5½	36x5	36x10	W
Chicago	D5	5	....	4½x5½	36x6	40x12	W
Clydesdale	10	¾–1½	1485	3¾x5	34x5n	34x5n	B
Clydesdale	10A	¾–1½	1535	3¾x5	34x5n	34x5n	B
Clydesdale	18	¾–1½	1890	3¾x5	34x5	34x5	W
Clydesdale	20	1–1½	2385	3¾x5	34x5	34x5k	W
Clydesdale	42	1½–2	2475	3¾x5	36x3½	33x6	W
Clydesdale	65X	2½–3	3250	4½x5¼	36x4	33x8	W
Clydesdale	65EX	2½–3	3450	4½x5½	36x4	33x8	W
Clydesdale	90	3½–4½	4100	4½x5½	36x5	36x10	W
Clydesdale	120	5–6	4590	4¾x6	36x6	40x12	W
Comet	T	1½	1950	3¾x5	34x4	34x4	W
Commerce	9	¾–1½	1150	3¾x5	32x4½n	32x4½n	B
Commerce	T	¾–1½	1450	3¾x5	31x4½n	34x4½n	B
Commerce	10	¾–1½	2500	3¾x5	33x5n	33x5n	B
Commerce	12	1½	1695	3¾x5	31x3½	34x4	I
Commerce	12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce	15	2	1995	3¾x5	31x4	34x6	I
Commerce	15	2	2150	3¾x5	35x5n	35x5n	I
Commerce	18	2½	2150	4½x5¼	36x4	36x7	I
Commerce	18	2½	2425	4½x5¼	36x6n	40x8n	I
Commerce	25	2½	2425	4½x5¼	36x4	36x7	W
Commerce	25	2½	2770	4½x5¼	36x6	40x8n	W
Cook	51	2½	3800	4 x5⅛	36x6n	40x8n	W
*Corbitt	....	¾–1	1250	3½x5	33x5n	33x5n	
Corbitt	E-22	1	1180	3¾x5	34x3½	34x4	W
Corbitt	D-22	1½	2200	3¾x5	34x3½	34x5	W
Corbitt	C-22	2	2600	4½x5¼	36x3½	36x7	W
Corbitt	B-22	2½	3000	4½x5¼	36x4	36x7	W
Corbitt	R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt	A-22	3½–4	3800	4½x5½	36x5	36x10	W
Corbitt	AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder	AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder	B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder	D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder	C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder	F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder	E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn	E	1	1600	3⅝x5⅛	35x5n	35x5n	W
Dearborn	FX	1½	2300	3¾x5½	34x4	34x5	W
Dearborn	F	1½	2180	3¾x5½	34x4	34x5	W
Dearborn	48	2	2590	3¾x5⅛	34x4½n	34x7	W
Defiance	G	1	1525	3¾x5	35x5n	35x5n	B
Defiance	D	1½	1315	3¾x5	35x5n	36x6n	I
Defiance	E	2	2075	3¾x5	35x5n	38x7n	I
Denby	31	1¼	1185	3¾x5	35x5n	35x5n	B
Denby	33	1½	2145	3¾x5	35x5n	38x7n	I
Denby	35	2½–3	2795	4½x5¼	36x4	36x7	I
Denby	27	4	3895	4½x5½	36x5	36x5d	I
Denby	210	5	4295	4½x5½	36x6	40x6d	I
Dependable	A	¾–1	1650	3⅝x5⅛	34x5n	36x6n	W
Dependable	C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable	D	2½	2650	4 x5½	34x5	36x6	W
Dependable	E	3	2950	4¼x5½	36x4	36x7	W
Diamond T	O-3	1–1¼	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T	T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T	U	2–2½	2650	4 x5¼	36x4	36x7	W
Diamond T	K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T	EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T	S	5	4500	4¾x6	36x6	40x6d	W
Doane	....	2½	4100b	4¼x5¾	36x5	36x7	C
Doane	....	3½	5100b	4⅝x5¾	36x5	36x5d	C
Doane	....	6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers	....	¾	730	37⅝x4½	32x4n	32x4n	B
Dorris	K-2	1	2190	4 x5½	33x5n	33x5n	B
Dorris	K-4	2–2½	3100	4¼x5½	36x4	36x7	W
Dorris	K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort	103	½	635a	3½x5	31x4n	31x4n	B
Double Drive	B	3	4000	4¼x5½	36x6	36x6	W
Duplex	A	2	2775	4 x5¼	35x5n	38x7n	W
Duplex	E	3½	3500	4¼x5½	36x8	36x8	I
Duty	22	2	1590	3½x5	34x3½	34x5	I
Eagle	101	1½	1875	3⅝x5⅛	34x5	34x5	I
Eagle	100-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D.	B	3	4200	4¾x5½	36x6	36x6	B
Fageol	1½	1½	3000	3¾x5¼	34x3½k	31x6k	W
Fageol	2½	2½	3900	4⅜x5¾	34x4	36x7	W
Fageol	3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol	5	5	5700	4½x6¼	36x6	40x6d	W
Fargo	R	2	1700	3¾x5	36x4	36x6	I
*Federal	....	1½	1375	3¾x5	—x5n	—5n	
Federal	SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal	TE	1½	2175	4½x5¼	36x3½	36x5	W
Federal	UE	2–2½	2425	4½x5¼	36x4	36x7	W
Federal	WE	3½–4	3150	4½x5½	36x5	36x5d	W
Federal	X2	5–6	4500	4¾x6	36x6	40x6d	W
*Ford	TT	1	380	3¾x4	30x3½n	32x4½n	W
Front Drive	C	1½	2800	3¾x5½	36x6	36x6	W
G.M.C.	K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C.	K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C.	K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C.	K-41T	5†	2450	4 x5½	36x4	36x8	W
G.M.C.	K-71A	2½	3600	4½x6	36x5	40x5d	W
G.M.C.	K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C.	K-71T	10†	3700	4½x6	36x5	40x12	W
G.M.C.	K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C.	K-101T	15†	4050	4½x6	36x5	40x14	W
G.M.C.	K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W.	....	1½	1850	3¾x5½	35x5	35x5	I
*Garford	15	1	1590	3⅝x5⅛	34x5n	34x5n	W
Garford	25-B	1½	1990	3¾x5⅛	36x3½	36x5	W
Garford	70-H	2½	2750	4¼x5½	36x4	36x8	W
Garford	77-D	4	3750	4½x6	36x5	36x5d	W
Garford	68-D	5	4500	5 x6½	36x6	40x5d	W
Garford	150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary	F	1–1½	1775	3⅜x5	36x3½	36x5	W
Gary	J	2½	2850	4¼x5½	36x4	36x8	W
Gary	K	3½	3790	4½x6	36x5	40x5d	W
Gary	M	5	4450	5 x6½	36x6	40x6d	W
Gersix	M	1½	3100	4 x5½	36x3½	36x7	W
Gersix	K	2½	3500	4½x5½	36x4	36x3	W
Gersix	....	3½	4500	4½x6	36x5	40x12	W
Gotfredson	20	1	2075	3¾x5⅛	34x5	34x5	W
Gotfredson	31	1½–2	3000	4 x5¼	36x6	38x7n	W
Gotfredson	A	2½	3375	4 x5¼	36x4	36x7	W
Gotfredson	B	3½–4	4475	4½x5½	36x5	36x10	W
Gotfredson	100	5–6	5500	5 x6½	36x6	40x14	W
Graham Bros.	....	1	1265	3⅞x4½	33x4½n	34x5n	B
Graham Bros.	....	1½	1325	3⅞x4½	33x4½n	36x6n	B
*Gramm-Pion.	10	1	1215	3½x5	33x5n	33x5n	B
1Gramm-Pion.	15	1½–2	1750a	3¾x5	36x3½k	36x5k	
1Gramm-Pion.	6	1½–2	2250a	3¾x5	36x3½k	36x5	W
1Gramm-Pion.	20	2–2½	2475a	4½x5¼	36x4k	36x7k	W
1Gramm-Pion.	30	3	3300a	4¼x5½	36x5k	36x5dk	W
1Gramm-Pion.	75P	3½	4225a	4½x5½	36x6n	42x9n	W
1Gramm-Pion.	40	4	3850a	4½x5½	36x5	36x5dk	W
1Gramm-Pion.	50	5–6	4450a	4¾x6	36x6	40x5dk	W
Hall	1½	1½	3100	3¾x5	34x5n	33x7n	W
Hall	2½	2½	3275	4⅛x5¼	36x4	33x6	W
Hall	3½	3½	4100	4½x5½	36x5	33x5d	W
Hall	5	5	5100	4½x5½	36x5	4.x6d	W
Hall	7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey	W OA	2	2350	4¼x5½	34x1	34x7	W
Harvey	WFA	2½	2950	4¼x5½	36x4	33x7	W
Harvey	WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye	O	1	1375	3½x5¼	34x5n	31x5n	
Hawkeye	K	1½	1345	3¾x5½	34x3½k	34x5k	I
Hawkeye	M	2	2145	4¼x5	33x4k	33x6k	I
Hawkeye	N	3½	3700	4½x6¼	36x5k	33x10k	I
Hendrickson	O	1½	2200	3⅝x5⅛	36x4n	33x5n	W
Hendrickson	N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson	M	3½	3000	4¼x5	36x5k	33x5dk	W
Hendrickson	K	5	4000	5 x6¼	36x6	40x6	W
Huffman	B	1½–2	1795	3⅜x5	34x3½	31x6	W
Huffman	C	1½–2	1695	3¾x5½	33x3½	33x6	I
Huffman	D	2–3	2895	4¼x5½	36x4	35x7	
Hurlburt	A-A	1–1½	1950	3¾x5	31x5n	31x5n	W
Hurlburt	B-B	2–2½	2800	4¼x5¼	36x4	33x4d	W
Hurlburt	C-C	3–3½	3475	4¼x5½	36x5	33x5d	W
Hurlburt	D-D	4–4½	4150	4½x6	36x5	36x6d	W
Hurlburt	E-E	5–6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa)	B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa)	G	1½	2040	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.)	H1	2½	2940	4½x5¼	36x4	36x7	I
*Indiana	10	1	....	3¾x5¼	34x5n	34x5n	B
Indiana	12	1½–2	....	3¾x5¼	34x3½k	31x5k	W
Indiana	20	2	....	4½x5½	33x4k	36x7k	W
Indiana	25	2½–3	....	4½x5½	36x4k	35x8k	W
Indiana	35	3½–4	....	4½x5½	33x5k	33x5dk	W
Indiana	51	5–7	....	5 x6¼	33x5k	40x6dk	W
*International	S	1	1250	3½x5	32x4½n	32x4½n	I
International	21	1	1550	3½x5¼	33x3½k	36x3½	I
International	31	1½	1650	3½x5¼	33x3½k	36x5k	I
International	41	2	2100	3½x5¼	33x3½k	36x6k	I
International	52	2½	3500	4¼x5	36x6n	36x6dn	I
International	61	3	2400	4¼x5	35x4k	36x7k	I
International	62	3	2800	4¼x5	36x4	36x7	I
International	101	5	3600	4¼x5	36x5	40x12k	I
International	102	5	3800	4¼x5	36x5	36x12	I
Jackson	4WD	3½	3850	4½x5½	36x7	36x7	B
K-Z	1	1	1750	3½x5	34x3½	34x5	W
K-Z	1½	1½	2075	3¾x5	36x4	36x6	W
K-Z	2½	2½	2550	4½x5¼	36x4	36x8	W
K-Z	3½	3½	3350	4½x5½	36x5	40x10	W
K-Z	5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo	T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo	G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo	LG	2	2045	4 x5	36x4	36x7	W
Kalamazoo	NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo	HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo	SK	4	3845	4¼x6	33x5	36x12	W
Kalamazoo	OK	5	4350	4½x6	33x6	40x6d	W
2Kelly-S	K-31	1½	2700	3¼x5¼	33x3½	33x6	C
2Kelly-S	K-34	1½	2700	3¼x5¼	36x3½	33x6	W
2Kelly-S	K-38	2½	2900	3¼x5¼	36x4	33x4d	W
2Kelly-S	K-35	2½	2900	3¼x5¼	36x4	36x4d	C
2Kelly-S	K-40	3½	3900	4½x6¼	36x5	40x5d	C
2Kelly-S	K-41	3½	3900	4½x6¼	36x5	36x10	I
2Kelly-S	K-42	3½	3900	4½x6¼	33x5	40x5d	W
2Kelly-S	K-50	5	4400	4½x6¼	33x6	40x6d	C
2Kelly-S	K-60	6	4600	4½x6½	36x6	40x7d	C
2Kelly-S	K-61	5–7	4800	4½x6½	36x3	36x7d	I
Kimball	AB	2	3675	4 x6	36x4	36x7	W
Kimball	AC	2½	3975	4¼x6	35x4	36x8	W
Kimball	AK	3	4500	4½x6	36x4	36x10	W
Kimball	AE	4	5000	4¾x6	36x5	40x12	W
Kimball	AF	5	5500	5 x6	36x6	40x7d	W
*Kissel	Express	1	1585	3⅞x5½	34x5n	34x5n	W
Kissel	Utility	1½	1975	3⅞x5½	36x3½	36x6	W
Kissel	Freighter	2½	2875	4¼x5½	36x4	36x8	W
Kissel	H.D.	4	3675	4¼x5½	36x5	36x12	W
Kleiber	AA	1	2200	4¼x5¼	34x3½k	34x5k	W
Kleiber	A	1½	3100	4½x5¼	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor. †Capacity with semi-trailer.

1—Gramm Pioneer. 2—Kelly-Springfield.

Passenger car specifications on pages 53 and 54

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5¼	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....D	1½	2150	3½x5	34x3½	34x5	W
Koehler.....M	2½	3175	4 x5½	36x4	36x7	W
Koehler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Koehler.....F	3½	4470	4½x5½	36x5	36x10	W
Koehler,MT.Trac	5	3275	4 x5½	36x4	36x7	W
Krebs.....23	¾	1360	3¾x5	34x4½	34x4½	B
Krebs.....24	1	1675	3¾x5	34x5	34x5	W
Krebs.....45	1½	2275	4½x5½	36x4	36x7	W
Krebs.....75	2½	2550	4½x5½	36x4	36x8	W
Krebs.....110	3½	3175	4½x5½	36x5	40x10	W
Krebs.....140	5	....	4¾x6	36x6	40x6d	W
Larrabee.....X-2	1	1925	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2400	3¾x5	34x3½	34x5	W
Larrabee.....J	1½–2½	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½–3½	3100	4½x5½	36x4	36x7	W
Larrabee.....K-5	2½–3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½–5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5–7	4800	4¾x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5¼	36x4	36x6	W
Maccar.....H-A	2	....	4½x5½	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5–6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack....AB D.R.	1½	3450	4 x5	36x4k	36x3½dk	D
Mack....AB Chain	1½	3000	4 x5	36x4k	36x3½dk	D
Mack....AB Chain	2	3300	4½x5	36x4k	36x4dk	C
Mack....AB D.R.	2	3750	4½x5	36x4k	36x4dk	D
Mack....AB D.R.	2½	3850	4½x5	36x4k	36x4dk	D
Mack....AB Chain	2½	3400	4½x5	36x4k	36x4dk	C
Mack....AC Chain	3½	4950	5 x6	36x5k	40x5dk	C
Mack....AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack....AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack....AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4½x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Mapleleaf....	**	1½	3000	3¾x5½	34x5n	36x6n	W
Mapleleaf....AA**	2	3600	4 x5½	36x4	36x4d	W
Mapleleaf....BB**	3	4050	4½x5½	36x4	36x4d	W
Mapleleaf....CC**	4	4800	4½x5½	36x5	36x5d	W
Mapleleaf....DD**	5	5625	4½x5½	36x6	40x6d	W
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x6	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4½x5½	34x4	36x8	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x8	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3⅝x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee....HT	1–1¼	2000	3¾x5	34x3½	36x5	W
Menominee....H	1½	2475	4 x5	36x3½	36x5	W
Menominee....D	2–2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	36x5	36x10	W
Menominee....J-3	5	4250	4¾x6	36x6	40x12	W
Meline.....10	1½	1985	3½x5	34x5n	36x6n	I
[3]Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5¼	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½–5	4600	4¾x6	36x6	40x6	W
Nash.....2018	1–1½	1595	3¾x5¼	34x4	34x5	I
Nash.....3018	2–2½	2150	3¾x5¼	34x4k	34x7k	I
Nash.....Quad.	2–2½	2750	4¼x5½	36x6	36x5k	I
Nash..3018, LWB	2–2½	2200	3¾x5¾	34x4k	34x7k	I
Nash.Quad. LWB	2–2½	2800	4¼x5½	36x6	36x6	I
Nash.....5018	2½	2250	3¾x5¼	34x4k	34x7k	I
[4]Nelson.....G2	1½	....	4½x5¼	36x3½	36x6	W
[4]Nelson.....G3	2½	....	4½x5¼	36x4	36x7	W
[4]Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
[4]Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5¼	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5¼	36x4k	36x7k	W
Noble.....A21	1¼	1750	3⅝x5½	34x5	34x5	W
Noble.....B31	1½–2	2395	3¾x5¼	36x4	36x7	W
Noble.....D51	2½–3	2795	4¼x5½	36x4	36x8	W
Noble.....E71	3½–5	3495	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3¾x5¼	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4¼x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4½x5¼	31x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E.Spec	1½	2285	3¾x5¼	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3½x5	34x3½	36x5	W
Ogden.....E	2½	....	4½x5¼	36x4	36x8	W
Old Hickory...W	1	$1775	3¾x5	36x3½k	36x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4¼x6	34x4	36x4d	W
Old Reliable....C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6¼	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5¼	35x5n	35x5n	I
Olympic.....A	2½	3200	4¼x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	2½	3200	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	2485	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	2585	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3485	4 x5½	38x7n	38x7n	B
Oshkosh.....BB	2½	3585	4 x5½	38x7n	38x7n	B
*Overland.....4	½	425	3½x4	30x3½n	30x3½n	B
Packard.....EC	2–3	3100	4½x5½	36x4	36x7	W
Packard.....EX	2–2½	3100	4½x5½	36x6n	40x8n	W
Packard.....ED	3½x4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5–7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige.....54-20	2½	2420	4¼x5½	34x4	34x8	W
Paige.....51-18	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot....Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot....Lincoln	2	2050	4 x5¼	34x4	34x6	W
Patriot....LS-800	2	2175	4 x5¼			
Patriot..Washgt'n	3	2900	4½x5½	36x5	36x7	W
Pierce-Arrow.....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow.....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow.....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher.....	1½–2	3000	3½x5	36x4	36x6	
Pittsburgher.....	3	3800	4½x5¼	36x5k	36x7	W
Power.....F	2	3150	4 x5¼	36x5	36x7	W
Power.....C	3½	....	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4½x5¼	34x4	34x6	W
Rainier.....R-20	2½–3	....	4½x5¼	34x4	34x7	W
Rainier.....R-15	3½–5	....	4½x5½	36x5	36x5d	W
Rainier.....R-25	3½–5	....	4½x5¼	36x5	36x5d	W
Rainier.....R-17	5–6	....	4¾x6	36x6	40x6d	W
Rainier.....R-27	6	....	4¾x6	36x6	40x6d	W
Ranger..TK-20-2	1½	1450	3¾x5	36x6n	38x7n	W
*Reo.....F	¾–1¼	1185	4½x4½	34x4½n	34x4½n	B
Reliance.....10A	1½	2400	4 x5½	36x3½	36x5	I
Reliance.....20B	2½	3100	4¼x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3¾x5	34x3	34x4	I
Republic...10 Exp	1	1695	3¾x5	34x5n	34x5n	I
Republic....11X	1½	1795	3¾x5	34x4	34x6	I
Republic.....19	2½	2195	4½x5¼	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rowe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rowe.....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rowe.....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rowe.....G.P.W.	3	5250	3¼x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4¼x6	36x5	36x6d	W
Rowe.....F.W.	5	4850	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4–3½x4	32x4n	32x4n	B
Samson.....25	1¼	....	4–3½x5½	35x5n	35x5n	B
Sanford....W-15	1½–2	2150b	3¾x5	36x3½k	36x5k	
Sanford.....25	2½–3½	....	4½x5¼	36x4	36x4d	W
Sanford.....35	3½–5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5–7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ton	3	3800	4½x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5¼	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½–2½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½–2½	3350	4½x5¼	34x5n	38x7n	W
Selden.....50	2½–3½	3250	4¼x5¼	36x4	36x7	W
Selden.....51	2½–3½	4350	4½x5½	36x6n	40x8n	W
Selden.....78	3½–5	$3750	4½x5½	36x5	36x10	W
Selden.....90	5–7	4950	4¾x6	36x6	40x12	W
Seneca.....M	½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3¼x4½	32x4½n	32x4½n	B
*Service.....25	1½	....	3¾x5½	34x5n	34x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4¼x5½	35x5n	38x7n	W
Service.....52	3	....	4½x5½	36x4	36x8	W
Service.....72	3½	....	4½x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	1450	3¾x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5½	34x4	36x6	W
Signal.....J	2½	2375	4½x5¼	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x5d	W
Signal.....R	5	3900	4¾x6	36x6	40x6d	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½–3	2400	4½x5¼	36x4k	36x8	W
Standard.....66	3½–5	3150	4½x5½	36x5	36x12	W
Standard.....5-K	5–7	4400	4¾x6	36x6	40x14	W
*Star.....	½	610b	3½x4¼	30x3½n	30x3½n	
Sterling.....1½	1½	2885	4 x5½	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5½	36x4k	36x6k	W
Sterling.....2½	2½	3290	4½x5½	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6½	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6½	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6½	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6½	36x6	40x7d	C
*Stewart...Utility	¼–1½	1245	3½x5½	34x4½n	34x4½n	I
Stewart.....15	1½–1½	1445	3½x5½	35x5n	35x5n	I
Stewart.....9	1½–2	1790	3¾x5	34x3½	34x6	I
Stewart.....7-X	2½–3	2390	4¼x5½	34x4	34x8	I
Stewart.....10-X	3½–4	3190	4½x6	36x5	36x10	I
*Stewart.....	1¼	1245	4–3½x5½	34x4½	34x4½	
*Steughton.....C	¾	1095	3½x5	34x4½n	34x4½n	B
Steughton.....A	1	1790	3¾x5¼	34x5n	34x5n	W
Steughton.....B	1½	2150	3¾x5¼	36x3½	36x5	W
Steughton.....D	2	2490	4 x5½	36x4	36x7	W
Steughton.....F	3	3150	4¼x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4¼x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Thomart.....	1¼	1795	4 x5¼	34x5	34x5	C
Tiffin.....GW	1½	2100	4½x5¼	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5¼	36x4	36x3½d	W
Tiffin.....PW	3½	3600a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4½x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4¼x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4½x5¼	35x5n	38x7n	W
Tower.....H	2½	2475	4½x5¼	36x4	36x7	W
Tower.....G	3½	3475	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595a	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595a	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3¾x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5½	34x3½k	34x5k	I
Transport.....35	2	1885a	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5¼	36x4k	36x8k	I
Transport.....60	3½	2585	4¼x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Traylor.....B	1½	2390	3¾x5½	34x3½	34x5	W
Traylor.....C	2–2½	2850	4 x5½	36x4	36x7	W
Traylor.....D	3–3½	3300	4¼x5½	36x4	36x8k	W
Traylor.....F	5–6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3¼x5	34x4½n	34x4½n	I
Triangle.....A	1½–2	1985	3¾x5¼	34x3½k	34x6k	I
Triangle.....C	2–2½	2285	3¾x5¼	36x4k	36x7k	I
Triangle.....B	2½–3	2585	4 x5¾	36x4k	36x7k	I
Twin City...B.W.	2	2400	4 x5½	36x6	40x8	I
Twin City...A.W.	3½	3500	4½x6	36x5	40x5d	W
[5]Twin City.....B	3½	....	5½x6	36x6	36x6	I
[5]Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4¼x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4¼x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4¼x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4¼x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
United.....A	1½	2445	3¾x5¼	36x3½k	34x5k	W
United.....B	2½	3150	4¼x5½	36x4k	36x7k	W
United.....C	3½	3975	4¼x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States..U	1¼	1800	3⅝x5½	34x5n	34x5n	B
UnitedStates.NW	1½–2	2375	3¾x5	36x5	36x3½	W
United States...N	1½–2	2175	3¾x5	36x3½k	36x5k	I
United States...R	3	3300	4 x5¼	36x4	36x4d	W
United States...S	4	4075	4½x5½	36x5	36x5d	W
United States...T	5–7	4975	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Velie.....53	2½	2185	4 x5½	36x4k	36x7k	I
Veteran.....M**	1½	2699	3¾x5¼	35x5n	35x5n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires.
k—pneumatic tires optional at extra cost. n—pneumatic tires.
a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Veteran.....P**	2	$3699	4½x5½	36x4	36x7	W
Veteran.....R**	3	4200	4¼x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....50	½–¾	995	4 x5	32x4n	32x4n	B
Walker-JohnsonA	2	2500	3⅜x5	34x3½	34x6	W
Walker-JohnsonB	3	3000	4¼x5½	36x4	36x8	W
Walter.....M	2½	3850	4½x5¾	36x4	36x8	D
Walter.....S	5	4850	4½x6¼	36x6	40x6d	W
*Watson.....C	1	1465a	3⅝x5½	35x5n	35x5n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2450	4½x5¼	36x3½k	36x5k	W
Western....L1½	1½	2450	3⅝x5	36x3½k	36x5k	W
Western....W2½	2½	3250	4½x5¼	36x4	36x7	W
Western....L2½	2½	2450	4¼x6	36x4	36x7	W
Western....W3½	3½	4000	4½x6	36x5	40x5d	W
*White.....15	¾	2400	3⅜x5½	34x5n	34x5n	B
White.....20	2	3250	3¾x5½	36x4k	36x7k	D
White.....40	3½	$4200	3¾x5¾	36x5	40x5d	D
White.....45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick....E	1	1225	3¾x5	34x5n	34x5n	W
White Hick....H	1½	1375	3¾x5	36x3½	36x5	W
White Hick....K	2½	1675	4½x5¼	36x4	36x5	W
Wichita.....K	1	1875	3¾x5¼	36x3½	36x4k	W
Wichita.....M	2	2400	3¾x5¼	36x3½k	36x6k	W
Wichita.....RX	3	3200	4⅜x5¾	36x4k	36x8k	W
Wichita.....O	4	$3500	4½x6¼	36x5k	36x5k	W
Wilcox.....AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4¼x5	36x4k	36x3½dk	W
Wilcox.....E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox.....F	5	4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¾x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4½x5¼	36x4	36x7	W
Wilson.....G	3½	3685	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin.....A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin.....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin.....C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin.....D	3½	3000	4⅜x5¾	36x6n	40x8	W
Wisconsin.....E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin.....F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will.....N	1½	2450	3¾x5	36x3½k	36x6k	W
Witt-Will.....P	2½	2900	4½x5¼	36x4k	36x8k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.

r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders; Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P.	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm...	15-25	1185	4	Midw.	4-4½x5¼	Gas.	3
Allis-Chalm...	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm..	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork...2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork.....C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T,...	15-30	1900	4	Clim.	4-5 x6½	G,K,D	4
Aultman-T,...	22-45	2800	4	Own	4-5½x8	G,K,D	6
Aultman-T,...	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Automot...B-3	12-24	1250	4	Here.	4-4 x5⅛	Gas.	2-3
Avery,SR.Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery Cult-C	...	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4⅜x6	G,K,D	2-3
§Avery.....	....	....	*	Own	4-4x5½	G,K,D	3-4
Avery.....	12-25	....	4	Own	2-6½x7	G,K,D	2-3
Avery.....	14-28	....	4	Own	4-4⅞x7	G,K,D	3-4
Avery.....	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7¾x8	G,K,D	8-10
Bates Mule.H	15-25	....	4	Midw.	4-4½x5¼	Gas.	3
Bates Mule..F	18-25	....	*2	Midw.	4-4½x5¼	Gas.	3
‡BatesMule.G	25-35	....	*2	Midw.	4-4½x6	Gas.	..
Bear.....	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman Jr..	¾–1½	180	2	B&S	1-2½x2½	Gas.	..
¶Beeman...G	2-4	240	4	Own	1-3½x4½	Gas.	..
Best.....	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best.....	60	....	*2	Own	4-6½x8½	G,K,D	8-9
¶Bolens.....	....	....	4	B&S	1-2½x2½	G.	..
Boring.....	5-10	395	4	LeR.	4-3½x4½	G.	..
Boring...1921	....	1850	3	Wauk	4-4⅜x5¾	GorK	2
**Bryan.....	15-30	....	4	Own	2-4 x5	K.	3
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	2-3
Case.....	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case.....	22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case.....	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T35	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar..5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur.....	5-2½	345	2	N Way	2-4½x4½	GorK	1
Cletrac.....F	9-16	595	*2	Own	4-3¼x4½	G,K,D	2
Cletrac.....W	12-20	1345	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom,	4-4¾x6	Gas.	3
Do-It-All,Baby	1	237	..	Own	1-2¾x2¾	Gas.	1
Do-It-All....A	3-6	495	..	Own	1-4½x5	Gas.	1
Do-It-All, Jack	6	395	..	Own	1-3⅜x3¾	Gas.	1
Do-It-All....6	12	495	2	Own	2-3⅜x3¾	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	GorK	4-5
E-B.....AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol.....D	9-18	1175	4	Lyc.	4-3½x5	Gas.	2
Farm Horse.B	18-30	1885	4	Clim	4-5 x6½	G,K	4
Fitch 4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	395	4	Own	4-4 x5	G,K	2
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt...A	18-36	$2150	4	Wauk.	4-4¾x6¾	GorK	4
Gray.....	20-36	1975	3	Wauk.	4-4½x6¼	Gas.	4
Gray.....	22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. WesternSt	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr..20	20	865	4	Own	2-5¼x6½	K,D.	2
Hart-Parr..30	30	1045	4	Own	2-6½x7	K,D.	3
‡Hart-Parr...	....	1395	4	Own	6½x7	K,D.	..
Heider.....D	9-16	628	4	Wauk.	4-4¼x5¾	G,K	2
Heider.....C	12-20	725	4	Wauk.	4-4½x6¾	G,K.	3
Heider...Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light.4	12-25	985	4	Wauk.	4-4½x5¾	GorK	3
Huber Super 4	15-30	1885	4	Midw.	4-4½x6	Gas.	3
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International..	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5¼x8	G,K,D	4
¶Kinkade....	1½–3	190	1	Own	1-3 x3	Gas.	..
La Crosse....	12-24	985	2	Own	2-6 x7	G,K	3
Lauson.....5	12-25	1295	4	Midw.	4-4½x5¼	Gas.	3
Lauson.....21	15-30	1675	4	Beav.	4-4¾x6	GorK	3-4
‡Lauson Road	15-30	2000	4	Beav.	4-4¾x6	K	..
Leader.....B	12-18	685	4	Own	2-6 x6¼	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K.	3-4
‡Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Little Giant..B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant..A	26-35	3300	4	Own	4-5½x6	K	6
Lombard.1922	85-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2⅝x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	GorK	3
Minne..Gen.P	17-30	1600	4	Own	4-4¾x7	GorK	3-4
Minne.Med.D	22-44	2650	4	Own	4-6 x7	GorK	5-6
MinneHeavyD	35-70	3850	4	Own	4-7¼x9	GorK	8-9
Mohawk.1922	8-16	650	2	Light	4-3¼x4½	KorG	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch..	9-18	....	2	Own	4-3½x5	Gas.	2-3
‡Monarch....	20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Motor Macult.	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	375	4	Own	2-3¾x4	Gas.	1
Nichols-Shep..	20-42	2650	4	Own	2-8 x10	GorK	3-6
Nichols-Shep..	25-50	3000	4	Own	2-9 x12	GorK	4-8
Nichols-Shep..	35-70	3650	4	Own	2-10½x14	GorK	8-12
Nilson Senior.	20-40	1975	5	Wauk.	4-5 x6¼	G,K	4
OilPull.....K	12-20	....	4	Own	2-6 x8	K,D	3
OilPull.....H	16-30	....	4	Own	2-7 x8½	K,D	4
OilPull.....G	20-40	....	4	Own	2-8 x10	K,D	5-6
OilPull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar...K	2½–5	$225	4	Own	1-5½x5½	Gas.	1
Pioneer.....G	18-36	....	4	Own	4-5½x6	G,K,D	4
Pioneer.....C	40-75	....	4	Own	4-7 x8	Gas.	10
Russell.....	12-24	1500	4	Own	4-4¼x5¾	GorK	2-3
Russell.....	15-30	2200	4	Own	4-5x6¼	GorK	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	GorK	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	GorK	8-10
Samson....M	....	445	4	Own	4-4 x5½	G,K	2
Toro Cultivator	6	750	3	LeR.	4-3½x4½	Gas.	2
ToroTractor'22	6-10	495	3	LeR.	4-3½x4½	Gas.	2
Townsend....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend....	25-50	2500	2	Own	4-8½x10	Ker.	4-8
TractionMotor	40-50	....	4	....	4-3¼x5	Gas.	4-5
Traylor....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar...10	25-40	3750	*2	Wauk.	4-5 x6¼	GorK	4
TwinCity.....	12-20	1200	4	Own	4-4¼x6	H,K	3
Twin City....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City....	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle SamC20	12-20	1295	4	Weid.	4-4 x5½	G	2-3
Uncle SamB19	20-30	1985	4	Beav.	4-4¾x6	GorK	3-4
Uncle SamD21	20-30	1895	4	Beav.	4-4¾x6	GorK	3-4
Utilitor....501	2½–4	295	4	Own	1-3½x4½	G	1
Utilitor...501A	2½–4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	....	4	Own	4-4¼x5¾	G,K	3
Waterloo....N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore21-22	12-25	1185	4	Wauk.	4-4 x5¾	G,K	3
Whitney....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin..E	16-30	1850	4	Clim.	4-5 x6½	GorK	3
Wisconsin...F	20-40	2050	4	Wauk.	4-5 x6¼	GorK	4
Wisconsin...H	22-40	2550	4	Clim.	4-5½x7	GorK	4-6
Yuba....12-20	12-20	2400	*2	Wauk.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4¼x6	G,K,D	..
Yuba....20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba.....	25-40	4750	*2	Yuba	4-5¼x7	D	..

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont.—Continental. Dom.—Domas. Evin.—Evinrude. Here.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor. ¶Garden Tractor. **Steam Tractor.

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (N.A.C.C.)	NAME AND MODEL	Carbureter	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle Type and Make	†Gear Ratios
.....	$4500c	$4500	.....	.....	$6500	136	33x5	Cont..	6-3 5/16x5 1/4	31.54	Ambassador.....R	Strom...	West.....	Bosch.....	m-d B-L....	B-L.....	f Norwalk..	F Tim..	4.45
$1995c	1785	1850	$1885c	.....	2485	127	33x4 1/2	H-S...	6-3 1/2x5	29.40	American.....D-66	Strom...	G-D.....	A-K.....	s-p B&B....	B & B ..	m Hartford..	F Salis..	4.50
.....	1650	.....	.....	.....	.....	127	33x4	Own..	2-	.....	American.....Steamer	None...	L-N.....	L-N.....	None.....	None.....	.....	Own..	1.75
.....	1195	.....	.....	$1450c	.....	114	32x4	Cont..	6-3 1/16x4 1/4	23.44	Anderson...Aluminum 6	.....	West.....	West.....	s-p B&B....	.....	.....	Salis..	....
{1495 {1785p	1495	1595	{1595c {1945c	1995c	1995d	120	33x4	Cont..	6-3 3/16x4 1/2	27.34	Anderson.....Series 40	Rayfield.	Remy.....	Remy.....	s-p B&B....	Durston.	f Snead.....	3/4F Salis..	4.50
.....	2620	2645	.....	3625	3695	130	34x4 1/2	Own..	8-3 1/4x5	33.80	Appersen.....8-21-S	Johnson.	Bijur.....	Remy.....	m-d Own....	Own.....	m Sterling...	1/2F Own..	4.25
1575	1475	1545n	{1895n {1995n	2275	2345	121	32x4	Cont..	6-3 3/8x4 1/2	27.34	Auburn.....6-51	Strom...	Remy.....	Remy.....	s-p B&B....	G-L.....	m Universal..	F Salis..	4.75
.....	1395	.....	.....	.....	1850d	118	32x4	Cont..	6-3 1/16x4 1/4	23.44	Barley.....	.....	Delco	Delco.....	s-p B&B...	Fuller...	f M&E.....	Col.....	.....
1800	1800	.....	.....	2400	2500	121	32x4	Cont..	6-3 1/16x4 1/2	25.35	Bay State.....	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Spicer....	3/4F Col...	4.67
2950	2950c	.....	.....	3950	3950	121	32x4	Buda.	4-3 3/4x5 1/8	22.50	Biddle.....B1 & B5	Zenith...	G-D.....	Simms....	s-p Warner .	Warner..	m Spicer....	1/2F Std...	4.50
5000	5000	.....	.....	.....	7000	125	32x4 1/2	Own..	4-4 x5 1/2	25.60	Brewster.....91	Zenith...	USL.....	Bosch.....	c Own....	Own.....	F Own.....	F Own..	3.92
865	885	725g	.....	1175	{1305 {1325	109	31x4	Own..	4-4 5/8x4 3/4	18.23	Buick..1923-34-5-6-7-38	Marvel..	Delco.....	Delco.....	m-d Own....	Own.....	m Own.....	3/4F Own..	4.66
1175	1195	975g	.....	1935	1985	118	33x4	Own..	6-3 3/16x4 1/2	27.34	Buick....1923-41-4-5-47	Marvel.	Delco.....	Delco.....	m-d Own....	Own.....	m Own.....	3/4F Own..	4.60
.....	.....	1435	{1625a {1675c	1895	2195	124	34x4 1/2	Own..	6-3 3/8x4 1/2	27.34	Buick.1923-48-9-50-4-55	Marvel..	Delco.....	Delco.....	m-d Own....	Own.....	m Own.....	3/4F Own..	4.90
3100	3150	3150	.....	{3875a {3925d	4100	132	33x5	Own..	8-3 1/16x5 1/8	31.25	Cadillac.....61	Own....	Delco.....	Delco.....	m-d Own....	Own.....	m Spicer....	F Tim...	4.50
1750	1790	.....	.....	2180	2575	122	32x4 1/2	Cont..	6-3 3/16x4 1/2	27.34	Case.....X	Rayfield.	Delco.....	Delco.....	m-d Own....	Own.....	f Snead.....	7/8F Col...	5.25
.....	1900	2250	1950	2480	2975	129	34x4 1/2	Cont..	6-3 5/8x5 1/4	31.54	Case.....W	Rayfield.	Delco.....	Delco.....	m-d Own....	Own.....	f Arvac.....	3/4F Col...	4.45
1185	1185	.....	.....	1595	{2295	117	32x4	Own..	6-3 1/4x4 1/2	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own.....	m Hardy.....	1/2F Adams	5.13
.....	.....	1345	.....	.....	{1585	122	32x4	Own..	6-3 1/4x4 1/2	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own.....	m Hardy.....	1/2F Adams	5.13
1495	1495c	1645	1595a	1995c	{2295d {2375f	123	33x4	Own..	6-3 1/2x5	29.40	Chandler.....Six	Rayfield.	Bosch.....	Bosch.....	s-p B&B....	Own.....	f Own.....	F Own..	4.45
510	525	425g	.....	{ 840c {680k	860	102	30x3 1/2	Own..	4-3 11/16x4	21.53	Chevrolet.....Superior	Zenith . Holley .	A-L.....	Remy..... A-L.....	c Own....	Own.....	m Own.....	1/2F Own..	3.66
1085	995	.....	1260	1295d	1495	112	32x4	Own..	6-3 1/16x4 1/2	22.50	Cleveland.....41	Strom...	Bosch.....	Bosch.....	s-p Own....	Own.....	m Mech.....	3/4F Own..	4.45
2685	.....	2685	2685c	3285b	{3285c {3685 f	127 1/4	33x5	Nort..	8-3 1/2x4 3/4	39.20	Cole.....890	Johnson	Delco.....	Delco.....	c North...	North...	m Spicer....	F Col...	4.46
1475	1475	.....	1475c	1925c	1995d	115	32x4	Cont..	6-3 3/16x4 1/2	27.34	Columbia.....Elite	Strom...	A-L.....	A-K.....	s-p B&B....	Durston.	m Spicer....	3/4F Tim...	.....
995	985	.....	.....	.....	1395d	115	31x4	Cont..	6-3 1/16x4 1/4	23.44	Columbia.....Light Six	Strom...	A-L.....	A-L.....	s-p B&B....	Durston.	m Spicer....	3/4F Tim...	.....
1395	1395	.....	{1495b {1495c	2065b	2165d	116	32x4	Falls.	6-3 1/16x4 1/4	23.44	Ceurier.....	Till.....	Bijur.....	A-K.....	s-p B&B....	Muncie..	f Norwalk..	3/4F Col...	5.00
3000	3000	3000	.....	.....	4500	122 1/2	32x4	Cont..	6-3 5/16x5 1/4	31.54	Crawford.....22-6-60	Strom...	West.....	Bosch.....	m-d B-L....	B-L.....	Spicer....	1/2F Tim...	.....
.....	.....	.....	3500	.....	.....	135	33x5	Cont..	6-3 5/8x5 1/4	31.54	Crawford-Dagmar...6-60	Zenith .	West.....	Bosch.....	m-d B-L....	B-L.....	Spicer....	1/2F Tim...	.....
.....	.....	.....	.....	.....	.....	142	33x5	Own..	8-3 3/4x5	45.00	Cunningham.....V	Strom...	Delco.....	Delco.....	m-d Own....	Own.....	f Snead.....	F Tim...	4.23
4350b	4350c	4350	.....	5250	6000	132	33x5	Own..	8-3 1/2x5 1/4	39.20	Daniels.....D-19	Zenith...	Delco.....	Delco.....	m-d Own....	Own.....	m Spicer....	F Tim...	.....
.....	1295	.....	1495	1795	1795	114	31x4	Cont..	6-3 1/16x4 1/4	23.44	Davis.....71	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Peters....	1/2F Tim...	5.10
1595	1595	.....	1695	2095	.....	120	32x4	Cont..	6-3 3/8x4 1/2	27.34	Davis.....61-67	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Peters....	3/4F Tim...	5.15
1175	1175	1295c	1245	1545	1595	112	32x4	H-S...	4-3 1/2x5	19.60	Dixie Flyer.....H-S-70	Strom...	Dyneto...	Eisemann..	s-p B&B....	G-L.....	f Hardy.....	F Peru..	4.75
850	880	.....	.....	980h	1195d	114	32x4	Own..	4-3 1/16x4 1/2	24.03	Dodge Brothers.....	Stewart.	N.E.....	N.E.....	m-d Own....	Own.....	m Own.....	1/2F Own..	4.16
3350	3950c	3950	.....	4985c	5750f	132	33x5	Own..	6-4 x5	38.40	Dorris.....6-80	Strom...	West.....	Bosch.....	m-d Own....	Warner..	m Spicer....	F Tim...	4.23
865	865	.....	{1015a {1015d	{1240 {1020k	{1370 {1070k	108	31x4	D-Ly.	4-3 1/2x5	19.60	Dort.....19-14	Carter..	Bosch.....	Conn.....	m-d Detlaff..	Own.....	m Mech.....	3/4F Flint..	4.66
990	990	.....	.....	{1145 {1365	{1195 {1495	115	31x4	Falls..	6-3 1/16x4 1/4	23.44	Dort.....25-20	Carter..	Bosch.....	Bosch.....	m-d Detlaff..	Own.....	Mech.....	3/4F Flint..	4.66
1275	1275	.....	.....	1650	1975	104	30x3 1/2	Own..	4-2 5/8x4 1/2	11.03	Driggs.....	Zenith..	Bosch.....	Bosch.....	s-p Hoos...	Mech...	m Spicer....	3/4F Own..	4.75
6500	6500	6750	.....	7800	7800	134	33x5	Own..	8-2 7/8x5	26.45	Duesenberg...Straight 8	Strom...	Delco.....	Delco.....	s-p Own....	Own.....	f Own.....	1/2F Own..	4.81
3000	3200	.....	.....	3800	4000	124	32x4 1/2	Own..	4-3 1/4x5 1/8	24.81	Du Pont.....A	Y&T....	West.....	Eisemann..	m-d B-L....	B-L.....	m Spicer....	Col...	4.50
890	890	.....	.....	1365	1365	109	31x4	Cont..	4-3 1/2x4 1/4	24.03	Durant.....A-22	Till.....	A-L.....	A-L.....	s-p Own....	Own.....	m,f Spicer..	3/4F Adams	4.30
1600	1650	.....	.....	2250	2400	123 1/2	32x4 1/2	Anst.	6-3 1/4x4 1/2	25.35	Durant.....B-22	Rayfield.	A-L.....	A-L.....	s-p Ansted..	Warner..	m,f Spicer..	1/2F Tim...	5.15
1485	1095	950g	.....	1395c	1795	112	32x4	Own..	4-3 1/8x5 1/4	18.91	Earl.....40	Scoe....	A-L.....	Conn.....	s-p B&B....	Own.....	f Own.....	1/2F Own..	3.66
1095	1095	.....	1095	1315	.....	118	33x4	Lyc...	4-3 1/16x5	19.60	Elcar.....K-4	Strom...	Delco.....	Delco.....	s-p B&B....	Muncie..	m Peters....	3/4F Salis..	4.50
1395	1395	.....	1395	1975	2065	118	33x4	Cont..	6-3 3/8x4 1/2	27.34	Elcar.....8-R	Strom...	Delco.....	Delco.....	m-d Warner .	Warner..	m Spicer....	3/4F Salis..	4.50
1125c	1125	.....	1165	1695	1645	118	33x4	Falls..	6-3 1/4x4 1/4	23.44	Elgin.....K-1	Strom...	West.....	Wagner....	s-p B&B....	Mech....	m Mech....	3/4F Col...	4.66
.....	1045	.....	.....	1145k	{1895 {1245k	108 1/2	32x4	Own..	4-3 3/8x5	18.23	Essex.....	Own....	Bosch.....	Bosch.....	m-d Own....	Own.....	m Spicer....	1/2F Own..	4.66
269r	298s	235g	.....	530	{595 {725	100	30x3 1/2	Own..	4-3 3/4x4	22.50	Ford.....T	Own....	Own.....	Own.....	m-d Own....	Own.....	m Own.....	1/2F Own..	3.63
3900	3900	.....	.....	4900	4900	132	32x4 1/2	Own..	6-3 3/8x5	27.34	Fox.....7F	Zenith...	West.....	Bosch.....	m-d B-L....	B-L.....	Spicer....	1/2F Tim...	4.45
1900	1950	1750g	.....	2750	2850	115	32x4	Own..	6-3 1/4x4	25.35	Franklin.....10	Own....	N.E.....	A-K.....	s-p B&B....	Own.....	m Spicer....	1/2F Own..	4.73
895	895	.....	.....	1095k	1345d	112	32x4	Lyc...	4-3 1/2x5	29.60	Gardner.....T-R & G	Carter...	West.....	West.....	s-p B&B....	Mech....	m Mech....	3/4F Flint..	4.80
1385	1385	.....	.....	1895	1945	116	32x4	Own..	6-3 1/8x4 1/2	23.44	Grant.....	Strom...	Bijur.....	A-K.....	s-p B&B....	Durston.	m Spicer....	3/4F Col...	4.66
490	490	.....	.....	.....	760	100	30x3 1/2	Own..	4-3 5/8x4	21.03	Gray.....	Scoe....	West.....	West.....	m-d Own....	Detroit..	m Mech....	1/2F Tim...	3.90
2475	2475c	.....	3250	.....	3475	120	32x4 1/2	Weid..	4-3 3/4x5 1/2	22.50	H.C.S.....Series 4	Strom...	Delco.....	Delco.....	m-d B-L....	B-L.....	m Spicer....	F Own..	.....
.....	.....	2650	.....	3450	3450	125	32x4 1/2	Own..	4-4 1/8x4 1/2	27.23	Handley-Knight.....	Till.....	A-L.....	A-L.....	m-d Warner .	Warner..	m Spicer....	1/2F Tim...	4.90
.....	995	.....	.....	.....	.....	114	31x4	Cont..	6-3 1/16x4 1/4	25.35	Hanson.....30	Marvel..	Delco.....	Delco.....	s-p B&B....	Detroit..	.....	3/4F Tim...	.....
1595	1595	1795	.....	2475c	2585	121	32x4	Cont..	6-3 3/8x4 1/2	27.34	Hanson.....60	Marvel..	Delco.....	Delco.....	s-p B&B....	Detroit..	.....	3/4F Tim...	.....
.....	1345	1345c	.....	1950	1950	115	32x4	H-S...	4-3 1/16x5	19.60	Hatfield.....A-42	Zenith...	Dyneto...	Conn.....	s-p B&B....	G-L.....	m Spicer....	3/4F Col...	4.66
2395	2395c	2395	.....	3095d	3395	132	33x5	Own..	6-3 1/2x5 1/8	29.40	Haynes.....75	Strom...	L-N.....	King.....	s-p Warner .	Own.....	m Universal..	3/4F Own..	4.60
{1515 {1895p	1495	.....	{1895a {1895d	{2095b {2135p	{2395d {2695p	121	32x4 1/2	Own..	6-3 1/2x5	29.40	Haynes.....55	Rayfield.	L-N.....	King.....	s-p Warner .	Own.....	m Universal..	1/2F Own..	4.11
.....	2500c	2500	.....	3300c	3600f	126	34x4 1/2	Own..	6-3 1/2x4 1/4	29.40	Holmes.....Series 4	Strom...	Dyneto...	Eisemann..	m-d B-L....	B-L.....	m Spicer....	1/2F Tim...	4.90
.....	1525c	1575	.....	2570c	{1625k {2295	126	34x4 1/2	Own..	6-3 1/2x5	29.40	Hudson.....Super 6	Own....	Bosch.....	Bosch.....	m-d Own....	Own.....	m Spicer....	1/2F Own..	4.45
1395	1395	.....	.....	.....	2295	120	32x4	Cont..	6-3 3/8x4 1/2	27 34	Huffman.....	Strom...	Dyneto...	Conn.....	s-p B&B...	Covert..	.....	F Salis..	....
{1150 {1025g	1150	.....	1250a	{1635 {1335k	1785	112	32x4	Own..	4-3 1/4x5 1/2	16.90	Hupmobile.....Series R	Strom...	West.....	A-K.....	m-d Own....	Own.....	m Universal..	3/4F Own..	4.87
.....	1485	1685c	.....	2985	2985	121	32x4 1/2	Cont..	6-3 1/4x4 1/2	25.35	Jackson.....638	Strom...	A-L.....	Remy.....	s-p B&B....	Covert..	f Snead.....	3/4F Salis..	4.75
995b	995	.....	1095a	1445c	1465d	112	31x4	Own..	6-3 1/4x5	25.35	Jewett.....Six	Strom...	Remy.....	A-K.....	m-d Long....	Warner..	m Mech....	1/2F Tim...	4.45
1895	1795	.....	.....	2785	2485	120	32x4	Own..	6-3 1/8x4 3/4	26.38	Jordan.....MX	Strom...	Delco.....	Delco.....	s-p Detroit..	Detroit..	m Spicer....	1/2F Tim...	4.42
.....	.....	.....	2150c	.....	.....	124	32x4	Own..	6-3 1/8x4 3/4	26.38	Jordan.....H	Strom...	Delco.....	Delco.....	s-p Detroit..	Detroit..	m Universal..	1/2F Tim...	4.42
.....	985	.....	.....	.....	1450	111	32x3 1/2	Gray..	4-3 1/2x5	19.60	Kelsey.....4	Scoe....	Bosch.....	Bosch.....	f-d Own....	f-d Own.	.....	Own..	4.50
.....	985	.....	.....	.....	1450	111	32x3 1/2	Gray..	4-3 1/2x5	19.60	Kelsey.....4	Scoe ..	Bosch.....	Bosch.....	s-p B&B....	Detroit..	Snead.....	1/2F Std...	4.75
.....	1525	.....	.....	.....	2175	118	32x4	Walk'r	6-3 1/8x4 1/2	23.44	Kelsey.....6	Strom...	Bijur.....	Bosch.....	f-d Own....	f-d Own.	.....	Own..	....
5000	5000	5250	.....	5000	6000	130	32x4 1/2	Own..	8-3 x5 1/4	28.80	Kenworthy.....8-90	.....	.....	.....	.....	.....	.....	.....	.....
1495	1495	.....	1495c	2200	2400	120	32x4 1/2	Own..	8-3 x5	28.80	King.....K	Ball&B	West.....	A-K.....	s-p Detroit..	Own.....	f Hardy.....	F Col...	4.08
.....	.....	.....	.....	1995	2550f	124	32x4 1/2	Own..	8-3 x5	28.80	King.....K	Ball&B..	West.....	A-K.....	s-p Detroit..	Own.....	f Hardy.....	F Col...	4.08
.....	1885	2395	2385c	2975c	3075	124	32x4 1/2	Own..	6-3 1/8x5 1/2	26.38	Kissel.....45	Strom...	Remy.....	Remy.....	m-d Warner .	Warner..	m Spicer....	F Own..	3.92
1690	1690	1690	1890	2750	2890	121	33x4	Cont..	6-3 3/8x4 1/2	27.34	Kline Kar.....6-55-K	Rayfield.	Wagner....	Conn.....	s-p B&B....	G-L.....	f Snead.....	1/2F Std..	4.75

MISCELLANEOUS

a—2 Passenger, d—5 Passenger,
b—3 Passenger, e—6 Passenger,
c—4 Passenger, f—7 Passenger,
g—Chassis Price,
h—All Metal Type,
k—Soft Top Type,
n—Tire Size 32x4½,
p—Sport.
r—Price without starter and demountable rims. Price, complete, $864.
s—Price without starter and demountable rims. Price, complete, $893.
†Standard Phaetons.

ENGINE

Anst—Ansted
Cont—Continental
D.-Ly—Dort Lycoming
H-S—Herschell-Spillman
Lyc—Lycoming
Nort—Northway
Walk'r—Walker
Weid—Weidely

CARBURETOR

Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg
Y & T—Yale & Towne

CLUTCH

f-d—Friction drive
c—Cone
m-d—Multiple disc
s-p—Single plate
B & B—Borg & Beck
B-L—Brown-Lipe

GEARSET

f-d—Friction Drive
B-L—Brown-Lipe
G-L—Grant-Lees
Mech—Mechanics
North—Northway

STARTING, LIGHTING IGNITION

A-L—Auto Lite
G-D—Gray & Davis
L-N—Leece Neville
N. E.—North East
West—Westinghouse

UNIVERSAL

f—fabric
m—metal
M &E—Merchant & Evans
Mech—Mechanics

REAR AXLE

F—Floating
½ F—Semi-Floating
¾ F—Three-Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
Tim—Timken

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (N.A.C.C.)	NAME AND MODEL	Carburetor	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universals: Type and Make	Rear Axle: Type and Make	†Gear Ratio
$3985	$4090c	$4090	.....	$5500	$5500	132	33x5	Own..	8-3¼x5½	33.80	LaFayette.....	Johnson	Delco.....	Delco.....	m-d Own....	Own....	m Own....		
5500	5500	5500	.....	5500	5500	134	32x4½	Own..	6-3¾x5½	33.75	Leach.....999	Rayfield	Delco.....	Delco.....	m-d	Own....	m,f.....		
1695	(1695	(1795	$2045d	2345c	(2545d	123	32x4½	Anst..	6-3¼x4½	25.35	Lexington.....23	Rayfield	G-D.....	Conn.....	m-d Ansted..	Warner..	f Snead..		
	(1995	(2095			(2145d														
1575	1395	.....	1575	(2085	2245	117	32x4	Own..	6-3⅛x5	23.44	Liberty.....10-D	Strom...	Wagner...	Wagner...	s-p B&B....	Detroit..	m Spicer..		
				(1695k															
3800	3800c	3800	.....	4400d	4700d	136	33x5	Own..	8-3⅜x5	36.45	Lincoln.....	Strom...	Delco.....	Delco.....	m-d Own....	Own....	m Spicer..		
6890g	7600c	7600	.....	10500	11000	142	35x5	Own..	6-4½x5½	48.60	Locomobile.....Series 8	Ball&B..	West.....	Delco.....	m-d Own....	Own....	m Own.....	F Own..	
3385	3185c	3185	.....	3985	4385	136	32x4½	Own..	6-3¾x5½	33.75	Marmon.....34	Strom...	Delco.....	Delco.....	m-d Own....	Own....	m Spicer....	¾F Own..	
885	885	.....	.....	(985	1335	109	31x4	Own..	4-3½x4½	21.03	Maxwell.....	Stewart.	A-L.....	Simms....	c Own....	Own.....	.....	¾F Own..	
				(1235															
6300	6300c	6300	.....	7500	7500	140	33x5	Own..	6-4½x6	48.60	McFarlan.....1922	Rayfield.	West.....	Splitdorf...	s-p B&B....	B-L.....	m Peters....	F Tim...	
3950	3950c	3950e	.....	4850	5250	132	32x4½	Own..	4-3¾x6¾	22.50	Mercer.....Series 5	Ball&B..	West.....	Eisemann..	m-d Own....	Own....	m Spicer....	F Own..	
.....	3750	3750	.....	5000	5000	132	32x4½	Own..	6-3¾x5	33.75	Mercer.....6	Strom...	.....	Eisemann..	.....	.....	.....	¾F	
1895	1895	.....	.....	.....	.....	119	32x4	Cont..	6-3⅛x4½	25.35	Merit.....	Strom...	Delco.....	Delco.....	s-p B&B....	Muncie..	f Snead....	F Col...	
1190b	1590	.....	1850c	2050c	2275d	120	32x4	Own..	6-3½x5	29.40	Mitchell.....F-50	Strom...	Remy.....	Remy.....	s-p B&B....	Own....	m Own.....	F Own..	
.....	.....	1690	.....	.....	.....	127	32x4½	Own..	6-3½x5	29.40	Mitchell.....F-50	Strom...	Remy.....	Remy.....	s-p B&B....	Own....	m Own.....	F Own..	
950	950	.....	.....	.....	.....	115	32x4½	Own..	4-3¼x4½	16.90	Monroe.....1922-S-9	Zenith..	A-L.....	Conn.....	m-d Own....	Mech...	m Universal..	¾F Own..	
1295	1195	p1445d	1885c	1585c	1695	115	31x4	Cont..	6-3⅛x4½	23.41	Moon.....6-40	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Spicer....	½F Tim...	
1785	1785	1785	1885	2785	(2785f	128	33x4½	Cont..	6-3½x4½	27.34	Moon.....6-58	Strom...	Delco.....	Delco.....	B&B.....	B-L.....	m Spicer....	½F Tim...	
					(2485c														
1210	1240	.....	1395c	.....	2040d	121	33x4	Own..	6-3¼x5	25.35	Nash.....691-96-97	Marvel..	Delco.....	Delco.....	s-p B&B....	Own....	m Own.....	½F Own..	
.....	.....	1390	1645	1890c	2190f	127	34x4½	Own..	6-3¼x5	25.35	Nash.....692-94-95	Marvel..	Delco.....	Delco.....	s-p B&B....	Own....	m Own.....	½F Own..	
915	935	.....	.....	(1385b	(1545d	112	33x4	Own..	4-3½x5	18.23	Nash Four.....41-4	Schebler.	Delco.....	Delco.....	s-p B&B....	Own....	m Own.....	½F Own..	
				1195k	1275k														
(2475b	2475c	(2375	.....	(3250c	3825f	130	32x4½	Own..	6-3½x5¼	29.40	National.....BB	Rayfield.	West.....	Delco.....	s-p B&B....	B-L.....	m Arvac.....	F Col...	
		(3150		(3725c															
2500	2500c	2600c	.....	.....	3500d	128	32x4½	Cont..	6-3⅛x4½	25.35	Noma.....3C	Claudel..	Delco.....	Delco.....	s-p B&B....	Detroit..	m Spicer....	½F Tim...	
2500	2500	.....	.....	.....	5500	128	33x5	Bea....	6-3½x5½	29.40	Noma.....1D	Zenith..	Delco.....	Delco.....	s-p B&B....	Detroit..	f Spicer....	½F Tim...	
.....	1035	.....	.....	.....	.....	116	32x3½	Lyc....	4-3½x5	19.60	Norwalk.....430-KS	Zenith..	Dyneto...	Delco.....	s-p B&B....	G-L.....	m Universal..	¾F Col...	
975	995	795g	1165c	(1445d	1545	115	32x4	Own..	6-2¹³/₁₆x4¾	18.99	Oakland.....6-44	Marvel..	Remy.....	Remy.....	c Own....	Muncie..	m Mech.....	F Own..	
				1185a															
3750c	3750	3850	3750c	4500c	4800f	134	33x5	Cont..	6-3½x5¼	31.54	Ogren.....6 T D Luxe	Rayfield.	Bosch.....	Bosch.....	m-d B-L....	B-L.....	m	F Col...	
955	975	1350d	1075	1475	1595	115	32x4	Own..	4-3¼x5¼	21.86	Oldsmobile.....43 A	Zenith..	A-L.....	Remy.....	s-p B&B....	Warner..	m Own.....	¾F Own..	
1735c	1850e	1735	.....	.....	.....	122	33x4½	Own..	8-2⅞x4¾	26.45	Oldsmobile.....46	Ball&B..	Delco.....	Delco.....	c Own....	Warner..	m Own.....	¾F Own..	
1625p	1375	.....	1675	1875	2025	115	32x4	Own..	8-2⅞x4½	26.45	Oldsmobile.....47	Johnson	Delco.....	Delco.....	s-p B&B....	Warner..	m Spicer....	½F Own..	
525	525	.....	425g	795	875	100	30x3½	Own..	4-3½x4	18.23	Overland.....4	Till.....	A-L.....	Conn.....	s-p B&B....	Own....	m Own.....	½F Own..	
2485	2485	2250g	.....	3175	3275	126	33x4½	Own..	6-3⅜x5	27.34	Packard.....Single-Six	Own....	A-K.....	Delco.....	m-d Own....	Own....	f Spicer....	½F Own..	
.....	2350g	2685	.....	.....	3525	133	33x4½	Own..	6-3⅜x5	27.34	Packard.....Single-Six	Own....	A-K.....	Delco.....	m-d Own....	Own....	f Spicer....	½F Own..	
3850	3850	3850	.....	5240	5400	136	35x5	Own..	12-3x 5	43.20	Packard.....Twin-Six	Own....	Bijur.....	Delco.....	m-d Own....	Own....	m Spicer....	½F Own..	
1465	1465	1290g	.....	1995	2245	119	32x4	Own..	6-3⅛x5	25.35	Paige.....6-44	Strom...	Remy.....	A-K.....	s-p Long....	Own....	m Universal..	¾F Salis..	
2495b	.....	2195	2245	3100	3155	131	33x4½	Cont..	6-3⅜x5	33.75	Paige.....6-66	Rayfield.	Remy.....	A-K.....	s-p Long....	Warner..	m Mecn.....	¾F Tim...	
.....	1390	1425	.....	2395	2395	120	32x4½	Cont..	6-3⅜x4½	27.34	Paterson.....22-6-52	Strom...	Delco.....	Delco.....	s-p B&B....	Durston.	m Hartford..	½F Std...	
.....	2990c	2990	.....	(3300a	(3990d	128	33x5	Own..	8-3½x5	33.80	Peerless.....23	Ball&B.	Delco.....	Delco.....	m-d Own....	Own....	M Spicer....	¾F Tim...	
				(3400c	(4090f														
5250	5250c	5250	.....	6800	(6900	138	33x5	Own..	6-4 x5½	38.40	Pierce-Arrow.....	Own....	Delco.....	Delco.....	m-d Own....	Own....	m Spicer....	½F Own..	
					(700														
2050	2000	2050	.....	2950	3000	126	32x4½	H-S...	6-3⅛x5	25.35	Pilot.....6-50	Till.....	Bijur.....	Conn.....	s-p B&B....	Muncie..	m Hartford..	¾F Col...	
3150	3100c	3250	.....	4300	5100	126¾	32x4½	Own..	6-3⅜x5½	27.34	Premier.....6-D	Johnson	Delco.....	Delco.....	s-p B&B....	Own....	m Spicer....	½F	
1095	1095	.....	.....	1750	1825	117	32x4	Falls..	6-3⅛x4¼	23.44	Premocar.....6-40-A	Strom...	Wagner..	Wagner..	s-p B&B....	Mech...	m Spicer....	¾F	
.....	1665	.....	.....	2385	2475	116	32x4	Own..	4-3¼x5	22.50	R & V Knight.....R	Strom...	Wagner..	Wagner..	s-p B&B....	B-L.....	m Spicer....	F Salis..	
2475	2475c	2475	.....	3015	3105	127	32x4½	Own..	6-3½x4½	29.40	R & V Knight.....J	Strom...	Wagner..	Wagner..	s-p B&B....	B-L.....	m Spicer....	½F Tim...	
1595	1645	1485	1745	(2355c	(2435f	120	33x4	Own..	6-3¾x5	24.34	Reo.....T6 & U6	Rayfield.	N.E.....	N.E.....	m-d Own....	Own....	m,f Own....	½F Own..	
				(1835	(1885														
3200	3200	3200	.....	.....	4000	131	32x4½	Dues..	4-4¼x6	28.90	ReVere.....C	Strom...	West.....	Bosch.....	m-d B-L....	B-L.....	m Spicer....	¾F Std...	
.....	1485	.....	.....	1885	1985	117	32x4	Own..	6-3⅛x4¾	23.44	Rickenbacker.....A	Strom...	Simms....	A-K.....	c Own....	Own....	m Universal..	¾F Own..	
2685	2485c	2685	.....	3585	3585	128	32x4½	Cont..	6-3½x5¼	29.40	Roamer.....6-54-E	Strom...	Bijur.....	Bosch.....	s-p G-L....	G-L.....	f Snead....	½F Tim...	
3785	3485	3650c	3650c	.....	4650c	128	32x4½	Dues..	4-4¼x6	28.90	Roamer.....4-75-E	Strom...	Bijur.....	Splitdorf...	m-d B-L....	B-L.....	f Snead....	½F Tim...	
.....	10900	.....	.....	.....	.....	143½	35x5	Own..	6-4½x4¾	48.60	Rolls-Royce.....	Own....	Bijur.....	Bijur.....	c Own....	Own....	m Own.....	F Own..	
1195	1195	.....	.....	1795	1795	112	32x4	Own..	4-3½x5	19.60	Saxon.....125	Strom...	Wagner..	Wagner..	s-p Detiaff..	Covert..	m Peters....	¾F	
1645	1645	.....	.....	2645	2645	118	33x4	Cont..	6-3¼x4½	25.35	Sayers Six.....DP	Strom...	Delco.....	Delco.....	s-p B&B....	G-L.....	m Arvac.....	½F Std...	
875	875	.....	.....	.....	.....	108	30x3½	Lyc....	4-3½x5	19.60	Seneca.....L-2 & O-2	Zenith..	A-L.....	A-L.....	s-p B&B....	G-L.....	m Universal..	F	
1095	1095	.....	.....	.....	.....	112	31x4	Lyc....	4-3½x5	19.60	Seneca.....50 & 51	Zenith..	A-L.....	A-L.....	s-p B&B....	G-L.....	Detroit....	F	
980	980	.....	.....	1685	1685	114	32x4	Supr..	4-3⅜x5	18.23	Sperling.....A	Zenith..	Bijur.....	Splitdorf...	s-p B&B....	Warner..	m Hartford..	¾F Peru...	
2150	.....	2395	2395	2750	3200	127	34x4½	Own..	8-3¼x5	33.80	Standard.....98	Zenith..	West.....	Splitdorf...	s-p B&B....	G-L.....	m Arvac.....	½F Tim...	
2750	2750	2750	2425g	3950c	3985f	130	32x4½	Own..	2-4 x5	.....	Stanley.....740	None....	Bijur.....	None.....	None.....	None.....	m Peters....	½F Own..	
1765	1765	.....	.....	2750	.....	118	33x4	Cont..	6-3¼x4½	25.35	Stanwood Six.....	Strom...	West.....	A-K.....	s-p B&B....	G-L.....	m Peters....	½F Std...	
319r	348s	285g	.....	580	615	102	30x3½	Cont..	4-3¼x4¼	15.63	Star.....	Till.....	A-L.....	A-L.....	s-p	.....	Spicer....	Tim...	
2250	2250	2450	.....	3150	3150	125	34x4½	Own..	4-3⅜x5⅝	22.50	Stearns-Knight....SKL4	Rayfield	West.....	A-K.....	m-d Own....	Own....	f Climax....	½F Own..	
2700	2700	2850	.....	3500	3700	130	34x4½	Own..	6-3⅜x5	27.34	Stearns-Knight.....6	Rayfield	West.....	A-K.....	m-d Own....	Own....	f Climax....	½F Own..	
1575	1595c	1625c	.....	2450	2550	122	33x4½	Own..	6-3¼x4½	25.35	Stephens.....99	Till.....	A-L.....	A-L.....	s-p B&B....	Mech...	m Mech.....	½F Tim...	
7250	6900c	6800	(6900c	8600	8900c	138	35x5	Own..	6-4 7/8x5½	47.27	Stevens-Duryea.....E	Strom...	West.....	Berling...	m-d Own....	Own....	m Own.....	F Own..	
			(5600g																
975	975	785g	.....	1225	1550	112	32x4	Own..	6-3¼x4½	23.44	Studebaker....Light Six	Strom...	Wagner....	Wagner...	s-p Own....	Own....	f Thermoid..	½F Own..	
(1250	1275	1275c	1000g	1875	2050	119	32x4	Own..	6-3½x5	29.40	Studebaker...Special Six	Strom...	Wagner...	Wagner...	s-p Own....	Own....	m Spicer....	½F Own..	
1275c				2375															
1300g	1650	.....	1785	(2275	2475	126	33x4½	Own..	6-3 7/8x5	36.01	Studebaker.....Big Six	Ball&B.	Wagner...	Wagner...	s-p Own....	Own....	m Spicer....	½F Own..	
2450	(2790c	(2640e	2670a	3490	4450	130	32x4½	Own..	4-4⅜x6	30.63	Stutz.....KLDH	Strom...	Remy.....	Delco.....	m-d Warner.	Own....	m Hartford..	½F Own..	
	(3165c	(3015																	
2025	2125	2175c	.....	2650c	2785	118	32x4	Own..	4-3⅛x5½	18.23	Templar.....A-445	Strom...	Bijur.....	Simms....	s-p B&B....	Detroit.	f Snead....	½F Un...	
1175	1175	.....	.....	.....	.....	117	33x4	H-S...	4-3½x5	19.60	Tulsa.....E-1-2-3	Zenith..	Dyneto...	Conn.....	s-p B&B....	Muncie..	m	F Salis..	
1275	1275	.....	1305	1795	1795	115	32x4	Own..	6-3⅛x4½	23.41	Velie.....58	Strom...	West.....	A-K.....	s-p Dooley..	Durston.	m Thiemer...	¾F Own..	
.....	1990f	1890	.....	.....	2890	125	32x4½	Cont..	6-3½x5½	29.40	Westcott.....D-48	Rayfield.	Delco.....	Delco.....	s-p B&B....	B-L.....	m Peters....	½F Tim...	
.....	1690	.....	1890	.....	2690	120	32x4	Cont..	6-3⅛x4½	35.35	Westcott.....B-44	Rayfield.	Delco.....	Delco.....	s-p B&B....	Warner..	m Peters....	½F Col...	
2175	2175	.....	.....	3275	3475	121	32x4½	Own..	8-3¼x4	33.80	Wills Sainte Claire..A-68	Zenith..	Delco.....	Delco.....	m-d Own....	Own....	m Mech.....	¾F Own..	
1235	1235	1375	.....	1795	1950	118	32x4	Own..	4-3⅝x4¼	21.03	Willys-Knight.....20	Till.....	A-L.....	A-L.....	m-d Own....	Own....	f Own.....	¾F Own..	
.....	.....	1435	.....	.....	2195f	124	32x4½	Own..	4-3⅝x4½	21.03	Willys-Knight.....27	Till.....	A-L.....	A-L.....	m-d Own....	Own....	f Own.....	¾F Own..	
3400	.....	3400	3600	4000	4550	132	33x5	Own..	6-3¾x5¼	33.75	Winton.....40	Rayfield.	Delco.....	Delco.....	m-d Warner.	Warner..	f Climax....	¾F Tim...	

MISCELLANEOUS

a—2 Passenger, d—5 Passenger
b—3 Passenger, e—6 Passenger,
c—4 Passenger, f—7 Passenger
g—Chassis Price.
h—All Metal Type,
k—Soft Top Type,
n—Tire Size 32x4½,
p—Sport.
r—Price without starter and demountable rims. Price, complete, $414.
s—Price without starter and demountable rims. Price, complete, $443.
†Standard Phaetons.

ENGINE

Anst—Ansted
Bea—Beaver
Cont—Continental
Dues—Duesenberg
H-S—Herschell-Spillman
Lyc—Lycoming
Supr—Supreme

CARBURETOR

Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg

STARTING, LIGHTING IGNITION

A-L—Auto Lite
G-D—Gray & Davis
L-N—Leece Neville
N E.—North East
West—Westinghouse

CLUTCH

c—Cone
f-d—Friction drive
m-d—Multiple disc
s-p—Single plate
B & B—Borg & Beck
B-L—Brown-Lipe

GEARSET

f-d—Friction Drive
B-L—Brown-Lipe
G-L—Grant-Lees
Mech—Mechanics

UNIVERSAL

f—fabric
m—metal
M&E—Merchant & Evans
Mech—Mechanics

REAR AXLE

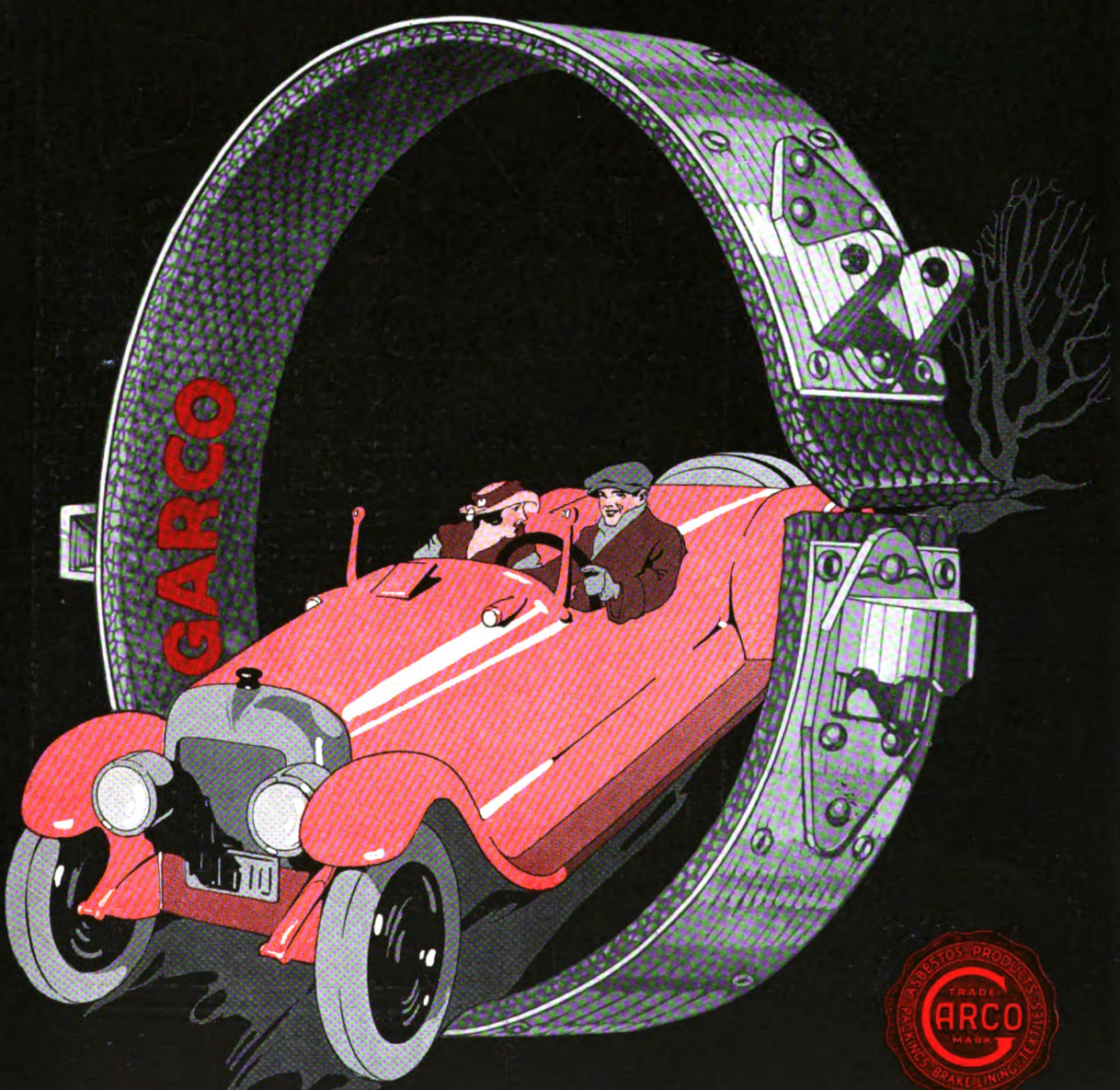
F—Floating
½ Floating—Semi-Floating
¾ F—Three-Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
Tim—Timken

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"FOR SAFETY'S SAKE"

GARCO

ASBESTOS BRAKE LINING



TRADE GARCO MARK
ASBESTOS PRODUCTS
PACKINGS BRAKE LINING TEXTILES

SOLIDLY WOVEN

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PRICE
$3.00
AND WORTH IT

WILLIAMS ACCELERATOR *for FORD CARS*



Less Sales Resistance

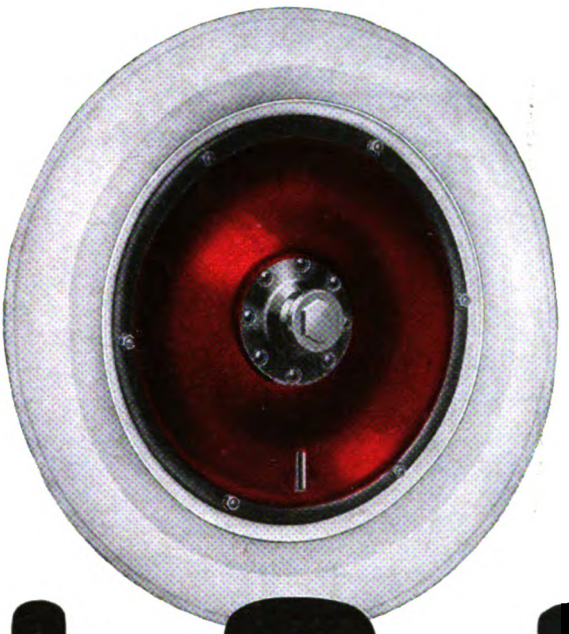
Compare the Williams Accelerator with any other Ford foot throttle. When you demonstrate it, there are no complicated parts, no foot rest, no extra attachments to explain. When you sell it, you can be sure of making a satisfied customer. When you install it, you can make the three easy connections in less than ten minutes. Three good reasons why you should show your customers the Williams Accelerator.

Order from your jobber

WILLIAMS BROS. AIRCRAFT CORP.
San Francisco

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN



Tuarc

More cars than ever at the automobile shows will be factory equipped with steel wheels.

Note what a dominant portion of those cars are on Tuarcs—and what good cars they are.

The reasons?—what other steel wheel so fully combines engineering betterments, owner-convenience and smart appearance?

MOTOR WHEEL CORPORATION
Motor Vehicle Wheels Complete—Metal Stampings—Steel Products
LANSING, MICHIGAN

Motor Wheel PRODUCTS

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NO-LEAK-O Piston Rings



As Business Builders

National advertising in the Saturday Evening Post has **made the motoring** public familiar with No-Leak-O **Piston Rings and** the fact that "they Won't Leak Be**cause They're Sea**led With Oil." Their exclusive "oil-**SEALing" groove** means to the motorist real SAVING. **This groove packs** an oil film in between piston and **cylinder walls wh**ich seals in all expanding gas, abso**lutely prevents** "oil pumping," gives *oil control and* ***compression in*** *each individual ring*, and prevents **"unburnt" gas** or kerosene from leaking down into **the crank case to** weaken lubrication.

No-Leak-O Piston Rings are made in one piece—easy to install—**quick seating—of fines**t material—guaranteed against breakage—**individually tested fo**r accuracy—and give equal tension on the **cylinder walls.**

The Nation's standard replacement ring.

Over 200 reliable jobbers carry No-Leak-O in standard sizes and ***over* sizes. Prompt** service *always*.

Write for free booklet, "Know the Facts About Grooved Piston Rings." Also let us tell you about our liberal dealer proposition and how our National Advertising can increase your profits. Quick action on your part will mean bigger profits.

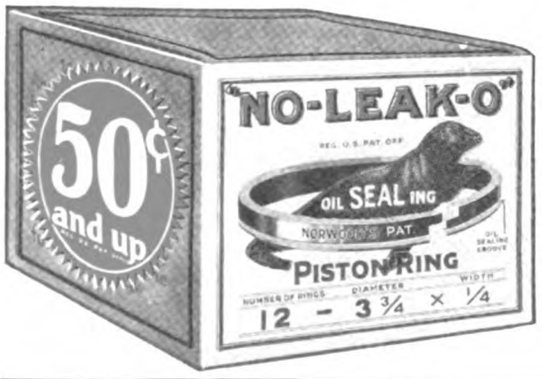
NO-LEAK-O PISTON RING COMPANY

Dept. T-45

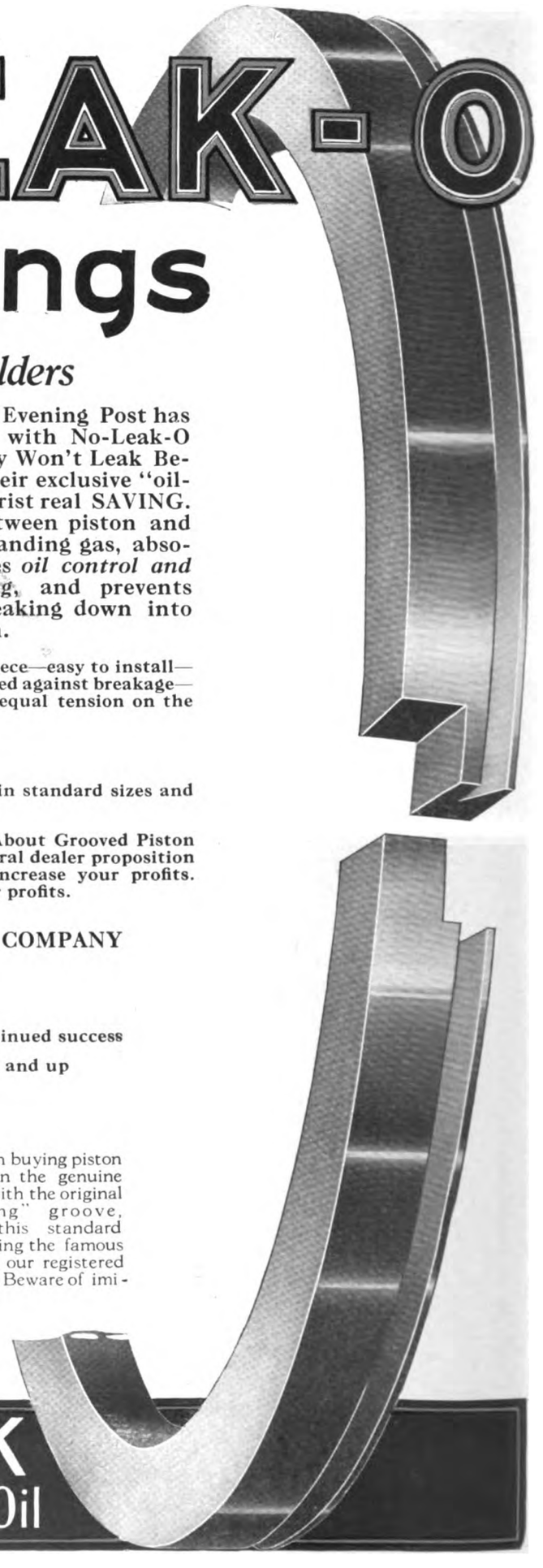
Baltimore, Md.

On price during eight years of continued success

One design—for all cars—50c and up



Important—In buying piston rings insist on the genuine No-Leak-O with the original "oilSEALing" groove, packed in this standard package bearing the famous ring and seal, our registered trade mark. Beware of imitations.



WON'T LEAK
because they're sealed with Oil

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MOTOR WORLD

DEALERS, JOBBERS AND GARAGEMEN

Reg. U. S. Pat. Off.

239 West 39th St., New York City Phone PENnsylvania 0060

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Apco Dash Oil Gauge No. 40

A solid cast aluminum gauge which fastens to the Ford instrument board. A hollow wire leads to an air pressure chamber which is threaded into the lower petcock hole in the Ford.

The indicating fluid in the body of the gauge is controlled entirely by the air pressure in the tube through which no oil or liquid passes.

The appearance of the APCO DASH OIL GAUGE compares favorably with any instrument that might be installed on the dash of any car and the convenience of having the oil level in plain sight is very desirable.

There is absolutely nothing to get out of order and once installed, which requires about fifteen minutes, it becomes a necessary part of the car and the saving in oil will pay for the gauge in a very short time.

Absolutely guaranteed to prove satisfactory under the liberal Apco Guarantee.

List Price $3.00

Dealer's Price $2.10 **Lots of five $1.95**

APCO MANUFACTURING CO.

Providence, Rhode Island

EXPORT OFFICE:
130 West 42nd Street, New York City, N. Y.

BRANCHES CARRYING STOCK:
Chicago, Ill., 180 North Market St.
Kansas City, Mo., 2005 East 15th Street
Atlanta, Ga., 23 West Peachtree Street

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Oldsmobile in Troy, N. Y.

"We have sold in the neighborhood of two hundred and fifty Model 43-A Oldsmobiles since that model came into production and it might interest you to know that the first one to be taken in trade by us was taken in today on a coupe. All the rest are still owned by the original owners with the exception of one which was traded in on a much higher priced car."

—OLDSMOBILE SALES AND SERVICE COMPANY
Q. H. BALL

That's a record that means money to the dealer — not only because of the sales he has already made, but because of the sales these two hundred and fifty satisfied owners will bring him.

Oldsmobile dealers all over the country are making money because they have a line that *sells*. It's a complete line, including fifteen passenger cars ranging in price from $955 to $2025 — and a highly successful one-ton truck at $1095 for the chassis.

And the liberal General Motors financing plan makes it easy to do business.

How is your business? Do you have to have more than one franchise in order to offer a reasonably complete line? Finding a lot of "sales resistance"? Is the financing of your business bothering you? Then investigate thoroughly the Oldsmobile franchise.

Write, wire, or phone.

OLDS MOTOR WORKS, LANSING, MICHIGAN
Division of General Motors Corporation

OLDSMOBILE

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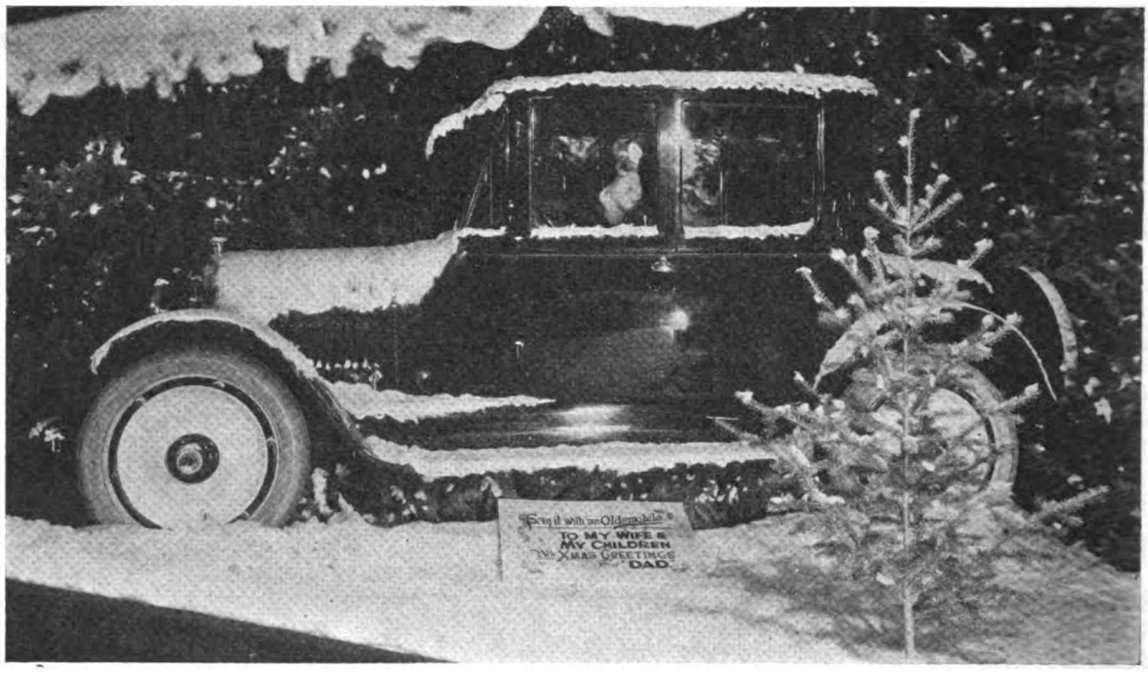
MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXIII New York, U. S. A., Wednesday, November 29, 1922 No. 9

Last Call!



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Nothing difficult or expensive about a window like this. A car, some evergreens gathered by salesmen or service men in woods just out of town and cotton sprinkled with saltpeter do the trick. Try it

Last Call!

Are You Going to Profit by the Automotive Christmas?

Some Suggestions for All Kinds of Automotive Dealers

THIS is going to be an automotive Christmas. More than ever before automotive dealers have recognized and have prepared to grasp the possibilities for greater sales and profits this December through selling automotive products with a gift appeal.

That this December's sales, from now on until Christmas eve, will far outstrip the same period in any previous year is almost certain. The question is how much. And this question puts it right up to each individual dealer. Indeed, regardless of what all the other dealers may do, the question of how much more he can sell this December through presenting his stock with a Christmas gift appeal is the most important, timely and profitable question the individual dealer can consider.

THE conditions are favorable. Motor car ownership has increased tremendously in the past few years—there's hardly a family in which at least one member does not own a motor car. Think of the opportunities to sell all of the members of the family automotive equipment for the car owner in the family group, and of the opportunity to sell to his friends besides.

Financial conditions on the whole are improved. People have more to spend and more inclination to spend it this year. They are beginning now to wander around in department stores and novelty shops selecting gifts and paying cash for them or placing deposits that will hold goods for cash sales within the next twenty days. The great bulk of Christmas business always is for cash.

The Christmas shopper invariably looks for something useful, something different, something novel, something that will make the person who receives it remember the giver. Automotive equipment articles fit in nicely in supplying this demand because of their usefulness and because, since they have not been widely distributed as Christmas gifts before, of their originality.

So this is the picture of selling opportunity that the coming month holds for the automotive equipment dealer. *And, now is the last chance he will have to cash in on this opportunity. What is to be done to present automotive products as Christmas gift suggestions MUST BE DONE NOW.*

And, right at this point let's banish the idea that the automotive equipment dealer is the only one in the industry that can profit from the Christmas opportunity. The holidays also bring merchandising opportunities to the car and truck dealer, to the repairman and the

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garageman. These opportunities, while they may not be translated into sales so promptly as they are by the automotive equipment dealer, exist nevertheless.

Cars for Christmas

For instance, some motor cars will be purchased as Christmas gifts this year, and some car owners will receive as Christmas gifts orders on some repair stations for work on their cars to be done this winter. But the big opportunities that the holiday period hold for the car dealer, repairman and garageman will be in impressing the public during this period through advertising and displays.

A brand new, shining car in the salesroom window, under bright lights, and displayed against a Christmas background will make an impression on a large number of people that may be the determining factor in drawing them to the salesroom when they are in the market for a car months hence. A particularly striking advertisement that puts the car into the Christmas atmosphere at this time; a simple, sincere card expressing the season's sentiment; a bit of Christmas decoration in the salesroom may be directly responsible for the sale of cars, trucks, repair service or some other service in the future. The important thing is to get your business into the Christmas picture at this particular time when the thoughts of everyone are for Christmas and anything that does not have the atmosphere of the holidays is lost from the picture.

If you have not been impressed with this fact before look around you during the coming month; analyze your own reactions in your Christmas shopping. They will help you this year and next year too. Notice which stores you are attracted to—invariably they will be the ones that through their advertising or their display have impressed you with the fact that they are the places to find Christmas gift suggestions. It is a good bet that even the wideawake bootblack will be "in the picture" if it is only a twig of holly in the window or a few paper streamers from the lighting fixtures.

Get Into the Picture

LET'S GET IN THE PICTURE.

But, getting in the picture is the least that can be done by the dealers in automotive products. There is the Christmas selling appeal to be made, and the ways of making this appeal are as many as there are automotive dealers.

Generally these selling activities may be grouped under two headings:

1—*Christmas advertising.*
2—*Christmas display.*

Christmas advertising is of two varieties—the advertising that is done to "get into the picture" and build good-will and the advertising that definitely asks people to buy the things the dealer sells for Christmas gifts. In the same way Christmas display divides itself into two varieties—the kind that presents the car or truck or service in a Christmas atmosphere for the purpose of getting the dealer "into the picture" and the kind that presents those products definitely as gift suggestions. The possibilities of the first form of Christmas display were very aptly illustrated in the Motor World Winter Business Number in a picture of a window used by a Seattle truck dealer.

The central figure of this display was a truck engine enamelled white and suspended from the ceiling with chains. Around the engine, on an easel, was a huge holly wreath. Heavy black hangings, on which were placed two smaller wreaths, and framed cross section views of the engine on easels on either side completed the window. It is not probable that very many people are going to give motor trucks to their friends as Christmas presents, but it is a fact that this display created a very favorable impression on many and led indirectly to subsequent sales. The display did get that truck "in the picture."

The automotive equipment and tire dealer and the motor car dealer can do more than get into the picture in the next three weeks. They can make definite presentation of their products as Christmas gifts, after they have got into the picture by fitting their salesrooms and displays with the things that will help give them Christmas atmosphere.

The motor car dealer can do these things:

1—Trim the salesroom with Christmas greens, red and green crepe paper, wreaths, bells and some of the many other decorative accessories now purchaseable at a modest price.

2—Keep the salesroom open and well lighted evenings—it's a good advertisement if nothing else when the sidewalks are crowded with Christmas shoppers.

3—Advertise the car as a Christmas gift suggestion.

4—Make a "Christmas morning delivery" drive on immediate prospects—use this appeal to get the lingering deals closed up.

5—Make a window display that definitely suggests a car as a Christmas gift.

These are all things that every motor car dealer can do during the next three weeks. There will be some sales of cars as a result of these efforts—a lot more than expected probably—but if no sales at all are made by some individual dealers they will at least have brought their business and the cars they sell more forcibly and favorably to the attention of a lot of people and will have prepared the ground for future sales in the advertising that these activities have brought them.

For the automotive equipment and tire dealer the next three weeks hold definite promise of quick cash sales and real profits. For him it is a case of doing the job just as the department store, the jeweler, the novelty shop and other merchants have been doing it Christmas after Christmas for many years. It is a job of advertising and displaying his goods with the definite suggestion that people buy them and give them this Christmas.

In a general way his job will be well done if he does these things:

1—Use all of the Christmas selling helps that are supplied by manufacturers and jobbers, including window cards, cut-outs, colored wrapping paper, advertising suggestions, etc.

2—Put a Christmas tree or some other Christmas symbol in the display window and make the window carry to the public a suggestion for the buying of the items it contains as Christmas gifts. (A good thing to remember in connection with Christmas window displays is that bright

A Window for the Service Man



A holiday window for the service man. The little house can easily be made by the man who letters your cards. Transparent paper can be used for the windows and an ordinary electric light hung behind the house will illuminate them. Details of the window, including the announcement cards, can be changed to fit the individual business

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colored, highly polished articles are particularly attractive to the eye of the Christmas shopper.)

3—Advertise frequently in daily newspapers, calling attention to the fact that automotive equipment makes exceptionally useful, original Christmas gifts for everyone who owns an automobile.

effort launched strongly by holding a meeting of the entire organization during the first week of December and asking their assistance in making the month a leader in sales through use of the Christmas appeal.)

Probably one of the best suggestions for the automotive equipment merchant who wishes to use every method available to cash in this Christmas is to observe particularly the advertising and display efforts of the progressive merchants of his vicinity and to adapt to his own use as many of the ideas as he can make fit in with his own business.

Price is a particularly strong factor in Christmas merchandising. For the most part the Christmas shopper is a price buyer. He knows about how much he wishes to spend for each gift and he mostly will buy the gift that fits the price when it has favorably impressed him. Hence, the prominence of price in advertising and displays, and particularly of price groups, is worth considering. Price cards, trimmed with a Christmas decoration should be on every piece of equipment in the display window.

The means of making the Christmas selling appeal are as varied as the personality and size of the dealer and his establishment. The big thought is to do something—not to let the opportunities of the next three weeks slip by without bringing to the automotive dealer his share of the sales and profits that they contain.

Christmas merchandising does not necessarily mean a heavy investment in advertising, display properties, or in any other thing. It only needs full and intelligent use of the things that are at hand to put the automotive stores "in the picture" and drive home to a public that is preparing to spend millions of dollars in the next couple of weeks the great big fact that automotive gifts are the most desirable for the more than 10,000,000 motor car owners this Christmas.

Let's tell the world this is an automotive Christmas and MAKE IT ONE.

A Christmas Ad with Punch



Dear Folks:

Let's give him something for his Car!

Santa.

A Few Gift Suggestions

[Use cuts of a few good Christmas Gift Suggestions with prices.]

WHERE'S the motorist who wouldn't prefer something nice and useful for his car instead of wild neckties and unsmokable cigars?

In this store you will find gifts that will bring Christmas morning delight to every person who drives a car—Gifts to fit every pocketbook.

Put us on your shopping list. Let us help you select useful Christmas gifts.

SMITH'S GARAGE

Everything for the Motor Car

442 Main Street Phone 8652

This is the general layout. Fill it in to suit your business

4—Arrange salesroom displays that suggest many different articles as Christmas gifts.

5—Mention the purchase of some items for Christmas gifts to every customer who enters the store between now and Christmas. (Some dealers are planning to get their Christmas merchandising

Stresses Immediate Delivery in Winter Selling

"I NEVER spent any time in the winter," said a successful middle western car dealer, "in digging up spring prospects. I know that when spring comes the prospects will develop automatically. Instead I devote all my time and thought and energy in the winter to moving all the cars I possibly can right at the immediate moment. I never talk spring deliveries, I always talk immediate deliveries. It has always struck me that if there is ever a time in the year when the dealer should clinch sales at once and go after the big and really live prospects at once, it is in the winter time. That's how I keep up a good record of sales in the winter, and, I believe, other dealers could do the same thing by following my plan."

Displayed Engine in Down Town Store Window

GOOD advertising was done by the Cruse-Crawford Mfg. Co., Birmingham, Ala., when it recently placed a Knight sleeve-valve engine in one of the most prominent downtown show windows.

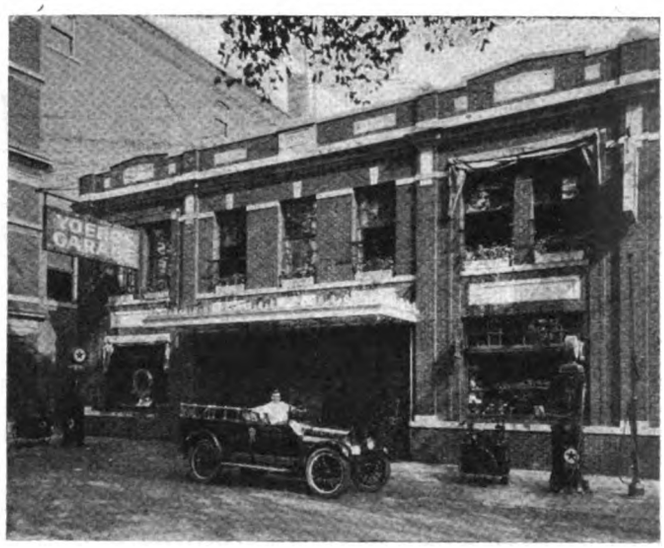
The engine was so arranged that the observer could see the operation of the valve and piston, and demonstrated the difference between the sleeve valve and the poppet valve.

Large crowds gathered around the window at all times during the day, and the display was considered a success by the merchant who let them use his window and by the Cruse-Crawford Co.

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Service and Publicity This Tire Dealer's Selling Tools

Customers Stand by Him When Price Cutter Threatens Competition



William P. Yoerg in his service car in front of his store in Holyoke, Mass.

WILLIAM P. YOERG, proprietor of the Yoerg Tire & Rubber Co., Holyoke, Mass., has built up a large and prosperous business as a tire dealer and repairer, on the strength of (1) Personality; (2) Emphasis on Quality and Service, with a fleet of road service wagons to assure speed and efficiency on the service end; (3) Ingenious and Systematic Publicity.

Personality is a big asset with Bill Yoerg as it is with many other successful merchants. Good cheer and good will, an evident desire to help a patron out of every difficulty and send him on his way rejoicing, a genius for remembering faces, the practice of greeting the customer by name on the instant—these are some of the traits that have smoothed the road to prosperity for this enterprising concern.

Yoerg has refused to cut prices or get in inferior stocks for the purpose of swelling sales. *His trade is educated to the idea that it is going to get quality as surely as it gets prompt and satisfactory service.*

Service and Publicity

Service and publicity have gone hand in hand as business builders for this organization. The red and gold service truck that stands as the latest addition to his fleet—you can see him with it in the accompanying picture—is a big help in a publicity sense. But the catch phrase "Call Yoerg, 804," has been perhaps his most effective publicity device. He was first in this region to invent and apply the idea of exploiting the telephone number as an advertisement. He made the combination "Yoerg, 804" familiar to every family or business establishment about Holyoke, having any interest in automobiles. It appears in every advertisement, on all his billboards and on his service trucks. In fact, tire trouble at once brings "Call 804" to mind. In a similar way he has given systematic publicity to United States Tires.

Yoerg started his business some fourteen years ago in a small store, when there were few automobiles in the city. To-day he has a building 60 x 122 feet, two stories high, employing fifteen persons in tire selling and repairing and automobile storage. Gasoline and oil are sold, and a limited stock of small accessories. The storage clientele helps to make tire business. Yoerg handles only one make of tires. But his service he rates as his big factor. He is ready to jump out on the road to a distance of fifty miles, if need be, to help a customer out of a difficulty. For this service he makes no charge, but he reaps his returns in a large and growing patronage composed of the most substantial class of car and truck owners. How he came to build his business on these lines he explains in this wise:

Cut Prices Unnecessary

"At no time in the fourteen years we have been in business have we found it necessary to cut prices in order to get business, so firmly have we established our business on quality and service," says Yoerg. As an instance of what this has meant I will cite an experience we had seven years ago. An out-of-town concern advertised in the local papers that it was about to open a tire repair shop and quoted prices on repairing tires and tubes at about half the rates I was getting. Naturally this started people talking, and they began asking how I expected to meet this new competitor. I immediately mailed a letter to our customers informing them that we were ready to meet the prices offered by the other company, provided we discontinued the system of *service* that had become familiar to the community. We left our customers to decide whether we should stick to our policy or abandon it in favor of low prices. Out of more than 400 replies there was just one that declared in favor of price-cutting, and whoever sent it failed to sign it. The rest were all in favor of our going ahead on the established lines. "Stick to your service," "Hold your prices, we want service," "Your service means too much to us to make price-cutting an inducement"—these were the expressions that came to us from every side. We certainly were proud of the compliments these postal cards brought to us, bearing as they did a stamp of approval for seven years of hard work. Since that occurrence others have tried the price-cutting policy, but with limited success. Holyoke is a city of about 65,000 inhabitants, and I honestly believe it is the cleanest city in the United States as regards the holding of prices on tires, and this because of our pains to educate the car owner to the fact that quality and service should be considered before price."

Yoerg doesn't see any reason why the tire dealer should not establish a fair price and stick to it, subject to market changes, as much as the clothing or shoe dealer. He believes that the tire business is in a way to become stabilized, like other lines of merchandise, and he thinks that if more dealers would take the same resolute stand against destructive price-cutting the tire business would be established on an infinitely better basis, with the failures much less numerous than in recent times.

Uses Billboards That Can Be Read

THE big problem in billboard advertising along a high-speed trolley line is to put one's message across in few enough words to enable the car riders to get it at a single, momentary glance. The same holds true of signs along a highway where motorists are wont to travel at a fast speed.

Joe Thompson, Dodge dealer of Ypsilanti, Mich., has solved this problem. Instead of using a single large board of the usual type, Thompson uses six small boards, each about 24 in. by 36 in., spaced about 200 ft. apart, with not more than two words on each board. The boards read, successively, as one approaches Ypsilanti on the interurban car or on the highway:

"Dodge" "Brothers" "Motor" "Cars" "Joe Thompson" "Ypsilanti."

The unusualness of the method attracts attention and sticks in the mind of the observer. Even should one miss one or more of the boards, or fail to take conscious note of the message, the others tell a nearly enough complete story for him to get the idea.

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The Relation of the Repair Shop to Truck Sales

In Which a Salesman Points Out the Need for Teamwork to Insure Satisfied Customers and Reduce Sales Resistance

"HOW much! $1200! Why, man, I don't want to buy a new truck or a fleet of them or anything like that, I only want an overhauling job. Yes—well, I know all about that stuff of quality and so forth, but that ain't puttin' any money in my jeans. That's just the trouble with you fellows up there, you bother the life out of us haulers and tell us how good your truck is and why it's so much better'n any other one in the world, and then when a fellow wants some kind of a little job done, it's good-night for the bankroll. You're robbers, thasall, and I'm for tellin' the world from now on, believe me."

BANG!

"BUT—BUT, are you listening?" And then the foreman realized that his "friend" on the other end had hung up. And it seems as though this is all that ever comes of these phone conversations. Sometimes the foreman may turn to one of the clerks in the shop office, and say something about—that ——— hung up on me—but that ends it.

THE second act of this little scenario begins when the truck sales manager calls one of the salesmen into his private office and goes on a tear about Joe MacNulty going to buy a competitive truck, and picks on the innocent salesman with cruel words. Inside of a half of an hour, the salesman appears at the front gate of Joe's place (Joe being the selfsame gentleman who hung up the phone some time before on the indignant foreman) and finds Joe in and not in a very receptive mood.

"Good-morning," says our hero, the salesman, in a "Sunday-Special" voice adopted by him upon special occasions only, as on Sundays when some of his wife's relations call. Joe nods and proceeds about the greasing on the truck standing in the front yard, which the salesman quickly recognizes as his own make. The salesman advances to the center of the stage, and makes a move as if to shake hands with Joe. Joe points to the grease-stained extremities and asks what he can do for the salesman.

"Why, Joe, how's the wagon running these days? Pretty good, I suppose. Certainly has lasted you a long time, hasn't she?" Not receiving any reply from Joe, who is busy underneath the truck just at that moment, the salesman proceeds.

"By the way, Joe, I hear you were low on that new road job. Do you think you'll be able to handle it with the one truck? She's pretty good, but I don't think she can handle all that stuff. How about another one just like her? You know we just dropped our price and —," but he was rudely, oh! so rudely, interrupted by Joe who came out from under and shook a menacing hand in our hero's face.

"Listen here, buddy, what I'm a-goin' to tell you ain't to be taken personal, but it's about that bunch of lunkheaded robbers that you got up there in your place. Yes, you're right about needin' a new truck, but it ain't goin' to be yours. I'm placin' my order for two, mind you, two not one, of them there Sturdybilts, 'cause I need two trucks on this job, and this here piece of junk ain't a truck a-tall. It's a pushcart. The guy's comin' up here this afternoon to collect for 'em, and I get 'em to-morrow right out of stock. 'Course, I don't expect this baby to last forever or anything like that, but I did think that maybe I could get her overhauled for a reasonable bunch of coin, and if I could, why I was for buyin' another one and makin' the new one and this one, overhauled, do the work. But when I can get the work done on her from a little blacksmith shop up the alley for $600, and you guys want $1,200 for the same job, I'm through, thasall. Why, listen here, buddy, I ain't done nothin' but pay, pay, pay since I had this here baby, and now I know I been robbed.



"There ain't no use of your standin' there and tryin' to argue with me. I'm buyin' the Sturdybilts this afternoon, and that ends it."

But it did not end it for the salesman, although he was struck for a minute with the tale told by his friend Joe, and he was glad Joe went on talking for enough time at least for him to collect his thoughts and get set. He told Joe about the material that would have to be used, the tools required, what it would mean to him to have it done right, and then figured up the cost. He was a salesman, not a mechanic, and he sold Joe the job and sold him a new truck before he left there. And when he returned he "started something" with the repair shop.

However, some of these cases are not so fortunate in their ending; in fact, a lot of them never end, as it were. Salesmen are constantly running into former customers who have dropped mysteriously from sight and prospects who have been unsold after they were practically closed, by some one of the former customers who has a grievance and has spread it broadcast among his friends and club members. A great many of

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these grievances spring from the repair shop and are never carried into the sales department; in fact, they never leak out of the shop. A driver is unconsciously insulted; he hears one of the mechanics venture an opinion on the profit of the house, that is, that it is tremendous, etc.; the foreman takes off an item from a job for an owner, perhaps legitimately, if it is a big job, and someone else's driver sees it done and does not understand it; he carries the news to his owner—and so it goes. There are ever so many ways that things leak out that are really unjust and easily straightened out if taken up immediately or stamped out entirely if the practice is not a fair one.

I venture to say that more sales are killed or badly maimed by the repair shop than in any other way. It is a sales resistance that the house itself is creating within its own walls that is stronger than all outside influence that may be brought against the product.

A Good Plan of Action

The sad part is that the salesmen labor day in and day out to spread the glad tidings, and for every word of goodness that they say, the repair shop may be causing more unjust criticism than ten times what the salesmen could ever say.

They do it unconsciously—this is the bad part. They're not trying to kill the business or be mean to their firm. No, indeed! It's often just the opposite. They try too hard to please—if this is possible—and by so doing they only do harm. They think they're doing the customer a favor with an item here or there, and either the customer tells his friends or someone who oversees the deduction or the change and does not understand the circumstances tells his friends and there is friction. The little fellow thinks the big fellow is getting allowances that he does not get, and there you have it. Furthermore, if a credit is allowed in some cases, they always expect it, and if they don't get it, they are being "robbed". It is only natural that a mechanic is not expected to be a salesman, but he certainly should be able to convince a man that the job is worth all it costs, and why it is worth more to have it done there than anywhere else.

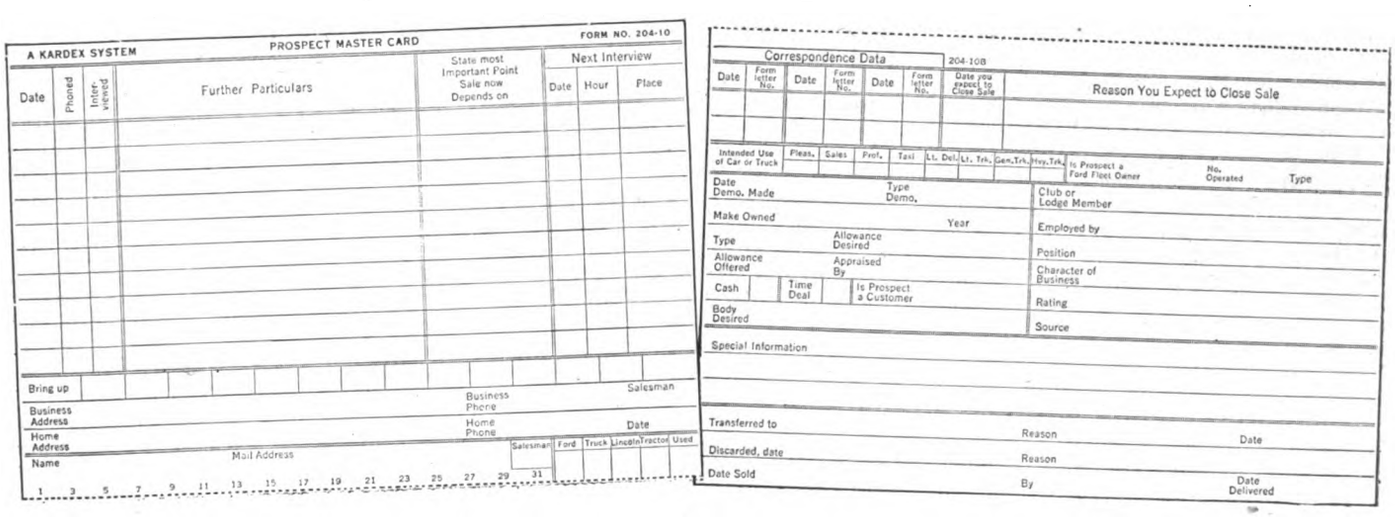
I think a good plan of action is the one adopted by quite a few of the larger agencies, and that is to have a triplicate copy of all truck repair bills given to the sales department each morning and a copy of all jobs written during the day. In this way the sales departments know exactly what is going on and how much the job costs. They are acquainted with the facts of each case, and if there is anything that looks out of place, they are quick to check it up and get the details. Perhaps a man can have something done that will cheapen the job in dollars and cents and yet give him the same mileage as he would get with the more expensive repairs. The mechanic's psychology is more of a detailed affair, and he likes to see a job done up right—rather than do it just enough to keep the truck running. He also feels an interest in seeing the repair shop pay and be busy so there is no chance of a lay-off, and he will try to increase the job. The sales department can check up on this tendency and keep the service sold. It works.

Weekly Meetings

Another thing is the weekly meetings of all foremen and their assistants with the truck sales department. At these all questions are brought up and answered, and any arguments or discussions that have come up during the week are gone over and straightened out.

Furthermore, the method of sending out a sort of questionnaire, after each repair job, to the owner, asking him whether he is perfectly satisfied with the work or not, works very well. It keeps the customer sold, and if he is not satisfied, it is more or less up to him to let you know. At least you have gone on record and you have made it plain that you are anxious to have him satisfied.

A New System for Sales Department Records



The face of the Kardex prospect card is shown at the left and the reverse at the right

A COMPLETE system of sales records for the automotive dealer has been developed by the Kardex Sales Co., Tonawanda, N. Y. Among the advantages claimed for the system are that it minimizes clerical work and yet gives detailed information and control; it eliminates disputes between salesmen; and that it makes it easy for the sales executive to follow the work of the salesman.

Six forms are used in the system. The field prospect card and the master prospect card are identical except that the former is printed on a buff-colored card and the latter on a white card. The field prospect cards are filed in the salesmen's individual files in alphabetical order. The white master cards are filed in the master file also in alphabetical order.

The third form is the salesman's daily work plan. He removes the cards of the prospects he will call on during the day and makes out his route on this form. Detailed reports of calls are made on the field card and a general report on the daily work plan. The reverse of this form is arranged for records of canvass calls that are made by the salesman.

The fourth form is called the Monthly Sales department analysis. It is arranged so that a daily report of the sales department may be entered. The monthly salesman's analysis provides a similar record for each salesman. The used car appraisal card is the sixth form.

In addition to these forms, the Kardex company has designed some special forms for the Ford dealer.

Complete information regarding these systems may be obtained by writing to the Kardex Sales Co.

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Keystone Dealers Pledge Support for Move to Repeal Burdensome Taxation

Second Annual Convention of Pennsylvania Automotive Association in State Capitol Maps Out Broad Program—150 Delegates Attend

HARRISBURG, PA., Nov. 21.

THE Second Annual Convention of the Pennsylvania Automotive Association, which closed its two-day sessions here this afternoon, ended with many expressions of satisfaction from members on the floor. The meetings had proved of great practical benefit to the 150 delegates in attendance.

The delegates had listened to some exceptionally able speakers on topics of vital interest to the industry, along the lines of past experiences and feasible plans for the future and were able to carry back to their salesrooms and shops much that will make for the betterment of business. The association went on record in favor of various proposed laws helpful to the automotive industry, including safety brake inspection as approved by the National Safety Council; more flexible and less restrictive motor vehicle regulatory enactments; favoring a road bond issue to restore exhausted State funds for road building purposes and recommending work co-operative with the National Automobile Dealers' Association and other national bodies in attempting to secure the repeal of burdensome taxes.

FOLLOWING a cordial invitation from the strong Erie delegation to hold the next convention in that city, the association unanimously accepted. A few routine changes in the bylaws were made, two new directors were chosen, four additional vice-presidents and two special secretaries were selected and the former officers re-elected. The officers and directors now are as follows:

President, George G. McFarland, Harrisburg; vice-presidents, J. Burton Arbuckle, Erie; E. T. Satchell, Allentown; J. H. Leppert, Johnstown; George A. Hoeveler, Pittsburgh; and O. E. Conrad, Scranton; secretary-manager of the association, L. H. Hagerling, Erie; secretary to the board of directors, Roy W. Shreiner, Harrisburg; secretary to the treasurer, Harry Shroeder, York; and treasurer, E. A. Clark, York.

Directors — George G. McFarland, Harrisburg; E. A. Clark, York; E. T. Satchell, Allentown; John B. Arbuckle, Erie; J. Miller Kalbach, Reading; Harry Olewine, Hazleton; Roy W. Shreiner, Harrisburg; J. H. Leppert, Johnstown; George A. Hoeveler, Pittsburgh; W. U. Mussina, Williamsport; L. H. Hagerling, Erie; Otto E. Conrad, Scranton; George S. Bray, Wilkes-Barre; W. C. Cheesman, Butler; W. H. Brearley, Philadelphia; and James Gallagher, Chester.

The opening session was held in the House of Representatives, Capitol Building, on Monday. First, there was a meeting of the board of directors in the ante-chamber of the House. This was followed by general registration. The convention was called to order at 10:30 a. m., by President McFarland, who introduced E. E Beidleman, lieutenant governor of Pennsylvania. Mr. Beidleman, who made the address of welcome, said that there should be a spirit of friendliness between the State House and any body of earnest, industry-building business men and emphasized the growth of the automobile trade, to which, he added, much preparation had been given to put it on a sound business basis. This preparation, he said, had included a vast investment, which showed that the industry possessed an unusual degree of stability.

In his address on "Progress," in which he pointed out the strides that the organization has made within the last year, President McFarland said that the association has gone on record as favoring the repeal, or the amendment of the "$100 law" on the sale of used cars.

Furthermore, Mr. McFarland said, the association has gone on record as favoring the State collection of the one-cent gasoline tax from the refiner, rather than from the dealer; as favoring a more liberal interpretation of the dealers' tag law and personal examination of every applicant for a State license. He urged close attention to legislation.

Membership Effort Launched

The report of Secretary Hagerling showed that from a membership of 92, in 1921, when the association was organized, the membership has increased to 533 and, although it is the youngest organization of its kind in the United States, it is also large and well financed.

Following an open meeting, the morning session closed with a recommendation that all members present secure at least one new member within sixty days, for each director. There are now 533 members in the association.

C. A. Vane, St. Louis, general manager of the N. A. D. A., spoke on "Building for Permanency," giving facts and figures on the growth of the trade. He emphasized the necessity for using common sense in the matter of making allowances to customers on their old cars and insisted that there was no other "used car problem," but that it was a matter for every individual dealer to see that he should get a legitimate return on his investment, which would be impossible if over-allowances were made on second-hand cars.

George H. Biles, assistant State highway commissioner, had been billed to speak on "Highways, Past and Present," but was unavoidably absent. His place on the program was taken by Thomas McDowell, field representative of the State Highway Department.

"Getting Back to Salesmanship" was the subject on which G. Lynn Sumner, director of advertising for the International Correspondence Schools, of Scranton, addressed the delegates, accentuating integrity and concentration in business.

Benjamin G. Eynon, registrar of motor vehicles, automobile division, State Highway Department, spoke on "Evils of the Highway License Bureau," in which he warned the members that "while the effect of accidents on sales is negligible just now, the time will come when the accumulated force of abuses will fall with a crashing blow on the industry." Reckless driving and the large number of motor accidents, he asserted, will result in the enactment of laws greatly restricting the use of the automobile, unless the industry actively assists in curbing these abuses.

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Following adjournment for the day at 5 o'clock, the delegates were taken to the Harrisburg Country Club in automobiles provided through the courtesy of the Harrisburg Motor Dealers' Association, Charles H. Barner, chairman, attending to that detail. A banquet at the club had been provided for and close to 160 delegates and guests sat down.

Ray Sherman, merchandising director of the Automotive Equipment Association, Chicago, made an address on "Shop Profits," in which he reviewed the "Ask 'Em to Buy" movement and stressed what he termed the "everlasting aftermarket" presented once a car has been sold and the owner drives up repeatedly for gasoline, air, or other necessities.

The first speaker at the session Tuesday morning in the Senate Chamber was Dr. J. M. Thomas, president of State College, State College, Pa., whose subject was "Education for an Age of Machinery."

At the conclusion of his address, Dr. Thomas was given a vote of thanks and the association later passed a resolution placing the organization on record as being in favor of the emergency building fund campaign of State College. A movement was started among the delegates to pledge several thousands of dollars toward the project.

How to Get Efficiency

What was considered as the most interesting address of the convention, was made by A. R. Kroh, of the educational department of the Goodyear Tire & Rubber Co. He spoke on "How to Get Efficiency from Sales and Service Organizations," or at least that was the topic that had been selected for him; but his address was an eloquent plea showing the delegates the great importance to the entire country and every industry, especially the automotive trades, of supporting the "business of agriculture," which, he showed by facts and figures is really the greatest business the country has, with its $78,000,000,000 invested, and not second to the steel industry as commonly supposed, which has only $36,000,000,000 invested. He followed up Dr. Thomas' address by urging the delegates to support the work of the college both morally and financially.

The "marvelous educational advantages" presented by the trade papers in the automotive field were referred to repeatedly in his address by Kroh, who said that dealers and others in the industry should make it their duty to read these journals and learn the opinions of others in the trade; follow their methods and development as shown therein and disseminate this information among their salesmen and service shopmen. He deplored the attitude of those in the industry who declare they haven't time to remove the wrappers from the trade journals and asserted that they would be a step ahead and much better off if they were to read and study them. "The trade papers of the country have spread a great educational feast," declared Kroh, "but the trade papers in your particular business are the best in the world."

Kroh cited figures and facts to show that the automotive industry is second only to agriculture. On the subject of increasing efficiency, Kroh said about the most useless thing in the world is the average factory representative, who is willing, apparently, to tell everything else to the dealer but how to sell more automobiles to the buying public. He asserted that the buying public is thinking of economy, efficiency and service more than ever before, and if it is forced to pay service overcharges, it is apt to regard the whole trade unfavorably and set up a bad influence. Kroh emphasized the rapid growth of the automotive industry in its 22 years and showed that something is wrong in a business where 40 per cent of the labor costs never have been paid and 30 per cent of the gasoline and accessories sold never have been accounted for on the books, citing such results as showing a lack of intelligence in the business. He also reviewed the great opportunities in the trade, where a mere "grease hound" in the first year makes more than does a lawyer in his starting twelve month. "You owe a duty to the buying public," Kroh asserted. "You cannot succeed by slave-driving; but you can by selling your employes the 'higher hunch,' such as the major sold Sergeant York, when he convinced the man who started in the war as a conscientious objector that he was called by God to do what he could to win the war."

Kroh asked the delegates to heed the fact that 85 per cent of the automobiles are sold through some feminine influence. "Get acquainted with that influence," he said. He deplored the giving of too liberal allowances on traded-in cars as very bad business and stressed the value of establishing the confidence of the customer and continuing it after the sale of the car, through a suitable letter from the head of the business, and through the 'follow-up' of the salesman asking the customer what there was about the car that made him buy it, so he could use the answer later in his sales argument and what there was about him that made the owner purchase the car from him. He told of the feelings of an owner the first three days after the purchase of a car, described his enthusiasm and the pride taken in having his judgment justified. He closed with a strong plea to the delegates to see that the business is professionalized and that the dealer is insistent upon getting a legitimate profit on every transaction, or letting the customer go.

It was decided by the convention to adopt for the association the slogan, proposed by "Doc" Williams, Ford dealer, Harrisburg, "Drive on the Right and Walk on the Left," as being in the interests of safety.

"Human Exhibits" Used in Scientific Salesmanship Talk

PHILADELPHIA, Nov. 23—"Human Exhibits," the election of a new set of officers and directors and a good dinner were among the factors contributing to the entertainment of the members of the Automobile Accessories Business Association and their guests, at the November meeting, held at the rooms of the Philadelphia Automobile Trade Association, last Friday evening.

The "Human Exhibits" alluded to were three prominent members of the association selected by one of the speakers of the evening, who indicated them as embodiments of the three representative types of prospects met with in automotive salesrooms, namely, the Mental type, the Motive type and the Vital type.

President W. Howard Metcalf, head of the association for the last four years, retiring because of his recent election as a member of the State Legislature, presided. The election of officers and directors resulted as follows: President, Guy S. Lane; vice-president, Ralph J. Cahall; secretary, N. A. Petry, and treasurer, R. A. Harp. Directors—W. Howard Metcalf, John Monahan, A. W. Stellwag, C. H. Walz and J. M. Willitts. These will serve one year. Directors whose terms will not expire till a year from now are George L. Fischer and George B. Shearer.

It was Gordon J. A. Hargraves, who designated W. Howard Metcalf, Guy S. Lane and W. A. Jones of Mount Holly, N. J., as the "Human Exhibits," asking them to take front seats. Hargraves is head of the Hargraves Selling System, New York, and a business counsellor. His subject was "Scientific Salesmanship," and the burden of it was that salesmanship of the right sort consists in the study of human nature and then acting on that information. Selecting Metcalf, the speaker declared that he was of the mental type and should such a prospect enter the automobile salesroom, the argument should be along the lines of interesting him especially in the construction of the car and the excellence of its mechanism and how it co-ordinates.

Indicating Lane, who is large and energetic, the speaker said:

"To sell a car to this motive type, I would lift the hood and show him the motor, emphasize the speed of the car and demonstrate that it was calculated to carry him far, at a rapid rate, without undue wear or tear."

Turning to Jones, who is stout and florid, Hargraves said:

"I would attempt to sell this vital type on the basis of how comfortable the car cushions are and how smoothly it runs."

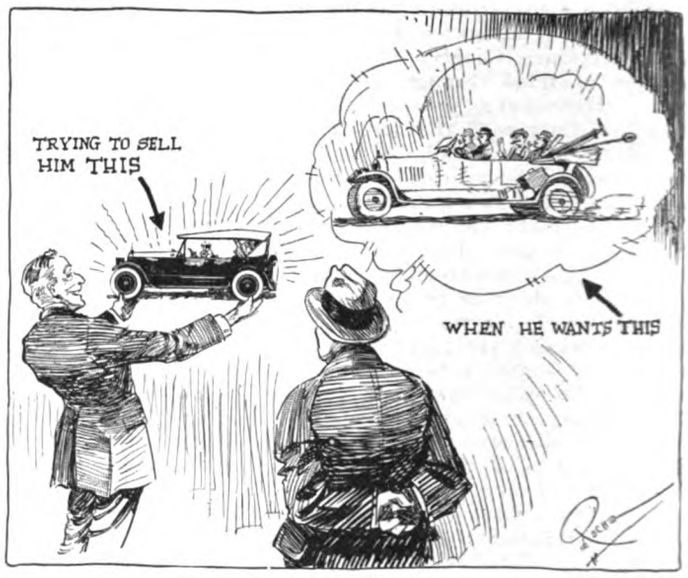
Jones then admitted that he was so impressed by the comfort of a car himself that only recently he had sold a car to a prospect on the basis of luxurious cushions and easy riding facilities alone.

The association will hold its annual smoker in December.

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Lost Sales

By NEAL G. ADAIR



"AND now," said Reilly, "let's have a little conversation about the sales we *lost*."

"Hot dog!" murmured an irreverent salesman, whereupon the sales organization of C. J. Reilly, Inc., which had spent its last two months of weekly meetings brushing up on the new line of Sennett cars, started on an excursion into its recent past that proved to be decidedly interesting.

"Let's see," Reilly continued, "Georgie Roper, here, had Doc Smith pretty well lined up for a coupe, but he jumped over to the Redman at the last minute. How did it happen, Georgie? Did the Redman folks hike up the bid on his old car?"

"No, I understand not," the salesman replied. "They gave him $600—just what we offered."

"Any idea why he switched?" Reilly persisted.

"Wish I had," Roper answered.

"H'm. How did you go at the Doc? What was your top notch argument?" Reilly asked.

"Well, I used the cream of the high spots in the new catalog," said Roper. "Told him about the new valve mechanism, the improvement in the lubrication system and the new lines of the hood."

"Have any idea what the Doc wanted to use the car for?" Reilly asked.

"To shag around town—same as any doctor, I suppose," Roper replied.

"Tell him anything about the extra wide doors, the ease of steering that's been one of the Sennett's big points, the sunshade and automatic windshield cleaner?" Reilly continued.

"But that's old stuff," Roper protested. "We were talking that stuff last year."

"To last year's prospects—sure," conceded Reilly, "but Doc Smith wasn't one of them. And—well, you say the Doc wanted a coupé to shag around town in. Most likely you're right, and what kind of a car did he want? One that would be easy to get in and out of, because he has to do that a good many times a day; one that steered easily, to save time in turning and parking; and one that he could drive without any worry about the weather—isn't that about right?"

"Sure, but—" began Roper.

"And, Georgie," Reilly interrupted, "you talked to him about valves and lubrication and cowl lines, which the Doc probably took for granted would be all right in any good car. You forgot all about what he was going to use the car for. I suspect somebody over in the Redman organization didn't forget, with the result that the Doc thinks his new coupè is the most comfortable, convenient and generally useful automobile, for his business, that was ever invented."

"Maybe," Roper admitted, and Reilly turned to Jack Mellon, who had had Samuel Hopkins, the lawyer, almost up to the dotted line when he shied at something and bought a De Luxe sedan.

"What about Hopkins, Jack?" Reilly began.

"Just bolted, that's all," the salesman answered. "All set for the final interview when I heard that he had fallen for a De Luxe."

"And what did you try to sell Hopkins?" Reilly began. Don't get the idea I'm criticizing you—or you, either, Georgie. I'm just hoping we can drive some things out into the light that will help all of us."

"Well, I naturally hopped into the appointments of the new sedan," said the salesman. "Made a play of the new type of doors and handles, the touring trunk mounted at the rear and—"

"Do you know Hopkins very well?" Reilly asked. "Know anything about his family and so on?"

Mellon shook his head.

"Well, it happens that I know quite a bit about the Hopkins family through some neighbors of mine," Reilly said. "There are five in the family, and they use their car to drive around town and for short trips out in the country; never took a long trip that I know of and probably won't for some years because their three children are very little ones. I can't imagine they got much excited about the touring trunk and the new door features—but they surely would have liked to hear a lot about the roominess and comfort of the interior, the easy riding qualities and some other things that would particularly interest a father and mother of a growing family."

"Maybe," Mellon admitted, in much the same fashion as Roper.

Reilly cast his eye down on a little card covered with lost sales notations, then passed the list over to Tommy Trumbull, who generalmanaged sales and a lot of other things around the Reilly establishment.

"Any more hot stuff on there, Tommy?" he asked.

"Here's a five-passenger job we should have sold to John Kerwin the contractor," Tommy said. "How did he happen to get out of the pasture?" he inquired of Tony Miller.

"Oh, he bought a used car from the Empire folks," Miller said.

"Did you try to sell him a used car," Trumbull demanded.

"Didn't know he wanted one," Miller responded.

"How did we get him on the list?"

"He came into the salesroom," said the salesman. "Said he was interested in a touring car. Seemed to like our job, though he hinted the price was pretty high. Wouldn't close on my second call following the demonstration, and the next I heard he was driving a used Empire."

"Queer you didn't switch to a used car when he complained about high price," Trumbull suggested.

"Why?" asked Miller. "He's making money, big contracting business and all that. Seemed like an insult to talk used car to him."

"And there's just where you missed hooking on to a fast one," Tommy replied. "Kerwin has the money all right, but he wanted this car for inspection work around his contracting jobs—that's what he's doing with the old Empire. Has to chase around in all kinds of weather, sometimes over bum roads, sometimes across open fields; picks up sub-contractors and foremen and even tools sometimes. Needs a car with guts in it, but doesn't give a hang about looks. We should have sold him that kind of a car, and we have several of 'em that we wouldn't mind getting rid of at all."

"But I didn't know—"

"And that's just the trouble with us," Reilly declared, again taking a hand in the conversation. "We don't know. We get ourselves all primed on the car, which is fine—absolutely necessary, but we don't use our ingenuity to learn what the prospect will be most interested in, so as to play up the most effective parts of our story. We can't sell 50-miles-an-hour to a doctor who has got to put in his time threading his way through city streets. We can't sell streamlines to a business man who wants to pack a big family into a car that boasts mostly of comfort.

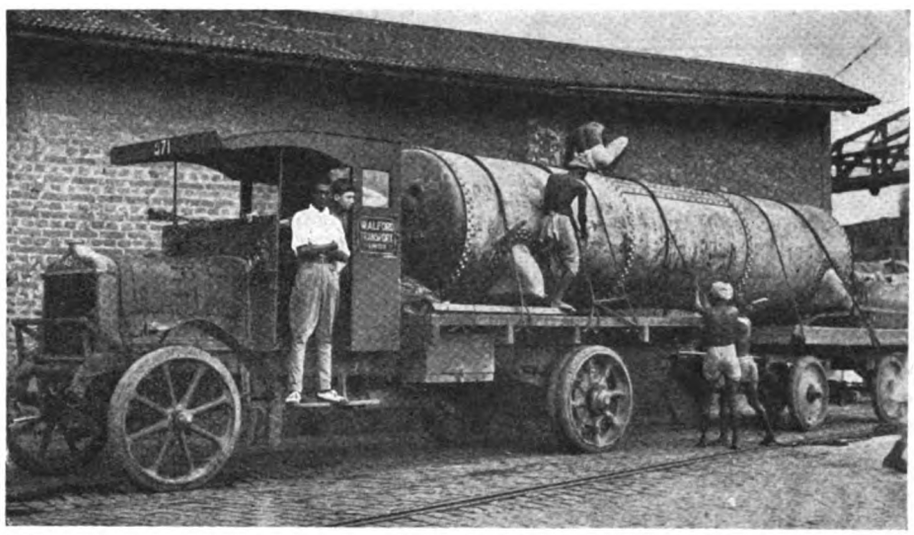
"We've all got to know the story of the Sennett, of course, and all tell fundamentally the same story, but we can't shut our eyes and go at it like a fat man doing his daily dozen.

"Our first job, always, is to find out what kind of a fellow our prospect is and what he wants a car for and then—"

"Sell him the car he wants," said Tommy Trumbull.

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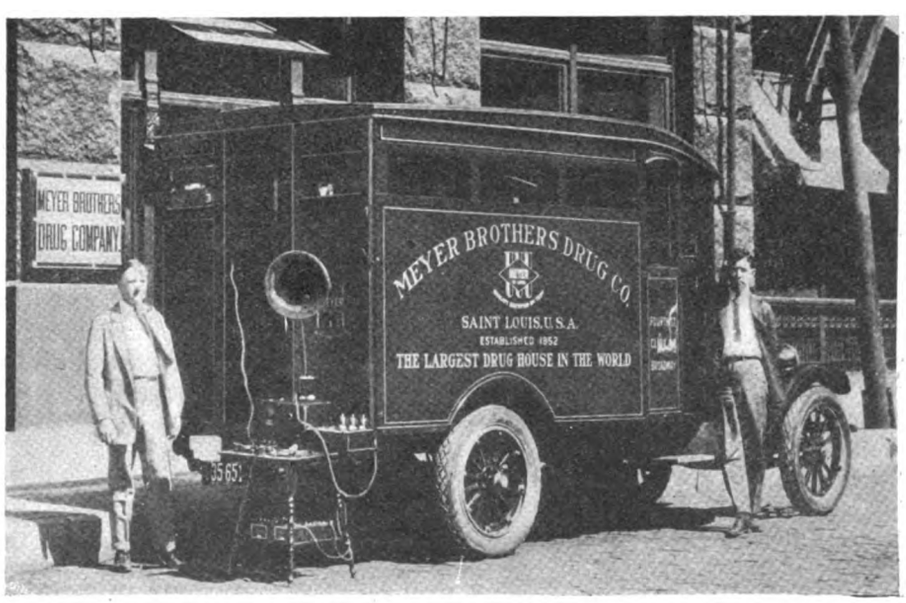
Interesting Things Automotive



Motor trucks are coming into increasing use in many countries of the Far East. Here we see one of the trucks of a Calcutta Transport Co., handling an 8-ton boiler, 25 feet long



Motor vehicles only is the rule on Manhattan Bridge, that great suspended highway over the East River connecting Manhattan Island with Long Island. The rule was made recently when a shifting of cables on the Brooklyn Bridge caused a flurry in engineering circles and it was decided to restrict the Brooklyn Bridge to horse-drawn traffic as causing less vibration. On Manhattan Bridge traffic passes to the left at the rush hours to prevent the crossing of the traffic streams at Canal and Bowery, near the New York entrance to the bridge



A prominent drug firm of St. Louis has installed a number of trucks to take the place of sample trunks for salesmen. Now, instead of a salesman having to travel around the country on trains with an assortment of trunks containing samples, he is outfitted with a truck the interior of which is fitted up with shelves for the display of his samples, small packing cases to take the samples into hotels and stores and a chauffeur assistant to take him any place at any time he desires

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Editorial Notes

What the Sport Car Teaches

DEALERS and garagemen who doubt the willingness of car owners to purchase extra equipment might well take a lesson from the success of manufacturers in selling sport models, that is, open cars equipped with the best of modern devices to improve operation and appearance. The hold which the sport model idea has taken on the public indicates that the car manufacturer has been a little quicker than the dealer in seizing the opportunity to profit by the desire of a great many car owners for what might be termed thoroughly equipped automobiles.

If the sport car can be sold with the cost of front and rear bumpers, windshield wings, extra tires and covers, sometimes a trunk, a windshield wiper and numerous other articles of equipment included in its price, why cannot the dealer sell some of these articles with a new car not so equipped, and why cannot the garageman who is servicing a car lacking many of these articles of equipment get the owner to install them?

There has been a strong trend toward the sport car, both because of its appearance and its features of comfort and convenience. It is an indication of what the public wants and equally an indication of what the automotive equipment merchant can sell if he will adapt the sport car idea to his own sales methods.

Demonstrating Tools

A BIT of travel about the country will convince almost any careful observer that there is opportunity for a widespread work in demonstrating to the dealer and garageman the usefulness of shop equipment and tools.

All dealers and garagemen know the purposes and money saving abilities of some garage equipment items, but the average man in the trade could stand a good deal of enlightenment regarding many purposes of shop equipment with which he has never had an opportunity to become familiar.

It would seem that the wise jobber would be doing a service for the trade of his territory, as well as building profits for himself, if he would perfect means of showing and demonstrating shop equipment in such a way that dealers and garagemen would get a wider understanding of the subject than they now have. It is impossible, of course, for jobber salesmen to carry heavy equipment with them for demonstrating purposes, but a good many men in the retail trade make periodic trips to centers where jobbing houses are located and jobbers in these places would very likely find it worth while to devote space to showing and demonstrating equipment, and to have men available to explain its working to visiting retailers.

It should be borne in mind that the use of machine equipment is a comparatively new development in the automotive maintenance field. Both wholesale and retail branches of the industry yet have much to learn about it and the jobber who contributes to this educational practice will not only have the satisfaction of helping to improve the condition of the trade but he will be repaid for his efforts.

Be Careful

THERE is a lesson for dealers, garagemen and others using gasoline tanks in what has happened in Massachusetts within the past few weeks. One Sunday afternoon recently five boys were playing in the rear of a building formerly occupied as an accessory store. A gasoline tank, long unused, was on the ground waiting to be taken away Monday morning. An explosion occurred, four boys were killed and another badly injured.

A couple of weeks later within a few miles of that accident another tank was being removed. It had been in the ground for some years. Since 1916 it had not been used. As the workmen were loading it on a truck flames sprang up about the vehicle and communicated to the feed pipe of the tank. An explosion followed, blowing out both ends and fatally injuring a boy some distance away. It is believed that in both cases some one was smoking, and in some way the residue in the tank became ignited. As a result the Massachusetts authorities have issued an order that no tank may be moved in future except under the direction of the chief of the fire department.

There are thousands of unused tanks scattered about the country. They are being dug up from time to time to be replaced by new ones, or to be taken away and used somewhere else. Therefore, men identified with the automotive and oil industries should take the lesson of Massachusetts to heart and see that the removal is safeguarded. Unused tanks are as dangerous under some conditions as unexploded shells on a former battlefield. If the men who read this editorial will call it to the attention of all their employees NOW it may be the means of saving lives in the future.

SOME of the happiest dealers in the country are those fellows who will have just so many used cars and no more. When they reach the maximum they quit trading. They are happy because cash assets are so much more negotiable than assets tied up in used car stocks.

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Should Time Payment Financing Include the Used Car?

New Hampshire Dealers Contend This Would Help Lighten the Burden—Association Issues Series of Advertisements to Enlighten Public

EDITOR Motor World:—It seems to be an acknowledged fact and a generally accepted idea that used cars constitute a serious problem. Webster's Common School Dictionary defines the word "problem" as "A question to be solved." There is another term often applied to used cars, for many speak of it as a "menace." The dictionary defines "menace" as "A threat" or "To threaten." If we confine it to the lesser of the two evils we still have a problem or a question to be solved and naturally the inquiry is, "Whose problem is it and how is it to be solved?" Up to the present time it has been considered a dealer's problem and has been left largely to the dealer to solve. Hundreds of thousands of dollars have been spent by the dealers of the country in their effort to solve the used car problem, but it is as yet unsolved and that is why most dealers term it a menace, and when a situation arises which constitutes a threat to an industry then is the time to face the facts and draw conclusions as to who and what is responsible for the situation. Let us analyze the problem for a moment.

In the life of an automobile there are three great factors. Those who build them (the manufacturers), those who sell them (the dealers) and those who buy and use them. Let's start at the beginning, that is, the manufacturer. Simply told, it is this—he builds the automobile, ships it to the dealers all over the country and receives what? CASH. Nothing else but cash. It was so in the beginning and it is so now. What about the next factor, the dealer? In the beginning he received mostly cash, but as time passed he received less and less cash until finally the proportion of cash received from the sale of a new car was about half of the price—the other 50 per cent consisted of a used car. Now for the third factor, the buyers. In the beginning he paid mostly in cash but his progress was in exact reverse to the dealer—he paid less and less cash because he had a used car to offer as part payment for the new car.

Where is the menace and who is menaced? The menace is the abundant supply of used cars in the hands of the dealer, and the dealer is menaced because he is unable to turn it into cash. The owner who turns his car in as part payment is not much interested in what becomes of it. Why should he? He has got what he wants, SO FAR. The manufacturer who receives cash for the new automobiles as he ships them has not been particularly interested in what becomes of a used car taken as part payment for the manufacturer's new car. He has got his cash, SO FAR. The dealer has got more than he wants SO FAR, so much so that he is beginning to realize that it is not all his problem and that it is impossible for him to carry the burden alone. Suppose all the dealers of the country should refuse to take used cars as part payment for a new car. What would happen? Undoubtedly it would restrict the sale of new cars. Thousands of owners would continue to use the cars they possessed. If such a thing should happen manufacturers would soon have to restrict their product.

Great financial institutions have been organized through which the manufacturer can transfer new cars to dealers upon payment of a small amount down by the dealer and the balance in notes. These institutions are all successful and prosperous, for by the terms which they operate neither the institutions nor the factory assume the slightest risk, as the entire responsibility rests upon the dealer, who pays liberally for the cost of financing.

Manufacturer Gets Cash

This plan simply delivers new cars to the dealers and gives the manufacturers CASH. This kind of financing would be all right for the dealer provided he got cash. This plan of financing would probably be all right provided the manufacturers confined their product to the number of cars that could be SOLD after taking into consideration the number of cars the dealer would take as part payment, that must also be sold, but it will not suffice if, as at present, the manufacturer attempts to use it as a medium of selling ALL THE CARS THEY CAN MANUFACTURE, regardless of the number of used cars thrown on the market through the sale of new cars.

After all is said and done the problem is one of proper production or proper financing, and both seem to be largely of vital importance to the manufacturer. If so, why not look to the manufacturer for the solution of the problem?

Production of new cars which can be sold, based on the proportion of used cars taken as part payment which must also be sold, is a matter for the manufacturer to consider and determine upon, and if it is the determination of the manufacturers as individuals, or as a whole that the used car problem is the result of overproduction let steps be taken to apply the remedy.

If, on the other hand, manufacturers as individual concerns or as a whole should determine that production is on a proper basis, then is there a wonderful opportunity for proper finance by great financial institutions organized at the instigation of the manufacturers; these institutions have only to receive instructions from the manufacturers to advance to the dealer the full value of a used car taken as part payment for the sale of a new car, and for which accommodation the dealer could give the institution proper papers guaranteeing to return to the institution the entire proceeds when the sale is made whether the proceeds are more or less than the amount allowed, and thus is a problem solved.—Automobile Dealers of New Hampshire.

Editor's Note.—The Automobile Dealers of New Hampshire have been publishing in the newspapers of their State a series of advertisements frankly informing the public regarding depreciation of used car values and indicating that used cars offered in trade to New Hampshire dealers will be accepted only at actual market values. The New Hampshire dealers are trying the "mass education" method to combat the public demand for excessive allowances on used cars. The advertising campaign is being employed as a supplement to a maximum allowance plan based on the maximum allowance book of the Boston Used Car Statistical Bureau.

Write to Motor World About It

This page every week is devoted to discussions of topics of the trade by Motor World readers. Have you a suggestion to overcome a difficulty or improve some condition within the industry? Write to Motor World about it.

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Touring Bulletins on Garages a Good Service

Motorists Have Come to Expect Information and They Appreciate Efforts to Supply It

THE garage has come to be the place where the motorist expects information along with service. He may not spend a cent, but he expects the retort courteous to a hundred and one questions if he cares to ask them.

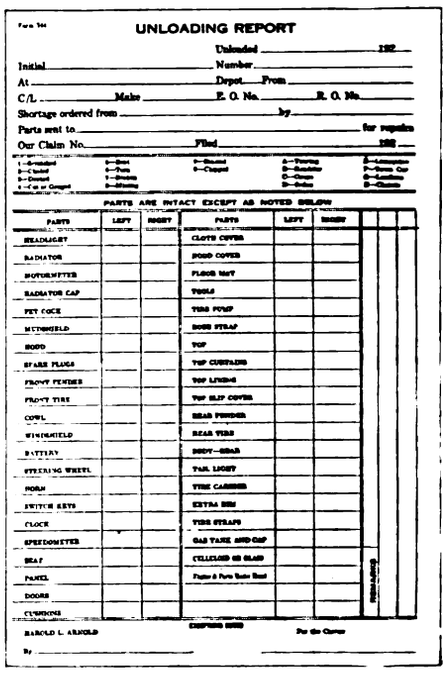
How to tell the motoring public the things it wants to know with the least loss of time and the least trouble is a growing problem with every garageman. Some solutions are being worked out. The one bit of information they all want is how far it is to this place or that place or some other place. A bulletin board with names of towns in the territory adjacent and distances to them is used by some garages to convey this information, just as the railroads maintain bulletin boards about trains to keep the public from harassing the man at the window with the "one and only" question, "Is the train on time?"

A garage at Decorah, Iowa, has a map of the roads out of Decorah painted on the side of the building. The J. G. Minert garage at Waukon, Iowa, a nearby town, has gone the Decorah concern one better by emblazoning the information about distances and towns across the front of the garage at the top, so that he who drives by may read.

Perhaps there are other methods of giving free information just as good to get motor tourists to stop at the garage and spend some money, but these give the stranger motorist the help he wants, which spells "Service."

Visiting the Trade Helps Jobber Sales Manager

"EVERY sales manager should find time occasionally to get out on the road with his traveling salesmen," says C. E. Ager, sales manager for Thos. J. Northway, Inc., Rochester, N. Y., automotive accessory jobber. "Every salesman gets stale once in a while and needs a 'shot in the arm' to stir him up and to keep him on his toes. New salesmen, too, ought to have a chance to use the sales manager's ability to get them started right. I believe, too, the sales manager cannot keep in touch with changing road conditions, nor can he give his men the right kind of encouragement, unless he himself gets out on the firing line once in a while and finds out through personal contact with the trade just what his men are up against. The trouble is that the average sales manager thinks he is too busy in his office to take the time necessary to get out. However, he should do it, just the same. Whenever I can take a day or two off I do and invariably I find my men do better work for a considerable time following such a trip on my part. Of course, I find myself snowed under with the office work when I get back, but that is no reason why I should neglect my road duty."


UNLOADING REPORT

Unloaded 192

Initial ..... Number .....

At ..... Depot ..... From .....

C/L ..... Make ..... R. O. No. ..... R. O. No. .....

Shortage ordered from ..... by .....

Parts sent to ..... for repairs

Our Claim No. ..... Filed 192

PARTS ARE INTACT EXCEPT AS NOTED BELOW

PARTS	LEFT	RIGHT	PARTS	LEFT	RIGHT
HEADLIGHT			CLOTH COVER		
RADIATOR			HOOD COVER		
MUFFLER			FLOOR MAT		
RADIATOR CAP			TOOLS		
PET COCK			TIRE PUMP		
WINDSHIELD			HOOD STRAP		
HOOD			TOP		
SPARK PLUGS			TOP CURTAINS		
FRONT FENDER			TOP LINING		
FRONT TIRE			TOP SLIP COVER		
COWL			REAR FENDER		
WINDSHIELD			REAR TIRE		
BATTERY			BODY—GEAR		
STEERING WHEEL			TAIL LIGHT		
HORN			TIRE CARRIER		
SWITCH KEYS			EXTRA RIM		
CLOCK			TIRE STRAPS		
SPEEDOMETER			GAS TANK AND CAP		
SEAT			CELLULOID OR GLASS		
PANEL			Frame & Parts Under Hood		
DOORS					
CUSHIONS					

REMARKS

HAROLD L. ARNOLD

By .....

Form for Checking in New Cars

An unusually thorough system of "checking in" new automobiles as they are unloaded from the freight cars has been organized by Harold L. Arnold, Hudson and Essex dealer in Los Angeles. Arnold has his own checkers at the yards, and any scratches, dents, cuts, bends, chips or stains or any broken or missing parts, are immediately listed on detection on a specially prepared "unloading report," and promptly called to the attention of the representative of the carrier. The carrier's agent is requested to sign the dealer's report after verification following the inspection of each automobile. With expert checkers on the job, Arnold has reduced his losses from uncollectible damages in transportation to almost nil

A Used Car Ad Suggestion

SMITH'S USED CARS · SMITH MOTOR CO · GIVE SATISFACTION

Why you get a good car when you buy a Smith used car

Our most valuable asset is the good will of our customers. Some of them buy new Leader cars, others buy used cars of one make or another. But they are all our customers and it would be folly to jeopardize their good will by making anything but true representations in selling used cars.

We accept none but good used cars, which have been carefully inspected by our expert appraiser. Before we offer these cars for sale we put them in first class condition. When they are sold they are sold with our guarantee of satisfactory service. Prices are right, too—first class automobiles at second class prices. Come in and convince yourself.

SMITH MOTOR CO.

101 Market Street **Phone Market 750**

Leader Motor Cars

Here is a suggestion for a used car ad that is designed to build public confidence in the dealer. Advertising of this kind is particularly desirable at the present time because it is one of the things that must be done to strengthen public confidence in the used automobile. When a dealer is making an effort to make the used cars he sells dependable he can well afford to sell them on that basis through his advertising. The use of the emblem provides a stamp of dependability and helps hook up the dealer's advertising from insertion to insertion

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Two-Inch Messages That Sell Tires

Another Example of the Effectiveness of Small, Timely, Frequently Used Newspaper Ads

TWO-INCH newspaper space every other day is getting fine returns for Wamsley & McClure, operating the Southeast Tire Shop, Kansas City.

The reason for the returns is chiefly in the informal, timely character of the copy in this space.

Attention is attracted by two or three words heavily displayed, touching upon a local event or a happening that is sure to be in the minds of everybody. And then by a thoughtful twist, this subject is made to lead the minds of the readers to the tire service of the company.

For instance, around election day the line said "Go to the Polls"—and this was given the desired turn with the addition, "and cast your vote for Goodyear. They are worthy of your support." The air meet, in which the Kansas City aviation field was dedicated, was snapped up for use. Armistice Day produced a reference to "armistice day for tire troubles." If there is no current event of sufficiently widespread interest to warrant use, a word or phrase is made to enlist attention to one phase of desirability of the company's tire service.

The advertising is something more than merely clever, it is true psychologically. For it establishes a point of contact and then, without "far fetching" of the connection, brings the reader to establish his favor for this company.

The advertising makes the reader think easily up to the subject of tire service. And it makes the reader remember.

A phrase is being used in most of these advertisements that cannot help wakening in almost every motorist a sympathetic smile. It is the phrase, "Invite us to your next blowout."

The advertisements are written largely by one or the other member of the firm, but the solicitor for the daily paper in which the copy is run assists in preparation, and also keeps after the firm to see that fresh stuff is supplied for each insertion.

Each advertising message is fresh, and the public therefore does not tire of reading them all.



Above is shown some samples of the ads that the Southeast Tire Shop, Kansas City, is using effectively. The ads shown here are the actual size used in Kansas City newspapers

The Dollars in Your Bins

IN the bins of your store or garage are many dollars.

The dollars on your shelves are worth just as much to you as the dollars in your cash register or the other dollars you have deposited in the bank. In fact, they need to be watched more carefully. for a dollar in cash is in a form that can be handled easily and protected without much difficulty, but a dollar that is invested in stock can easily get away from you.

Depreciation, theft, failure to charge goods sold, loss by fire and many other causes help to reduce your chances of getting back the money you have paid out for the goods you carry in stock.

Yet these goods represent dollars, and must be turned back into dollars if your business is going to pay.

It is important that the money represented by your stock be watched as closely and protected as carefully as the money you deposit in the bank.

When goods are inventoried only once a year or even less, there are countless opportunities for a part of them to get away unaccounted for. Losses of goods from stock cost many businesses thousands of dollars.

The inventory is an important part of the bookkeeping of a business. But the actual counting of the goods in stock is, by itself, only partly satisfactory, because it shows only what quantity of goods is in stock, and not what ought to be there.

Besides the actual inventory, taken every six or twelve months, or more often if possible, every business should keep up an approximate inventory. This may show either the quantity or the value of the goods on hand and should be figured every day or every week.

The inventory according to the value of the goods in each department is the simplest plan, and for many businesses is sufficiently accurate. This inventory is kept up to date by adding to the inventory figures the purchases of the day or week, and subtracting the sales at cost. The remainder is the value of the stock on hand. The sales and purchases of each day or week during the period between actual inventories should be figured in this way.

The dollars in your bins are important. Watch them.—A. M. Burroughs of the Burroughs Adding Machine Co.

Ideas On Selling and Management

You will find them on this and the opposite page—ideas that will make dollars or save dollars for the

Car Dealer Truck Dealer Equipment and Tire Dealer Tractor Dealer Repairman

Some of our readers are contributors to this section of Motor World. Have you developed a plan that might help some other men? If you have, will you write it out and send it in?

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A Schedule of Flat Rates for the Stephens Car

Over Two Hundred Individual and Twenty-Eight Combination Operations Grouped Into Twenty-Four Convenient Divisions with Time Limits for Each Individual and Combination Operation

THE service department of the Stephens Motor Car Co., Inc., has worked out time studies on two hundred and thirty-two individual and twenty-eight combination operations for the Stephens Six. These operations comprise the great bulk of service operations that are ordinarily encountered in service work on this car. The figures have been prepared from time studies covering a sufficient variety of mechanical skill and shop supervision to make them a fair average.

Axle Front—Group A

No.		Hours
1	Install steering knuckle bolt and bushings	5
2	Install tie rod bolts and bushing	2
3	Adjust front wheel bearings	½
4	Install new steering tie rod	¾
5	Line up front wheels	½
6	Install steering knuckle	2
7	Install steering knuckle thrust washer	1
8	Remove and free up knuckle and tie rod bolts	2½
9	Install new axle	5
10	Straighten axle and assemble in car	8
11	Complete overhaul of steering connections at axle	15
	Combination operations 1, 2, 3, 5	6½

Axle, Rear—Group B

1	Install ring gear and pinion	15
2	Take end play out of drive pinion shaft	2
3	Install pinion shaft bearings	5
4	Install pinion shaft	5
5	Install one rear axle shaft bearing	1
6	Install one differential bearing	8
7	Install additional differential bearings	½
8	Install differential case	10
9	Install differential cross and pinions	8
10	Overhaul differential	10
11	Take end play out of axle shaft	1
12	Install rear axle housing	15
13	Install axle shaft	1½
	Combination operations 2, 11	2½

Brakes—Group C

1	Reline service brake (one side)	2
2	Reline emergency brake (one side)	2
3	Reline one service and one emergency brake	3
4	Install set screw in internal band	1
5	Install emergency brake camshaft	2
6	Install emergency brake camshaft bushing	3
7	Adjust service brake	1½
8	Adjust emergency brake	2
	Combination operations 2, 4	2½

Body—Group D

1	Install door bumpers in one door	1
2	Install door hinge on one door	1½
3	Tighten body on frame	1

Carbureter—Group E

1	Install needle valve	1
	Float valve assembly	1
	Float valve	1
2	Install float	½
4	Install carbureter gasket at manifold	1

Chassis—Group F

Including Springs, Snubbers, Etc.

1	Install spring bolts and bushings in front springs	6
2	Install spring bolts and bushings in rear springs	8
3	Tighten all spring shackles	2
4	Install new spring shackle bolts, front	1
5	Install new spring shackle bolts, rear	½
6	Install snubber	8
7	Install front spring	2
8	Install rear spring	3
9	Oil springs	½
10	Graphite springs	6
	Combination operations 7, 3, 9	3½
	Combination operations 8, 3, 9	4½

Clutch—Group G

1	Install clutch facing	6
2	Install clutch throwout bearing	4
3	Reline clutch brake	2
4	Install clutch brake spring	1
5	Install clutch driving disk outer hub	2
6	Install clutch drive shaft	3
7	Install clutch engaging spring	4
8	Install clutch thrust bearing stud	4
9	Install clutch thrust bearing	4
10	Install throwout fork	2
11	Install clutch shaft lever	2
	Combination operations 1, 2	7
	Combination operations 3, 4	2½

Other Flat Rate Schedules

This is the thirteenth flat rate schedule published in Motor World. The previous schedules covered Buick, Cadillac, Chandler, Chevrolet, Dodge, Dort, Hupmobile, Marmon, Oakland, Overland, Paige and Studebaker. Other schedules will be published from time to time as they are worked out.

Cooling System—Group H

1	Install bottom radiator hose	2
2	Install pump outlet hose	1
3	Install water header	2
4	Install water header gasket	2
5	Repack water pump	1
6	Install pump impeller	4
7	Install fan belt	¼
8	Install new bearings in fan	2
9	Install new fan	1
10	Install top radiator hose	½
	Combination operations 1, 2, 10	1½

Dust Pan—Group I

1	Install dust pan assembly	3
2	Install radiator section dust pan	1½

Fenders—Group J

Including Splash Guards and Running Boards

1	Install right or left front fender	3
2	Install right or left rear fender	2
3	Install right or left splash guards	5
4	Recover runningboard, right or left	3½
5	Install new headlight bracket	1

Gasoline and Vacuum Tank—Group K

1	Install gasoline tank	2
2	Install gasoline gage	½
3	Install gasoline line to vacuum tank	½
4	Install vacuum tank float	1

Generator—Group L

1	Install generator	1½
2	Install generator coupling bumpers	1½
3	Install generator couplings	1½
4	Install generator armature	2
5	Install generator brushes	2
6	Install upper generator bearing	2
7	Install lower generator bearing	2
8	Install new relay	1
9	Install new ammeter	1
10	Reface commutator or armature	3
11	Install new battery to ground cable	1½
12	Solder battery to ground cable	1
13	Install new connection on battery cable	1
	Combination operations 1, 2	2
	Combination operations 2, 3	2
	Combination operations 4, 6	2½
	Combination operations 5, 10	4
	Combination operations 6-7	2½
	Combination operations 7-4	2½

Ignition—Group M

1	Install breaker arm with platinum point	1
2	Install adj. screw and platinum point	1
3	Install ignition switch assembly	1
4	Install distributor gears	6
	Combination operations 1, 2	1½

Engine—Group N

1	Burn carbon	2
2	Burn carbon and grind valves	14
3	Install new valve cap	½
4	Install new valve cap gasket	½
5	Install all valve cap gaskets	1
6	Install new push rod and guide	2
7	Install new valve	2
8	Install each individual push rod and guide	½
9	Adjust tappets	1
10	Install new cylinder head	2
11	Install new cylinder head gasket	2
12	Install new piston	5
13	Install each individual piston	1½
14	Install new rings on one piston	3
15	Install new rings on each additional piston	1
16	Install piston pin and bushing	5
17	Install additional pin and bushing	1

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No.		Hours
18	Install connecting rod	5
19	Install additional connecting rod	1
20	Tighten connecting rods	5
21	Tighten main and connecting rod bearings	12
22	Install gear case cover	5
23	Install camshaft gear	6½
24	Install crankshaft gear	6½
25	Install front camshaft bearing	10
26	Install camshaft	9
27	Change oil in engine	½
28	Install valve spring	2
29	Install additional valve springs	½
30	Install valve guides	3
31	Install additional valve guides	1
32	Install cylinder block	30
33	Install crankshaft	50
34	Install crankshaft bearing rear	60
35	Install front crankshaft bearing	60
36	Install front and rear center crankshaft bearing	60
37	Install crankcase	60
38	Install or refit main bearings	60
39	Install new flywheel	8
40	Take end play out of crankshaft	6
	Combination operations 23, 24	8
	Combination operations 31, 40	6

Muffler—Group O

No.		Hours
1	Install muffler assembly	1½
2	Install muffler front head	1½
3	Install muffler rear head	1½

Oiling System—Group P

No.		Hours
1	Install new pressure gage	¼
2	Install oil pump	2½
3	Overhaul oil pump	3
4	Install oil pump gasket	3
5	Install new distributor pipe	7
6	Clean distributor pipe	7
7	Install new oil throw ring	5
8	Install new oil pan gaskets	2
9	Install new oil gage pressure pipe	½
10	Repair oil float gage	1
11	Clean oil pan strainer	1
12	Install oil pan screen	1
	Combination operations 1, 6	7

Propeller Shaft—Group Q

No.		Hours
1	Install front universal joint bushings	2
2	Install rear universal joint bushings	2
3	Install new universal joint cross	2
4	Install front universal joint yoke	2
5	Install propeller shaft with yoke	2
6	Overhaul front universal joint	2
7	Overhaul rear universal joint	2
8	Overhaul propeller shaft	3
9	Install universal outer casing	1½
10	Install universal inner casing	1½
	Combination operations 1, 2	3½
	Combination operations 3, 4	3½
	Combination operations 6, 7	3½

Starting System—Group R

No.		Hours
1	Install new starter motor brushes	2
2	Install new starter motor armature	2
3	Install starter brushes and reface commutator	3
4	Install new starter motor	1
5	Install new starter chain	½
6	Install new starter clutch pawls	4
7	Install new starter motor sprocket	4
8	Install oversize bolt in starter motor support	6
9	Install new starter switch	½
10	Install new starter clutch	4
11	Repair starter switch	1
12	Install starter gear case cover with bushing	2½
	Combination operations 1, 2	2½

Steering Gear—Group S

No.		Hours
1	Tighten arm on worm gear shaft	1
2	Take excessive end play out of worm gear shaft	1
3	Overhaul steering gear	10
4	Tighten steering gear in frame	¾
5	Tighten steering sector	½
6	Install new steering post	4½
7	Tighten steering wheel on post	1¼
8	Install new steering wheel	1
9	Install throttle shaft	1
10	Install throttle control rod	1
11	Install steering worm gear	4½
12	Install steering worm	4½
	Combination operations 1, 2	1½
	Combination operations 11, 12	6

Tops—Group T

No.		Hours
1	Install top deck and side quarters	6
2	Install glass in rear curtain (one only)	1
3	Install rear curtain	2

Gearset—Group U

No.		Hours
1	Install gearset assembly	5
2	Install gearset case	8
3	Install high and intermediate sliding gear	5
4	Install low and reverse sliding gear	5
5	Install countershaft drive gear	8
6	Install countershaft	8
7	Install countershaft bushings	10
8	Install gearset main drive shaft	5
9	Install front bearing on spline shaft	5
10	Install rear bearing on spline shaft	5
11	Install gear shift rod	2
12	Install main gearset drive pinion	8
13	Install main gearset drive pinion bearings	8
14	Install reverse idler gear	1
15	Install countershaft low gear	9
16	Install gearset hand control base	2
17	Install countershaft interior gear	9
18	Install gear shift fork	2
	Combination operations 3, 4	5
	Combination operations 8, 3	5
	Combination operations 11, 18	2½
	Combination operations 17, 3	5

Wheels—Group V

No.		Hours
1	Install front wheel	1
2	Install front wheel hub	1½
3	Install front wheel outer bearing	1
4	Install front wheel inner bearing	1
5	Install rear wheel	2
6	Install rear wheel hub	2
7	Install rear wheel or axle shaft bearing	2
8	Install new rim	½
9	Install new rim bolt	¼
10	Install new rim bolt nut	¼
11	True up rim	½
12	Grease wheel bearings	2

Windshield—Group W

No.		Hours
1	Install upper frame with glass	1½
2	Install lower frame with glass	1½
3	Install windshield complete	3

Miscellaneous—Group X

No.		Hours
1	Fill all grease and oil cups, universal joints, starter clutch and clutch hub	3½
2	Fill gearset and differential	½
3	Remove all wheels, fill bearings with grease and adjust bearings	1

Can You Use These Sales Letters?

Letter to a Grocer

Diamond Groceries, Inc.,
Newtown, Ohio.

Attention Mr. B. O. Roberts

Dear Mr. Roberts:

Are you satisfied with your delivery service?

Delivery of merchandise to customers' homes is a service you render to get and hold business. This service must be performed so that it is an asset to your business and it is desirable to provide it at as low a cost as is consistent with efficient and satisfactory service.

The Empire Light Delivery Truck fitted with panel body is the right equipment to handle this class of work. Business men who are using this truck find that it makes their delivery service efficient and dependable. Their records show that this truck is economical to operate.

The panel body we furnish with this truck combines utility with beauty. It is an advertisement that a business can be proud of.

Will you give our representative an opportunity to talk over your delivery service with you? We will be glad to have him call at your office at any time that is convenient to you.

Letter to a Coal Dealer

Lehigh Coal Co.,
Newtown, Ohio.

Mr. F. J. Smith, Gen. Mgr.

Dear Mr. Smith:

Your business consists essentially of getting coal into your yard and out again at a profit to yourself and with satisfaction to your customers. The profits you make depend largely on the efficiency of your transportation methods.

Empire Trucks provide economical transportation for coal dealers. We can prove this by the cost record of coal dealers who use them. Any Empire owner will testify as to the reliability of this make of truck. The body equipment recommended to any prospective purchaser is selected only after we have made a careful study of his problems. The body we recommend is the one that will have the greatest usefulness in actual service.

May we send our representative to study your transportation problems? It will place you under no obligation. We feel confident that he could make some suggestions that would reduce your transportation costs and improve your service.

A Headlamp Adjusting Letter

Do your headlamps give you enough light on the road?

Or are they blinding other drivers and pedestrians?

Eight out of ten headlamps are not correctly adjusted to give the best driving light on the road, where it belongs. Due to faulty adjustment in the first place or to the bending of lamp brackets through accident, many lamp beams cross each other, both go off to one side or one or both point up in the air.

For a flat charge of one dollar we will test and adjust your headlamps so that they will give you from two to five times as much light on the road and prevent a blinding glare, which may lead to unpleasant contact with police officers or liability damages for accidents. This is a small insurance premium to pay for such a great benefit.

Headlamps get out of adjustment easily. You should have a test made every two months at least. It takes only a few minutes. And you will be glad you came.

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This Storage Receipt Protects Garageman

Form of This Type Makes Specific Notations Possible Thereby Preventing Fraudulent Claims

Editor Motor World:—We run for the winter months from September to May 31, a winter dead storage rate on automobiles. I would like to have a legal form of receipt or contract that we could give to the party whose car we take in for storage, assuming no responsibility in respect to the running condition of the car. Any help in this matter will be greatly appreciated. Edgemere Garage & Sales Co., Inc., Edgemere, N. Y.

Answer:—When cars are accepted on dead storage it is important for the person receiving them to specify just what has been received so no fraudulent claims can be successfully made thereafter. The following form of receipt should serve in all ordinary cases. The condition of the upholstery, etc., if in poor condition when received should be stated. A clause may be added if desired to cover freedom from liability for defective running condition, etc.

STORAGE RECEIPT

WILLIAM C. JONES

Office and Warehouse,
372 West 197th Street,
Telephone 7165 Stag.

Received..... 192....

Name ..... Style Job .....

Address ..... Rate per month .....

BODY

Annunciator
Arm Straps
Apron, storm
Batteries, dry
Batteries, storage
Board, floor
Board, heel
Broom, whisk
Bulbs, electric
Buttons, push
Carpets, outside
Carpets, inside
Cigar Lighter
Clocks
Covers, dust
Covers, slip
Curtains, side
Curtains, silk
Curtains, storm
Cushions, seat
Cushions, foot
Cushions, pillow
Dome Light
Footrest, brass
Foot Warmer
Glass
Glass Frames
Handles, door
Handles, pillar
Hat Rack
Mat, cocoa
Megaphone
Robe, carrier
Seats, extra
Speaking Bulb
Speaking Mouth Piece
Speaking Tube
Switches
Top, extension
Top, envelope
Top, Victoria

TOILET CASE

Ash Receiver
Card Case
Maps
Manicure Set
Mirror
Note Book
Pad
Pencil
Perfume Bottle
Vase, flower
Watches
Umbrella Holder

WEARING APPAREL

Boots
Caps
Coats, duster
Coats, leather
Foot Warmers
Robes
Gloves
Goggles
Trousers
Cigar Case

MISCELLANEOUS

Battery Box
Bumper, front
Bow Rests
Caps, axle
Coil Sparks
Fenders
Horn, bulb, tube
Horn, Klaxon
Horn, siren
Knuckle Covers
Keys
Lamps, dash
Lamps, head
Lamps, pillar
Lamps, tail
Lamp Covers
License Pad
Magneto
Mats, linoleum
Mats, rubber
Meters, speed
Mirroscope
Radiator Cap
Shock Absorbers
Straps, hood
Tank, gasoline
Tank, Prest-o-Lite
Tire Chains
Tire Covers
Tire Holders
Tires, extra
Tires, extra mounted
Tires, inner tubes
Tire Pumps
Tire Tools
Tool Box
Trunk
Trunk Cover
Trunk Rack
Trunk Straps
Wheel Rims
Windshield, glass
Windshield, leather

TOOLS

Bits
Bolts
Drills
Files
Grease Can
Hammers
Jacks
Oil Can
Oilers
Oil Guns
Pliers
Polish
Repair Kit
Spark Plugs
Straps
Screwdrivers
Wrenches, monkey
Wrenches, special
Wrenches, rim
Wrenches, hub

No claim for shortage on this receipt will be recognized after 4 days from receipt of goods in warehouse.

This storage receipt is not negotiable.

Goods are not insured unless so ordered by owner.

Not responsible for moths or checking of panels, but every precaution will be taken to prevent them.

Responsibility of the undersigned for any piece or package enumerated in schedule including contents of same is in any event limited to the sum of $50 unless the value thereof is made known at the time of storing and receipted for on the storage receipt. An additional charge will be made for a higher valuation.

WILLIAM C. JONES.

Damages for Loss of Use of Car

That damages for the loss of use of a motor car, based on the fair and reasonable rental value of the car for the number of days it could not be used because it was injured in a collision, cannot be allowed when there is no evidence that such amount has been paid by the owner or that any sum was paid for the use of another car during such time, was the decision of the court in the New York case of Zerman vs. Misroch, reported in 192 New York Supplement, pg. 881.

Village Right to Restrict Curb Filling Stations

In the recently decided Massachusetts case of North Adams vs. Wertz, it was held by the court that a village has a right to restrict the installation of a curb gasoline filling station, even though it may be shown that the property on which the station was to be erected had for a long time been used as a hotel, and it had been a steady custom for years to put chairs out on the sidewalk for the guests.—188 N. W. 527.

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

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Maximum-Minimum Time Estimates for Electrical Repairs

Schedules Cover Equipment of Nine Makers of Starting-Lighting Systems and All Types of Ignition

THE application of a flat rate schedule to electrical service is complicated by certain fundamental characteristics of this business. First, there is the large number of makes and models of equipment. Second, the accessibility of the electrical equipment varies widely with the make of car. Furthermore, it is frequently impossible to determine the nature and extent of the trouble without a bench test or a disassembly of the unit.

Some of the advantages of a flat rate have been obtained by Barter-Oppenheim, Inc., electrical service station dealer in Newark, N. J., through the development of maximum-minimum time estimate schedules. These schedules cover bench repairs only. Time spent in removing and installing units is charged on an hourly basis.

This dealer guarantees all his repair work to be equal to factory specifications. For his own protection, he accepts all work with the understanding that a complete repair will be made. Whether the charge is the minimum, the maximum, or some intermediate amount depends on the scope of the repairs that are found to be necessary on the disassembly and test of the unit.

Westinghouse

	Min. Hrs.	Max. Hrs.
Generators, 202-208	2½	4½
236-246	4	6
400-450	2	3
150-760-780	2	3½
Regulators	1	2
Motor-generators	3	5
Starting motors with reduction	2½	4
With bendix	2	3½

Delco

Motor-generators	Min. Hrs.	Max. Hrs.
Round type with igniter	3½	4½
Round type without igniter	2½	4
Regular type with igniter	3	5
Regular type without igniter	3	4½
Generators (two unit type)	2	3½
Starting motors (two unit type)	2	3½

Gray & Davis and American Bosch

	Min. Hrs.	Max. Hrs.
Generators, CI-GE	3	5
T-S	2	3
200-233, 240, 600-800, 1000	2	3
M69	3	6
Regulators	1	1½
Starting Motors Y with reduction	3	4
with bendix	2	3½
H1-H2	3	5

Remy

	Min. Hrs.	Max. Hrs.
Generator, 200-900 types	2½	3½
0 types	3	4
Starting motors, plain	2	3½
With reduction	2½	4

Auto-Lite

	Min. Hrs.	Max. Hrs.
Generators, G-GA-GF	3	4
GB-GC-GD	1½	2½
GG-GH-GS-GK	2½	4
Starting motor with reduction	3	4½
With bendix	2	3½

Bijur

	Min. Hrs.	Max. Hrs.
Generators, L61-L-220-P types	2	3½
K643-646	2½	4½
Motor-generators	3	5
Regulators	1	1½
Starting switches	½	1
Starting motors with reduction	3	4
Starting motors with Bijur shift	2½	3½

Northeast

	Min. Hrs.	Max. Hrs.
Motor generators 4 lead type	3	4½
3rd brush type	2	4
Generators (two unit type)	2	3
Starting motors (two unit type)	2	3½

Dyneto

	Min. Hrs.	Max. Hrs.
Motor generators	2	4
Generators (two unit type)	2	3
Starting Motors (two unit type)	2	3½

Battery Ignition

	Min. Hrs.	Max. Hrs.
All Makes Igniters	¾	1½
Coils	¼	¾

Magnetos

	Min. Hrs.	Max. Hrs.
All Makes Single Spark	2	3½
Two spark	2½	3½
Dual	3	4½

Lengthening the Life of Ford Transmission Lining

PROBABLY no one feature of the Ford is "cussed and discussed" quite as much as the transmission lining problem. The fact that this important item requires frequent replacement, and that the necessity usually arises at the most inopportune time, is the argument invariably used against it.

Experience proves that the "Fording" public needs a lot of education in the proper care and use of the transmission. We have all known drivers who seemed to be able to make a set of linings last indefinitely, and also those with whom they seemed to vanish like the proverbial "June frost." There is no reason why a set of any of the high grade linings now on the market should not last at least 5000 miles under average driving conditions.

To begin with nearly all bands are set too tight when they are first installed. This is done to obviate the necessity of an early adjustment as they will always loosen up considerably when breaking in.

A new band is very prone to burn before the oil has a chance to penetrate the fibre, and a band once glazed over has no further chance for lubrication.

A new set of lining should be carefully fitted to a transmission drum before installing in the car and should be bent to a true circle. Take special care that the ends are not bent inward as the bands, on contraction, strike the drum at this point first.

The original adjustment should be just tight enough to be serviceable, and will require tightening after a few miles running. Never set the bands so close that they are not perfectly free on the drums when worked back and forth by hand. Nothing is gained by a tight adjustment as the lining will wear to a definite clearance anyway.

Bear in mind that there is no wear whatever on the low or reverse lining when that gear is engaged. When running on low gear with the pedal properly depressed, the drum does not revolve. Allowing the low to slip, is what wears out the lining prematurely. Hold the pedal down with a firm steady pressure and do not allow the band to become so loose that the pedal touches the floor board.—H. V. D. Sweet.

Better Mechanics

ARTICLE No. 267

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.

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A. E. A. Exhibit Shows Trend Toward Better Tools and Accessories

Chicago Show Introduces Many New Items of Automotive Equipment—Better Packing a Merchandising Aid

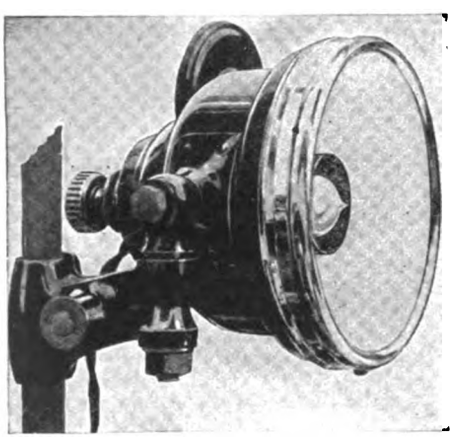
ON this and the following pages will be found brief descriptions and illustrations of half a hundred new pieces of automotive equipment, parts and shop equipment which were on exhibition at the Coliseum during the convention of the Automotive Equipment Association.

In the field of shop equipment there is a noticeable trend toward better tools and new tools designed to turn previous hand operations into machine operations, thus saving both time and money. The equipment that is for resale presents many improvements, all tending toward more utility to the user. This class of goods is also featured by better packing, individual cartons and more systematic packing of cartons in cases for shipping. The wider use of the individual carton is of great benefit to the retail dealer in handling.

Wakefield Combined Spot Light and Warning Signal

F. W. Wakefield Brass Co., Vermillion, Ohio.

The general appearance of the spotlight is conventional but it has a cylindrical sleeve of red glass which can be pushed forward by operating a thumb lever so that the red glass surrounds the bulb. By placing the glass in the position the spotlight becomes a warning signal as occasion requires.



Lempco Axles and Driveshafts

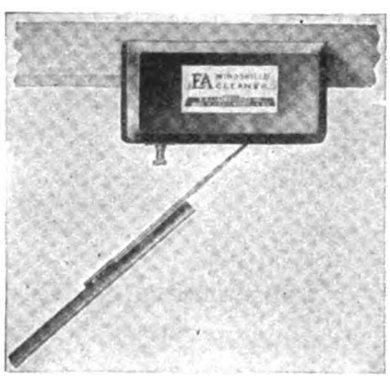
Lake Erie Metal Products Co., Cleveland, Ohio.

The axles and driveshafts are made in sizes for practically all passenger cars. A display rack which holds nine shafts is furnished to dealers stocking the axles. The axles are made of heat treated open hearth steel, which is machine straightened after rolling. The carbon content is 40-50, manganese 60-80 and sulphur, silicon and phosphorus not exceeding .005.

Circle S Automatic Windshield Cleaner

F. M. Stewart Mfg. Corp., Chicago

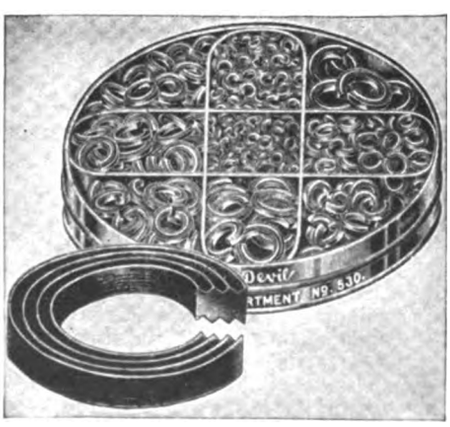
This automatic windshield cleaner is vacuum operated and an inside adjustment is incorporated in the design. The motion of the squeegee is supplied by a vacuum operated oscillating mechanism inclosed in the enameled case. The actuating unit has few metal parts. A double rubber bellows is caused to expand and contract, thus supplying the intermittent forward and backward motion to the squeegee.



Corcoran Red Devil Lock Washer

Smith & Hemenway, Inc., Irvington, N. J. Price $7.70 for assortment of 530.

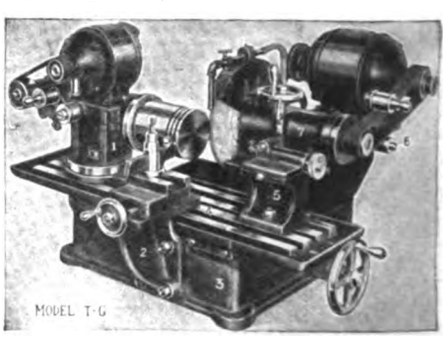
A new pattern lock washer has upon each face three concentric grooves which form three sharp ridges. The washers are put up in 100 to 1000 size packages and are also furnished in assortments of 530 consisting of nine sizes. These are packed in metal boxes with tight covers.



Franklin Model TG Multi-Purpose Tool

Franklin Machine & Tool Co., Springfield, Mass.

This firm has been marketing a multi-purpose tool designed especially for refacing valves, cleaning carbon and sharpening small hand and machine reamers. To meet the demands for a tool having a wider range of application, a new machine has been brought out which is designated model "T G." The model "T G" will accomplish the tasks of the former and smaller model, in addition to which it functions as turning lathe and piston grinder. The work head of the machine receives its power for rotation from a ¼-hp. motor which is belt connected to the work head spindle. A wet grinding attachment is part of the machine and provision is made to provide continuous circulation of the cutting fluid. The wheel head of the machine receives its drive from a ½-hp. motor mounted on a cross slide. A head feed wheel graduated in thousandths controls the feed of the 10-in. grinding wheel. The table is mounted on dovetailed slides fitted with gib for adjustments. A hand wheel is fitted for control of the feed screw. The tail stock is adjustable to accommodate for taper turning and grinding.



Presto Radiator Heater

Metal Specialties Mfg. Co., Chicago

Considerable improvement has been made in the design of the Presto automobile engine and radiator heater. This is an electrical heater of a portable type to be hung in a small garage or under the hood of a car. A single heating coil is now used instead of the double coil formerly used, and the price has been reduced from $5 to $3.50.

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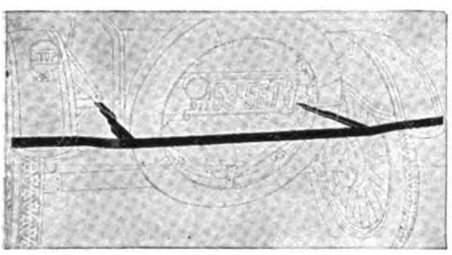
NEW AUTOMOTIVE EQUIPMENT AT THE A. E. A. SHOW

Marquette Fender Brace

Marquette Mfg. Co., St. Paul, Minn.

Price $4.75

A new addition to the Marquette line is the fender brace. It is of angle iron construction and has its anchorage at the wooden sill of the body. The company is also making shock absorbers of the modified cantilever type which utilize Ford standard bushings at all journaling points. The price per set of four is $17.



Straightline Fan Belt

Rossendale-Reddaway Belting & Hose Co., Newark, N. J.

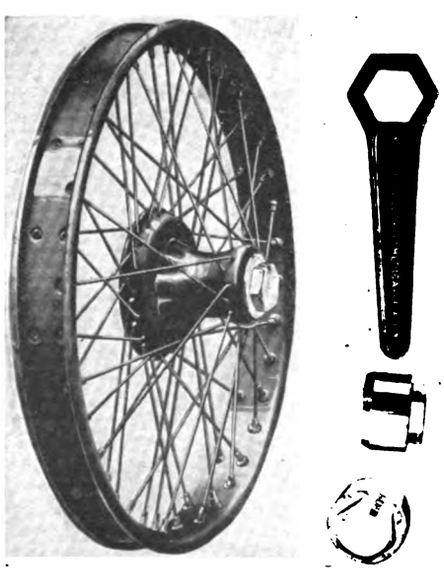
Price 50 cents for Ford sizes.

The belts are made of canvas turned in and machine stitched lengthwise. They are treated with a preparation to resist the action of oil. Made for all models of cars and trucks. Each belt is packed in an individual box, ten boxes to a carton.

New Type House Wire Wheel

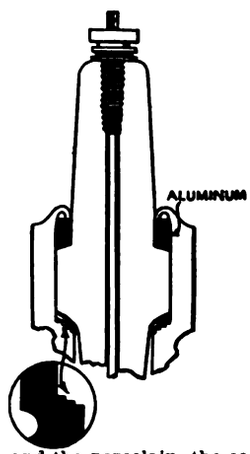
Wire Wheel Corp. of America, Buffalo, N. Y.

A new type House wire wheel bears the model number 3 and has a distinctive hexagonal hub cap. This cap is heavier and provides greater bearing surface for the wrench and permits greater leverage on the wrench when the wheel is being put on or removed. The hub caps are stamped left and right and have arrows indicating the direction to turn for off or on. The wheels are supplied in sets of five with a carrier for the extra wheel, four inner hubs, four hub caps, hub cap wrench and a spoke nipple wrench.



Improved Bosch Spark Plug

American Bosch Magneto Corp., New York City.



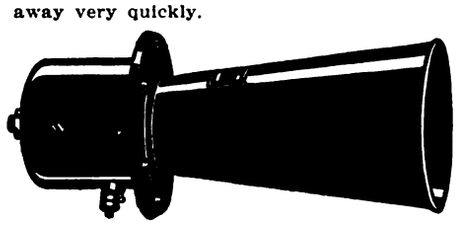
Several changes have been made in the construction of the Bosch spark plug. Instead of crimping the steel shell directly upon the porcelain as heretofore, there is a deep aluminum washer inserted to separate the two parts. The idea of this washer is to compensate for unequal expansion between the steel and the porcelain, the coefficient of expansion of the aluminum being correct to make the compensation. It is claimed that this prevents undue stresses and prevents any tendency to crack the porcelain or loosen it. A new type of asbestos washer is used at the bottom. A toothed seat holds this washer in place.

Klaxon Model 8 Horn

Klaxon Co., Newark, N. J.

Price $7.50

The new Klaxon model has the motor armature carried in ball bearings. This enables the horn to get up speed very quickly and, therefore, the horn responds instantly to the pressure of the button. The initial discharge on the battery is considerably lower, due to the fact that the motor gets away very quickly.

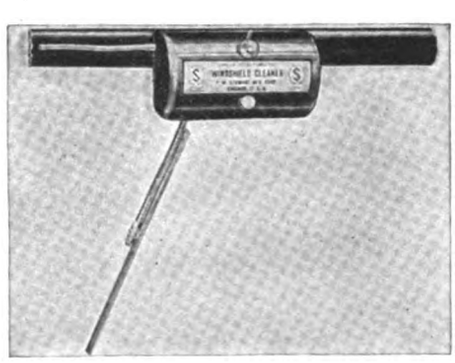


E. A. Electric Windshield Cleaner

E. A. Laboratories, Brooklyn, N. Y.

Price $5.50.

The automatic windshield cleaner is operated by a small electric motor with a 40 to 1 gear reduction. The current drawn is 2.75 amperes at 6 volts and the device is said to exert a force of 13½ lb. at the center of the moving arm. The control is by means of a switch on the dash.

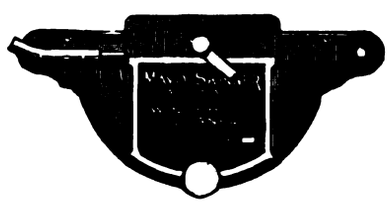


Mayo-Skinner Automatic Windshield Cleaner

Mayo-Skinner Mfg. Co., Chicago

Price $5

A new model of windshield cleaner has been developed. The new cleaner incorporates many of the features of the previous standard model, but is of smaller overall dimensions. As with the larger style put out by this concern, the new model is vacuum operated through connection with the engine manifold. Better production methods have made possible a lower price on the new model.



Green Pyralin Visor

Metal Specialties Mfg. Co., Chicago

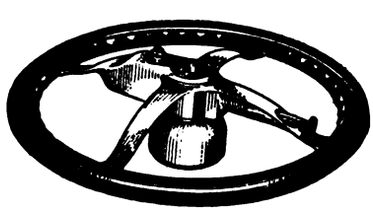
Price $7.25

The visor is made of green pyralin 1/32 in. thick. It has a double curve and is adjustable as to angle. One width fits all cars either open or closed. The edges of the pyralin are metal bound, so that there is no possibility of the transparent material being bent or broken.

Spencer Locking-Tilting Steering Wheel

Spencer Mfg. Co., Spencer, Ohio.

A combination wheel lock and tilting steering wheel. The working parts are inclosed in a hardened steel forging to prevent tampering. The wheel spider is a heavy die casting of aluminum and is hinged in such a manner that the lock may be operated while the wheel is either tilted or in the down position. Made for Ford, Dodge, Chevrolet, Overland, Maxwell, Star and Gray cars. Packed in individual cartons, ten to a case.





Model for Ford Cars

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NEW AUTOMOTIVE EQUIPMENT AT THE A. E. A. SHOW

Marquette Rim Tool

Marquette Mfg. Co., St. Paul, Minn.

Price $30

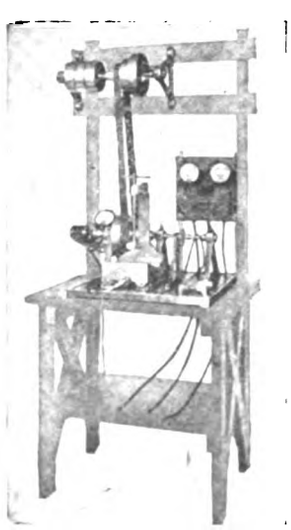
This is an all-metal universal rim tool. The forward arm is pivoted so as to swing to the right, thus coiling the rim into a smaller circle instead of pushing the end in. It is also pivoted to swing straight up out of the way when the rim is being placed or removed from the table. The threaded spindle is 1⅛ in. in diameter with square threads. Weight complete is 120 lbs.



Weidenhoff "Add-a-Unit" Electric Test Equipment

Joseph Weidenhoff Co., Chicago

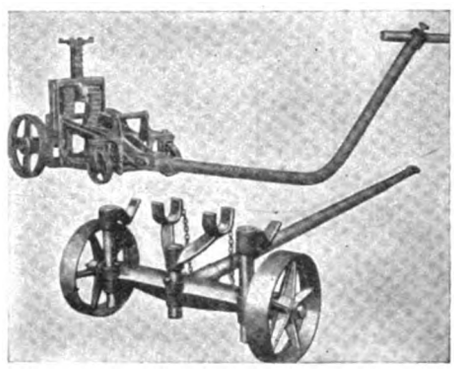
The "Add-a-Unit" is built on the principle of the sectional bookcase. It is so designed that, as the requirements of a small service station develop and more elaborate is needed, standard units may be added until the stand is ultimately brought up to the requirements of the particular establishment. The assembly as shown is for use where power is taken from a line shaft. The countershaft is fitted with tight and loose pulleys, provision being made for a crossed belt to give right and left rotation: Power is delivered to the generator under test by direct chain drive from the jack shaft. Tachometer, instrument panel, adjustable spark gap, and spark coil testing device are optional, and may be added as required.



National Standard Towing Truck

National Standard Co., Niles, Mich.

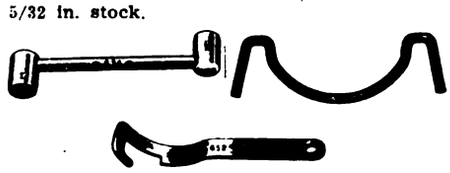
A new towing truck is furnished with either plain or rubber tired wheels and weight 215 lb. A collapsible tongue is furnished which has a range of extension of from 7 ft. 3 in. to 12 ft.



New Mossberg Wrenches

Frank Mossberg Co., Attleboro, Mass.

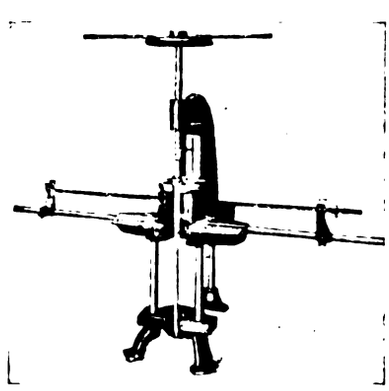
Many new models of wrenches have been added to the line, three of which are illustrated. The spring perch wrench No. 634 is designed to facilitate the installation of shock absorbers on the Ford car or any work that requires the removal of the spring perch nuts. Tool No. 649 is a new addition to the Mossberg line and is designed to remove stubborn headlight rims of the Ford headlamp. Tool No. 652 is designed exclusively to assist the operations on the Ford universal joint assembly. The wrench is of 5/32 in. stock.



Canedy-Otto Model 3½ Press

Canedy-Otto Mfg. Co., Chicago Heights, Ill.

This is a combination arbor and straightening press. The pressure screw is of carbon steel with a No. 6 Acme thread, and will produce 30-ton pressure. The capacity is 6 ft. between centers. A feature of the device is the combination centers, which are slidable and which carry vee blocks to accommodate a shaft which is to be straightened from the datum point supplied by the shaft journal. The maximum distance between centers is 72 in. and the weight 645 lb.

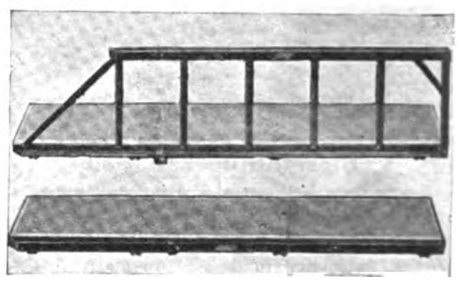


Griprack Luggage Carrier

Milwaukee Motor Products Co., Inc., Milwaukee, Wis.

Prices $5, $6 and $7, according to style

This is an all-steel device which attaches to the edge of the runningboard and when in the extended position it makes a guard for holding suitcases or other luggage. It is self-inclosed, dust tight and is provided with slots for straps. Style A for Ford, Chevrolet and Dodge cars is 44 in. long and sells for $5. Style B for Studebaker, Buick, Nash and similar cars is 56 in. long and sells for $6. Style C for Hudson, Cadillac, Marmon and other large cars is 69 in. long and sells for $7. The device is enameled black, the finish being baked on.



Thermoid Brake Lining Machine

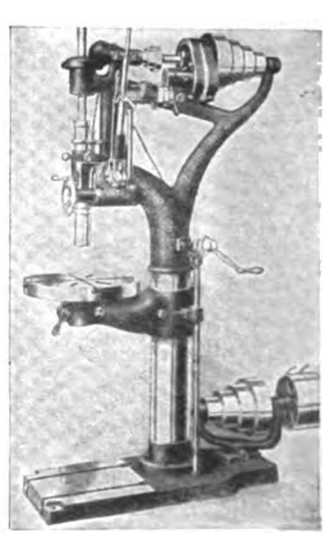
Thermoid Rubber Co., Trenton, N. J.

The machine punches holes in the lining and, by the substitution of a different tool, drives the split tubular rivets home with the heads below the lining surface, giving the same effect as countersinking.

Canedy-Otto 21-in. Upright Drill

Canedy-Otto Mfg. Co., Chicago Heights, Ill.

The drill has a diameter capacity of 0 to 1½ in., and will drill to the center of a 21⅛-in. circle. It is equipped with 4 step cone pulleys of 2⅞-in. face. Can be furnished with plain lever feed, wheel and lever feed and a combination of the two. A back gear or power feed are furnished on request. The horsepower required is 1½ and the weight approximately 700 lbs.



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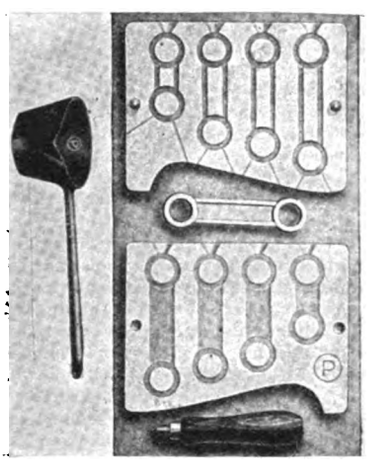
NEW AUTOMOTIVE EQUIPMENT AT THE A. E. A. SHOW

Ohio Pattern "O-P" Speed Ladle

Ohio Pattern Wks. & Foundry Co., Cincinnati, Ohio

Price $1.20

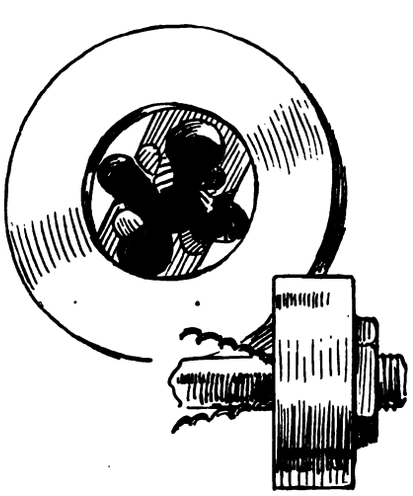
The "O-P" speed ladle is used in battery work. The bowl is 3 in. in diameter. Various molds for casting the pillar cups, straps, and cell connectors are also made. Most popular of these molds is the screw mold, which enables the battery man to make his own lead-headed terminal screws.



Self-Cleaning Die

Conont L. Donelson Co., Conway, Mass.

A new type of threading die which has a little scoop shaped recess on the side of each cutting projection, this giving the die the self-cleaning feature. Each die is made in two sections which are interchangeable and which will feed equally well from either end. Made in all standard sizes.



Buckeye Bronze Backed Bushings

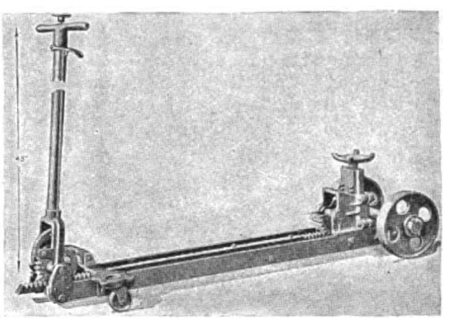
Buckeye Brass & Mfg. Co., Cleveland

Replacement bronze and bronze back babbitt bushings are being made. The centrifugal process of deposing babbitt being utilized on the bronze backed bushings. Miscellaneous and spring eye bushings are featured, and for the guidance of the purchaser a specification booklet has been prepared. Data pertaining to the dimensions of piston pin, steering arm, king bolt, and tie rod bushings are included in this booklet.

Manley Quick Acting Jack

Manley Mfg. Co., York, Pa.

The jack is for lifting either the front or rear end of a car or truck. The slack is instantly taken up without working the handle and the operating lever is so designed that it can be worked either in a vertical or horizontal position. Thirty degrees of motion is sufficient to work from one ratchet tooth to the next so that there are three consecutive positions between the horizontal and vertical planes.

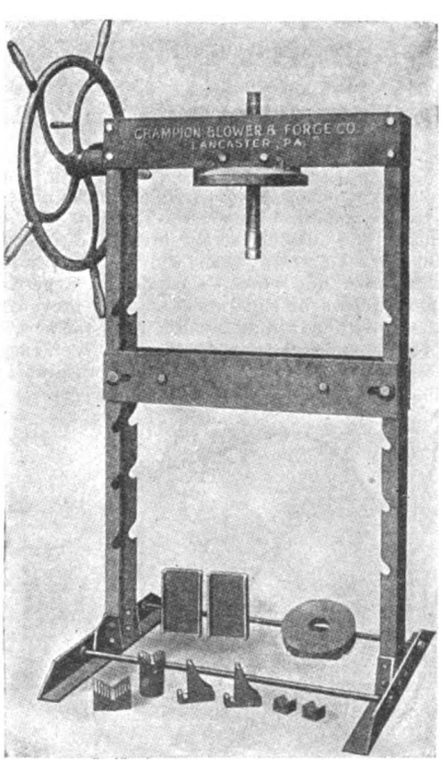


Champion 30-Ton Garage Press

Champion Blower & Forge Co., Lancaster, Pa.

Price $80

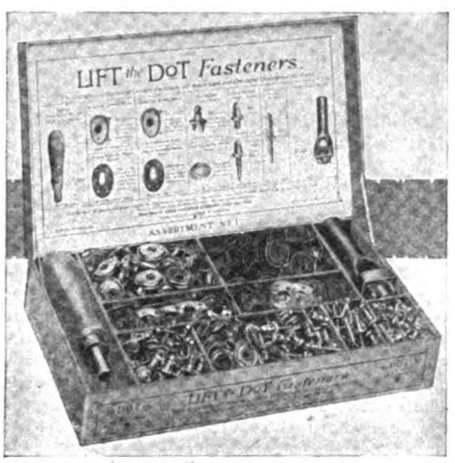
This garage and service station press has leverage whereby 100 lbs. exerted on the hand wheel develops 75 tons pressure on the screw. The hand wheel is geared three to one with heavy inclosed bevel gears operat- a 2-in., 4-pitch acme thread screw. The hand wheel, weighing 57 lbs., is used as a flywheel to run the spindle up and down quickly. The table can be raised or lowered by one man. The uprights are 5-in. channels, with cross bars 6 in. wide by ⅝ in. thick. The width between uprights is 32 in. and the up and down travel of the spindle 9 in. It occupies a floor space 36 by 39 in. and the weight is 485 lbs.



Lift-the-Dot Fastener Assortment

Carr Fastener Co., Cambridge, Mass.

Lift-the-Dot, Common Sense and Durable Dot fasteners are now being put up in attractive box assortments, each box containing all the different patterns together with the necessary tools for attaching them. Besides the large boxes there are also small assortments for retail sale to be used by car owners. Refill packages are furnished to renew stock in the compartments of the large packages as they become exhausted.

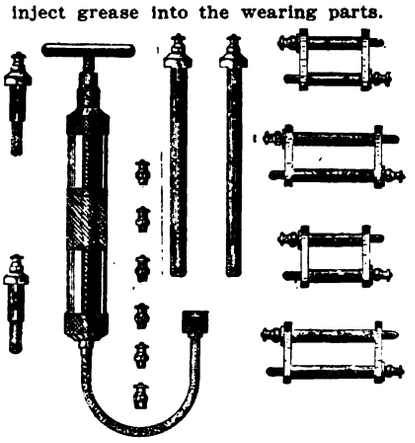


Rose Chassis Lubricating System for Fords

Frank Rose Mfg. Co., Hastings, Neb.

Price $8.64.

The system consists of special spring shackles, tie rod bolts, spindle bolts and the necessary fittings so that a force grease pump may be connected to any of the fittings to inject grease into the wearing parts.



Genasco Oil and Greases

Barber Asphalt Co., Madison, Ill.

This firm has supplied quantities of its products to the paint and allied industries and has recently perfected a method of distilling a solid hydrocarbon. The solid hydrocarbon appears in a semi-crystal form, the base of which is paraffine. It is claimed by the manufacturer that the distillation process insures uniformity of the product which is now being offered in oils and greases bearing the trade name of "Genasco."

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NEW AUTOMOTIVE EQUIPMENT AT THE A. E. A. SHOW

Alvord Combination Reamer and Facing Tool

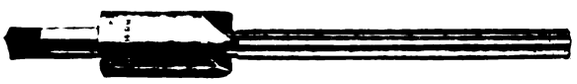
Alvord Reamer & Tool Co., Millersburg, Pa.

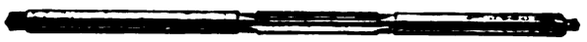
A new combination reamer and facing tool, for reaming the spindle body bushings of the Ford car, and at the same time facing these bushings so that the spindle body will accurately fit between the front axle trunnions.

Alvord Pilot Reamer for Ford Spindle Bushings

Alvord Reamer & Tool Co., Millersburg, Pa.

A pilot reamer of expansion type, for reaming Ford spindle bolt bearings in alignment. The expansion feature compensates for wear, and permits of accurate work with bolts which vary slightly in size.





Pyrene Adds Phomene and Guardene Extinguishers

Pyrene Mfg. Co., Newark, N. J.

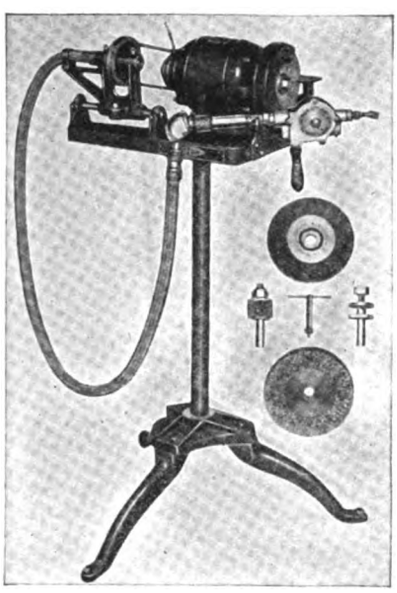
Two additions have been made to the line of fire extinguishing apparatus marketed by the Pyrene Mfg. Co. The carbon tetrachloride type is still manufactured and is featured in the small hand sizes of extinguishers. The new products are called phomene and guardene. The former is being marketed in the 2½-gal. container, which is the standard wall size. Guardene is the Pyrene Co.'s name for their acid and water type of equipment, which externally has the appearance of the conventional extinguisher of this type. The method of discharging the contents is unique and it is claimed that the tank can be charged after usage in less than five minutes. Both the phomene and guardene extinguishers are recommended for service where the duties are not as heavy as would necessitate the use of a liquid carbon extinguisher such as the pyrene. Neither of the devices mentioned are for use where they may be subjected to freezing temperatures.



Sioux Flexible Shaft and Attachments

Albertson & Co., Sioux City, Iowa.

This machine can be used for a wide variety of work in the automotive maintenance station or repair shop, machine shops, etc. It consists essentially of an alternating-current ¼-hp. motor, stand, flexible shaft with universal joint and single control, three-speed drive pulley and belt, one 6-in. emery wheel and one 4-in. emery wheel and arbor, a 4-in. wire brush and arbor, one ¼-in. capacity Jacobs chuck, including arbor, and the shaft is bent or curved during use it does not at any time come into contact with the housing. The shaft itself is music wire, the first winding is of small wire and is followed by larger sizes. Each wire is wound in the opposite direction.

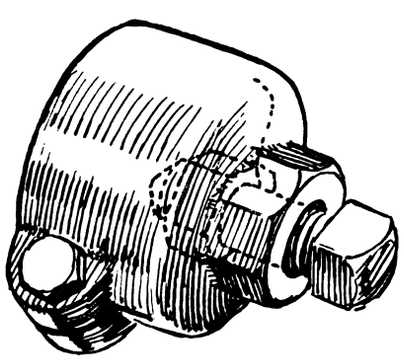


Le Compte Wheel Puller for Fords

The Le Compte Co., Newark, N. J.

Price $1

The casing of the puller is of conventional type, clamping around the threads of the hub. The driving screw instead of being threaded directly into the casing, goes through a nut which is carried in a hexagonal recess inside the case. This prevents the nut from turning but allows of the screw being pounded with a hammer, in which case the hammer below is communicated directly to the shaft and not to the casing.



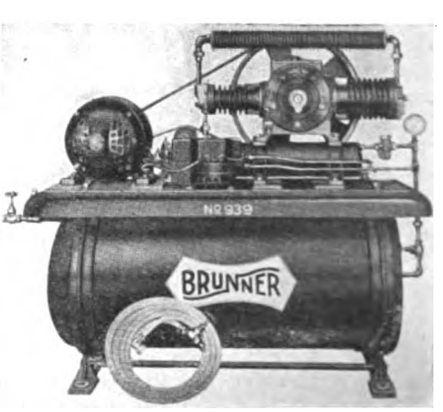
Three New Brunner Compressors

Brunner Mfg. Co., Utica, N. Y.

Several models of the Brunner air compressors have undergone slight modifications, but three brand new types, models 932, 939 and 965, have been added to the line. The model 932 has been brought out to meet the needs of the majority of dealers who require air service. It is not sufficiently large for the shop which uses pneumatic tools, nor for the oil station which operates its pumps by air pressure. It is self-operating, having an unloader which maintains the desired tank pressure and at the same time relieves the motor of the starting load. All pipe fittings are of brass and the general features of the outfit follow the usual Brunner construction. The price on this outfit ranges from $325 to $340, depending on the motor equipment.

The model 939 is the fastest working ¾-hp. unit built by the company. Pressure in the 32-gal. tank rises from 0 to 175 lbs. in less than 25 min. This efficiency is said to be obtained by the dual valves, larger intercooler and snugly fitted, polished pistons. This outfit ranges in price from $370 to $394.

Model 965 is a heavy-duty assembled unit and has ample capacity, it is stated, to meet the needs of the largest and busiest filling stations. The assembly is very compact. The top of the compressor is 48½ in. from the floor and the outfit is 65 in. long, with a width of 22 in. The weight, 775 lbs., is too great for overhead location. The price range is from $530 to $580.



Manley Engine and Axle Stand for Dodge

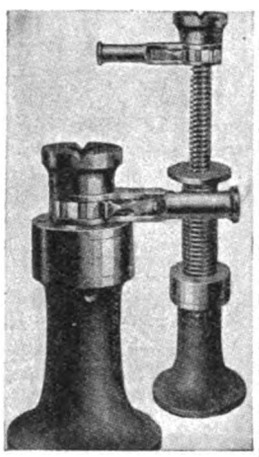
Manley Mfg. Co., York, Pa.

The stand, in addition to handling the engine and the axle of the Dodge car will also handle the gearset. The device will handle any of these units separately.

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NEW AUTOMOTIVE EQUIPMENT AT THE A.E.A. SHOW

Hart-Bell Truck Jacks, Models 10 and 15



Hart-Bell Mfg. Co. Poughkeepsie, N. Y.

Price $20.

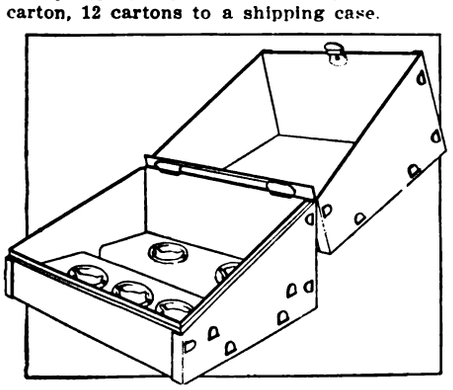
Two new truck jack models have been added to the Hart - Bell line. Model 10 is a 10 ton model which is 11½ in. high and has a raise of 10 in. Model 15 is the same as model 10 except that it is geared down to give it a capacity of 15 tons. Both models are the same price. The price of model 5 has been reduced from $13 to $10 and a new touring car jack is being turned out to sell for $8.

Dover Bulb Box

Dover Stamping & Mfg. Co., Cambridge, Mass.

Price $1.00.

The bulb box holds five bulbs and is made of steel. It opens with a spring latch and the bulbs are held in place by springs in very much the same way they are held in place in the bayonet socket. The box is 3⅞ by 3⅛ by 3⅞. Each box is packed in a carton, 12 cartons to a shipping case.

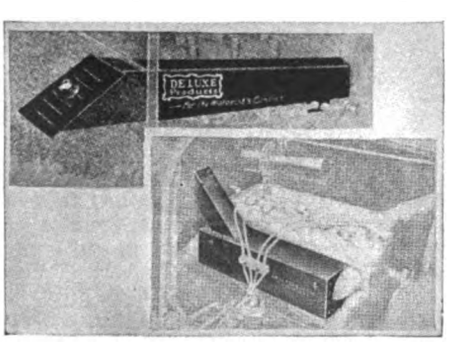


Arvin Heater De Luxe for Fords

Indianapolis Pump & Tube Co., 1020 Drover St., Indianapolis, Ind.

Price $1.75

A new model of the Arvin DeLuxe heater has a rectangular damper and the design is changed in many respects. The device consists of a one-piece jacket that clasps snugly over the exhaust manifold and brings the heat back to the driving department.

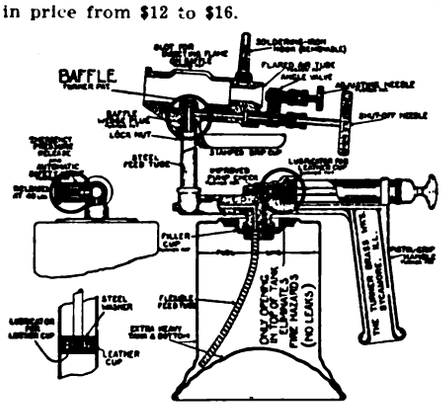


Turner "Master Series" Blow Torch

Turner Brass Wks., Sycamore, Ill.

Prices $12 to $16

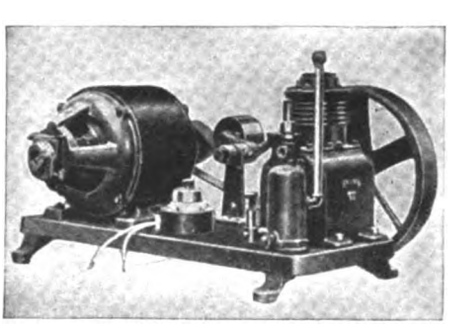
The most recent additions to the Turner line is known as the "Master Series" blow torch. A sectional view of the construction is shown. The tank is filled from the top by removal of the burner mechanism assembly. Additional features are the safety valve, which prevents an excess of pressure forming in the tank, and the hot spot or preheater, which enables the torch to operate on either gasoline or kerosene. The pistol grip handle carries the pump mechanism. The "Master" line of torches is being manufactured in several different models, ranging in price from $12 to $16.



Kellogg Type EM52Y Air Compressor

Kellogg Mfg. Co., Rochester, N. Y.

This air compressor is intended especially for gasoline filling stations because of the lower initial cost and reduced operating expense. It is furnished without tank and the pump is in operation only when inflating a tire. A telephone switch at the service point starts and stops the motor and the switch is opened only when the hose is removed. From one to four air lines can be used. It has approximately the same tire filling speed as a tank outfit, the makers state. The compressor has a 1-hp. motor and the pump is a two-cylinder, 2¼-in. bore and 2-in. stroke, with an air displacement of 4½ cu. ft. per min. It is equipped with the switch, belt tightener, fan blades on pulley to cool pump fins, 30-ft. hose and all necessary parts. The whole outfit is mounted on a neat base. The telephone switch must, of course, be mounted at the point where the tires are inflated.



Manley Garage Light

Manley Mfg. Co., York, Pa.

A light for garage and shop use. It is adjustable to any height for use in working under the car, over the car or at the side. It has a connection socket to which can be attached an electric drill or other piece of electrical equipment operated by lighting current.

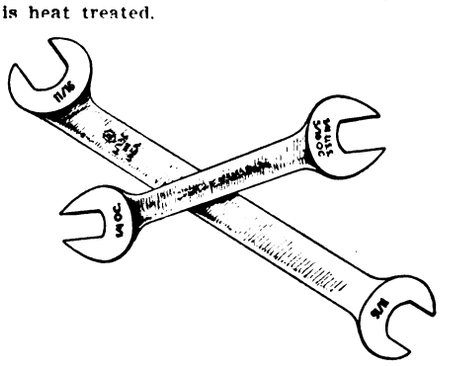


Bonney Chrome Vanadium Tappet Wrenches

Bonney Forge & Tool Wks., Allentown, Pa.

Price $1.10 to $1.20.

The wrenches are made in five sizes with openings of ⅛, 17/32, 9/16, ⅝ and 11/16. They are made very thin, being 5/32 in. thick at the head for the first three sizes and 3/16 for the last two. They are made of chrome vanadium steel to provide extra strength to offset the thinness of the wrench. The steel is heat treated.

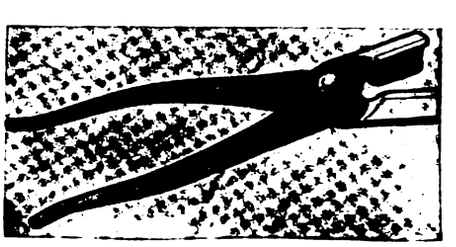


Bonney Battery and Grease Cup Pliers

Bonney Vise & Tool Works, Inc., Allentown, Pa.

Price $1.50

The pliers are designed to grip battery posts and terminals and to operate grease cups from any angle. The teeth are cross-milled in double concave jaws. The same sliding rivet pivot that is used in ordinary pliers allows a considerable range of sizes to be handled. Length 9 in., weight 8½ lbs. a dozen.

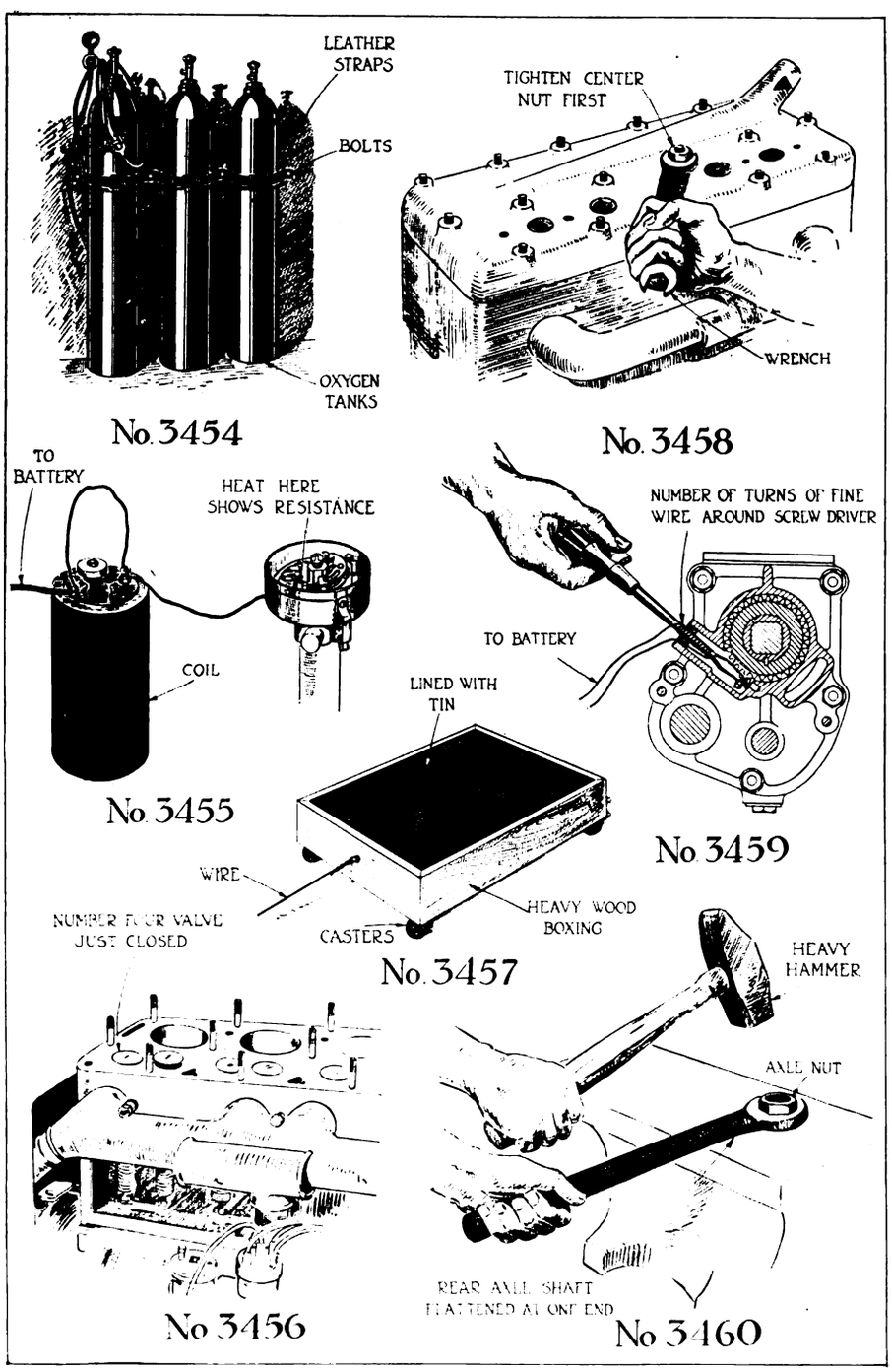


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Repairshop Shortcuts

Quick Service

DID you ever bolt down your supper, go without your dessert, forget to kiss your wife good bye and dash madly down to the doctor's office only to find twenty patients ahead of you and then kill two hours reading last year's magazines? Well, the way you feel is the way the car owner feels when he wants to get a little job done and finds that he will have to wait a long time or leave the car over night. There are a lot of little jobs of brake adjustment, carbureter adjustment and fixing up snivvys that can be done in a very few minutes and if there is a man available for this quick service the income can be made very attractive. Many dealers have quick service departments for this kind of business.



No. 3454—Straps for Oxygen Tanks—Oxygen tanks are strapped to the wall with leather belts and buckles to prevent their being upset with consequent damage to the gages, etc.—W. B. Wheatley, Brooklyn, N. Y.

No. 3455—Testing Contact Points—To prove that contact points are well fastened to the breaker arm and screw, short circuit the coil and resistance with small iron wire about 18 in. long and close the points. Heat at the points shows a resistance.—H. V. D. Sweet, Canajoharie, N. Y.

No. 3456—Timing a Dodge Engine—Dodge cars not having marked flywheels, the position of the crank can be ascertained by cranking the engine until the No. 4 exhaust valve just seats. This is the proper setting for the spark to start breaking on retard.—Hayes Pettit, Wilmington Motor Service Co., Wilmington, N. C.

No. 3457—Portable Oil Pan—A portable oil pan is made with a heavy wood boxing lined with tin and mounted on casters. A wire is used to pull it into position. — Hayes Pettit, Wilmington Motor Service Co., Wilmington, N. C.

No. 3458—Tightening Cylinder Head Bolts—Best results are obtained by tightening the center stud nut first and working toward the sides and ends from this center. This squeezes the gasket outward and brings the head down uniformly. — Hayes Pettit, Wilmington Motor Service Co., Wilmington, N. C.

No. 3459—Removing Broken Speedometer Gear on Buick—A broken gear on a Buick speedometer in the gearset is removed by winding some wire around a screw driver to make an electro magnet. The end of the screw driver is then inserted in the speedometer connection hole and the parts of the broken gear withdrawn.—Hayes D. Pettit, Wilmington Motor Service Co., Wilmington, N. C.

No. 3460—Rear Axle Nut Wrench—A rear axle nut wrench is made from an old axle shaft flattened at one end and with a hole, which is afterward formed to a hexagon shape over the nut to be turned. A wrench made in this way naturally gives a tight fit. It is also strong enough for the work.—H. R. West, Hall Motor Co., Fort Collins, Col.

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Along the Automotive Newsway

By Leo Roche



WISCONSIN STATE HIGHWAY ENGINEER SAYS BRAINS ARE FIRST ESSENTIAL FOR SAFETY.



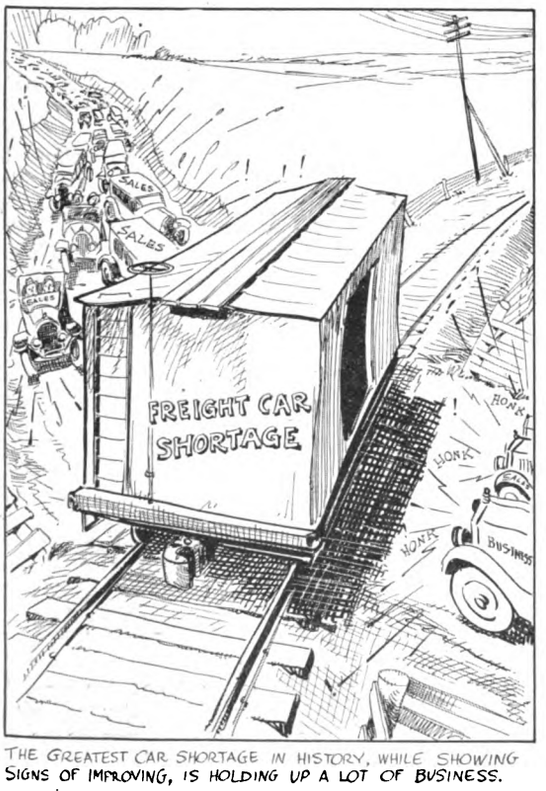
NEW YORK POLICE COMMISSIONER PLANS CONTROL OF PEDESTRIANS ON SIDEWALKS. THE TRAFFIC COPS ON SIDEWALKS TO WEAR HEADLIGHTS



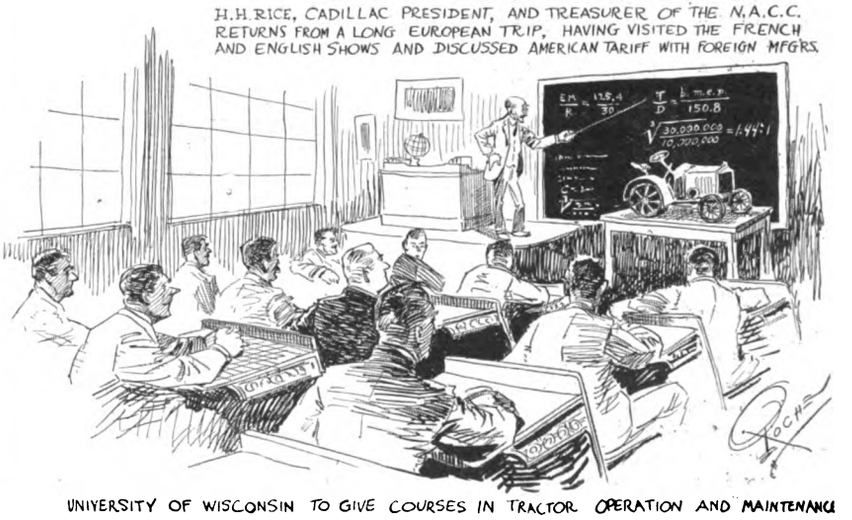
ROGER BABSON, ECONOMIST, SAYS MANUFACTURERS SHOULD GIVE MORE ATTENTION TO DISTRIBUTION AND SELLING AND MORE SUPPORT TO THE DEALER.



H.H. RICE, CADILLAC PRESIDENT, AND TREASURER OF THE N.A.C.C. RETURNS FROM A LONG EUROPEAN TRIP, HAVING VISITED THE FRENCH AND ENGLISH SHOWS AND DISCUSSED AMERICAN TARIFF WITH FOREIGN MFGRS.



THE GREATEST CAR SHORTAGE IN HISTORY, WHILE SHOWING SIGNS OF IMPROVING, IS HOLDING UP A LOT OF BUSINESS.



UNIVERSITY OF WISCONSIN TO GIVE COURSES IN TRACTOR OPERATION AND MAINTENANCE

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Industry Breaking Record of 1920

DECEMBER WILL SHOW BEST YEAR EXCELLED

Production Being Kept at High Level—No Let-Up Apparent in Sales

NEW YORK, NOV. 27.—The automotive industry will enter December with all records in its production history broken. The eleven months' period of 1922 is expected to show an excess of approximately 100,000 cars and trucks over the output for all of 1920, which established a record not surpassed up to this time. Estimating the November output at 200,000, at least, the aggregate for the eleven months will reach 2,313,000, compared with the 1920 total of 2,205,000. Based on this estimate the production for the full year will closely approach, if it does not reach, 2,500,000.

There is no apparent let-up in demand. Shifting of sales effort from sections where there has been a slight decline to districts where interest is keeping to a high level has equalized sales so that a good general average is being maintained. None of the major operating companies have tapered off their production schedules, with output centering around the closed car. The demand continues strong for this type, although there is evidence of renewed activity in sections where the open car carries a special appeal.

Cotton Prices Help Sales

On the Pacific Coast and in the South, conditions are particularly encouraging. High prices for cotton and other farm products in the southern States have been accompanied by a growing demand for cars which is making this section one of the most attractive in the sales field.

While dealers have not yet made serious efforts toward stocking up cars, there is a trend in this direction to prevent a possible shortage in the spring. This movement probably will take more definite shape as soon as transportation facilities can be diverted from immediate needs.

No improvement is noted in the rail situation. Deliveries of cars are still behind, and greater difficulty is being experienced in getting through steel shipments from producing centers. The lack of adequate shipping facilities, aggravated by the approaching season for the closing of navigation on the Great Lakes, continues to be one of the chief obstacles confronting the industry.

Trucks are moving forward steadily in production, light delivery vehicles meeting with the greatest popularity. Conditions in this branch of the industry are showing marked improvement. Tire manufacturers are moving toward increased output, to establish stocks of the finished products. Parts makers report conditions excellent, with orders booked far in excess of their expectations for this season.

While the fuel situation has eased greatly, there is still a lack of bituminous coal, which calls for the greatest economy in its use, but this shortage is not so serious as to cause concern.

OCTOBER PRODUCTION AGGREGATED 238,514

WASHINGTON, Nov. 28—Figures received by Department of Commerce through the Bureau of the Census place the total production of passenger cars and trucks in October at 238,514.

The following table gives the total production for each of the last four months, with corresponding figures for the same months of last year. With a few exceptions, the reports each month are from identical firms and include approximately 90 passenger car and 80 truck manufacturers. October figures are subject to slight revision when all reports have been received.

	1922	1921
Passenger Cars		
July	224,057	165,574
August	249,225	167,705
September	187,128	144,669
October	217,098	134,734
Trucks		
July	21,357	10,766
August	24,200	13,080
September	18,656	13,648
October	21,416	12,813

Ford's October Output

DETROIT, Nov. 26—Ford Motor Co.'s October production in its American plants totaled 121,765 cars and trucks, approximately 32,000 more than any previous October. September was 89,000 and in the foreign plants October showed an increase over September in each place.

Baltimore Winton Dividend

BALTIMORE, Nov. 27—The Board of Directors of the Winton Co. of Baltimore, Inc., has authorized the payment of dividend at the rate of 8 per cent per annum to Sept. 30, 1922, on the preferred stock, to stockholders of record as of that date.

SCOBIE IS ELECTED NEW EARL PRESIDENT

Choice Gives Satisfaction to Financial Interests in Back of Company

JACKSON, MICH., Nov. 25—George C. Scobie, vice-president and treasurer of Earl Motors, Inc., under the Earl regime, has been elected president to succeed Clarence A. Earl, resigned. Scobie is a Jackson man, having served successfully with Hayes Wheel Co. as auditor, controller, secretary and director, continuing in the latter capacity after joining Earl.

Before becoming identified with the Hayes company, Scobie was a member of the accounting staff of Price, Waterhouse & Co. and has a long financial and business experience. He became active in the Earl company together with other Jackson men early in the year when the company experienced financial difficulties.

His place as head of the company has created general satisfaction in Jackson where the residents have a large financial interest in the company.

New Sales Manager

W. E. Stalnaker, formerly distributor for the Premier Motor Car Co. in Chicago and vice-president and sales manager of the former Pathfinder Co., Indianapolis, has been named general sales manager of Earl Motors, Inc. He is one of the well known men of the industry, and while a distributor was one of the most successful in the western territory.

Stalnaker is mapping out plans for 1923 which are designed to give Earl the most extensive representation it has had. Territories both East and West will be carefully mapped out, and many important dealer connections will be signed in the time before and during the New York and Chicago shows. He will attend both shows personally and will renew many acquaintances made during his former connections in the industry.

Several other changes will be made in plant departments, but Scobie has deferred announcement on these pending a thorough consideration of the needs of the company. Though the company has made progress during the year as attested by its improved position at the national shows it is planned by the new executive to bring it much more to the forefront.

With Scobie as president, the company is reported to be in position to secure ample financing at all times as he enjoys a large measure of confidence of the interests backing the company.

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Would Have Job Govern Truck Sale

WAY TO END HOSTILE LAWS, STATES FENNER

Overloading One of Subjects Discussed at Highway Meeting in Michigan

GRAND RAPIDS, MICH., Nov. 25—Classification of motor trucks as measuring tools rather than carrying tools has been responsible in a large measure for the inauguration of regulatory statutes in many States, David C. Fenner, manager of the public works department of Mack Trucks, Inc., told delegates to the convention of the north central division of the National Highway Traffic Association.

To overcome hostile legislative sentiment, he said, trucks must be sold according to the work they are to perform, and manufacturers can aid by indicating clearly the general capability of the truck to perform it. The convention was held in joint session with the Michigan State Good Roads Association in preparation for active participation of the two organizations in highway legislation in the coming year. Representatives of all elements in the industry were present, prominent among whom were delegates of transportation associations and other truck manufacturing and operating interests.

Fenner's talk, with a paper on "Lights for Highway Vehicles," by David Beecroft, directing editor of The Class Journal Co. and vice-president of the North Atlantic division of the National Highway Traffic Association, featured the meeting.

Chapin Speaks on Financing

Roy D. Chapin, president of the Hudson Motor Car Co. and Michigan director of the National Highway Traffic Association, was chairman of the afternoon session and spoke at the evening session on financing of State highways.

On the subject of overloading, Fenner said:

We are handicapped by lack of standards for truck rating and classification, so no comparison can be used. A motor truck is a carrying tool, but not necessarily a measuring tool. It should be in the same general classification with the shovel and wheelbarrow and not with the quart, peck and bushel basket. Truck overloading is due in part to the improper basis of rating and classifying the motor truck chassis in terms of the manufacturer's rated pay load capacity. The user soon learns that this does not mean anything.

He attaches a body which may or may not fit either the chassis or the commodity he carries and loads it to suit himself. The motor truck body is the real measure of capacity which determines the size of the chassis which must be used to carry it loaded with the commodity to be handled.

In the sale of motor transportation the successful salesman conducts a survey which convinces the customer that a certain type, capacity and weight of body are necessary to fill his transportation requirements. He sells the customer this body and then he is in a position to sell the proper type and size chassis to carry this body loaded to capacity with the particular commodity.

The large number of misfit trucks on the road today are examples of the other method of selling the chassis first and allowing the customer to put on any old body and load it any old way. The body may include many items of special equipment, as hoists, winches, pumps, etc., the weight of which must be considered in the selection of the chassis and the pay load to be carried.

Accidents on highways due to faulty lighting of motor vehicles were supplemented in many instances by improper road conditions, Beecroft said, due to poor highway illumination, curves and other dangerous conditions. Motor cars are too often overlighted and trucks underlighted. He condemned the proposed additional lights on trucks to indicate their widths as unnecessary in the experience of many States.

Showing how highway illumination might be used for reducing dangerous conditions, he told of the effectiveness of lights on railroads, rivers and canals. Railroads are not complete when the road beds are built, nor channels when dredged, the light systems being just as important, he declared, for safe operation as the construction.

Things to Look Forward to in Motor World

Next week—A new idea in cooperation to protect and promote the automotive industry and the use of motor vehicles in legislative action. All over the country legislatures will be convening in a few weeks. Every distributor, jobber, dealer and garageman can help the industry get what it deserves. A story in this issue will tell how it can be done.

Last week in December—The Before Shows Number, looked forward to as an annual treat by Motor World readers, will be issued Dec. 27. There will be several new features and a wealth of interesting and useful information for the automotive man.

December and January—Motor World has in prospect some important articles on Salesmanship Training, Modern Methods of Compensating Salesmen, the Broader Meaning of Better Highways and other subjects of vital interest to the trade.

BESSEMER-AMERICAN MERGER ANNOUNCED

One Selling Organization Will Take Care of Both Cars and Trucks

NEW YORK, Nov. 25—Awaiting only the formal approval of the stockholders to make it effective, the merger of the American Motors Corp. of Plainfield, N. J., and the Bessemer Motor Truck Co. of Grove City and Philadelphia, is announced.

The consolidated company will be known as the Bessemer-American Motors Corp. with the Plainfield concern a dominant factor. The new concern will have a capitalization of $2,000,000 of 8 per cent participating preferred stock and 200,000 shares of common stock, with assets in excess of $3,000,000, it is understood. It is hardly likely that the two parties concerned will be brought together until the first of the year. Until that time each will continue as before, with Ralph D. Mock as general manager of the Bessemer company.

The Bessemer Motor Truck Co. was established more than 10 years ago and makes a line of trucks ranging from one to four-ton. It has two plants located in Grove City and Philadelphia, and when the merger is completed it is understood that operations will be consolidated at the Philadelphia plant.

The American Motors Corp. manufactures passenger cars and has been put on its feet in the last year through the efforts of President Carl H. Page, who has cleared away the financial difficulties of the concern since he took control.

Under the merger plan the consolidated company will have a complete line of trucks and passenger cars, handled by one selling organization.

YEAR WILL SHOW 5,000 RICKENBACKERS BUILT

DETROIT, Nov. 25.—Rickenbacker Motor Car Co. will complete its first year of operation with a total business of about 5,000 cars, a record which is considered eminently satisfactory, and a total which will be doubled in the coming year. These figures on the business of the company were furnished by President B. F. Everitt in a statement accompanying an announcement of a five per cent cash dividend to be paid Feb. 1.

The declaration of the dividend evidences the financial return that the company has enjoyed despite the heavy expense of tooling-up and the overcoming of initial production losses.

Everitt declared that the company is following out a dividend policy of distributing a substantial part of earnings among stockholders.

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HUPP HAS SCHEDULE FOR 40,000 IN 1923

Represents One-Third Increase Over Original Estimate Made for This Year

DETROIT, Nov. 25—Hupp Motor Car Corp. has set a schedule of 40,000 cars for 1923, approximately one-third of which will be closed cars. The schedule represents a one-third increase over the schedule for this year which was fixed originally at 30,000, but which will reach approximately 35,000. It has been estimated that the export business in 1923 will reach 2500 cars, an increase of about 1000 over the 1500 total this year.

Dealer Force Increased

The company has just concluded its annual distributor convention which was attended by 90 per cent of its wholesale organization. Contracts for cars for 1923 signed at the convention were in excess of the company's scheduled output. It was pointed out, however, that the schedule did not represent the company's manufacturing capacity, but was a conservative figure fixed after careful study of probable business conditions in the new year.

General Sales Manager O. C. Hutchinson, at the convention, said that the company's dealer and sub-dealer organization had been increased from 900 to 1500 during the year and that a further increase would be made this year. The company will hold its usual dealer meetings at New York and Chicago during the national shows at each of which 500 dealers will be entertained.

Hutchinson urged the distributors to co-operate and assist dealers in meeting merchandising requirements. Particular attention should be paid to educating the retail salesmen as these men, in the final analysis, he said, are the ones who eventually sold all the cars for the factory. Marketing methods should be studied and improved constantly he said so the dealers may keep their establishments at high efficiency.

The only reports the company has had of used car difficulty were from dealers who tried to do more business than their districts warranted, Hutchinson said. At the time the factory pointed out the fallacy of forcing business, he declared. Under its merchandising policy, Hupp was always in a position to divert its product to districts in which there was assured demand, he said, without loading dealers in territories temporarily caught up.

Flat Rates Described

C. E. Salisbury, service manager, described the company's flat rate system which he said was now being used by practically all of its distributors. Within a short time all distributors and larger dealers will have the flat rate system in effect, he said, as experience has shown it to be most satisfactory both to the owner and to the operator of the large service shop.

STATE CANNOT GET TAX FROM GASOLINE

WASHINGTON, Nov. 28—Motorists in the State of Arkansas cannot be forced to pay a gasoline tax, pending the final adjudication of the constitutionality of the question as to whether or not a State can levy a tax of one cent a gallon on gasoline and kerosene.

The Supreme Court has granted an injunction on the application of the Pierce Oil Corp. to continue in force a temporary injunction secured in the Federal courts against the enforcement by the State of a State tax of one cent a gallon on gasoline consumed in motor vehicles.

The constitutionality of the question is now before the United States Supreme Court and pending the court's decision it was held that the temporary injunction in Arkansas must stand.

Hupp business at present is running largely to closed cars but the company reports that 50 per cent of present business in open models is for the special sport models which it introduced last month. The demand for open models at this season has been largely increased by the special line. Next fall the company will be prepared to increase its output of closed cars over the one-third quota set for the early part of the year.

NEWARK ADOPTS PLAN TO HANDLE USED CARS

NEWARK, N. J., Nov. 23—More than 20 motor car dealers of Newark to-night adopted a plan of co-operation in establishing used car market values. Other dealers are expected shortly to join the movement, which got under way with a budget prepared for the first year's operation and with George Smith, a former Newark dealer, as secretary. W. E. Dusenbury of the Reo branch was made chairman of the used car committee which will govern the work.

The co-operative plan was decided upon at a meeting held under the auspices of the Newark Automotive Trade Association and attended by 100 dealers from Newark and other New Jersey cities. L. B. Sanders, secretary of the Boston Used Car Statistical Bureau, whose plan was adopted by the Newark trade, made the principal talk.

Sanders in Brooklyn

BROOKLYN, N. Y., Nov. 24—L. B. Sanders of the Boston Used Car Statistical Bureau addressed 48 Brooklyn dealers to-day, telling about the success of co-operative plan in the Hub. The meeting took informal steps which it is expected will lead to co-operative action on used cars.

STUDEBAKER REACHED QUOTA NOVEMBER 15

Took Only Ten and One-Half Months to Produce Estimate for All Year

SOUTH BEND, IND., Nov. 25—Just a year ago announcement was made by President A. R. Erskine that Studebaker would manufacture 100,000 motor cars in 1922. This quota was reached on Nov. 15. In fact, when the whistle blew the afternoon of the 15th, 100,008 Studebaker Sixes had left the factory this year. The 1922 schedule was reached and passed in exactly 10½ months.

Studebaker plants continue to operate at capacity, demand for all models still being considerably in excess of production. Thousands of sales are said to have been lost this year because production could not keep pace with demand.

Large additions to Studebaker plants are now being constructed, both in South Bend and Detroit to take care of the planned production in 1923 of 150,000 cars.

SIX-CYLINDER TEMPLAR MAY SUPPLEMENT LINE

CLEVELAND, Nov. 26—The Templar Motor Co. in all probability will place a six-cylinder car on the market. The four-cylinder car will be continued.

The price will be such that both cars will come into the market under much better conditions from the price standpoint. This feature is being planned with the idea of much larger production and larger sales of cars.

In the meantime Receiver T. L. Hausman, who is in active charge of the plant operations, is making new cars and shipping them daily. All dealers are being supplied with parts, and the court protection that was secured has enabled Hausman to obtain sufficient working capital and thereby overcome what had been a serious handicap.

Business has exceeded the expectations of the receiver.

WIRE WHEEL ENTERS STEEL DISK FIELD

BUFFALO, Nov. 28—The Wire Wheel Corp. of America will produce and market a new steel disk wheel which will be called the Buffalo. This step has not been taken until the situation had been thoroughly canvassed, and General Manager O. J. Rohde convinced of the public demand for disk wheels. Years have been spent in developing the wheel, and the company has had the co-operation of factory engineers and production managers.

Mechanical features will not be announced until the national shows, when the new type will make its debut.

The Wire Wheel Corp. of America, one of the pioneers in its field, has heretofore confined its manufacturing efforts to wire wheels.

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CAR PLANT RUMORED FOR WEST VIRGINIA

Reported That Factory Will Be Constructed There at Cost of $10,000,000

PITTSBURGH, Nov. 26—Orders received by Pihl & Miller, Inc., of Pittsburgh, construction engineers, for a great quantity of constructional steel lend strength to the rumor that a large automobile plant will be built at Ridgeway, a township near Martinsburg, W. Va. The Pittsburgh firm admits receipt of the order for material for an automobile plant in that town, but refuses to mention any names.

It also has developed that the interests back of the deal have bought 3000 acres of land at an average price of $200 upon which the plant will be constructed.

According to the rumors, the plant is to cost $10,000,000. No stock has been offered for sale, and efforts to find out who is back of the project have failed so far. It is said, however, that financial interests of Pittsburgh and Detroit are fathering the project. It is known, however, that one of those approached is Harvey S. Firestone, who is reported to have refused to go into the deal.

As far as can be gathered, the project contemplated is something similar to the Marysville venture of Wills Ste. Claire in that it is expected to build a city of 16,000 homes at Ridgeway.

Dealer Designs Own Building

ATLANTA, Nov. 28—D. C. Black, president of the Atlanta Automobile Association, and one of the Atlanta Buick dealers, has finished construction of a new and permanent home for his Buick agency in this city. Black, who is an engineering graduate of Georgia School of Technology, designed the building himself, which provides 18,000 sq. ft. of floor space, and includes a large service station.

PREDICTS THAT RADIO WILL CONTROL FLEETS

NEW YORK, Nov. 29—Radio as a means for controlling the operation of motor truck fleets in the near future was predicted last night by F. W. Fenn, secretary of the motor truck committee of the National Automobile Chamber of Commerce, whose discourse on the evolution of transportation was broadcasted from the WJZ station at Newark, N. J.

"Undoubtedly, as time goes on," Fenn said, "motor truck fleets will be dispatched from one end of the country to the other by means of the radio, with resulting efficiency and economy to shippers and operators alike. In other words, the radio will be the eyes through which the traffic managers in our major cities will be permitted to watch closely the work of their operators for the benefit of business in general."

Republic Truck Statement

ALMA, MICH., Nov. 28—Republic Motor Truck Co. receiver has issued a statement showing the company's financial condition as of Sept. 28. The assets, excluding good will, shop rights, etc., are fixed by the appraisers at $6,289,929. Liabilities to all classes of creditors of record total $5,181,861.

New Buick Home in Indianapolis

INDIANAPOLIS, Nov. 27—The local branch of the Buick Motor Car Co. will occupy a new three-story building here at a cost of nearly half a million dollars.

FORD MAY INCREASE OUTPUT IN SPRING

Number of Unfilled Orders Largest on Record—Lincoln Booked Far Ahead

DETROIT, Nov. 27—Ford production next spring may reach between 7000 and 8000 cars a day as compared with the record-breaking 5380. At the present time Ford has more unfilled orders on hand than ever before in the history of the company, while the Lincoln plant is said to be booked for two years ahead and making money at the rate of $1,000,000 annually.

In an interview, Ford declared that his cut of $50 a car on a production of 5000 cars daily, which represents a decrease in gross of $250,000 a day, has not resulted in financial loss and he referred to his unfilled orders as proof.

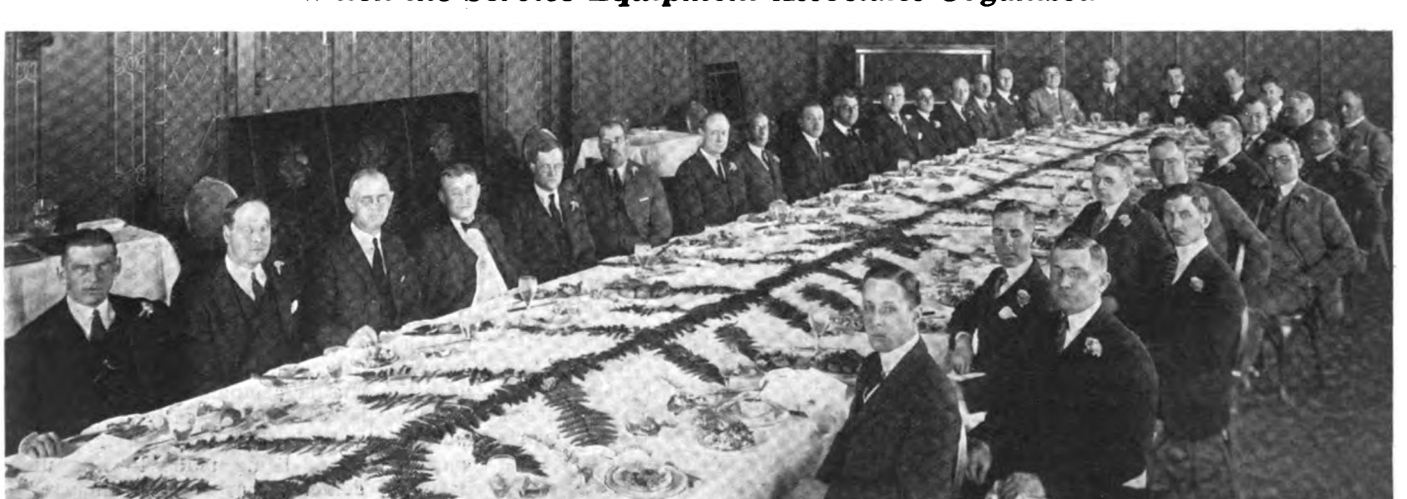
Ford plans are said to include operating the plant at capacity the year around, making cars principally in the second and third quarters and in the first and final quarters keeping busy with the manufacture of parts for stock and replacement.

Coal for blast furnaces is being obtained at the mines at an average of $4, while there is a proportionate saving made on steam coal. Ford believes these prices are the result of his closing his plants for four days.

Glover Heads Timken Axle

DETROIT, Nov. 27—Fred Glover, vice-president and general manager of the Timken-Detroit Axle Co., has been elected to the presidency, following the resignation of A. R. Demory. The resignation is effective Dec. 2, when Glover will assume the presidency, and H. W. Alden will succeed to the position as chairman of the board. No other changes in the organization are contemplated.

When the Service Equipment Associates Organized



This picture was taken when the Service Equipment Associates, a new trade body, organized in Chicago, Nov. 17, to promote education as the proper understanding and use of equipment in automotive maintenance establishments. G. W. Brogan of the Black & Decker Manufacturing Co. presided. The organization had its beginning last May when a group of equipment manufacturers agreed upon a plan of pooled advertising of the educational type

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CAMPBELL SEES GAIN IN NORTH CAROLINA

Chevrolet Sales Head Hears Optimistic Reports During Trip There

DETROIT, Nov. 25—Commenting on business conditions in the South Atlantic district, Colin Campbell, general sales manager of Chevrolet Motor Co., declared North Carolina to be showing remarkable gains in an industrial sense, so much so that hydroelectric companies in that district have announced that they are unable to make additional contracts for power.

Bankers in that district advised him on a recent trip that bank deposits in that State have reached a higher mark than ever before. Many cotton factories are working two shifts he said and the demand for labor is taxing the district. Under the influence of higher prices for cotton, the last of the crop of two years ago is being rushed to market, and there is little possibility of further storing by growers.

The highway construction program of the State is also furnishing a large amount of employment and, in addition, is creating an increased demand for automobiles. Sales of low priced cars in that territory have shown remarkable increases in recent months, he said, and the outlook for large business in 1923 is especially bright. Better prices for grain and oats in the middle Atlantic States are also strengthening the car demand in those districts, he declared.

COURT UPHOLDS LAW BONDING TAXICABS

NEW YORK, Nov. 28—The Appellate Division of the Supreme Court has upheld the validity of the state law requiring the bonding of taxicabs in cities of the first class. This decision was made in the test case of Charles Martin, who failed to comply with the law which calls for a bond of $2,500 for each taxicab to guarantee compensation if a passenger is injured.

Justice Dowling, who wrote the decision, held that the validity of the statute was not affected by the expense, however heavy, that must be borne by the owner of a taxicab. For every six taxis there was a death each year in New York City, the justice said, as compared with one fatal accident for every 20 passenger cars of other types.

Stewart-Warner Dividend

CHICAGO, Nov. 29—Stewart-Warner Speedometer Corp. has declared an extra distribution of $1 a share on the common stock, thus bringing the year's payments up to $5 a share. Next year, there is every reason to believe the stock will be on a $5 basis. The company, it is said, now has more than enough cash to pay such dividend and has no indebtedness, outside of current bills. Sales up to Nov. 15 more than equalled those for the entire year of 1921 and net profits for the first nine months of this year totaled $3,514,078, or the equivalent of $7.32 a share.

GIVES TRADE WARNING ON ACCIDENT EFFECTS

PITTSBURGH, Nov. 26—Members of the Pennsylvania Automotive Trade Association were warned last week by Benjamin G. Eynon, State registrar, that "while the effect of accidents on sales is negligible now, that time will come when the cumulative force of abuses will deal a crashing blow to the industry."

He said the time will come when the average citizen will demand legislation forbidding the building of engines above a certain speed and restricting fast traveling. He predicted over 760,000 cars and 66,000 trucks will be registered in Pennsylvania this year, and probably 900,000 cars and 80,000 trucks next year.

TWO BIG BUILDINGS GOING UP ON COAST

SAN FRANCISCO, Nov. 28—Business in the automotive merchandising line is so good in the Pacific Northwest and the Pacific Southwest that two big buildings are being erected, one in Portland and one in Los Angeles, to house growing firms in this line. The Howard Automobile Co., distributors of the Buick for this territory, is erecting a four-story concrete and steel building in Portland, Ore., to be devoted exclusively to the sale, service and repair of Buicks. Don Lee, distributor for the Cadillac, is building a seven-story structure in Los Angeles, for the exclusive sale and distribution of the Cadillac.

In Los Angeles, the used-car department will be continued on Main Street, and the Don Lee Coach and Body Works on another street, giving this distributor a total of 220,000 sq. ft. of space in Los Angeles, a few feet more than in the northern headquarters in San Francisco, where the nine floors are now being converted into a "24-hour automobile department store," with night and day service and sales. Lee believes that the better the building and the finer the sales and showrooms, the greater the sales.

Dealer Has Drivers' School

CHICAGO, Nov. 25—A school for owners and drivers of Ford cars and trucks is being conducted by Charles J. Dempsey, Inc., Ford dealer here. Classes are held from 7.30 to 9 o'clock every Tuesday evening for 10 weeks. Lectures are illustrated with charts, and at the end of each lecture a printed copy, containing reproductions of all the charts used, is given to each pupil. A tuition fee of $5 is charged to cover the cost, and the enrollment is limited to 100.

COMPANIES INCREASE NUMBER OF DEALERS

Leading Manufacturers Also Throwing Open Restricted Sales Territories

DETROIT, Nov. 25—Stocking of dealers on a limited scale is getting under way against the early spring demand, by manufacturers with strongly financed dealer organizations. Though there is a continued large demand in closed cars, the demand for open models has fallen off extensively in most parts of the country, and factories maintaining major operations are doing so by building against next year's purchases.

The lightness in the stocking this year, as compared to others may be traced directly to the increased demand for closed models which is placing the industry more firmly on an all-season basis. Many persons, otherwise purchasers of open models in the spring, are buying closed models now, making immediate business possible where formerly an open model would have been carried over.

Closed Car Output Big

Closed car business in almost every branch of the industry is now exceeding 50 per cent of total output. With manufacturers of better priced cars it is running as high as 70 to 80 per cent. Manufacturers running on close to normal summer schedules, are stocking dealers with open models, though a large number of open models are being sold at this season due to the increasing popularity of special sport designs.

The closed car demand alone now has reached proportions adequate to carry most manufacturers through the winter on satisfactory earning basis, but the outlook for spring is regarded as warranting continued manufacture of open cars in large quantity. Manufacturers whose dealers are not stocking are operating on immediate business alone on schedules ranging from one-half to two-thirds lower than schedules in force during the summer.

Changes Made in Dealers

Companies are pushing vigorously their campaigns for increased dealer representation, and many important retail and distribution changes are being made every day. Restricted sales territories are being thrown open by many leading manufacturers, resulting in many dealers in less popular lines taking over sales of the more popular product, but in some cases this conditions is inverted and sub-dealers of the big lines are switching to exclusive sales contracts with the smaller company.

There is tremendous activity in the sales field, all through the industry, and every effort is being made to line up desirable dealers wherever they may be had. The building up of dealer organizations in cities continues strongly and apparently the larger companies will develop this policy more intensively than ever before.

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STATE OFFICERS GET VIEWS ON TAXATION

Theft Question Is Also Discussed at Meeting of National Association

FRANKFORT, KY., Nov. 28—One of the outstanding features of the meeting of the National Association of Secretaries of State held here was the sentiment favoring more equitable systems of taxation for motor car owners in various states.

The conferees devoted considerable time to discussion of automobile thefts and sentiment favored a title law in each State as the best solution of the problem at this time. M. O. Eldridge, executive chairman of the American Automobile Association, speaking on behalf of the Automobile Association, told the State officials that more than $2,500,000 represented the value of stolen cars recovered since enactment of the Dyer Act in 1919.

Eldridge pointed out the need of dividing state finances into two groups. He said:

> There is a tendency in some states to place the entire cost of building and maintaining of trunk line highways on the automobiles, which is manifestly unfair and impractical. Motorists, as a rule, are willing to pay their just share of road taxes, but the American Automobile Association believes that the capital outlay for the building of new roads should be obtained from bond issues amortized over a period of years from general taxation, and that the maintenance expenses should be paid from current revenues obtained either partially or wholly from the users of the highways.

Officials from New Jersey support Eldridge in his contention and discussed the advantages of this division in the State of New Jersey.

Eldridge told the conference that motorists generally opposed gasoline taxes especially in view of high taxes levied on automobile owners by states and municipalities. He expressed the opinion that the gasoline tax would be the fairest form of levy in event the impost was in lieu of excessive taxes.

CHICAGO MOTOR BUS CAN EXTEND SERVICE

CHICAGO, Nov. 28—Permission to operate motor buses over south side boulevards here has been granted by the Illinois Commerce Commission to the reorganized Chicago Motor Bus Co. of which the president is John A. Ritchie, formerly head of the Fifth Avenue Coach Co. of New York.

The application of the Depot Motor Bus Co. for a similar permit was denied.

The new service must be inaugurated within six months, according to the terms of the permit. Officials of the company state, however, that service will be started in a shorter time and that from 40 to 50 buses will be put in service at the start.

The buses are to be manufactured in Chicago by a new corporation headed by Ritchie and operated as a subsidiary of the Yellow Cab Manufacturing Co.

PARADE SHOWS USES FOR LIGHT TRUCKS

ATLANTA, Nov. 27—To illustrate to Atlanta business men how their transportation problems can be simplified through the use of light trucks, the Atlanta Ford Motor Dealers Association held a series of commercial truck parades through all sections of the city each day during the week of Nov. 20, in co-operation with several manufacturers of motor truck bodies for light transportation use.

The parades began each morning at 8:30 at the Ford company's Atlanta plant, and continued through the morning, a different part of the city being selected each day. Twenty separate truck units were shown in each parade, all equipped with a different type of body. Large co-operative advertising space was used in the newspapers by the various dealers during the week.

MORE CITIES DESIRE TO BUILD SPEEDWAYS

SAN FRANCISCO, Nov. 28—Detroit, Atlantic City, Altoona and Norfolk are negotiating with Jack Prince, builder of the speedways at Cotati, Fresno and near San Francisco, for the construction of wooden bowls for automobile racing. This is only one of several interesting statements made by Fred Wagner, dean of starters, who stopped in San Francisco on his way to the Thanksgiving Day Races at the Beverley Hills track, Los Angeles.

The four cities have filed applications with the American Automobile Association for sanctions to hold races, according to Prince, thus indicating that the plans for the bowls and the financing of their construction had proceeded to a definite point in each of the cities.

Prince is now building a speedway at San Diego, which will be ready for the try-outs shortly after Jan. 1. He has made tentative plans and estimates for the Detroit, Atlantic City, Altoona and Norfolk bowls, but has not closed final agreements with any of them, according to Wagner.

Elizabeth Plant Builds First Star

NEW YORK, Nov. 23—The first of the Star cars to be manufactured at the Elizabeth plant came through on schedule last Thursday. While production will be at the rate of 25 a day for the time being, it is expected that by June 1 the Elizabeth plant will be turning out 500 Stars and 150 Durant fours a day. Elizabeth is the fifth Durant plant to start Star production, and the output is in excess of 200 a day in all these factories.

TARIFF OPERATION DELAYED BY MEXICO

Cars Can Be Imported Free of Duty Until Latter Part of Next Month

MEXICO CITY, MEXICO, Nov. 25—Foreign automobile manufacturers and dealers will have an opportunity to continue their shipments into Mexico unrestricted until the latter part of December and possibly until Jan. 15. The Treasury Department has issued an official order suspending temporarily the decree which placed an ad valorem duty of 10 per cent on all automobiles imported to Mexico. This decree went into effect early in October. It is stated that a considerable number of automobiles were imported while it was in effect, but under the new order of the Treasury Department these collections will be refunded to those who paid them.

The order was issued in response to a protest of the automobile dealers of Mexico City and other towns of the country who set forth in their plea for lifting of the duty that it worked a severe financial hardship upon them, inasmuch as they were not given time before the decree went into effect to replenish their depleted stocks of automobiles, and that many sales had been made at prices based on the importation of the cars free of duty.

It is stated that the suspension of the duty will continue until the outstanding orders for automobiles have been filled, which will be the latter part of December or the early part of January.

CANADIAN INDUSTRY BOOSTS GOOD ROADS

DETROIT, Nov. 28—A resolution endorsing the plan of the Canadian Good Roads Association to obtain from the Federal Government a further grant of $20,000,000 to assist provinces in road building and to provide an extension of time to provinces unable to take full advantage of the dominion appropriation within the time limit, has been passed at a meeting of representative manufacturers in Windsor.

The meeting was addressed by W. R. Campbell, vice-president and treasurer of Ford Motor Co. of Canada, Ltd.; Hon. J. L. Perron, K.C., minister of highways for the Province of Quebec and new president of the Canadian Good Roads Association; Hon. F. C. Biggs, minister of highways for Ontario; W. Sampson, president of the Canadian Automobile Association, and S. L. Suries, chairman of the executive committee of the Canadian Good Roads Association.

Jobber Has House Organ

COLUMBUS, Nov. 25—The Justus & Parker Co., automotive equipment jobber, has begun the publication of a monthly house organ under the title, "Hot Stuff."

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SCHWAB TELLS DEALERS BASIS FOR OPTIMISM

Stutz Conference Hears of Prospects for Business Growth Next Year

INDIANAPOLIS, Nov. 28—Charles M. Schwab, president of the Bethlehem Steel Co. and a moving factor in the reorganized Stutz Motor Co. of America, told Stutz distributors and dealers, assembled here for a one-day conference, his reasons for believing that the country's business interests and the automotive industry should share his confidence of good times ahead and continued prosperity and increased trade during the coming year.

Schwab said:

After a little recession due to conditions abroad and to the recent election and the uncertainty due to future legislative action I find the outlook is very good and I am optimistic about it. I believe I can point out sound grounds for my optimism. The whole country needs material in every line and in great quantities. The railroads will need much steel. The farmers will get good prices for their crops, and so will the cotton growers for the world needs more cotton than it has for several years. In fact the world is short of every fundamental and will continue so. That means prosperity.

Continued and steady growth for general business and for the making and selling of automobiles can confidently be expected for next year. The marketing of farm crops at good prices and the continued growth of general lines will bring discount to the disturbing elements of the immediate present. By the first of the year we can confidently look for materially bettered general conditions, and a steady growth and expansion from month to month from then on. I do not look for a boom. I sincerely hope there will be none. But steady growth and progress I do look forward to.

The people seem to want more and more cars. With the probable growth and expansion and progress of general trade next year it would be quite unreasonable to expect the motor industry and trade to lag. All fundamental conditions point to steady growth and progress. The election being passed an element of uncertainty is removed. All conditions are better than they were a year ago. The motor industry made records this year. There seems no sound reason to expect anything but a growth and steady rise after the first of the year.

INDIVIDUALS LIST STOCK, NOT FORD

DETROIT, Nov. 23—Listing of the stock of Ford Motor Co. of Canada, Ltd., is not a company action according to a statement from the factory but the action of individual stockholders. The shares of the company have been listed officially upon the Detroit and Toronto Stock Exchanges for a number of years.

Quotations in New York approximating 400 are not unusual as the stock has been holding close to this figure and mounting as high as 440 at times on the local exchange. There is little trading in the stock which is closely held and few sales are in quantity exceeding ten shares.

Indiana Truck Names Gargett

MARION, IND., Nov. 27—F. W. Gargett has been named assistant to the president of the Indiana Truck Corp.

PULCHER AGAIN HEADS TRUCK ASSOCIATION

National Association Will Name Committee to Study Used Vehicle Problem

DETROIT, Nov. 25.—Title of the National Association of Motor Truck Industries was shortened at a meeting this week to Motor Truck Industries, Inc.

M. L. Pulcher, president of the Federal Motor Truck Co., will continue as president of the organization with H. T. Boulden vice-president of Selden, as first vice-president, Fred Glover, president and general manager of Timken-Detroit Axle Co., as second vice-president; Don F. Whitaker, general manager of the association, as secretary and general manager and A. S. More, president of Denby, as treasurer.

A service committee headed by George Dow, service manager of Federal Motor Truck Co., will be named which will make an immediate study of the used truck situation. Much of the difficulty in moving used trucks is thought due to inability of dealer to rebuild them owing to lack of money. The committee will make recommendations to directors Dec. 20.

The naming of the service committee illustrates the resources of the association in meeting conditions in the truck field with which specialized vehicle makers may be confronted. The entire organization of each member company may be drawn upon for specialists in particular work to serve on committees and perform other functions as they may be required. By specialized effort many former problems will be eliminated.

Distributor Celebrates First Anniversary



This is a picture of the First Anniversary Dinner of the W. E. W. Motor Corp. of Philadelphia, tendered by the Durant Motor Car Co., at the Hotel Adelphia, Nov. 13

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CADILLAC CUTS PRICES ON ALL MODELS

NEW SCALE PUTS OPEN TYPES UNDER $3,000

President Rice Says Reduction Is Due to Increased Business During Year

DETROIT, Nov. 24.—Cadillac Motor Car Co. has made reductions of $215 to $265 on open styles and from $150 to $260 on closed models, the new prices to become effective Dec. 1. The new prices are declared by President H. H. Rice to be the result of largely increased business during the year, and to anticipations of still further increases in 1923. In connection with the price change, the company declares that the type 61 will be continued without change.

The new and former prices are as follows:

	Old Prices	New Prices
Roadster	$3,100	$2,885
Phaeton	3,150	2,885
Touring	3,150	2,885
Coupe (5-pass.)	3,925	3,750
Victoria	3,875	3,675
Sedan	4,100	3,950
Suburban	4,250	3,990
Limousine	4,550	4,300
Imperial Limousine	4,600	4,400

Under the new price scale, the company places all of its open models in a class under $3,000, and brings its four largest production models in the closed car type under $4,000. The company has been extending its sales and production with this thought largely in view. Sales in the first ten and a half months of the year have exceeded any best previous year. With extensions to plant and increased personnel, facilities for production in 1923 will reach a new high point.

In a statement on the new prices, Rice said:

The new prices are largely the result of the large production and sales of the type 61 Cadillac during the last year in which we have already sold more Cadillacs than in the best previous record year.

The type 61 Cadillac proved so popular during the last year that we were forced time and again to revise upward our production schedule to meet the demand.

The new prices are based on an even larger production schedule for 1923 than the record high production mark of this last year and on the many economies in manufacturing made possible by our new factory.

Bergougnan Increases Prices

NEW YORK, Nov. 26—Announcement is made that the Bergougnan Rubber Corp. of Trenton, N. J., has increased the price of its cord and fabric tires and tubes 12½ per cent, effective at once. The change in price is caused by the increased cost of production, due to the rise in the price of rubber and fabrics. The Trenton plant is now working at full capacity.

TELEPHONE SERVICE AS ANTI-THEFT AID

PITTSBURGH, Nov. 27—The Pennsylvania State Highway Department announces that the automobile division will furnish 24 hour telephone service daily to the public in supplying names of car owners. In the past it has been difficult to ascertain an owner's name in case of accident or theft after closing hours of the automobile division at Harrisburg.

Under the new plan any person in the United States will now be able at any hour, day or night, to secure complete information concerning any registration on file by calling the automobile division in Harrisburg by telephone.

ELECTRIC SERVICE ASSOCIATION GAINS

DETROIT, Nov. 24.—The directory of the Automotive Electric Service Association for 1923 will show a large increase in members over the total for this year. In this connection Secretary D. W. Burke is sending out a letter to prospective members urging them to file their applications in time to be listed in the new booklet.

Plans for the annual convention of the association have determined the Congress Hotel, Chicago, Florentine Room, as the place and Jan. 29, 30 and 31 as the dates. The board of governors will meet on the opening day, and the general sessions will be on the two latter days. A joint session with the Automotive Electrical Association, the manufacturers body, will be held on the closing afternoon. All electrical equipment dealers are invited to attend the open sessions. Over 200 members will attend the closed sessions.

A questionnaire to car dealers is now being circulated by the association to determine the effectiveness of the service that the equipment dealers have been rendering and requesting information for improvement. It will also serve to show manufacturers how equipment dealers and car dealers are co-operating and afford opportunities to put the service on the best basis from the owner viewpoint.

Schmidt Now Micro Machine

DAVENPORT, IOWA, Nov. 28—Manufacturer of the Micro machine, which is used in cylinder refinishing by the wet method, has changed its name from the B. L. Schmidt Co. to the Micro Machine Co. in order to link the name of the company with the name of the product.

BESSEMER CUTS LIST OF LIGHTER MODELS

Price Reductions Amount to $285 on 1-1½-Ton Truck and $405 on 1½-2-Ton

PHILADELPHIA, Nov. 27—Bessemer Motor Truck Co. announces price reductions on its two light models. The reduction amounts to $285 on the 1-1½ ton model and $405 on the 1½-2 ton model.

Ralph D. Mock, general manager of the company, stated that these reductions are not accompanied by any change in chassis specifications.

Complete new prices for all models are as follows:

	Old Price	New Price
1—1½ ton	$1,735	$1,450
1½—2 ton	2,395	1,990

The Bessemer plant reports greater sales in November than in any preceding month this year, and also appointed a number of new dealers and distributors. General Manager Mock states that the Bessemer policy of maintaining factory branches in certain principal cities will be continued and the number of such branches increased. All factory branches will carry new trucks in stock for the convenience of dealers in surrounding territory in making quick deliveries.

HAYNES INCREASES SIX MODEL PRICES

KOKOMO, IND., Nov. 27.—Price increases ranging from $55 to $280 on six of its models have been announced by the Haynes Automobile Co. The changes are as follows:

	Old Price	New Price
"55" Standard		
Phaeton 5-pass.	$1,495	$1,695
Sedan 5-pass.	2,395	2,595
"55" Sport		
Phaeton 5-pass.	1,895	1,950
"75" Standard		
Phaeton 7-pass.	2,395	2,595
Brougham 5-pass.	3,095	3,350
Sedan 7-pass.	3,395	3,675
"75" Sport (New Models)		
Phaeton 7-pass.	....	2,700
Phaeton 4-pass.	....	2,700
Brougham 5-pass.	....	3,475

Hudson Promotes Draper

DETROIT, Nov. 27—J. S. Draper has been appointed assistant sales manager of the Hudson Motor Car Co., his appointment being part of the change in the sales department by which Harry G. Moock becomes sales manager and H. B. Phipps, export manager. Draper formerly served as district manager.

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SPARKS-WITHINGTON HOST TO A. E. A. PARTY

Second Annual Entertainment to Bring Officers and Jobbers Together

JACKSON, MICH., Nov. 25 — The Sparks-Withington Co. entertained a party of 150 men and women, including jobbers, officers of the Automotive Equipment Association, a number of business paper representatives and the wives of some of the guests. The visitors, who came here from the A. E. A. Convention at Chicago on a special train, watched the making of Sparton horns during the morning and in the afternoon were taken on another special train to Ann Arbor, where they witnessed the Michigan-Wisconsin football game.

The Sparks party had breakfast, lunch and dinner at the Jackson City Club, where an informal program of entertainment and speech-making was a feature of the dinner party in the evening. Captain William Sparks acted as toastmaster and the speakers included Colonel Winthrop Withington, Major Philip H. Withington, Harry and Clifford Sparks, N. H. Oliver, president of the Automotive Equipment Association, and Howard M. Dine, past president. A number of the jobbers and other visitors also made brief remarks.

This was the second annual Sparks-Withington party. Its object, to bring officers of the company and its jobbing representatives into closer acquaintance, was thoroughly realized. The guests departed, some of them Saturday and others Sunday, with a keen appreciation of Sparks-Withington hospitality, which even included provision of raincoats, ponchos and rubbers when it looked as though the football game would have to be played in the rain, a fear, however, which did not materialize.

JOBBERS REACH PEAK OF TRADE IN SOUTH

ATLANTA, Nov. 27—That automotive equipment business among southern wholesalers has now reached the highest point since the inflation period of 1920, and is steadily getting better over the entire district, was the consensus of the southern jobbers who attended the convention this month of the Southern Automotive Equipment Jobbers Association, held at Nashville, Tenn.

More than 50 of the South's leading jobbers and their salesmen were present, with a number of factory representatives of various equipment lines. E. H. Baughman of the Ozburn-Abston Co. of Atlanta is president of the organization. Most of the jobbers left Nashville to attend the national meeting at Chicago.

Fulton Co. Entertains Force

MILWAUKEE, Nov. 27—The Fulton Co. of Milwaukee, manufacturer and distributor of automotive equipment, entertained its branch managers and field force at a banquet following a sales conference at the factory at the conclusion of the Automotive Equipment Convention in Chicago. The meeting was conducted by S. M. Fulton, president and general manager, and L. M. Fidler, secretary and treasurer. Among the guests were Earl LaPorte, Atlanta; George H. Lewis, Kansas City, L. T. Ware, Los Angeles; J. E. Murphy, New York.

TRACTORS ARE NOT "MOTOR VEHICLES"

MILWAUKEE, Nov. 28 — The question whether or not tractors are amenable to the State motor vehicle license laws of Wisconsin has been settled by an opinion of the Attorney General, holding that no license need be taken out by the owner.

The opinion says that tractors are not "motor vehicles" within the meaning of the statute, and explains: "It should be noted that the State department always has construed the law to exclude tractors from the class of motor-driven contrivances for the operation of which a license is required."

CONVENTION REPORTS TIRE SALES ON GAIN

ATLANTA, Nov. 27—More than 100 dealers of General tires in 11 southern States attended the annual sales convention of the General Tire & Rubber Co.'s southeastern forces, held at the Cecil Hotel here. It was the first meeting of the kind the company has held in the southern territory.

The Akron factory was represented at the convention by W. F. O'Neill, vice-president and general manager; Howard Smith, assistant sales manager; A. B. Stiller, advertising manager, and others. Sales that are many per cent better than the volume at this time last year was the report made by all of the dealers attending, with the 1923 tire outlook promising an unusually large volume all year in the southern field.

QUESTIONNAIRE SHOWS OPTIMISM IN FUTURE

NEW YORK, Nov. 26—"What in your opinion is the automotive outlook for 1923 with respect to finance and credit?" is the question asked of some of the leaders in the industry by M. L. Heminway, general manager of the Motor and Accessory Manufacturers Association in a questionnaire sent out. Replies received predict sound credit conditions and keen competition.

Heminway's correspondents in this symposium unite in declaring for unremitting vigilance in granting credit and show optimism tempered by caution as well as displaying a forward-looking faith in the dynamic progress of the automotive industry.

HUDSON EXPECTS PLAN WILL ASSIST DEALERS

Company Will Confine Producing and Selling Efforts to Fewer Models

DETROIT, Nov. 27—Hudson Motor Car Co. is now offering a line of automobiles which covers practically the entire medium-priced field with only seven models, Essex phaeton, cabriolet and coach and Hudson speedster, phaeton, coach and sedan. The prices range from $1,045 to $2,295, and in the Hudson plan each model is in a distinctive price class, the Essex closed models ceasing with the coach at $1,245 and the Hudson open models beginning with the speedster at $1,525.

The models and prices representing the complete line now are, the Essex phaeton (five passenger), $1,045; Essex cabriolet (single seat enclosed model), $1,145; Essex coach (five passenger), $1,245; Hudson speedster (four passenger), $1,525; Hudson phaeton (five passenger), $1,575; Hudson coach (five passenger enclosed), $1,625; Hudson sedan (seven passenger), $2,295.

In this arrangement is seen a merchandising policy which manufacturers and dealers of the country will watch with great interest, and which Hudson believes will prove of great benefit to the buying policy. By it the company will confine its manufacturing and selling efforts to a small number of cars, all of which are fast selling, and yet cover the entire field in the medium price. Each model is designed to fit a particular need, and the simplification of manufacturing problems results in prices most favorable to the buyer.

Sees Better Yield to Dealer

For the dealer it supplies a wide choice of cars without loading him with models with only limited buying appeal, the company declares. Factory officials state that such a line will yield a dealer a larger net profit on a year's business than one containing more varieties of cars, some of which would be less easy to handle than others. Fitting in with the policy is the new dealer financing plan which has been selected after two years of study of such plans, and which is declared unusually economical and dependable in operation.

Issues "Booster" Handbook

BOSTON, Nov. 27—At a meeting of the "Boosters Club," composed of manufacturers' representatives calling on the New England automotive trade, authority was given for the publication of the "Booster Handbook," the first issue of which contains the constitution and by-laws of the organization and a list of members. There are now Boosters Clubs in Kansas City and Denver, with others in formation in Chicago, Minneapolis, Dallas, San Francisco, Philadelphia and Atlanta.

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CHANGES IN THE TRADE

Scott & Martin, Kewanee, Ill., has taken over Jewett line.

Alfred Pickup has taken the agency for the Chevrolet in Holyoke, Mass.

Akron Buick Co., Akron, Ohio, has increased its capital from $50,000 to $100,000.

Elm Garage, Holyoke, Mass., has become distributor of the Paige, Jewett and Haynes.

William B. Staley, Baltimore, has been appointed distributor for Traffic trucks in that city.

P. L. Emerson, of San Francisco, will handle the Star in San Francisco and San Mateo counties.

Cole-Louisville, Louisville, Ky., has been appointed distributor for the Cole in that territory.

Shackleford Chevrolet Co. has been organized in Atlanta by **C. B. Shackleford** and associates.

A. W. Davis is manager of the newly organized **Chevrolet Nashville Co.** at Nashville, Tenn.

F. H. Swival, as Swival & Co., St. Paul, has taken over local sales for the International truck.

I. J. Bartlett of the I. J. Bartlett Co., Minneapolis, will distribute the Cleveland car in the Northwest.

Independent Tire Co., of Memphis, has been appointed distributor for the Knight tire for the Memphis territory.

George C. Kanouse, of the Kanouse Auto Co., Indianapolis, distributor of H. C. S., has acquired the Columbia contract.

W. H. Halpenny, who has distributed the Lexington in Des Moines, has sold out his business and will spend the winter in California.

Peerless Auto Sales Co. has been organized at Canton, Ohio, by **E. F. Hask, J. D. Morris, Frank S. Crawford, L. J. Noaker** and **H. A. Roemer.**

J. C. Bartlett Motor Co., of the Ensley section of Birmingham, Ala., has been appointed dealer for the Chevrolet. The company also handles the Velie.

Clyde E. Erskine, for many years connected with the Chicago branch of Mack Trucks, Inc., has been appointed manager of the St. Louis branch.

Fred Grinham, formerly of the **Chevrolet Retail Store**, and **L. L. Johnson**, of the **Mephan-Chevrolet Co.**, have been appointed Chevrolet retail dealers for St. Louis.

E. A. Neff, who has been identified with the sales department of the Cole agency in Columbus, has been appointed distributor for that line in Columbus and vicinity.

Goree-Wise Auto Co. has been organized in Montgomery, Ala., to distribute the Durant and Star in that territory. **Luther H. Goree** and **Emil Wise** are the organizers.

Stevens Motor Co. of Birmingham, Ala., has been appointed dealer for the Chevrolet. **Frank Stevens**, for a number of years identified with the trade, is the president.

C. L. Philbrick, of Winston-Salem, N. C., has taken charge of the Franklin agency at Raleigh. He is succeeded as manager of the Winston-Salem agency by **Carl E. Hine.**

Broadway Motor Sales has established an additional salesroom in Louisville, Ky. The company is distributor in that territory for the Chevrolet. **Clarence J. Jacobson** is president.

Brock Motor Car Co., distributor of various lines of accessories, and retailers of the Haynes and Hupmobile, has been appointed distributor for the Mitchell for St. Louis and adjacent territory.

Vesta Battery Corp.'s St. Louis branch has been taken over by the **Equipment Service Co. C. J. Kloske**, formerly sales manager for the **Fred B. Campbell Auto Supply Co.**, is manager of the Equipment Service Co.

Truck Parts Co. has been organized in Atlanta, to handle parts of all kinds for heavy and light trucks in the southeastern territory. It is one of the few companies in the Southeast specializing exclusively in this line.

Pence Automobile Co., Minneapolis, wholesaler of Buick cars, has increased its capital stock from $1,000,000 to $3,000,000. **Harry E. Pence** is president. The company is erecting a building in St. Paul for local headquarters.

Joe R. Cook Auto Co., Davenport, Iowa, has obtained the agency for the Peerless automobile and will also handle the Mack truck. Cook lately went to Davenport from Burlington, Iowa, where he was in the automobile business.

Upper Michigan Motors Corp. of Marquette has taken over the distribution of Dort cars in ten counties of the upper peninsula. **J. S. Davis**, who has been in business in Marquette for years, is president of the company.

L. R. Green, for some time associated with the **International Harvester Co.**, and **C. L. Mullen**, recently connected with the **Herring Motor Co.**, have joined the sales force of the **Wayne Tank & Pump Co.**, and will work from the Des Moines office.

L. B. Tebbetts Co., St. Louis, has taken over the retail business of the **Battery Exchange, Inc.** The latter company will continue a wholesale business with authorized Philadelphia Battery stations throughout southern Illinois and eastern Missouri.

Ralph Brooks, formerly an Overland salesman, has joined the **Anderson Motor Co.** of Rock Hill, S. C., as district manager for Florida and southeast Georgia with headquarters in St. Petersburg, Fla. **Hawkins Motor Co.**, of St. Louis, is distributor for the Anderson.

The Watkins Motor Co. has been organized at Asheville, N. C., to distribute Maxwell and Chalmers cars in 17 counties of western North Carolina. **J. A. Watkins** is president of the company; **Bernard Bach**, vice-president, and **Jack O'Neil** secretary and treasurer.

Wire Wheel Corp. of America, of which W. Howard Metcalf, recently elected to the Pennsylvania Legislature, is branch manager, is moving from 328 North Broad street, Philadelphia, where it has been for the last seven years, to larger quarters, which will include as a new feature a complete enameling plant, at 222-224 North Fifteenth Street.

Hodson Motor Car Co., Louisville, Ky., has secured the services of **L. H. Sackett** to act as general manager of the company. Sackett for two years served as president of one of the big local automobile companies. The Hodson company has taken on the Rickenbacker recently and will distribute it throughout Kentucky and Southern Indiana.

Harry S. Whitehair has been appointed to the national sales division of the **General Motors Truck Co.**, of Pontiac, Mich. He will devote his time to sales to national organizations which use large fleets of trucks in all sections of the country, paying special attention to the companies which have headquarters outside of New York and Chicago.

Charles H. Newlin, associated with the Hudson Motor Car Co. eleven years, and recently factory branch office manager, has formed a partnership with **LeRoy Kussy**, three years purchasing agent at Camp Grant, and opened a Hudson and Essex salesroom and service station in Rockford, Ill. **G. A. Boyer** will have charge of the service station.

Berning-Payton Motor Co. has been organized in St. Louis to succeed **Holmes Motors, Inc.** The change of name followed the signing of a contract to distribute the Stephens car. The company will retain the distribution of the Holmes. **Henry G. Berning** is president and **C. T. Payton**, vice-president of the company. **A. E. Brown** is secretary and manager.

Schroeder Motor Co., recently organized by **Geo. S. Schroeder**, well known in the automobile industry in St. Louis, owing to his many years connection with the **Vesper-Buick Auto Co.**, has been appointed distributor for the Stearns-Knight car in St. Louis. Prior to coming to St. Louis several years ago, Schroeder was connected with the Buick factory branch in Kansas City.

David Rosenbach has resigned as director of sales of the **Farran-Kinney Co.**, of Chicago, to become manager of sales for **Dalton & Balch**, of Chicago, manufacturers of D & B silent timing gears. Rosenbach has been in the automotive equipment field for over 20 years, having been secretary of the Automotive Equipment Association and sales manager for the Rayfield carbureter.

R. M. Clapp, Greensboro, N. C., and **J. I. Clendenin**, Raleigh, have sold their stock in the **Guilford Motor Car Co.**, of Greensboro, to **H. M. Clendenin** and **A. M. Scales**, both of that city. The corporation has three offices, Greensboro, Winston-Salem and Raleigh. Scales will be president of the company as reorganized and Clendenin, secretary-treasurer and general manager. The company handles Franklin cars.

Paul J. Bingaman, J. H. Steele and **Harvey Wahl**, former employees of **L. O. Rothermel**, authorized Ford agent in Reading, Pa., have purchased his interests in the business, which they have reorganized as the **Windsor Motor Co.**, to handle Ford cars and Fordson tractors. Rothermel has taken over the local Packard distributing rights. Bingaman is in charge of sales; Steele is parts manager and Wahl has the management of the service end.

Metzger-Hurlburt Motor Co. has been formed in Detroit by **William E. Metzger** and **William B. Hurlburt** to handle sales of Columbia cars, the company occupying the same headquarters as the Wills Sainte Claire Co. of Michigan, which also is headed by Metzger and in which Hurlburt has been associated. Both Metzger and Hurlburt have been prominent in the industry for many years, a large part of the time being associated. Besides being one of the founders of the Cadillac, Metzger was the "M" of the E-M-F combination and has been a vice-president of Columbia Motor Car Co. for several years. Hurlburt, after being associated with Metzger in the early days of the industry, served as a distributor in eastern cities of several cars and later organized the Hurlburt Motor Truck Co. of New York. Since leaving the truck company he has been with Metzger in the Wills Sainte Claire distributorship.

Ford Meeting at Salt Lake

SALT LAKE CITY, Nov. 25—The Ford dealers of the mountain country held a two-day convention at the Newhouse Hotel. About 200 attended from all parts of the territory, the convention closing with a banquet.

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ASSOCIATION ACTIVITIES

Closed Car Week in Louisville

LOUISVILLE, KY., Nov. 29—Twenty members of the Louisville Automobile Dealers Association staged special displays of closed cars in their salesrooms last week. Decorations in the way of autumn leaves and branches were used in many of the showrooms. Efforts were directed toward explaining closed car advantages rather than making sales, so that visitors to the various automobile establishments may feel free to call and inspect models on display.

Large beaverboard signs, bearing the lettering "Enclosed Car Week, November 20-25," together with the name of the car handled and the membership emblem of the association, were in place before the various automobile showrooms of dealers participating.

Nearly half of the automobiles sold in Jefferson County during the present year have been closed cars, according to figures compiled by the Louisville Automobile Dealers Association. This represents a substantial increase over 1921, when the percentage of closed cars was about one-fourth of the total sold.

An analysis of the figures shows that a considerable difference exists between low and high-priced automobiles in the matter of percentage of closed cars. In the low-priced field the number of closed cars sold in 1921 was 20 per cent of the total sales for that year. In 1922 this percentage has increased to 38 per cent.

In the high-priced field there is a high percentage of closed cars. Last year it was 41 per cent. This year it is 60 per cent.

Philadelphia Hears of Conditions

PHILADELPHIA, Nov. 28—Members of the Philadelphia Automobile Trade Association held a get-together meeting at the organization's headquarters and listened to talks on trade conditions by prominent business representatives of the city.

Louis C. Block, president, presided and introduced Edward Randolph, vice-president of the Girard National Bank. Randolph predicted good general business in 1923, basing his views on the fact that construction is going ahead rapidly, labor is more or less satisfied, cotton and wool growers have reason to be pleased and the railroads are carrying merchandise to capacity.

He indorsed the association's used car plan and stated that bankers regard with favor such conservative business methods. He warned them against over-allowances on traded-in cars, involving possible sacrifice when the used cars are eventually sold.

E. J. Cattell, formerly city statistician and now a field representative of the Chamber of Commerce, gave a talk on business conditions and foretold prosperity for the automobile trade.

Seek to Simplify Garage Law

CHICAGO, Nov. 27—The Chicago Garage Owners Association will endeavor at the next session of the legislature to effect changes in the state law requiring garage owners or proprietors to keep detailed records of the cars in their garages. At present the keeping of two sets of records is required, one under the state law and an entirely different form of record under the city ordinance. The state law requires a card to be filled out and signed by the owner or driver of the car. Literal compliance with both the state law and the city ordinance is considered almost impossible, and recently several garage proprietors in Chicago were fined $25 and costs each for failure to keep proper records.

The association will work for the enactment of a simplified law which would be uniform throughout the state and provide for the keeping of necessary records without imposing too great a burden on the proprietor. The association expects to co-operate with the Illinois Automotive Trade Association in the effort to bring about the enactment of such a law.

A membership campaign is under way by the garage association, a feature of which was an entertainment at a local hotel Nov. 15 at which non-members were guests. The "Shop Profits" film of the A. E. A. was shown, after which there was a dinner and vaudeville entertainment. About 230 were present.

Frampton St. Louis Director

ST. LOUIS, Nov. 28—R. C. Frampton, president of the Hudson Frampton Motor Car Co., Hudson and Essex distributor, has been elected to the directorate of the St. Louis Automobile Dealers Association. Frampton, who last year was president of the association, succeeds F. H. Squires, formerly branch manager in St. Louis for the White Co.

Election in Springfield

SPRINGFIELD, OHIO, Nov. 25—Fred W. Moyer was elected president of the Springfield Automobile Dealers Association at its annual meeting. The other officers chosen are: Vice-President, W. E. Stevens; secretary, D. C. Smith; W. F. Townsley, treasurer; new directors, Charles S. Burke and George W. Higgins.

It is planned to hold an automobile show at Memorial Hall in February.

Tire Warehouse in Fort Wayne

FORT WAYNE, IND., Nov. 27—The establishment of a warehouse in Fort Wayne from which tires and accessories will be distributed through at least six counties has been announced by George F. Guin, manager of the Toledo office of the Firestone Tire & Rubber Co.

The New Car and Truck Description Index

Giving the date and page number on which they appeared

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Barley Light 6.....Oct. 4, 1922-19
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Five Pass. Limousine.....Sept. 27, 1922-11
Chandler Town Car.....Sept. 27, 1922-11
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Chesterfield Special.....Aug. 9, 1922-30
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Moon 7 Pass. Phaeton.....Aug. 16, 1922-25
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Oakland Closed Bodies.....Oct. 4, 1922-20
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Packard Limousine-Sedan
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Packard Coupe.....Sept. 27, 1922-11
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Reo Phaeton.....Aug. 9, 1922-31
Reo Model C Sedan.....Sept. 27, 1922-11
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Seven Pass. Sedan.....Sept. 27, 1922-11
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TRUCKS

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Federal Express Chassis.....July 19, 1922-28
Indiana One Ton Speed.....Aug. 30, 1922-36
Standard Model 75.....July 5, 1922-42
Stewart Utility Wagon.....July 12, 1922-30
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Calendar of Trade Events

CONVENTIONS

Toledo.....Dec. 6-8
Annual Convention of the Ohio Automotive Trade Association.

Indianapolis.....Dec. 12
Second Annual Convention and Get-together Dinner of the Indiana Automotive Trade Association.

Chicago.....Jan. 29-31
Annual Meeting, Automotive Electric Service Association, Congress Hotel.

Quincy, Ill.....March 19
Annual Meeting of the Illinois Automotive Trades Association.

SHOWS

Bridgeton, N. J.....Nov. 25-Dec. 2
First Closed Car Show, Martin Dye Building, under the auspices of the Bridgeton Automobile Dealers Association, J. W. Acton, manager.

New York.....Dec. 3-9
Eighteenth Annual Automobile Salon, Commodore Hotel.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, auspices of the Automobile Body Builders Association.

Oakland, Cal.....Jan. 13-20
Fifth Annual Automobile Show, Civic Auditorium, under the auspices of the Alameda County Automobile Trade Association, Robert W. Martland, Manager.

Buffalo.....Jan. 13-20
Twenty-first Annual Automobile Show, 174th Regiment Armory, under the auspices of the Buffalo Automobile Dealers Association, Carl Proctor, Executive Secretary.

Hudson, N. Y.....Jan. 16-20
Hudson Automobile Show, State Armory, under the auspices of Company M, J. M. Callahan, Manager.

Baltimore.....Jan. 20-27
Annual Automobile Show, Fifth Regiment Armory, under the auspices of the Baltimore Automobile Trade Association, John E. Raine, Secretary.

Cleveland.....Jan. 20-27
Annual Automobile Show, New Public Auditorium, under the Auspices of the Cleveland Automobile Manufacturers and Dealers Association, Herbert Buckman, Manager.

Milwaukee.....Jan. 20-27
Fifteenth Annual Automobile Show, Auditorium, under the auspices of the Milwaukee Automotive Dealers Association, Bart J. Ruddle, Manager.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Salon, Drake Hotel.

Ann Arbor, Mich.....Jan. 29-Feb. 2

Minneapolis.....Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Portland, Ore.....February
Annual Automobile Show, under the auspices of the Portland Automobile Dealers Association.

Atlanta.....February
Annual Southern Automobile Show, Atlanta Auditorium, under the auspices of the Atlanta Automobile Association, Virgil W. Shepard, manager.

Troy, N. Y.....Feb. 3-10
Ninth Annual Automobile Show, State Armory, under the auspices of the Troy Used Car Sales Corp., Frank M. Baucus, manager.

Charlotte, N. C.....Feb. 5-10
Annual Automobile Show, Made-in-Carolinas Exposition Building, under the auspices of the Charlotte Automotive Trade Association.

Lansing, Mich.....Feb. 5-10

Toledo.....Feb. 5-10
Annual Automobile Show, Terminal Auditorium, under the auspices of the Toledo Auto Shows Co., H. V. Buelow, Manager.

Waterbury, Conn.....Feb. 5-12
Third Annual Show at the New State Armory, under the auspices of the Waterbury Automotive Dealers Association. Passenger Cars and Accessories. M. A. Doolittle, Chairman of the Show Committee.

Cincinnati.....Feb. 7-14
Automobile Show, under the auspices of the Cincinnati Automobile Dealers Association, Harry T. Gardner, manager.

Kansas City, Mo.....Feb. 10-17
Annual Automobile Show, under the auspices of the Kansas City Motor Car Dealers Association, George A. Bond, Secretary.

Kalamazoo and Flint, Mich.....Feb. 12-17

San Francisco.....Feb. 17-24
Seventh Annual Pacific Automobile Show, under the auspices of the San Francisco Motor Car Dealers Association, Exposition Auditorium, George A. Wahlgreen, Manager.

Grand Rapids and Mt. Clemens, Mich. Feb. 19-24

Louisville, Ky.....Feb. 19-24
Fifteenth Annual Automobile Show, under the auspices of the Louisville Automobile Dealers Association, George T. Holmes, secretary.

Trenton, N. J.....Feb. 21-24
Annual Automobile Show of Passenger Cars, Trucks and Accessories, Armory, under the auspices of the Trenton Automobile Trade Association, Frederick Petry, Jr., Manager.

Brooklyn, N. Y.....Feb. 24-Mar. 3
Annual Automobile Show under auspices of the Brooklyn Motor Vehicle Dealers Association, 23rd Regiment Armory.

Des Moines.....Feb. 25-March 5
Fourteenth Annual Automobile Show, Coliseum, Passenger Cars and Accessories only, under the auspices of the Des Moines Automobile Dealers Association, Dean Schooler and C. G. Van Vliet, managers.

Omaha.....Feb. 26-March 3
Seventeenth Annual Show of Passenger Cars, Trucks and Accessories, Municipal Auditorium, under the auspices of the Omaha Automobile Trade Association, A. B. Waugh, Manager.

Muskegon, Mich.....Feb. 26-March 3

Syracuse.....Feb. 26-Mar. 3
Annual Automobile Show under auspices of the Syracuse Automobile Dealers Association.

Springfield, Mass.....Feb. 26-March 3
Annual Automobile Show under the auspices of the Springfield Automotive Dealers Association.

Bay City, Mich.....March 5-10

Newark, N. J.....Mar. 10-17
Annual Automobile Show under the auspices of the New Jersey Automobile Exhibition Co., Claude E. Holgate, manager.

Washington, D. C.....March 10-17
Third Annual Spring Show of Passenger Cars and Accessories, Convention Hall, under the auspices of the Washington Automotive Trade Association, Rudolph Jose, Chairman of Show Committee.

Port Huron, Mich.....March 12-17

Battle Creek, Mich.....March 19-24

Alpena, Mich.....April 2-7

RACES

San Diego.....January

Teaching Women Mechanics

FORT WAYNE, IND., Nov. 28—The Y. W. C. A. of this city has started a class in automobile mechanics for women. The first half of the term is devoted to fundamental questions of design and operation and electric systems, carburetion and the cooling system, while the last half is devoted to the consideration of ordinary engine trouble and repair methods. Many women have signed up to take the course.

Bosch Case Dismissed

WASHINGTON, Nov. 28—After more than a year's investigation by the Federal Government of the sale of the Bosch Magneto Co. by the former alien property custodian, the Government's suit to dissolve the sale has been dismissed by the District Criminal Court on the ground that no overt act was shown to have been committed and therefore not within the jurisdiction of the local court.

Flint Expected in December

NEW YORK, Nov. 26—Durant Motors expects to have the first of the new Flint cars out by the first week in December. There has been a slight delay in the original program, caused by a few changes in engine proportions. The Flint engine will be made by Continental, but will be built along lines laid down by both Durant and Continental engineers.

Packard Stock Dividend

DETROIT, Nov. 28—Packard Motor Car Co. will pay a 100 per cent stock dividend on Dec. 16 to holders of common stock, directors at a meeting determining that a portion of the accumulated surplus should be permanently invested in the business to care for needs created by its rapid expansion.

Receiver for London Plow

SPRINGFIELD, OHIO, Nov. 27—On application of Edwin L. Shuey, Jr., a stockholder, John G. Cooley has been appointed receiver for the London Motor Plow Co. by Common Pleas Judge F. W. Geiger.

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾–1	$1650a	3¾x5	34x5n	34x5n	W
Acason....RB	1½	1950	3¾x5¼	36x3½	36x6	W
Acason....H	2½	2750	4⅜x5¾	36x4k	36x8k	W
Acason....L	3½	3450	4⅜x5¾	36x5k	36x10k	W
Acason....M	5	4350	5 x6¼	36x6	40x12	W
Ace....30	1½–1½	2400	3⅝x5	34x3½	34x6	W
Ace....40	2	2850	4⅛x5¼	36x4	36x7	W
Ace....60	2½–3	3400	4⅛x5¼	36x4	36x8	
Acme....20	1	....	3¾x5	35x5n	35x5n	W
Acme....30	1½	....	3¾x5	34x3½	34x5	W
Acme....40	2	....	3¾x5	34x3½	34x5	W
Acme....60	3	....	4½x5¼	36x4	36x7	W
Acme....60L	3	....	4½x5½	36x4	36x7k	W
Acme....90	4½	....	4½x5½	36x5	40x10	W
Acme....125	6¼	....	4¾x6	36x6	40x12	W
American....25	2½	3350	4 x6	36x4k	36x4dk	W
American....40	4	4275	4½x6	36x5k	36x5dk	W
American....50	5	4500	4½x6	36x5	36x12	W
Armleder....20	1	....	3¾x5¼	34x3½k	34x6k	W
Armleder....21	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder....40-B	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder....40-C	1½	....	4½x5¼	34x3½k	34x6k	W
Armleder..HW-B	2½	....	4¼x5½	36x4k	36x7k	W
Armleder..HW-C	2½	....	4½x5¼	36x4k	36x7k	W
Armleder..KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder..KW-C	3½	....	4½x5½	36x5k	36x5dk	W
*Atlas....22	1	1495	3¾x5½	34x4½n	34x4½n	W
*Atlas....44	1½–2	1950	3¾x5⅛	36x6n	36x6n	W
Atterbury....20R	1½	2175	3¾x5	34x3½	34x5	W
Atterbury....22C	2½	3375	4½x5¼	36x4	36x4d	W
Atterbury....22C	2½	3475	4½x5¼	36x4	36x4d	W
Atterbury....22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury....22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury....8E	5	4975	4¾x6	36x5	40x6d	W
Atterbury....8E		5125	4¾x6	36x5	40x6	W
Autocar....21UF	1½–2	1950	4¾x4½t	34x4k	34x6	D
Autocar....21UG	1½–2	2050	4¾x4½t	34x4k	34x6	D
Autocar....27H	2–3	2950	4 x5½	34x5	36x7	D
Autocar....27K	2–3	3075	4 x5½	34x5	36x7k	D
Autocar....26Y	4–6	3950	4¼x5½	34x6	36x12	D
Autocar....26-B	4–6	4100	4¼x5½	34x6	36x12	D
Available...H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available....H2	2	2775	4 x5	36x3½k	36x6k	W
Available...H2½	2½	3160	4 x5	36x4k	36x8k	W
Available...H3½	3½	4175	4½x5½	36x5	40x5d	W
Available....H5	5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x4s	34x5n	34x5n	I
Beck....A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	I
Beck....B-30	1½	1350	3¾x5	34x5	36x6	
Beck....C-40	2	1550	3¾x5	36x6	36x6	
Beck....D-50	2½	1950	4½x5¼	38x7	40x8	
Bell....M (Iowa)	1	1495	3⅝x5⅛	35x5	35x5n	W
Bell....E (Iowa)	1½	2100	3¾x5¼	34x3½	34x5	I
Bell....O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Bessemer....G	1	....	3½x5	35x5n	35x5n	I
Bessemer....H-2	1½	....	3¾x5	36x3½	36x5	D
Bessemer....J-2	2½	....	4½x5¼	36x4	36x4d	D
Bessemer....K-2	4	....	4½x5½	36x5	36x10	I
Bethlehem....KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem....GN	2	1795	4 x5¼	34x4	34x6k	D
Bethlehem....GN	3	2495	4 x6¼	36x4k	36x8k	D
Bridgeport....A	1½	....	3¾x5⅛	34x3½	34x6	W
Bridgeport....B	2½	....	4½x5½	36x4	36x4d	W
Bridgeport....C	3½	....	4½x6	36x5	36x10	W
Brinton....C	2	2500	3¾x5	34x4	34x5	W
Brinton....D	3	2975	4½x5¼	36x4	36x7	W
Brockway....E	1	....	4 x5	33x5n	33x5n	B
Brockway....S-5	1½	....	4 x5	36x4	36x6	W
Brockway....SK	1½	....	4½x5¼	36x4	36x6	W
Brockway....KR	2½	....	4½x5½	36x4	36x8	W
Brockway....K-5	2½	....	4½x5¼	36x4	36x8	W
Brockway....RT	3½	....	4¾x6	36x5	36x10	W
Brockway....R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway....T-4	5	....	4¾x6	36x6	40x6d	W
*Buick	½	945b	3⅜x4¾	31x4n	31x4n	B
Case	2	....	4¼x5¾	36x6	38x7	I
*Chevrolet	¼	510b	3½x4	30x3½n	30x3½n	B
*Chevrolet....G	¾	650	3½x4	34x4n	34x4½n	B
*Chevrolet....T	1	1095	3½x5¼	33x4n	35x5n	W
Chicago....C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago....C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago....C3½	3½	....	4½x5½	36x5	36x10	W
Chicago....D5	5	....	4½x5½	36x6	40x12	W
Clydesdale....10	¾–1½	1485	3¾x5	34x5n	34x5n	B
Clydesdale...10A	¾–1½	1535	3¾x5	34x5n	34x5n	B
Clydesdale....18	¾–1½	1890	3¾x5	34x5	34x5	W
Clydesdale....20	1–1½	2385	3¾x5	34x5	34x5k	W
Clydesdale....42	1½–2	2175	3¾x5	36x3½	33x5	W
Clydesdale...65X	2½–3	3250	4½x5¼	36x4	36x8	W
Clydesdale..65EX	2½–3	3150	4½x5½	36x4	36x8	W
Clydesdale....90	3½–4½	4100	4½x5½	36x5	36x10	W
Clydesdale....120	5–6	4500	4¾x6	36x6	40x12	W
Comet....T	1½	1950	3¾x5	34x4	34x4	W
Commerce....9	¾–1½	1150	3¾x5	32x4½n	32x4½n	B
Commerce....T	¾–1½	1450	3¾x5	34x4½n	34x4½n	B
Commerce....10	¾–1½	2500	3¾x5	33x5n	33x5n	B
Commerce....1	1 2	1695	3¾x5	34x3½	34x4	I
Commerce....1	1 2	1800	3¾x5	35x5n	35x5n	I
Commerce....1	2	1995	3¾x5	34x4	34x5	I
Commerce....15	2	2150	3¾x5	35x5n	34x5n	I
Commerce....18	2½	2150	4½x5¼	36x4	36x7	I

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Commerce....18	2½	$2495	4½x5¼	36x6n	40x8n	I
Commerce....25	2½	2425	4½x5¼	36x4	36x7	W
Commerce....25	2½	2770	4½x5¼	36x6	40x8n	W
Cook....51	2½	3600	4 x5⅛	36x6n	40x8n	W
*Corbitt	¾–1	1250	3½x5	33x5n	33x5n	
Corbitt....E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt....D-22	1½	2200	3¾x5	34x3½	34x5	W
Corbitt....C-22	2	2600	4½x5¼	36x3½	36x7	W
Corbitt....B-22	2½	3000	4½x5¼	36x4	36x7	W
Corbitt....R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt....A-22	3½–4	3800	4½x5½	36x5	36x10	W
Corbitt....AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder....AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder....B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder....D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder....C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder....F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder....E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn....E	1	1600	3⅝x5⅛	35x5n	35x5n	W
Dearborn....FX	1½	2300	3¾x5⅛	34x4	34x5	W
Dearborn....F	1½	2180	3¾x5⅛	34x4	34x5	W
Dearborn....48	2	2590	3¾x5⅛	34x4½n	34x7	W
Defiance....G	1	1525	3¾x5	35x5n	35x5n	B
Defiance....D	1½	1815	3¾x5	35x5n	36x6n	I
Defiance....E	2	2075	3¾x5	35x5n	38x7n	I
Denby....31	1¼	1485	3¾x5	35x5n	35x5n	B
Denby....33	1½	2145	3¾x5	35x5n	38x7n	I
Denby....35	2½–3	2795	4½x5¼	36x4	36x7	I
Denby....27	4	3895	4½x5½	36x5	36x5d	I
Denby....210	5	4295	4½x5½	36x6	40x6d	I
Dependable....A	¾–1	1350	3⅝x5⅛	34x5n	36x6n	W
Dependable....C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable....D	2½	2650	4 x5½	34x5	36x6	W
Dependable....E	3	2950	4¼x5½	36x4	36x7	W
Diamond T....O-3	1–1¼	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T....T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T....U	2–2½	2650	4 x5¼	36x4	36x7	W
Diamond T....K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T....EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T....S	5	4500	4¾x6	36x6	40x6d	W
Doane	2½	4100b	4¼x5¾	36x5	36x7	C
Doane	3½	5100b	4⅝x5¾	36x5	36x5d	C
Doane	6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers	¾	730	3⅞x4½	32x4n	32x4n	B
Dorris....K-2	1	2490	4 x5½	33x5n	33x5n	B
Dorris....K-4	2–2½	3100	4¼x5½	36x4	36x7	W
Dorris....K-7	3½	4490	4¼x5½	36x5	36x10	W
*Dort....103	½	635a	3½x5	31x4n	31x4n	B
Double Drive...B	3	4000	4¼x5½	36x6	36x6	W
Duplex....A	2	2775	4 x5¼	35x5n	38x7n	W
Duplex....E	3½	3500	4½x5½	36x8	36x8	I
Duty....22	2	1590	3½x5	34x3½	34x5	I
Eagle....101	1½	1875	3⅝x5⅛	34x5	34x5	I
Eagle....103-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D....B	3	4200	4¾x5½	36x6	36x6	B
Fageol....1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol....2½	2½	3900	4⅜x5¾	34x4	36x7	W
Fageol....3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol....5	5	5700	4½x6¼	36x6	40x6d	W
Fargo....R	2	1700	3¾x5	36x4	36x6	I
*Federal	1½	1375	3¾x5	—x5n	—5n	
Federal....SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal....TE	1½	2175	4½x5¼	36x3½	36x5	W
Federal....UE	2–2½	2125	4½x5¼	36x4	36x7	W
Federal....WE	3½–4	3150	4½x5½	36x5	36x5d	W
Federal....X2	5–6	4500	4¾x6	36x6	40x6d	W
*Ford....TT	1	380	3¾x4	30x3½n	32x4½n	W
Front Drive....C	1½	2800	3¾x5½	36x6	36x6	W
G.M.C....K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C....K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C....K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C....K-41T	5†	2450	4 x5½	36x4	36x8	W
G.M.C....K-71A	2½	3300	4½x6	36x5	40x5d	W
G.M.C....K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C....K-71T	10†	3700	4½x6	36x5	40x12	W
G.M.C....K-101A	5	3950	4½x6	36x5	40x5d	W
G.M.C....K-101T	15†	4050	4½x6	36x5	40x14	W
G.M.C....K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W	1½	1850	3¾x5½	35x5	35x5	I
*Garford	15	1590	3⅝x5⅛	34x5n	34x5n	W
Garford....25-B	1½	1990	3¾x5⅛	36x3½	35x5	W
Garford....70-H	2½	2750	4¼x5½	36x4	35x8	W
Garford....77-D	4	3750	4½x6	36x5	36x5d	W
Garford....63-D	5	4500	5 x6½	36x6	40x5d	W
Garford....153-A	7½	5200	5 x6½	36x6	40x7d	C
Gary....F	1–1½	1775	3¾x5	36x3½	36x5	W
Gary....I	2	2150	4 x5½	36x3½	36x6	W
Gary....J	2½	2850	4¼x5½	36x4	36x8	W

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Gary....K	3½	$3790	4½x6	36x5	40x5d	W
Gary....M	5	4450	5 x6½	36x6	40x6d	W
Gersix....M	1½	3100	4 x5½	36x3½	36x7	W
Gersix....K	2½	3500	4½x5½	36x4	36x8	W
Gersix	3½	4500	4½x6	36x5	40x12	W
Gotfredson....20	1	2075	3¾x5⅛	34x5	34x5	W
Gotfredson....31	1½–2	3000	4 x5¼	36x6	38x7n	W
Gotfredson....A	2½	3375	4 x5¼	36x4	36x7	W
Gotfredson....B	3½–4	4475	4½x5½	36x5	36x10	W
Gotfredson...100	5–6	5500	5 x6½	36x6	40x14	W
Graham Bros.	1	1265	3⅞x4½	33x4½n	34x5n	B
Graham Bros.	1½	1325	3⅞x4½	33x4½n	36x6n	B
[4]Gramm-Pion..10	1	1245	3½x5	33x5n	33x5n	
[1]Gramm-Pion..15	1½–2	1750a	3¾x5	36x3½k	36x5k	
[1]Gramm-Pion..65	1½–2	2250a	3¾x5	36x3½k	36x5	W
[1]Gramm-Pion..20	2–2½	2475a	4½x5¼	36x4k	36x7k	W
[1]Gramm-Pion..30	3	3300a	4½x5½	36x5k	36x5dk	W
[1]Gramm-Pion.75P	3½	4225a	4½x5½	36x6n	42x9n	W
[1]Gramm-Pion..40	4	3850a	4½x5½	36x5	36x5dk	W
[1]Gramm-Pion..50	5–6	4450a	4¾x6	36x6	40x6dk	W
Hall....1½	1½	3100	3¾x5	34x5n	33x7n	W
Hall....2½	2½	3275	4½x5¼	36x4	35x6	W
Hall....3½	3½	4100	4½x5½	36x5	35x5d	W
Hall....5	5	5100	4½x5½	36x5	42x6d	W
Hall....7 chain	7	5100	4½x5½	36x5	40x6d	W
Harvey....W OA	2	2650	4¼x5½	34x4	34x7	W
Harvey....WFA	2½	2950	4¼x5½	36x4	35x7	W
Harvey....WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye....O	1	1375	3⅝x5½	34x5n	34x5n	
Hawkeye....K	1½	1645	3¾x5½	34x3½k	34x5k	
Hawkeye....M	2	2115	4¼x5	36x4k	33x6k	
Hawkeye....N	3½	3700	4½x6¼	36x5k	36x10k	
Hendrickson....O	1½	2200	3⅝x5½	33x5n	33x5n	W
Hendrickson....N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson....M	3½	3300	4¼x5	33x5k	33x5dk	W
Hendrickson....K	5	4000	5 x6¼	36x6	40x6	W
Huffman....B	1½–2	1795	3¾x5	34x3½	31x6	W
Huffman....C	1½–2	1695	3¾x5½	33x3½	36x6	
Huffman....D	2–3	2895	4½x5½	36x4	36x7	
Hurlburt....A-A	1–1½	1950	3¾x5	34x5n	34x5n	W
Hurlburt....B-B	2–2½	2800	4¼x5½	35x4	35x4d	W
Hurlburt....C-C	3–3½	3475	4¼x5½	35x5	35x5d	W
Hurlburt....D-D	4–4½	4150	4½x6	36x5	36x6d	W
Hurlburt....E-E	5–6½	4850	4¾x6½	33x6	40x5d	W
Indep'd't(Iowa).B	1	1665	3½x5	34x3½	31x4	
Indep'd't(Iowa).G	1½	2040	3¾x5¼	34x3½	34x5	
Indep'd't(Ia.)..Hi	2½	2940	4½x5¼	36x4	36x7	
*Indiana....10	1	....	3¾x5¼	34x5n	34x5n	B
Indiana....12	1½–2	....	3¾x5¼	34x3½k	34x5k	W
Indiana....20	2	....	4½x5½	36x4k	36x7k	W
Indiana....25	2½–3	....	4½x5½	35x4k	36x8k	W
Indiana....35	3½–4	....	4⅝x5½	33x5k	36x5dk	W
Indiana....51	5–7	....	5 x6¼	33x5k	40x6dk	W
*International...S	1	1250	3½x5	32x4½n	32x4½n	
International...21	1	1550	3½x5¼	36x3½k	36x3½	
International...31	1½	1650	3½x5¼	36x3½k	36x5k	
International...41	2	2100	3½x5¼	36x3½k	36x6k	
International...52	2½	3500	4¼x5	36x6n	36x6dn	
International...61	3	2400	4¼x5	36x4k	36x7k	
International...62	3	2600	4¼x5	36x4	36x7	
International..101	5	3600	4¼x5	36x5	40x12k	
International..102	5	3800	4¼x5	36x5	36x12	
Jackson....4WD	3½	3850	4½x5½	36x7	36x7	B
K-Z....1	1	1750	3½x5	34x3½	34x5	W
K-Z....1½	1½	2075	3¾x5	36x4	36x6	W
K-Z....2½	2½	2550	4½x5¼	36x4	36x8	W
K-Z....3½	3½	3350	4½x5½	36x5	40x10	W
K-Z....5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo....T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo...G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo...LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo...NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo...HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo....SK	4	3845	4¼x6	36x5	36x12	W
Kalamazoo...OK	5	4350	4½x6	36x6	40x6d	W
[2]Kelly-S....K-31	1½	2700	3¼x5¼	36x3½	36x6	W
[2]Kelly-S....K-34	1½	2700	3¼x5¼	36x3½	38x6	W
[2]Kelly-S....K-38	2½	2900	3¼x5¼	36x4	38x4d	W
[2]Kelly-S....K-35	2½	2900	3¼x5¼	36x4	36x4d	C
[2]Kelly-S....K-40	3½	3900	4½x6½	36x5	40x5d	C
[2]Kelly-S....K-41	3½	3900	4½x6½	36x5	38x10	W
[2]Kelly-S....K-42	3½	3900	4½x6½	36x5	40x5d	W
[2]Kelly-S....K-50	5	4400	4½x6½	36x6	40x6d	C
[2]Kelly-S....K-60	6	4600	4½x6½	36x6	40x7d	C
[2]Kelly-S....K-61	5–7	4800	4½x6½	36x6	36x7d	C
Kimball....AB	2	3675	4 x6	36x4	36x7	W
Kimball....AC	2½	3975	4¼x6	36x4	38x8	W
Kimball....AK	3	4500	4½x6	36x4	36x10	W
Kimball....AE	4	5000	4¾x6	36x5	40x12	W
Kimball....AF	5	5500	5 x6	36x6	40x7d	W
*Kissel...Express	1	1585	3⅞x5½	34x5n	34x5n	W
Kissel....Utility	1½	1975	3⅞x5½	36x3½	36x6	W
Kissel...Freighter	2½	2875	4¼x5½	36x4	38x8	W
Kissel....H.D.	4	3675	4¼x5½	36x5	36x12	W
Kleiber....AA	1	2200	4½x5¼	34x3½k	34x5k	W
Kleiber....A	1½	3100	4½x5¼	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor. †Capacity with semi-trailer.

1—Gramm Pioneer. 2—Kelly-Springfield.

Passenger Car Specifications on pages 51 and 52

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4⅛x5¼	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....D	1½	2150	3½x5	34x3½	34x5	W
Koehler.....M	2½	3175	4 x5⅛	36x4	36x7	W
Koehler.....MCS	2½	3275	4 x5⅛	36x4	36x7	W
Koehler.....F	3½	4470	4½x5½	36x5	36x10	W
Koehler,MT.Trac	5	3275	4 x5⅛	36x4	36x7	W
Krebs.....23	¾	1360	3⅜x5	34x4½	34x4½	B
Krebs.....24	1	1675	3⅜x5	34x5	34x5	W
Krebs.....45	1½	2275	4½x5¼	36x4	36x7	W
Krebs.....75	2½	2550	4½x5½	36x4	36x8	W
Krebs.....110	3½	3175	4½x5½	36x5	40x10	W
Krebs.....140	5	....	4¾x6	36x6	40x6d	W
Larrabee.....X-2	1	1925	3½x4½	34x5n	34x5n	B
Larrabee.....U	1½	2400	3¾x5	34x3½	34x5	W
Larrabee.....J	1½–2¼	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½–3	3100	4½x5¼	36x4	36x7	W
Larrabee.....K-5	2½–3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½–5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5–7	4800	4¾x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5¼	36x4	36x6	W
Maccar.....H-A	2	....	4½x5¼	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5–6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack....AB D.R.	1½	3450	4 x5	36x4k	36x3½dk	D
Mack....AB•Chain	1½	3300	4 x5	36x4k	36x3½dk	D
Mack....AB Chain	2	3300	4¼x5	36x4k	36x4dk	C
Mack....AB D.R.	2	3750	4¼x5	36x4k	36x4dk	D
Mack....AB D.R.	2½	3850	4¼x5	36x4k	36x4dk	D
Mack....AB Chain	2½	3400	4¼x5	36x4k	36x4dk	C
Mack....AC Chain	3½	4950	5 x6	36x5k	40x5dk	C
Mack....AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack....AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack....AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4¼x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Mapleleaf....**	1½	3000	3¾x5¼	34x5n	36x6n	W
Mapleleaf...AA**	2	3600	4 x5¼	36x4	36x7	W
Mapleleaf...BB**	3	4050	4¼x5½	36x4	36x4d	W
Mapleleaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Mapleleaf..DD**	5	5625	4½x5½	36x6	40x6d	W
Mason.....1	1	1200	4 x5	34x5n	34x5n	B
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x6	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4¼x5½	34x4	36x8	W
Master.....DD	2½	3190	4¼x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x8	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4¼x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3⅝x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1–1¼	2000	3¾x5	34x3½	36x5	W
Menominee....H	1½	2475	4 x5	36x3½	36x5	W
Menominee....D	2–2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4¾x6	36x6	40x12	W
Moline.....10	1½	1985	3½x5	34x5n	36x6n	I
§Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x6	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5¼	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½–5	4600	4¾x6	36x6	40x6	W
Nash.....2018	1–1½	1595	3¾x5¼	34x4	34x5	I
Nash.....3018	2–2½	2150	3¾x5¼	34x4k	34x7k	I
Nash.....Quad.	2–2½	2750	4¼x5½	36x6	36x5k	I
Nash. 3018, LWB	2–2½	2200	3¾x5¾	34x4k	34x7k	I
Nash.Quad. LWB	2–2½	2800	4¼x5½	36x6	36x6	I
Nash.....5018	2½	2250	3¾x5¼	34x4k	34x7k	I
‡Nelson.....G2	1½	....	4½x5¼	36x3½	36x6	W
‡Nelson.....G3	2½	....	4½x5¼	36x4	36x7	W
‡Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
‡Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5¼	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5¼	36x4k	36x7k	W
Noble.....A21	1¼	1750	3⅝x5⅛	34x5	34x5	W
Noble.....B31	1½–2	2395	3¾x5¼	36x4	36x7	W
Noble.....D51	2½–3	2795	4¼x5½	36x4	36x8	W
Noble.....E71	3½–5	3495	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3¾x5¼	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4¼x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4½x5¼	34x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E.Spec	1½	2285	3¾x5¼	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	36x3½	36x5	W
Ogden.....E	2½	....	4½x5¼	36x4	36x8	W
Old Hickory...W	1	$1775	3¾x5	36x3½k	36x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4¼x6	34x4	36x4d	W
Old Reliable....C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6¼	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5¼	35x5n	35x5n	I
Olympic.....A	2½	3200	4¼x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	2½	3200	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	2485	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	2585	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3485	4 x5⅛	38x7n	38x7n	B
Oshkosh.....BB	2½	3585	4 x5⅛	38x7n	38x7n	B
*Overland.....4	½	425	3⅜x4	30x3½n	30x3½n	B
Packard.....EC	2–3	3100	4⅜x5½	36x4	36x7	W
Packard.....EX	2–2½	3100	4⅜x5½	36x6n	40x8n	W
Packard.....ED	3½x4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5–7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige.....54-20	2½	2420	4¼x5½	34x4	34x8	W
Paige.....51-18	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot....Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot....Lincoln	2	2050	4 x5¼	34x4	34x6	W
Patriot....LS-800	2	2175	4 x5¼			
Patriot..Washgt'n	3	2900	4½x5½	36x5	36x7	W
Pierce-Arrow....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher.....	1½–2	3000	3⅝x5	36x4	36x6	
Pittsburgher.....	3	3800	4⅛x5¼	36x5k	36x7	W
Power.....F	2	3150	4 x5¼	36x5	36x7	W
Power.....C	3½	....	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4½x5¼	34x4	34x6	W
Rainier.....R-20	2½–3	....	4½x5¼	34x4	34x7	W
Rainier.....R-15	3½–5	....	4½x5½	36x5	36x5d	W
Rainier.....R-25	3½–5	....	4½x5¼	36x5	36x5d	W
Rainier.....R-17	5–6	....	4¾x6	36x6	40x6d	W
Rainier.....R-27	6	....	4¾x6	36x6	40x6d	W
Ranger..TK-20-2	1½	1450	3¾x5	36x6n	38x7n	W
*Reo.....F	¾–1½	1185	4½x4½	34x4½n	34x4½n	B
Reliance.....10A	1½	2400	4 x5½	36x3½	36x5	I
Reliance.....20B	2½	3100	4½x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3¾x5	34x3	34x4	I
Republic...10 Exp	1	1695	3¾x5	34x5n	34x5n	I
Republic.....11X	1½	1795	3¾x5	34x4	34x6	I
Republic.....19	2½	2195	4½x5¼	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rowe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rowe.....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rowe.....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rowe.....G.P.W.	3	5250	3¼x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4¼x6	36x5	36x6d	W
Rowe.....F.W.	5	4850	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4–3⅛x4	32x4n	32x4n	B
Samson.....25	1¼	....	4–3⅛x5½	35x5n	35x5n	B
Sanford....W-15	1½–2	2150b	3¾x5	36x3½k	36x5k	
Sanford.....25	2½–3½	....	4½x5¼	36x4	36x4d	W
Sanford.....35	3½–5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5–7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ton	3	3800	4¼x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5¼	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x5	40x12	W
Selden.....30	1½–2½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½–2½	3350	4¼x5¼	34x5n	38x7n	W
Selden.....50	2½–3½	3250	4¼x5¼	36x4	36x7	W
Selden.....51	2½–3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½–5	$3750	4½x5½	36x5	36x10	W
Selden.....90	5–7	4950	4¾x6	36x6	40x12	W
Seneca.....M	½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3¼x4½	32x4½n	32x4½n	B
*Service.....25	1¼	....	3⅜x5⅛	34x5n	34x5n	B
Service.....21	1½	....	3½x5⅛	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4¼x5½	35x5n	38x7n	W
Service.....52	3	....	4¼x5½	36x4	36x8	W
Service.....72	3½	....	4¼x5½	36x4	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	1450	3⅜x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5¼	34x4	36x6	W
Signal.....J	2½	2375	4½x5¼	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x5d	W
Signal.....R	5	3900	4¾x6	36x6	40x6d	W
*Standard.....75	1¼	1330	3⅜x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....75	2½–3	2400	4½x5¼	36x4k	36x8	W
Standard.....66	3½–5	3150	4½x5½	36x5	36x12	W
Standard.....5-K	5–7	4400	4¾x6	36x6	40x14	W
*Star.....	½	610b	3½x4¼	30x3½n	30x3½n	
Sterling.....1½	1½	2885	4 x5¾	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5¾	36x4k	36x6k	W
Sterling.....2½	2½	3290	4⅜x5⅝	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6¼	36x5k	40x5dk	W
Sterling... S-W	5	4950	5 x6¼	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6¼	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6¼	36x6	40x7d	C
*Stewart...Utility	¼–1½	1245	3⅝x5⅛	34x4½n	34x4½n	I
Stewart.....15	1½–1½	1445	3⅝x5⅛	35x5n	35x5n	I
Stewart.....9	1½–2	1790	3¾x5	34x3½	34x6	I
Stewart.....7-X	2½–3	2390	4¼x5½	34x4	34x8	I
Stewart.....10-X	3½–4	3190	4½x6	36x5	36x10	I
*Stewart.....	1¼	1245	4–3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1095	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3¾x5¼	34x5n	34x5n	W
Stoughton.....B	1½	2150	3¾x5¼	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....F	3	3150	4¼x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4¼x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Thomart.....	1¼	1795	4 x5¼	34x5	34x5	C
Tiffin.....GW	1½	2100	4¼x5¼	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5¼	36x4	36x3½d	W
Tiffin.....PW	3½	3600a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4¼x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4½x5¼	35x5n	38x7n	W
Tower.....H	2½	2475	4½x5¼	36x4	36x7	W
Tower.....G	3½	3475	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595a	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595a	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3¾x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5⅛	34x3½k	34x5k	I
Transport.....35	2	1885a	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4¼x5¼	36x4k	36x8k	I
Transport.....60	3½	2585	4¼x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Traylor.....B	1½	2390	3¾x5½	34x3½	34x5	W
Traylor.....C	2–2½	2850	4 x5½	36x4	36x7	W
Traylor.....D	3–3½	3300	4¼x5½	36x4	36x8k	W
Traylor.....F	5–6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3¼x5	34x4½n	34x4½n	I
Triangle.....A	1½–2	1985	3¾x5¼	34x3½k	34x6k	I
Triangle.....C	2–2½	2285	3¾x5¼	36x4k	36x7k	I
Triangle.....B	2½–3	2585	4 x5¾	36x4k	36x7k	I
Twin City...B.W.	2	2400	4 x5½	36x6	40x8	I
Twin City...A.W.	3½	3500	4¼x6	36x5	40x5d	W
§Twin City.....B	3½	....	5½x6	36x6	36x6	I
§Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4¼x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4¼x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4¼x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4¼x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
United.....A	1½	2445	3¾x5¼	36x3½k	34x5k	W
United.....B	2½	3150	4¼x5½	36x4k	36x7k	W
United.....C	3½	3975	4¼x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States..U	1¼	1800	3⅝x5⅛	34x5n	34x5n	B
UnitedStates.NW	1½–2	2375	3¾x5	36x5	36x3½	W
United States...N	1½–2	2175	3¾x5	36x3½k	36x5k	I
United States...R	3	3300	4 x5¼	36x4	36x4d	W
United States...S	4	4075	4½x5½	36x5	36x5d	W
United States...T	5–7	4975	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Velie.....53	2½	2185	4 x5⅛	36x4k	36x7k	I
Veteran.....M**	1½	2699	3⅜x5¼	35x5n	35x5n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

§—Moreland Road Runner. ‡—Nelson Le Moon. §—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Veteran.....P**	2	$3699	4¼x5½	36x4	36x7	W
Veteran.....R**	3	4200	4¼x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....50	½–¾	995	4 x5	32x4n	32x4n	B
Walker-JohnsonA	2	2500	3¾x5	34x3½	34x6	W
Walker-JohnsonB	3	3000	4¼x5½	36x4	36x8	W
Walter.....M	2½	3850	4½x5¾	36x4	36x8	D
Walter.....S	5	4850	4½x6¼	36x6	40x6d	W
*Watson.....C	1	1465a	3⅝x5½	35x5n	35x5n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2450	4½x5¼	36x3½k	36x5k	W
Western....L1½	1½	2450	3¾x5	36x3½k	36x5k	W
Western....W2½	2½	3250	4½x5¼	36x4	36x7	W
Western....L2½	2½	2450	4¼x6	36x4	36x7	W
Western....W3½	3½	4000	4½x6	36x5	40x5d	W
*White.....15	¾	2400	3¾x5½	34x5n	34x5n	B
White.....20	2	3250	3¾x5½	36x4k	36x7k	D
White.....40	3½	$4200	3¾x5¾	36x5	40x5d	D
White.....45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick....E	1	1225	3¾x5	34x5n	34x5n	W
White Hick....H	1½	1375	3¾x5	36x3½	36x5	W
White Hick....K	2½	1675	4⅛x5¼	36x4	36x5	W
Wichita.....K	1	1875	3¾x5¼	36x3½	36x4k	W
Wichita.....M	2	2400	3¾x5¼	36x3½k	36x6k	W
Wichita.....RX	3	3200	4⅜x5¾	36x4k	36x8k	W
Wichita.....O	4	$3500	4½x6¼	36x5k	36x5k	W
Wilcox.....AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4¼x5	36x4k	36x3½dk	W
Wilcox.....E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox.....F	5	4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¾x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4½x5¼	36x4	36x7	W
Wilson.....G	3½	3685	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin.....A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin.....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin.....C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin.....D	3½	3000	4⅝x5¾	36x6n	40x8	W
Wisconsin.....E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin.....F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will.....N	1½	2450	3¾x5	36x3½k	36x6k	W
Witt-Will.....P	2½	2900	4⅛x5¼	36x4k	36x8k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.

r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders; Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P.	6–12	$250	2	LeR.	4–3½x4½	Gas.	1
Allis-Chalm.	15–25	1185	4	Midw.	4–4½x5½	Gas.	3
Allis-Chalm.	20–35	1885	4	Own	4–4¾x6½	GorK	3–4
‡Allis-Chalm.	20–35	2085	4	Own	4–4¾x6½	G	4
Allwork...2-G	14–28	1595	4	Own	4–4¾x6	GorK	3
Allwork.....C	14–28	1395	4	Own	4–5 x6	GorK	3
¶ARO.1921-22	3–6	385	4	Own	1–4½x5	Gas.	1
Aultman-T,...	15–30	1900	4	Clim.	4–5 x6½	G,K,D	4
Aultman-T,...	22–45	2800	4	Own	4–5½x8	G,K,D	6
Aultman-T,...	30–60	4000	4	Own	4–7 x9	G,K,D	8–10
Automot...B-3	12–24	1250	4	Herc.	4–4 x5⅛	Gas.	2–3
Avery,SR.Cul.	5–10	....	4	Own	4–3 x4	G,K	..
Avery Cult-C	....	....	3	Own	6–3 x4	G,K	..
Avery.....B	5–10	....	4	Own	4–3 x4	G,K	2
Avery.....C	....	....	4	Own	6–3 x4	G,K	..
Avery.....	8–16	....	4	Own	2–5½x6	G,K,D	2–3
Avery.....	12–20	....	4	Own	4–4⅜x6	G,K,D	2–3
§Avery.....	....	....	*	Own	4–4x5½	G,K,D	3–4
Avery.....	12–25	....	4	Own	2–6½x7	G,K,D	2–3
Avery.....	14–28	....	4	Own	4–4⅞x7	G,K,D	3–4
Avery.....	18–36	....	4	Own	4–5½x6	G,K,D	4–5
Avery.....	25–50	....	4	Own	4–6½x7	G,K,D	5–6
Avery.....	45–65	....	4	Own	4–7¾x8	G,K,D	8–10
Bates Mule.H	15–25	....	4	Midw.	4–4½x5¼	Gas.	3
Bates Mule..F	18–25	....	*2	Midw.	4–4½x5¼	Gas.	3
‡BatesMule.G	25–35	....	*2	Midw.	4–4½x6	Gas.	..
Bear.....	25–35	4250	*2	Ste.	4–4¾x6½	Gas.	4
¶Beeman Jr..	¾–1½	180	2	B&S	1–2½x2½	Gas.	..
¶Beeman...G	2–4	240	4	Own	1–3½x4½	Gas.	..
Best.....	30	....	*2	Own	4–4¾x6½	G,K,D	4
Best.....	60	....	*2	Own	4–6½x8½	G,K,D	8–9
¶Bolens.....	....	....	4	B&S	1–2½x2½	G.	..
Boring.....	5–10	395	4	LeR.	4–3½x4½	G.	..
Boring...1921	....	1850	3	Wauk	4–4⅜x5¾	GorK	2
**Bryan.....	15–30	....	4	Own	2–4 x5	K.	3
Case.....	12–20	1050	4	Own	4–4½x5	G,K,D	2–3
Case.....	15–27	1320	4	Own	4–4½x6	G,K,D	3–4
Case.....	22–40	2550	4	Own	4–5½x6¾	G,K,D	4–5
Case.....	40–72	5200	4	Own	7 x8	G,K,D	8–10
Caterpillar T35	15	....	*2	Own	4–4 x5½	Gas.	3
Caterpillar. 5T	25	....	*2	Own	4–4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4–6½x7	Gas.	6
Centaur.....	5–2½	345	2	N Way	2–4½x4½	GorK	1
Cletrac.....F	9–16	595	*2	Own	4–3½x4½	G,K,D	2
Cletrac.....W	12–20	1345	*2	Own	4–4 x5½	G,K,D	2–3
Dakota.....4	15–27	1500	3	Dom.	4–4¾x6	Gas.	3
Do-It-All,Baby	1	237	..	Own	1–2¾x2¾	Gas.	1
Do-It-All....A	3–6	495	..	Own	1–4½x5	Gas.	1
Do-It-All, Jack	6	395	..	Own	1–3⅝x3¾	Gas.	1
Do-It-All....6	12	495	2	Own	2–3⅝x3¾	Gas.	1
Eagle.....F	12–22	....	4	Own	2–7 x8	GorK	3–4
Eagle.....H	16–30	....	4	Own	2–8 x8	GorK	4–5
E-B.....AA	12–20	1095	4	Own	4–4¾x5	G,K,D	3
Fageol.....D	9–18	1175	4	Lyc.	4–3½x5	Gas.	2
Farm Horse B	18–30	1885	4	Clim	4–5 x6½	G,K	4
Fitch .4 Drive	20–35	1850	4	Clim.	4–5 x6½	GorK	3–4
Fordson.....	–18	395	4	Own	4–4 x5	G,K	2
Frick.....A	12–20	....	4	Erd.	4–4 x6	G,K	2–3
Frick.....C	15–28	....	4	Beav.	4–4¾x6	G,K	3–4
Grain Belt...A	18–36	$2150	4	Wauk.	4–4¾x6¾	GorK	4
Gray.....	20–36	1975	3	Wauk.	4–4½x6¼	Gas.	4
Gray.....	22–44	2165	3	Wauk.	4–5 x6¼	Gas.	4–5
Gt. WesternSt	20–30	1950	4	Beav.	4–4¾x6	K	4
Hart-Parr..20	20	865	4	Own	2–5¼x6½	K,D.	2
Hart-Parr..30	30	1045	4	Own	2–6½x7	K,D.	3
‡Hart-Parr...	....	1395	4	Own	6½x7	K,D.	..
Heider.....D	9–16	628	4	Wauk.	4–4¼x5¾	G,K	2
Heider.....C	12–20	725	4	Wauk.	4–4½x6¾	G,K.	3
Heider...Cult	5–10	800	4	LeR.	4–3½x4½	Gas.	1
Huber Light.4	12–25	985	4	Wauk.	4–4½x5¾	GorK	3
Huber Super 4	15–30	1885	4	Midw.	4–4½x6	Gas.	3
Indiana.....F	5–10	665	2	LeR.	4–3½x4½	Gas.	1–2
International..	8–16	†670	4	Own	4–4¼x5	G,K,D	2
Internatl.Titan	10–20	†700	4	Own	2–6½x8	G,K,D	3
International..	15–30	1750	4	Own	4–5¼x8	G,K,D	4
¶Kinkade....	1½–3	190	1	Own	1–3 x3	Gas.	..
La Crosse....	12–24	985	2	Own	2–6 x7	G,K	3
Lauson.....5	12–25	1295	4	Midw.	4–4½x5¼	Gas.	3
Lauson.....21	15–30	1675	4	Beav.	4–4¾x6	GorK	3–4
‡Lauson Road	15–30	2000	4	Beav.	4–4¾x6	K	..
Leader.....B	12–18	685	4	Own	2–6 x6¼	G,K,D	2–3
Leader.....N	16–32	1725	4	Clim.	4–5 x6½	G,K.	3–4
‡Leader...GU	18–35	2150	*2	Clim.	4–5 x6½	G,K	3–4
Little Giant..B	16–22	2200	4	Own	4–4½x5	K	4
Little Giant..A	26–35	3300	4	Own	4–5½x6	K	6
Lombard.1922	85–150	8950	*2	Wisc.	6–5½x6¾	Gas.	16
Lombard.1922	50	5300	*2	Wisc.	4–4¾x6½	Gas.	6–10
MerryGar1922	2	210	2	Evin.	1–2⅝x2½	Gas.	..
Minne...All-P	12–25	800	4	Own	4–4½x7	GorK	3
Minne..Gen.P	17–30	1600	4	Own	4–4¾x7	GorK	3–4
Minne. Med.D	22–44	2650	4	Own	4–6 x7	GorK	5–6
MinneHeavyD	35–70	3850	4	Own	4–7¼x9	GorK	8–9
Mohawk .1922	8–16	650	2	Light	4–3½x4½	KorG	1–2
Moline Univ D	9–18	650	2	Own	4–3½x5	Gas.	2–3
Moline Orch...	9–18	....	2	Own	4–3½x5	Gas.	2–3
‡Monarch....	20–30	3500	*2	Beav.	4–4¾x6	G,K,D	4
Motor Macult.	1½	195	2	Own	1–2¾x3½	Gas.	..
NB.....1	3–6	375	4	Own	2–3¾x4	Gas.	1
Nichols-Shep..	20–42	2650	4	Own	2–8 x10	GorK	3–6
Nichols-Shep..	25–50	3000	4	Own	2–9 x12	GorK	4–8
Nichols-Shep..	35–70	3650	4	Own	2–10½x14	GorK	8–12
Nilson Senior..	20–40	1975	5	Wauk.	4–5 x6¼	G,K	4
OilPull.....E	30–60	....	4	Own	2–10x12	K,D	8–10
¶Oldsmar...K	2½–5	$225	4	Own	1–5½x5½	Gas.	1
Pioneer.....G	18–36	....	4	Own	4–5½x6	G,K,D	4
Pioneer.....C	40–75	....	4	Own	4–7 x8	Gas.	10
Russell.....	12–24	1500	4	Own	4–4¼x5¾	GorK	2–3
Russell.....	15–30	2200	4	Own	4–5x6½	GorK	3–4
Russell.....	20–35	3000	4	Own	4–5½x7	GorK	4–5
Russell.....	30–60	5000	4	Own	4–8 x10	GorK	8–10
Samson....M	....	445	4	Own	4–4 x5½	G,K	2
ToroCultivator	6	750	3	LeR.	4–3½x4½	Gas.	2
ToroTractor'22	6–10	495	3	LeR.	4–3½x4½	Gas.	2
Townsend....	10–20	800	2	Own	4–6½x7	Ker.	2–3
Townsend....	15–30	1350	2	Own	4–7 x8	Ker.	3–4
Townsend....	25–50	2500	2	Own	4–8½x10	Ker.	4–8
TractionMotor	40–50	....	4	....	8–3¼x5	Gas.	4–5
Traylor....TB	6–12	500	4	LeR.	4–3½x4½	Gas.	1–2
Trundaar...10	25–40	3750	*2	Wauk.	4–5 x6¼	GorK	4
TwinCity.....	12–20	1200	4	Own	4–4¼x6	H,K	3
Twin City....	20–35	2750	4	Own	4–5½x6¾	G,K	3–4
Twin City....	40–65	4750	4	Own	4–7¾x9	G,K	8–10
Uncle SamC20	12–20	1295	4	Weid.	4–4 x5½	G	2–3
Uncle SamB19	20–30	1985	4	Beav.	4–4¾x6	GorK	3–4
Uncle SamD21	20–30	1895	4	Beav.	4–4¾x6	GorK	3–4
Utilitor....501	2½–4	295	4	Own	1–3½x4½	G	1
Utilitor...501A	2½–4	340	4	Own	1–3½x4½	G	1
Wallis.....K	15–25	....	4	Own	4–4¼x5¾	G,K	3
Waterloo....N	12–25	675	4	Own	2–6½x7	Ker.	3
Wetmore21-22	12–25	1185	4	Wauk.	4–4 x5¾	G,K	3
Whitney....D	9–18	595	4	Own	2–5½x6½	Gas.	2
Wichita.....T	15–30	2000	4	Beav.	4–4½x6	G,K,D	3–4
Wisconsin...E	16–30	1850	4	Clim.	4–5 x6½	GorK	3
Wisconsin...F	20–40	2050	4	Wauk.	4–5 x6¼	GorK	4
Wisconsin...H	22–40	2550	4	Clim.	4–5½x7	GorK	4–6
Yuba....12-20	12–20	2400	*2	Wauk.	4–4½x6¾	G,K,D	3
Yuba....15-25	15–25	2750	*2	Wisc.	4–4½x6	G,K,D	..
Yuba....20-35	20–35	3900	*2	Wisc.	4–5¾x7	G,K,D	4
Yuba....25-40	25–40	4250	*2	Wisc.	4–5¾x7	G,K,D	..
‡Yuba.....	25–40	4750	*2	Yuba	4–5½x7	D	..

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont.—Continental. Dom.—Domas. Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor. ¶Garden Tractor. **Steam Tractor.

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (N.A.C.C.)	NAME AND MODEL	Carburetor	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle Type and Make	†Gear Ratios
.....	$4500c	$4500	.....	.....	$6500	136	33x5	Cont.	6-3⅝x5¼	31.54	Ambassador.....R	Strom...	West.....	Bosch.....	m-d B-L.....	B-L.....	f Norwalk..	F Tim...	4.45
$1995c	1785	1850	$1885c	.....	2485	127	33x4½	H-S...	6-3½x5	29.40	American.....D-66	Strom...	G-D.....	A-K.....	s-p B&B...	B & B..	m Hartford..	F Salis..	4.50
.....	1650	.....	.....	.....	.....	127	33x4	Own..	2-	.....	American.....Steamer	None...	L-N.....	L-N.....	None.....	None....	.....	Own..	1.75
.....	1195	.....	.....	$1450c	.....	114	32x4	Cont..	6-3½x4¼	23.44	Anderson...Aluminum 6	.....	West.....	West.....	s-p B&B....	.....	.....	Salis..	.....
{1495 {1785p	1495	1595	{1595c {1945c	1995c	1995d	120	33x4	Cont..	6-3⅝x4½	27.34	Anderson.....Series 40	Rayfield.	Remy.....	Remy.....	s-p B&B....	Durston.	f Snead.....	¾F Salis.	4.50
.....	2620	2645	.....	3625	3695	130	34x4½	Own..	8-3¼x5	33.80	Appersen.....8-21-S	Johnson	Bijur.....	Remy.....	m-d Own....	Own.....	m Sterling...	½F Own..	4.25
1575	1475	1545n	{1895n {1995n	2275	2345	121	32x4	Cont..	6-3⅝x4½	27.34	Auburn.....6-51	Strom...	Remy.....	Remy.....	s-p B&B....	G-L.....	m Universal..	F Salis..	4.75
.....	1395	.....	.....	.....	1850d	118	32x4	Cont..	6-3½x4¼	23.44	Barley.....	.....	Delco	Delco.....	s-p B&B....	Fuller..	f M&E.....	Col.....	.....
1800	1800	.....	.....	2400	2500	121	32x4	Cont..	6-3¼x4½	25.35	Bay State.....	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Spicer....	¾F Col....	4.67
2950	2950c	.....	.....	3950	3950	121	32x4	Buda.	4-3⅝x5½	22.50	Biddle.....B1 & B5	Zenith..	G-D.....	Simms.....	s-p Warner .	Warner..	m Spicer....	½F Std....	4.50
5000	5000	.....	.....	.....	7000	125	32x4½	Own..	4-4 x5½	25.60	Brewster.....91	Zenith..	USL.....	Bosch.....	c Own....	Own.....	F Own.....	F Own....	3.92
865	885	725g	.....	1175	{1395 {1325	109	31x4	Own..	4-3⅜x4¼	18.23	Buick..1923-34-5-6-7-38	Marvel..	Delco.....	Delco.....	m-d Own....	Own.....	m Own.....	¾F Own..	4.66
1175	1195	975g	.....	1935	1985	118	33x4	Own..	6-3⅜x4½	27.34	Buick....1923-41-4-5-47	Marvel..	Delco.....	Delco.....	m-d Own....	Own.....	m Own.....	¾F Own..	4.60
.....	.....	1435	{1625a {1675c	1895	2195	124	34x4½	Own..	6-3⅝x4½	27.34	Buick.1923-48-9-50-4-55	Marvel..	Delco.....	Delco.....	m-d Own....	Own.....	m Own.....	¾F Own..	4.90
3100	3150	3150	.....	{3875a {3925d	4100	132	33x5	Own..	8-3½x5½	31.25	Cadillac.....61	Own....	Delco.....	Delco.....	m-d Own....	Own.....	m Spicer....	F Tim....	4.50
1750	1790	.....	.....	2480	2575	122	32x4½	Cont..	6-3⅝x4½	27.34	Case.....X	Rayfield.	Delco.....	Delco.....	m-d Own....	Own.....	f Snead.....	⅞F Col....	5.25
.....	1990	2250	1950	2480	2975	129	34x4½	Cont..	6-3⅝x5½	31.54	Case.....W	Rayfield.	Delco.....	Delco.....	m-d Own....	Own.....	f Arvac.....	¾F Col....	4.45
1185	1185	.....	.....	1595	{2295 {1585	117	32x4	Own..	6-3½x4½	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own.....	m Hardy.....	½F Adams	5.13
.....	.....	1345	.....	.....		122	32x4	Own..	6-3½x4½	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own.....	m Hardy.....	½F Adams	5.13
1495	1495c	1645	1595a	1995c	{2295d {2375f	123	33x4	Own..	6-3½x5	29.40	Chandler.....Six	Rayfield.	Bosch.....	Bosch.....	s-p B&B....	Own.....	f Own.....	F Own....	4.45
510	525	425g	.....	{ 840c { 680k	860	102	30x3½	Own..	4-3¾x4	21 53	Chevrolet.....Superior	Zenith . Holley .	A-L.....	Remy.... A-L.....	c Own....	Own.....	m Own.....	½F Own..	3.66
1085	995	.....	1260	1295d	1495	112	32x4	Own..	6-3½x4½	22.50	Cleveland.....41	Strom...	Bosch.....	Bosch.....	s-p Own....	Own.....	m Mech.....	¾F Own..	4.45
2685	.....	2685	2685c	3285b	{3285c {3685f	127¼	33x5	Nort..	8-3½x4½	39.20	Cole.....890	Johnson	Delco.....	Delco.....	c North..	North...	m Spicer....	F Col....	4.46
1475	1475	.....	1475c	1925c	1995d	115	32x4	Cont..	6-3⅛x4½	27.34	Columbia.....Elite	Strom...	A-L.....	A-K.....	s-p B&B....	Durston	m Spicer....	¾F Tim....	.....
995	985	.....	.....	.....	1395d	115	31x4	Cont..	6-3½x4¼	23.44	Columbia.....Light Six	Strom...	A-L.....	A-L.....	s-p B&B....	Durston	m Spicer....	¾F Tim....	.....
1395	1395	.....	{1495b {1495c	2065b	2165d	116	32x4	Falls.	6-3½x4¼	23.44	Courier.....	Till.....	Bijur.....	A-K.....	s-p B&B....	Muncie.	f Norwalk.	¾F Col....	5.00
3000	3000	3000	.....	.....	4500	122½	32x4	Cont..	6-3⅝x5½	31 54	Crawford.....22-6-60	Strom...	West.....	Bosch.....	m-d B-L....	B-L.....	Spicer....	½F Tim....	.....
.....	.....	.....	3500	.....	.....	135	33x5	Cont..	6-3⅝x5¼	31 54	Crawford-Dagmar...6-60	Zenith .	West.....	Bosch.....	m-d B-L....	B-L.....	Spicer....	½F Tim....	.....
.....	.....	.....	.....	.....	.....	142	33x5	Own..	8-3¼x5	45 01	Cunningham.....V	Strom...	Delco.....	Delco.....	m-d Own....	Own.....	f Snead.....	F Tim....	4.23
4350b	4350c	4350	.....	5250	6000	132	33x5	Own..	8-3½x5¼	39.20	Daniels.....D-19	Zenith..	Delco.....	Delco.....	m-d Own....	Own.....	m Spicer....	F Tim....	4.50
.....	1195	.....	1495	1795	1795	114	31x4	Cont..	6-3½x4¼	23.44	Davis.....71	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Peters....	½F Tim....	5.10
1595	1595	.....	1695	2095	.....	120	32x4	Cont..	6-3⅝x4½	27.34	Davis.....61-67	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Peters....	¾F Tim....	5.15
1175	1175	1295c	1245	1545	1595	112	32x4	H-S...	4-3½x5	19.60	Dixie Flyer.....H-S-70	Strom...	Dyneto....	Eisemann..	s-p B&B....	G-L.....	f Hardy.....	F Peru....	4.75
850	880	.....	.....	980b	1195d	114	32x4	Own..	4-3⅞x4½	24.03	Dodge Brothers.....	Stewart.	N.E.....	N.E.....	m-d Own....	Own.....	m Own.....	½F Own..	4.16
3350	3950c	3950	.....	4985c	5750f	132	33x5	Own..	6-4 x5	38.40	Derrie.....6-60	Strom...	West.....	Bosch.....	m-d Own....	Warner..	m Spicer....	F Tim....	4.23
865	865	.....	{1015a {1015d	{1240 {1020k	{1370 {1070k	108	31x4	D-Ly.	4-3½x5	19.60	Dort.....19-14	Carter..	Bosch.....	Conn.....	m-d Detlaff..	Own....	m Mech.....	¾F Flint..	4.66
990	990	.....	.....	{1145 {1365	{1195 {1495	115	31x4	Falls..	6-3½x4¼	23.44	Dort.....25-28	Carter..	Bosch.....	Bosch.....	m-d Detlaff..	Own....	Mech.....	¾F Flint..	4.66
1275	1275	.....	.....	1650	1975	104	30x3½	Own..	4-2⅝x4½	11.03	Driggs.....	Zenith..	Bosch.....	Bosch.....	s-p Hoos....	Mech..	m Spicer....	¾F Own..	4.75
6500	6500	6750	.....	7800	7800	134	33x5	Own..	8-2⅞x5	26.45	Duesenberg...Straight 8	Strom...	Delco.....	Delco.....	s-p Own....	Own.....	f Own.....	½F Own..	4.81
3000	3200	.....	.....	3800	4000	124	32x4½	Own..	4-3½x5½	24.81	Du Pont.....A	Y&T....	West.....	Eisemann..	m-d B-L....	B-L.....	m Spicer....	Col.....	4.50
890	890	.....	.....	1365	1365	109	31x4	Cont..	4-3⅞x4½	24.03	Durant.....A-22	Till.....	A-L.....	A-L.....	s-p Own....	Own.....	m,f Spicer..	¾F Adams	4.30
1600	1650	.....	.....	2250	2400	123½	32x4½	Anst.	6-3½x4½	25.35	Durant.....B-22	Rayfield.	A-L.....	A-L.....	s-p Ansted..	Warner..	m,f Spicer..	½F Tim....	5.15
1485	1095	950g	.....	1395c	1795	112	32x4	Own..	4-3⅛x5½	18 91	Earl.....40	Scoe....	A-L.....	Conn.....	s-p B&B....	Own..	f Own.....	½F Own..	3.66
1095	1095	.....	1095	1345	.....	118	33x4	Lyc...	4-3½x5	19.60	Elcar.....K-4	Strom...	Delco.....	Delco.....	s-p B&B....	Muncie.	m Peters....	¾F Salis..	4.50
1395	1395	.....	1395	1975	2065	118	33x4	Cont..	6-3⅝x4½	27.34	Elcar.....8-R	Strom...	Delco.....	Delco.....	m-d Warner .	Warner..	m Spicer....	¾F Salis..	4.50
1125c	1125	.....	1165	1695	1615	118	33x4	Falls.	6-3⅛x4¼	23.44	Elgin.....K-1	Strom...	West.....	Wagner....	s-p B&B....	Mech..	m Mech.....	¾F Col....	4.66
.....	1045	.....	.....	1145k	{1895 {1245k	108½	32x4	Own..	4-3½x5	18.23	Essex.....	Own....	Bosch.....	Bosch.....	m-d Own....	Own.....	m Spicer....	½F Own..	4.66
269r	298s	235g	.....	530	{595 {725	100	30x3½	Own..	4-3¾x4	22.50	Ford.....T	Own....	Own.....	Own.....	m-d Own....	Own.....	m Own.....	½F Own..	3.63
3900	3900	.....	.....	4900	4900	132	32x4½	Own..	6-3½x5	27 34	Fox.....7F	Zenith..	West.....	Bosch.....	m-d B-L....	B-L.....	Spicer....	½F Tim....	4.45
1900	1950	1750g	.....	2750	2850	115	32x4	Own..	6-3½x4	25.35	Franklin.....10	Own....	N.E.....	A-K.....	s-p B&B....	Own.....	m Spicer....	½F Own..	4.73
895	895	.....	.....	1095k	1345d	112	32x4	Lyc...	4-3½x5	29 60	Gardner.....T-R & G	Carter..	West.....	West.....	s-p B&B....	Mech..	m Mech.....	¾F Flint..	4.80
1385	1385	.....	.....	1895	1945	116	32x4	Own..	6-3½x4½	23.44	Grant.....	Strom...	Bijur.....	A-K.....	s-p B&B....	Durston	m Spicer....	¾F Col....	4.66
490	490	.....	.....	.....	760	100	30x3½	Own..	4-3⅝x4	21.03	Gray.....	Scoe....	West.....	West.....	m-d Own....	Detroit..	m Mech.....	½F Tim....	3.90
2475	2475c	.....	3250	.....	3475	120	32x4½	Weid.	4-3¾x5½	22.50	H.C.S.....Series 4	Strom...	Delco.....	Delco.....	m-d B-L....	B-L.....	m Spicer....	¾F Own..	.....
.....	.....	2650	.....	3450	3450	125	32x4½	Own..	4-4½x4½	27.23	Handley-Knight.....	Till.....	A-L.....	A-L.....	m-d Warner .	Warner..	m Spicer....	½F Tim....	4.90
.....	995	.....	.....	.....	.....	114	31x4	Cont..	6-3½x4¼	25.35	Hansen.....30	Marvel..	Delco.....	Delco.....	s-p B&B....	Detroit..	.....	¾F Tim....	.....
1595	1595	1795	.....	2475c	2585	121	32x4	Cont..	6-3⅝x4½	27.34	Hansen.....60	Marvel..	Delco.....	Delco.....	s-p B&B....	Detroit..	.....	¾F Tim....	.....
.....	1345	1345c	.....	1950	1950	115	32x4	H-S...	4-3½x5	19.60	Hatfield.....A-42	Zenith..	Dyneto....	Conn.....	s-p B&B....	G-L.....	m Spicer....	¾F Col....	4.66
2395	2395c	2395	.....	3095d	3395	132	33x5	Own..	6-3½x5½	29.40	Haynes.....75	Strom...	L-N.....	King.....	s-p Warner .	Own.....	m Universal..	¾F Own..	4.60
{1545 {1895p	1495	.....	{1895a {1895d	{2095b {2135p	{2395d {2695p	121	32x4½	Own..	6-3½x5	29.40	Haynes.....55	Rayfield.	L-N.....	King.....	s-p Warner .	Own.....	m Universal..	½F Own..	4.11
.....	2500c	2500	.....	3300c	3600f	126	34x4½	Own..	6-3½x4¼	29.40	Holmes.....Series 4	Strom...	Dyneto....	Eisemann..	m-d B-L....	B-L.....	m Spicer....	½F Tim....	4.90
.....	1525c	1575	.....	2570c	{1625k {2295	126	34x4½	Own..	6-3½x5	29.40	Hudson.....Super 6	Own....	Bosch.....	Bosch.....	m-d Own....	Own.....	m Spicer....	½F Own..	4.45
1395	1395	.....	.....	.....	2295	120	32x4	Cont..	6-3⅜x4½	27 34	Huffman.....	Strom...	Dyneto....	Conn.....	s-p B&B....	Covert..	.....	F Salis..	.....
{1150 {1025g	1150	.....	1250a	{1635 {1335k	1785	112	32x4	Own..	4-3½x5½	16.90	Hupmobile.....Series R	Strom...	West.....	A-K.....	m-d Own....	Own.....	m Universal..	¾F Own..	4.87
.....	1485	1685c	.....	2985	2985	121	32x4½	Cont..	6-3½x4½	25.35	Jackson.....638	Strom...	A-L.....	Remy.....	s-p B&B....	Covert..	f Snead.....	¾F Salis..	4.75
995b	995	.....	1095a	1445c	1465d	112	31x4	Own..	6-3½x4	25.35	Jewett.....Six	Strom...	Remy.....	A-K.....	m-d Long..	Warner..	m Mech.....	½F Tim....	4.45
1895	1795	.....	.....	2785	2485	120	32x4	Own..	6-3⅛x4¾	26.38	Jordan.....MX	Strom...	Delco.....	Delco.....	s-p Detroit..	Detroit..	m Spicer....	½F Tim....	4.42
.....	.....	.....	2150c	.....	.....	124	32x4	Own..	6-3⅛x4¾	26.38	Jordan.....H	Strom...	Delco.....	Delco.....	s-p Detroit..	Detroit..	m Universal..	½F Tim....	4.42
.....	985	.....	.....	.....	1450	111	32x3½	Gray..	4-3½x5	19.60	Kelsey.....4	Scoe....	Bosch.....	Bosch.....	f-d Own....	f-d Own..	.....	Own....	4.50
.....	985	.....	.....	.....	1450	111	32x3½	Gray..	4-3½x5	19.60	Kelsey.....4	Scoe ..	Bosch.....	Bosch.....	s-p B&B....	Detroit..	Snead.....	½F Std....	4.75
.....	1525	.....	.....	.....	2175	118	32x4	Walk'r	6-3½x4½	23.44	Kelsey.....6	Strom...	Bijur.....	Bosch.....	f-d Own....	f-d Own..	.....	Own....	.....
5000	5000	5250	.....	5000	6000	130	32x4½	Own..	8-3 x5½	28.80	Kenworthy.....8-90								
1495	1495	.....	1495c	2200	2400	120	32x4½	Own..	8-3 x5	28.80	King.....K	Ball&B.	West.....	A-K.....	s-p Detroit..	Own.....	f Hardy.....	F Col....	4.08
.....	.....	.....	.....	1995	2550f	124	32x4½	Own..	8-3 x5	28.80	King.....K	Ball&B.	West.....	A-K.....	s-p Detroit..	Own.....	f Hardy.....	F Col....	4.08
.....	1885	2385	2385c	2975c	3075	124	32x4½	Own..	6-3⅛x5½	26.38	Kissel.....45	Strom...	Remy.....	Remy.....	m-d Warner .	Warner..	m Spicer....	F Own....	3.92
1690	1690	1690	1890	2750	2890	121	33x4	Cont..	6-3⅝x4½	27.34	Kline Kar.....6-55-K	Rayfield.	Wagner..	Conn.....	s-p B&B....	G-L.....	f Snead.....	½F Std....	4.75

MISCELLANEOUS

a—2 Passenger, d—5 Passenger,
b—3 Passenger, e—6 Passenger,
c—4 Passenger, f—7 Passenger,
g—Chassis Price,
h—All Metal Type,
k—Soft Top Type,
n—Tire Size 32x4½,
p—Sport.
r—Price without starter and demountable rims. Price, complete, $364
s—Price without starter and demountable rims. Price, complete, $393.
†Standard Phaetons.

ENGINE

Anst—Ansted
Cont—Continental
D.-Ly—Dort Lycoming
H-S—Herschell-Spillman
Lyc—Lycoming
Nort—Northway
Walk'r—Walker
Weid—Weidely

CARBURETOR

Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg
Y & T—Yale & Towne

CLUTCH

f-d—Friction drive
c—Cone
m-d—Multiple disc
s-p—Single plate
B & B—Borg & Beck
B-L—Brown-Lipe
North—Northway

STARTING, LIGHTING IGNITION

A-L—Auto Lite
G-D—Gray & Davis
L-N—Leece Neville
N. E.—North East
West—Westinghouse

GEARSET

f-d—Friction Drive
B-L—Brown-Lipe
G-L—Grant-Lees
Mech—Mechanics
North—Northway

UNIVERSAL

f—fabric
m—metal
M &E—Merchant & Evans
Mech—Mechanics

REAR AXLE

F—Floating
½F—Semi-Floating
¾F—Three-Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
Tim—Timken

The following price changes have been announced since the above was compiled, CADILLAC 61, Roadster, 5 Pass. Phaeton, 7 Pass. Phaeton, $2,885; 5 Pass. Coupe, $3,750, Sedan, $3,950. HAYNES 55, 5 Pass. Phaeton, $1,695, Sedan, $2,595, 5 Pass. Sport Phaeton, $1,590. HAYNES 75, 7 Pass. Phaeton, $2,595, Coupe, $3,350, Sedan, $3,675.

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (N.A.C.C.)	NAME AND MODEL	Carbureter	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle: Type and Make	†Gear Ratio
$3985	$4090e	$4090	.....	$5500	$5500	132	33x5	Own..	8-3¼x5¼	33.80	LaFayette	Johnson	Delco	Delco	m-d Own	Own	m Own	F Own	4.88
5500	5500	5500	.....	5500	5500	134	32x4½	Own..	6-3⅜x5¼	33.75	Leach.....999	Rayfield	Delco	Delco	m-d	Own	m,f	Tim..	
1695	(1695	(1795	$2045d	2345e	(2545d	123	32x4½	Anst..	6-3¼x4½	25.35	Lexington.....23	Rayfield	G-D	Conn	m-d Ansted	Warner	f Snead	¾F Own	5.10
	(1995	(2095			(2145d														
1575	1395	.....	1575	(2085	2245	117	32x4	Own..	6-3½x5	23.44	Liberty.....10-D	Strom	Wagner	Wagner	s-p B&B	Detroit	m Spicer	½F Tim	4.80
				(1695k															
3800	3800e	3800	.....	4400d	4700d	136	33x5	Own..	8-3⅜x5	36.45	Lincoln	Strom	Delco	Delco	m-d Own	Own	m Spicer	F Tim	4.55
6800g	7600e	7600	.....	10500	11000	142	35x5	Own..	6-4½x5½	48.60	Locomobile.....Series 8	Ball&B	West	Delco	m-d Own	Own	m Own	F Own	3.50
3385	3185e	3185	.....	3985	4385	136	32x4½	Own..	6-3⅜x5½	33.75	Marmon.....34	Strom	Delco	Delco	m-d Own	Own	m Spicer	¾F Own	3.73
885	885	.....	.....	(985	1335	109	31x4	Own..	4-3⅝x4½	21.03	Maxwell	Stewart	A-L	Simms	c Own	Own	.....	¾F Own	4.56
				(1235															
6300	6300e	6300	.....	7500	7500	140	33x5	Own..	6-4½x6	48.60	McFarlan.....1922	Rayfield	West	Splitdorf	s-p B&B	B-L	m Peters	F Tim	3.90
3950	3950e	3950e	.....	4850	5250	132	32x4½	Own..	4-3¾x6¾	22.50	Mercer.....Series 5	Ball&B	West	Eisemann	m-d Own	Own	m Spicer	F Own	3.82
.....	3750	3750	.....	5000	5000	132	32x4½	Own..	6-3¾x5	33.75	Mercer.....6	Strom	.....	Eisemann	.....	.....	.....	¾F	3.77
1895	1895	.....	.....	.....	.....	119	32x4	Cont..	6-3¼x4½	25.35	Merit	Strom	Deloo	Deloo	s-p B&B	Muncie	f Snead	F Col	4.60
1490b	1590	.....	1850e	2050e	2275d	120	32x4	Own..	6-3½x5	29.40	Mitchell.....F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4.42
.....	.....	1690	.....	.....	.....	127	32x4½	Own..	6-3½x5	29.40	Mitchell.....F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4.42
950	950	.....	.....	.....	.....	115	32x4½	Own..	4-3¼x4½	16.90	Monroe.....1922-S-9	Zenith	A-L	Conn	m-d Own	Mech	m Universal	¾F Own	5.30
1295	1195	p1445d	1885e	1585e	1695	115	31x4	Cont..	6-3½x4½	23.44	Moon.....6-40	Strom	Deloo	Deloo	s-p B&B	Warner	m Spicer	½F Tim	4.80
1785	1785	1785	1895	2785	(2785f	128	33x4½	Cont..	6-3⅜x4½	27.34	Moon.....6-58	Strom	Deloo	Deloo	B&B	B-L	m Spicer	½F Tim	5.05
					(2485e														
1210	1240	.....	1395e	.....	2040d	121	33x4	Own..	6-3¼x5	25.35	Nash.....690-96-97	Marvel	Delco	Deloo	s-p B&B	Own	m Own	½F Own	4.50
.....	.....	1390	1645	1890e	2190f	127	34x4½	Own..	6-3¼x5	25.35	Nash.....692-94-95	Marvel	Delco	Deloo	s-p B&B	Own	m Own	½F Own	4.50
915	935	.....	.....	(1385b	(1545d	112	33x4	Own..	4-3⅜x5	18.23	Nash Four.....41-4	Schebler	Delco	Deloo	s-p B&B	Own	m Own	½F Own	4.88
				1195k	1275k														
2475b	2475e	(2375	.....	(3250e	3825f	130	32x4½	Own..	6-3½x5¼	29.40	National.....BB	Rayfield	West	Deloo	s-p B&B	B-L	m Arvac	F Col	4.66
		(3150		(3725e															
2500	2500e	2600e	.....	.....	3500d	128	32x4½	Cont..	6-3¼x4½	25.35	Noma.....3C	Claudel	Deloo	Deloo	s-p B&B	Detroit	m Spicer	½F Tim	4.45
2500	2500	.....	.....	.....	5500	128	33x5	Bea..	6-3½x5¼	29.40	Noma.....1D	Zenith	Deloo	Deloo	s-p B&B	Detroit	f Spicer	½F Tim	4.45
.....	1035	.....	.....	.....	.....	116	32x3½	Lyc..	4-3½x5	19.60	Norwalk.....430-KS	Zenith	Dyneto	Deloo	s-p B&B	G-L	m Universal	¾F Col	5.17
975	995	795g	1165e	(1445d	1515	115	32x4	Own..	6-2½x4¾	18.99	Oakland.....6-44	Marvel	Remy	Remy	c Own	Muncie	m Mech	F Own	4.33
				(1185a															
3750e	3750	3850	3750e	4500e	4800f	134	33x5	Cont..	6-3⅝x5¼	31.51	Ogren.....6 T D Luxe	Rayfield	Bosch	Bosch	m-d B-L	B-L	m	F Col	4.00
955	975	1350d	1075	1475	1595	115	32x4	Own..	4-3¼x5¼	21.86	Oldsmobile.....43 A	Zenith	A-L	Remy	s-p B&B	Warner	m Own	¾F Own	4.33
1735e	1850e	1735	.....	.....	.....	122	33x4½	Own..	8-2½x4¾	26.45	Oldsmobile.....46	Ball&B	Deloo	Deloo	c Own	Warner	m Own	¾F Own	4.33
1625p	1375	.....	1675	1875	2025	115	32x4	Own..	8-2½x4½	26.45	Oldsmobile.....47	Johnson	Deloo	Deloo	s-p B&B	Warner	m Spicer	¾F Own	5.10
525	525	.....	425g	795	875	100	30x3½	Own..	4-3⅜x4	18.23	Overland.....4	Till	A-L	Conn	s-p B&B	Own	m Own	½F Own	4.50
2485	2485	2250g	.....	3175	3275	126	33x4½	Own..	6-3⅜x5	27.34	Packard.....Single-Six	Own	A-K	Deloo	m-d Own	Own	f Spicer	½F Own	4.30
.....	2350g	2685	.....	.....	3525	133	33x4½	Own..	6-3⅜x5	27.34	Packard.....Single-Six	Own	A-K	Deloo	m-d Own	Own	f Spicer	½F Own	4.30
3850	3850	3850	.....	5240	5400	136	35x5	Own..	12-3x 5	43.20	Packard.....Twin-Six	Own	Bijur	Deloo	m-d Own	Own	m Spicer	½F Own	4.30
1465	1465	1290g	.....	1995	2245	119	32x4	Own..	6-3½x5	25.35	Paige.....6-44	Strom	Remy	A-K	s-p Long	Own	m Universal	¾F Safis	4.72
2495b	.....	2195	2245	3100	3155	131	33x4½	Cont..	6-3⅜x5	33.75	Paige.....6-60	Rayfield	Remy	A-K	s-p Long	Warner	m Mech	¾F Tim	4.66
.....	1390	1425	.....	2395	2395	120	32x4½	Cont..	6-3⅜x4½	27.34	Paterson.....22-6-52	Strom	Deloo	Deloo	s-p B&B	Durston	m Hartford	½F Std	4.57
3300	2990e	2990	.....	(3300a	(3990d	128	33x5	Own..	8-3½x5	33.80	Peerless.....23	Ball&B	Deloo	Deloo	m-d Own	Own	M Spicer	¾F Tim	4.90
				(3400c	(4090f														
5250	5250e	5250	.....	6800	(6900	138	33x5	Own..	6-4 x5½	38.40	Pierce-Arrow.....	Own	Deloo	Deloo	m-d Own	Own	m Spicer	½F Own	3.35
					(700														
2050	2000	2050	.....	2950	3000	126	32x4½	H-S..	6-3½x5	25.35	Pilot.....6-50	Till	Bijur	Conn	s-p B&B	Muncie	m Hartford	¾F Col	4.57
3150	3100e	3250	.....	4300	5100	126¾	32x4½	Own..	6-3⅜x5½	27.34	Premier.....6-D	Johnson	Deloo	Deloo	s-p B&B	Own	m Spicer	¾F	4.55
1095	1095	.....	.....	1750	1825	117	32x4	Falls..	6-3½x4¼	23.44	Premocar.....6-40-A	Strom	Wagner	Wagner	s-p B&B	Mech	m Spicer	¾F	4.77
.....	1665	.....	.....	2385	2475	116	32x4	Own..	4-3¾x5	22.50	R & V Knight.....R	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	F Safis	4.77
2475	2475e	2475	.....	3015	3105	127	32x4½	Own..	6-3½x4½	29.40	R & V Knight.....J	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	½F Tim	4.40
1595	1615	1485	1745	(2355e	(2435f	120	33x4	Own..	6-3⅛x5	24.34	Reo.....T6 & U6	Rayfield	N.E	N.E	m-d Own	Own	m,f Own	½F Own	4.17
				(1835	(1885														
3200	3200	3200	.....	.....	4000	131	32x4½	Dues..	4-4½x6	28.90	ReVere.....C	Strom	West	Bosch	m-d B-L	B-L	m Spicer	¾F Std	4.00
.....	1485	.....	.....	1885	1985	117	32x4	Own..	6-3½x4¾	23.44	Rickenbacker.....A	Strom	Simms	A-K	c Own	Own	m Universal	¾F Own	
2685	2485e	2685	.....	3585	3585	128	32x4½	Cont..	6-3½x5½	29.40	Reamer.....6-54-E	Strom	Bijur	Bosch	s-p G-L	G-L	f Snead	½F Tim	4.37
3785	3485	3650e	3650e	.....	4650e	128	32x4½	Dues..	4-4½x6	28.90	Reamer.....4-75-E	Strom	Bijur	Splitdorf	m-d B-L	B-L	f Snead	½F Tim	4.37
.....	10900	.....	.....	.....	.....	143½	35x5	Own..	6-4½x4¾	48.60	Rolls-Royce.....	Own	Bijur	Bijur	c Own	Own	m Own	F Own	4.00
1195	1195	.....	.....	1795	1795	112	32x4	Own..	4-3½x5	19.60	Saxon.....125	Strom	Wagner	Wagner	s-p Detlaff	Covert	m Peters	¾F	4.66
1645	1645	.....	.....	2645	2645	118	33x4	Cont..	6-3½x4½	25.35	Sayers Six.....DP	Strom	Deloo	Deloo	s-p B&B	G-L	m Arvac	½F Std	4.77
875	875	.....	.....	.....	.....	108	30x3½	Lyc..	4-3½x5	19.60	Seneca.....L-2 & O-2	Zenith	A-L	A-L	s-p B&B	G-L	m Universal	F	4.77
1095	1095	.....	.....	.....	.....	112	31x4	Lyc..	4-3½x5	19.60	Seneca.....50 & 51	Zenith	A-L	A-L	s-p B&B	G-L	Detroit	F	4.55
980	980	.....	.....	1685	1685	114	32x4	Supr..	4-3⅜x5	18.23	Sperling.....A	Zenith	Bijur	Splitdorf	s-p B&B	Warner	m Hartford	¾F Peru	4.66
2150	.....	2395	2395	2750	3200	127	34x4½	Own..	8-3¼x5	33.80	Standard.....98	Zenith	West	Splitdorf	s-p B&B	G-L	m Arvac	½F Tim	4.45
2750	2750	2750	2425g	3950e	3985f	130	32x4½	Own..	2-4 x5	.....	Stanley.....740	None	Bijur	None	None	None	None	½F Own	4.50
1765	1765	.....	.....	2750	.....	118	33x4	Cont..	6-3¼x4½	25.35	Stanwood Six.....	Strom	West	A-K	s-p B&B	G-L	m Peters	½F Std	4.50
319r	348s	285g	.....	580	645	102	30x3½	Cont..	4-3¼x4¼	15.63	Star.....	Till	A-L	A-L	s-p	.....	Spicer	Tim	4.77
2250	2250	2450	.....	3150	3450	125	34x4½	Own..	4-3⅜x5⅜	22.50	Stearns-Knight.....SKL4	Rayfield	West	A-K	m-d Own	Own	f Climax	½F Own	4.50
2700	2700	2850	.....	3500	3700	130	34x4½	Own..	6-3⅜x5	27.34	Stearns-Knight.....6	Rayfield	West	A-K	m-d Own	Own	f Climax	½F Own	4.50
1575	1585e	1625e	.....	2450	2550	122	33x4½	Own..	6-3¼x4½	25.35	Stephens.....90	Till	A-L	A-L	s-p B&B	Mech	m Mech	½F Tim	4.90
7250	6900e	6800	(6900e	8600	8900e	138	35x5	Own..	6-4⅞x5½	47.27	Stevens-Duryea.....E	Strom	West	Berling	m-d Own	Own	m Own	F Own	4.14
			(5600g																
975	975	785g	.....	1225	1550	112	32x4	Own..	6-3½x4½	23.44	Studebaker....Light Six	Strom	Wagner	Wagner	s-p Own	Own	f Thermoid	½F Own	4.55
(1250	1275	1275e	1000g	1875	2050	119	32x4	Own..	6-3½x5	29.40	Studebaker..Special Six	Strom	Wagner	Wagner	s-p Own	Own	m Spicer	½F Own	4.06
1275e				(2375															
1300g	1650	.....	1785	(2275	2475	126	33x4½	Own..	6-3⅞x5	36.04	Studebaker.....Big Six	Ball&B	Wagner	Wagner	s-p Own	Own	m Spicer	½F Own	4.70
2450	(2790c	(2640e	2670a	3490	4450	130	32x4½	Own..	4-4⅜x6	30.63	Stutz.....KLDH	Strom	Remy	Deloo	m-d Warner	Own	m Hartford	½F Own	3.50
	(3165c	(3015																	
2025	2125	2175e	.....	2650e	2785	118	32x4	Own..	4-3⅜x5½	18.23	Templar.....A-445	Strom	Bijur	Simms	s-p B&B	Detroit	f Snead	¼F Us	4.40
1175	1175	.....	.....	.....	.....	117	33x4	H-S..	4-3½x5	19.60	Tulsa.....E-1-2-3	Zenith	Dyneto	Conn	s-p B&B	Muncie	m	F Safis	4.50
1275	1275	.....	1305	1795	1795	115	32x4	Own..	6-3¼x4½	23.44	Velie.....58	Strom	West	A-K	s-p Dooley	Durston	m Thiemer	¾F Own	4.66
.....	1785	.....	.....	.....	2285	120	32x4	Cont..	6-3¼x4½	25.35	Washington.....6	.....	Bijur	Remy	s-p B&B	Warner	Arvac	¾F Col	4.77
.....	1910f	1890	.....	.....	2890	125	32x4½	Cont..	6-3½x5¼	29.40	Westcott.....D-48	Rayfield	Deloo	Deloo	s-p B&B	B-L	m Peters	½F Tim	4.45
.....	1690	.....	1890	.....	2690	120	32x4	Cont..	6-3¼x4½	25.35	Westcott.....B-44	Rayfield	Deloo	Deloo	s-p B&B	Warner	m Peters	½F Col	4.33
2475	2475	.....	.....	3275	3475	121	32x4½	Own..	8-3¼x4	33.80	Wills Sainte Claire..A-68	Zenith	Deloo	Deloo	m-d Own	Own	rt Mech	¾F Own	4.45
1235	1235	1375	.....	1795	1950	118	32x4	Own..	4-3⅝x4¼	21.03	Willys-Knight.....20	Till	A-L	A-L	m-d Own	Own	f Own	¾F Own	4.44
.....	.....	1435	.....	.....	2195f	124	32x4½	Own..	4-3⅝x4½	21.03	Willys-Knight.....27	Till	A-L	A-L	m-d Own	Own	f Own	¾E Own	5.12
3400	.....	3400	3600	4000	4550	132	33x5	Own..	6-3⅜x5¼	33.75	Winton.....40	Rayfield	Deloo	Deloo	m-d Warner	Warner	f Climax	¾F Tim	4.66

MISCELLANEOUS
a—2 Passenger, d—5 Passenger
b—3 Passenger, e—6 Passenger,
c—4 Passenger. f—7 Passenger
g—Chassis Price.
h—All Metal Type.
k—Soft Top Type.
n—Tire Size 32x4½.
p—Sport.
t—Price without starter and demountable rims. Price, complete, $414.
s—Price without starter and demountable rims. Price, complete, $443.
†Standard Phaetons.

ENGINE
Anst—Ansted
Bea—Beaver
Cont—Continental
Dues—Duesenberg
H-S—Herschell-Spillman
Lyc—Lycoming
Supr—Supreme

CARBURETOR
Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg

STARTING, LIGHTING IGNITION
A-L—Auto Lite
G-D—Gray & Davis
L-N—Leece Neville
N. E.—North East
West—Westinghouse

CLUTCH
c—Cone
f-d—Friction drive
m-d—Multiple disc
s-p—Single plate
B & B—Borg & Beck
B-L—Brown-Lipe

GEARSET
f-d—Friction Drive
B-L—Brown-Lipe
G-L—Grant-Lees
Mech—Mechanics

UNIVERSAL
f—fabric
m—metal
M&E—Merchant & Evans
Mech—Mechanics

REAR AXLE
F—Floating
½ Floating—Semi-Floating
¾ F—Three-Quarter Floating
Col—Columbia
Safis—Salisbury
Std—Standard
Tim—Timken

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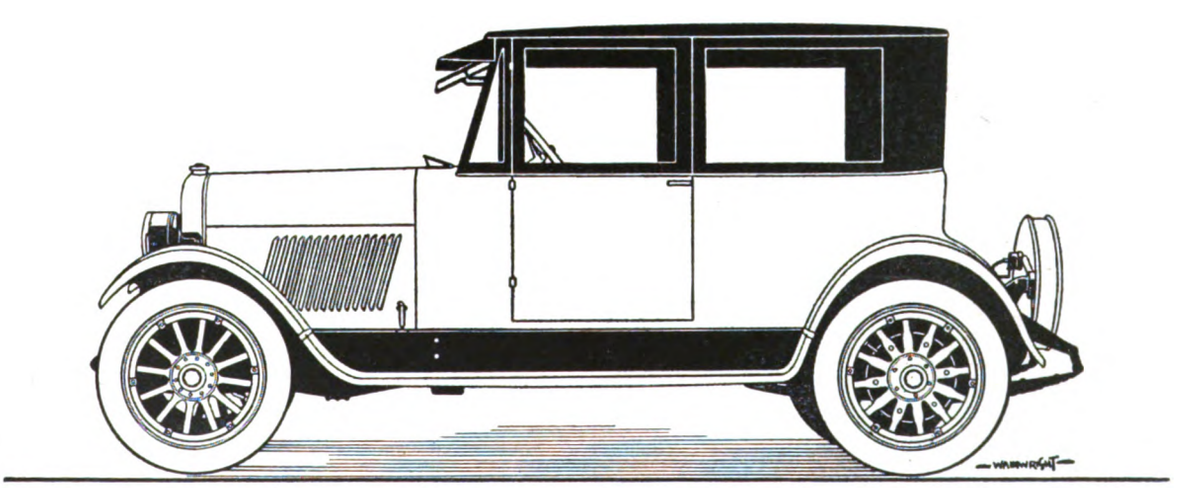
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It's the latest achievement of Haynes foresight—outgrowth of the deep understanding of progress in motor lovers' requirements and the accurate knowledge of what the dealer can sell—which has produced the fully equipped sport cars now offered as the

HAYNES 55 SPORT SERIES

"No Extras to Buy"

THIS new series has met with such immediate and immense success because it is so thoroughly sound in principle and in understanding of motoring needs.

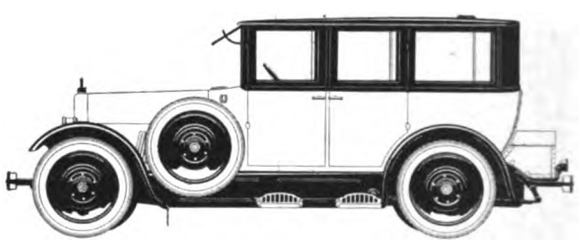
Such equipment as you will find on these new Haynes 55 Sport models is the equipment which any experienced motorist would put on the car himself, for comfort, convenience and style.

Haynes has simply put this equipment on the car as it leaves the factory. It means economy for the motorist, as well as correct harmony of each unit with the complete proportion of the car.

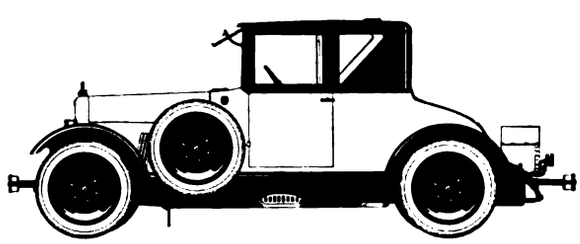
Six disc wheels, cord tires and tubes—sun and vision visor, rear vision mirror—trunk and protection bars—windshield wings on open models—a graceful body of rich maroon on a 121-inch wheel base—the famous Haynes-built light six motor—all these and many more factors are specific reasons for the tremendous welcome of these cars everywhere.

Are you interested in such sales possibilities as the Haynes presents? Well qualified dealers are invited to write, telephone or telegraph for appointment—confidential if desired. Address Department 1152.

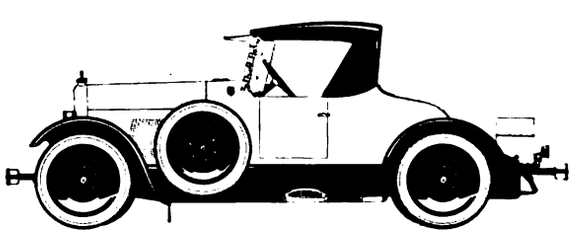
THE HAYNES AUTOMOBILE COMPANY, *Kokomo, Indiana*
EXPORT OFFICE: 1715 Broadway, New York City, U.S.A.



THE NEW, 1923 HAYNES 55 SPORT SEDAN, 5 PASSENGERS

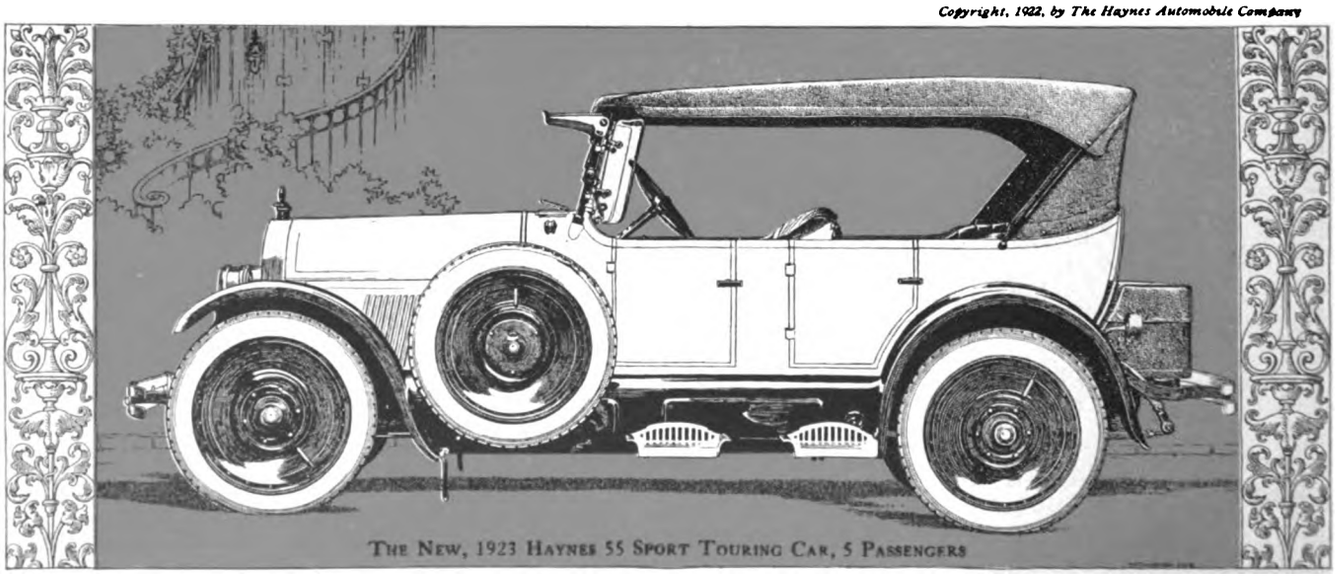


THE NEW, 1923 HAYNES 55 SPORT COUPELET, 3 PASSENGERS



THE NEW, 1923 HAYNES 55 SPORT ROADSTER, 2 PASSENGERS

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THE NEW, 1923 HAYNES 55 SPORT TOURING CAR, 5 PASSENGERS

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGE

Volume LXXIII
Number 16

NEW YORK

Pete says:—

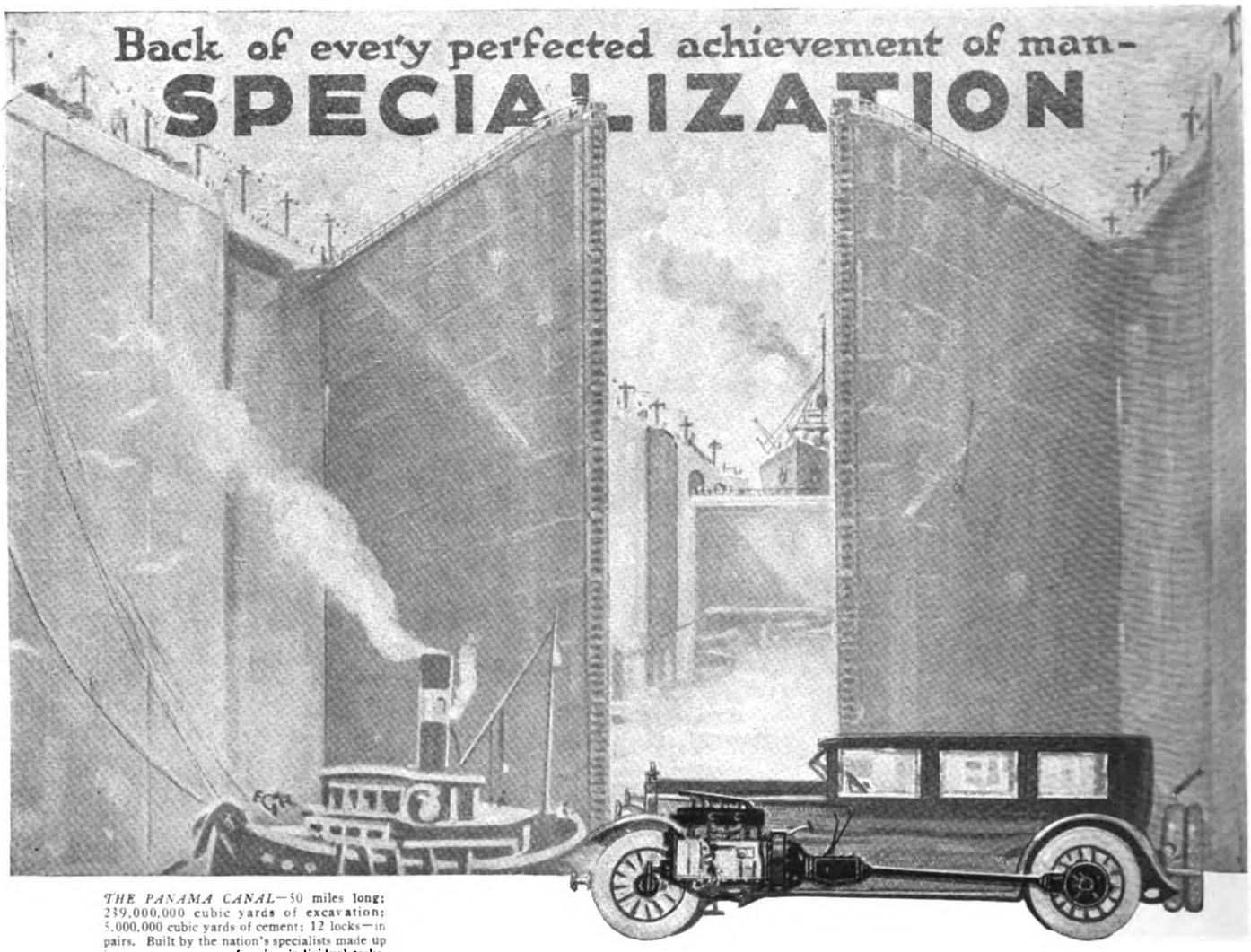
"I feel sorry for any dealer in any town of over ten thousand people in the United States who doesn't know what he is going to be saying to himself before the first of January, 1924.

"This is it:—

"'Why didn't I get the Jordan proposition when it was open in the fall of 1922'"!

PRESIDENT
Petersen Motors Inc.
Philadelphia, Pa.

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The industry's master achievement—the SPECIALIZED car

All the good intentions in the world could not have constructed the Panama Canal. It required the bringing together of the SPECIALIZED resources of the nation to complete the task.

Just so in the SPECIALIZED Vehicle the car builder has brought together highly specialized products—units—manufactured by completely equipped specialist organizations.

The public appreciates what it means to have all major units of a car—the motor, transmission, universal joints, axles and clutch—the products of the specialist organizations exclusively equipped to make those units.

The car buying public also knows the advantage of the uninterrupted performance assured by the parts-distributing stations throughout the world, supplying the parts for specialized units.

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And in seeing that the car *is* a SPECIALIZED Vehicle, consider the fundamental unit—the motor. If it's a genuine SPECIALIZED Vehicle you will find upon the crankcase of the motor the well known—Continental Red Seal.



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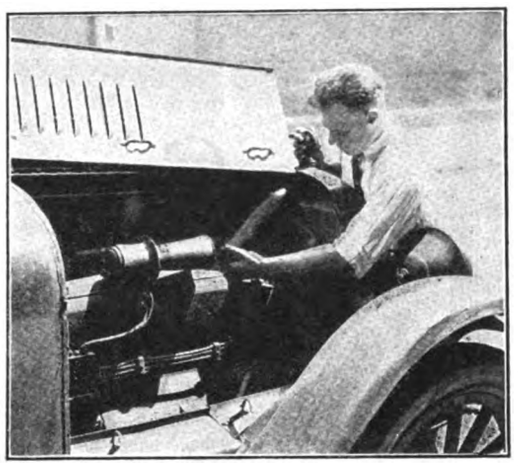
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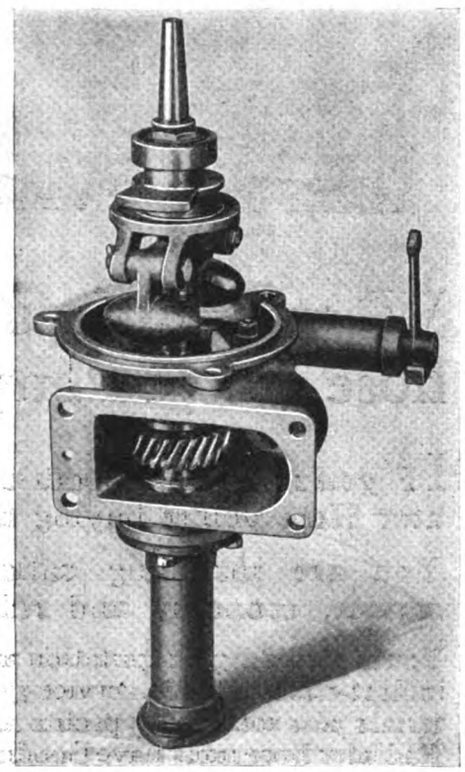
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is a unique feature effecting the control, and economy of operation, of the Rolls-Royce Motor Car. When the Governor lever on the quadrant is set to any given position it automatically controls the maximum speed at which the engine will develop power (without the use of the accelerator pedal.)

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SPRINGFIELD, MASSACHUSETTS

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXIII New York, U. S. A., Wednesday, December 6, 1922 No. 10

YOUR Business and Automotive Transportation Demand It



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What Will the Automotive Trade Be Doing

When 43 Legislatures Convene Next Month?

It's Time to Get Together to Promote and Protect That Great Utility—Transportation—This Story Suggests Some Things That Dealers Can Do

By NEAL G. ADAIR

FORTY-THREE Legislatures are going to begin about a month from now considering legislation that affects the automotive trade. How do we know? Forty-three Legislatures are going to convene soon after the first of the year and who ever heard of a legislative session without automotive legislation?

It just isn't done, that's all. The automobile, its manufacture, sale and use, have been for years subjects of special legislation. Nor is any change in sight. In fact, keen students of the legislative mind predict that the next ten years will be the most critical, from a legislative standpoint, in the history of the industry.

Yet in how many States have automotive men united to promote and protect their interests before the Legislature? There are a few State dealer associations which maintain legislative committees working more or less effectively in promoting good and restraining bad legislation. In some States which have no State-wide dealer associations informal groups of dealers have been formed to watch legislation. In very few States is there a powerful agency—as there should be in every State—composed of automotive manufacturing, automotive merchandising and automotive vehicle using interests working together to see that the automobile gets a fair share with other utilities in public improvements and that it is not victimized by class legislation.

Early in August Motor World commented on probable classes of legislation affecting the automotive trade and urged study and action by dealers to prevent discrimination against their businesses and their products. We hope the suggestions made then prompted steps in some states toward organization. Now we are within a month of the convening of nearly all the legislatures and it seems timely to call again to the attention of the trade what it can do for itself while senators and representatives are grinding out the annual grist of new laws.

The first essential is organization.

The most farsighted and most energetic dealer cannot, alone, accomplish anything along legislative lines. It is an organization task.

Co-operation Is Necessary

It is equally futile for dealers, even if well organized, to go it alone in legislative affairs. They should work with the automotive manufacturing interests, if there are any in the state, and also with the powerful owner group, the people who own and drive cars and trucks.

California is a shining example of preparedness to fight the industry's legislative battles. In that state there is an Automotive Conference, composed of representatives of organized manufacturers, dealers and owners, which holds a legislative convention several weeks before the law-making body convenes. This Conference adopts a program for the legislative session, recommending some laws and changes in laws and determining beforehand where it will stand on various classes of legislation initiated outside its own organization. When the Legislature convenes, committees of the Conference are ready to present the views of manufacturers, dealers and owners as a single, definite view. The effect of such a presentation, of a united, powerful front, can readily be imagined.

In New Jersey the Good Roads Association, which recently promoted successfully a $40,000,000 highway bond issue referendum, is about to consider its legislative program. This association includes representatives of manufacturers, dealers and owners and will be prepared also to work as a single organization on questions that come before the Legislature.

What the Problems Are

Automotive men looking forward to participation in legislative affairs would do well, in considering their local problems, to give some thought to the general line of thought that is running through the minds of legislators all over the country. In the main it may be said that legislators are thinking along five principal lines, which cover these subjects:

Taxation.
Restrictions on the size and weight of loads.
Rules of the road.
Compulsory insurance.
Common carrier legislation.

Let's look into these subjects, one at a time, and try to determine where the trade should stand regarding them.

Taxation of automotive vehicles is necessary and good public policy. Everybody recognizes that. The question is, how shall they be taxed and how much?

In some States it has been the habit of the automotive trade to fight any and every new tax bill. This has had the effect of antagonizing legislators and creating unfavorable public opinion for the industry. What should be done is to investigate the need for the proposed tax and, if it is needed, help its proponents levy it in a scientific manner.

There has been quite a bit of agitation by the trade here and there in favor of gasoline taxes. As a matter of fact, such a tax would distribute the tax burden more evenly among motor vehicles than some forms of assessment now

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in vogue, but the gasoline tax as an *additional tax*, with various license fees also prevailing, may impose an unfair levy on users of cars and trucks and so make the dealer's business more difficult by increasing sales resistance.

In any State where taxation is to be a legislative issue the men in the industry should get together now to determine what revenues should be raised and how the process can be most equitably applied.

There is no need of guesswork in such an inquiry. It is generally conceded by well informed persons that highway building should be financed by the public at large, with some assistance from abutting property owners, and that highway maintenance funds should come from users of the highways, largely car and truck owners. It is just as reasonable that the public should bear the burden of highway construction—and it should be remembered that car and truck owners themselves form a large part of the general taxpaying public—as it is that society at large should finance education. Both education and transportation are essential to progress, both are utilities of the first order.

Maintenance Needs Defining

In addition, however, to bringing about recognition of the public responsibility for the construction of highways, it is necessary to get a correct definition of maintenance. In some States where officials recognize highway building as a general tax some building and rebuilding undertakings are juggled into the maintenance account, thus throwing the burden on the car and truck user. The cost of actual maintenance of roads already built, including administration and the expense of administering motor vehicle registration and traffic control, is a legitimate maintenance charge and will represent in any State what should be raised by taxation of the motor vehicle owning public. If highway maintenance and administration is going to cost a State a million dollars next year and the motor vehicle licenses and kindred forms of taxation will yield a million or a little more it is obvious that an additional tax of any kind is not justified and if the facts are properly presented to the Legislature and the public it is not likely that legislative opinion will approve nor public opinion permit passage of a tax increase law. In one large State last winter the automotive interests brought about the defeat of bills levying additional motor vehicle taxes, including an all but prohibitive levy on trucks, by showing the legislators and the people that the revenues already available were sufficient. In some States it may be advisable to change the system of taxing motor vehicles. The trade should not blindly oppose such a change because it is a change and perhaps looks on the surface like another attempt to bleed the motorist and truck owner, but should set intelligent committees to work with the legislative and highway officials to bring about the changes in a manner equitable to everybody concerned.

In several States bills are likely to be introduced restricting weights and sizes of vehicles and their loads. Some restriction is necessary else motor trucks will destroy highways, injuring their own and the motor car's interests as well as the public's. But there is a reasonable limit to restrictions. Some legislators have been decidedly unreasonable in their attitude toward truck loads. Others have seemed to be unreasonable because they lacked definite information to proceed along sensible lines. There is a central point of information and advice in the Motor Vehicle Conference Committee, with headquarters in New York. The committee has worked out an elaborate schedule of recommended truck weights and sizes which can be had for the asking.

Rules of the road, including speed limits and varied forms of regulation having to do with traffic control may be the subject of legislation. Rules of the road may be so restrictive and rigid as to discourage motor car and truck use and thus set up a serious factor of sales resistance. They should be so drafted as to provide for prompt and regular movement of vehicles at speeds in keeping with their capabilities and at the same time recognizing the factor of safety, for motorists and pedestrians alike. Some States have capable men, some of them with engineering ability, directing the preparation of traffic control regulations. Other States might well employ such men, and the automotive trade can encourage action along this line.

The subject of compulsory liability insurance for the car and truck owner, which has been coming to the front within the past two or three years, is closely associated with traffic regulation. Highway accidents caused by motor vehicles have reached such proportions that a considerable element of the public is demanding legislation which will insure financial responsibility on the part of a driver to pay for personal or property injury resulting from his recklessness.

There are men in the industry who believe that compulsory liability insurance is bound to come. But they argue that everything possible should be done in the building of additional and better highways and in more scientific control of traffic, so that the rates may be kept down by holding down the number of accidents. In any State where the subject is brought up it should have the closest attention of the automotive trade. If conditions in any locality justify the enactment of a compulsory insurance law it should be framed with the utmost care, else the expansion of the industry will be dealt a severe blow through the setting up of an arbitrary discouragement of motor vehicle use.

Common carrier legislation, affecting motor vehicles which transport persons or freight for hire, is under discussion in virtually all States. Some authorities favor putting such vehicles under State commissions regulating fares, schedules and service to the public in general, in much the same fashion as railroad and trolley service is regulated. Others oppose such supervision. Local judgment must be applied. And in such application the automotive industry, with its expert knowledge of motor transportation, should be a factor.

Trade Can Get a Hearing

The automotive trade can get a hearing on all questions affecting the sale and use of motor vehicles if the men in the trade will demand it. They should demand such a hearing and be ready to use it intelligently when these forty-three Legislatures convene in the next few weeks. There is no need to go before State authorities as a suppliant, nor is a fighting attitude any more effective. It should be remembered that the majority of legislators are honest but that they have to deal with hundreds of subjects of which they have no personal knowledge. They will welcome fair, sound advice and on many subjects automotive men are particularly fitted to advise them.

In New York, at headquarters of the National Automobile Chamber of Commerce, there is an organization of the motor vehicle manufacturing, merchandising and using interests equipped to guide State organizations in legislative questions. It is the Motor Vehicle Conference Committee. Its officers stand ready to advise and assist groups of manufacturers, dealers, or owners anywhere in their public problems. If manufacturers, dealers and owners out in the separate States will do their part, uniting, as they can and should, for the promotion and protection of the automotive vehicle as a great public utility, the problem will be considerably simplified.

The Legislature in YOUR State will be assembling next month. It is going to do things of vital concern to your business. And your business *is your business*. Organize NOW to give it a fair chance to live and grow.

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Follow Through System for Sales Staff Keeps Customers Sold

Los Angeles Dealer Has Salesmen Call on Customers Once Each Month—All Complaints and Dissatisfaction Followed Up and Adjusted

"SMITH, if you ever purchase a car don't get a ———. I have had this 'can' less than five months and all it has been is a pack of trouble. It's the most overgrown lemon that ever crept on the market."

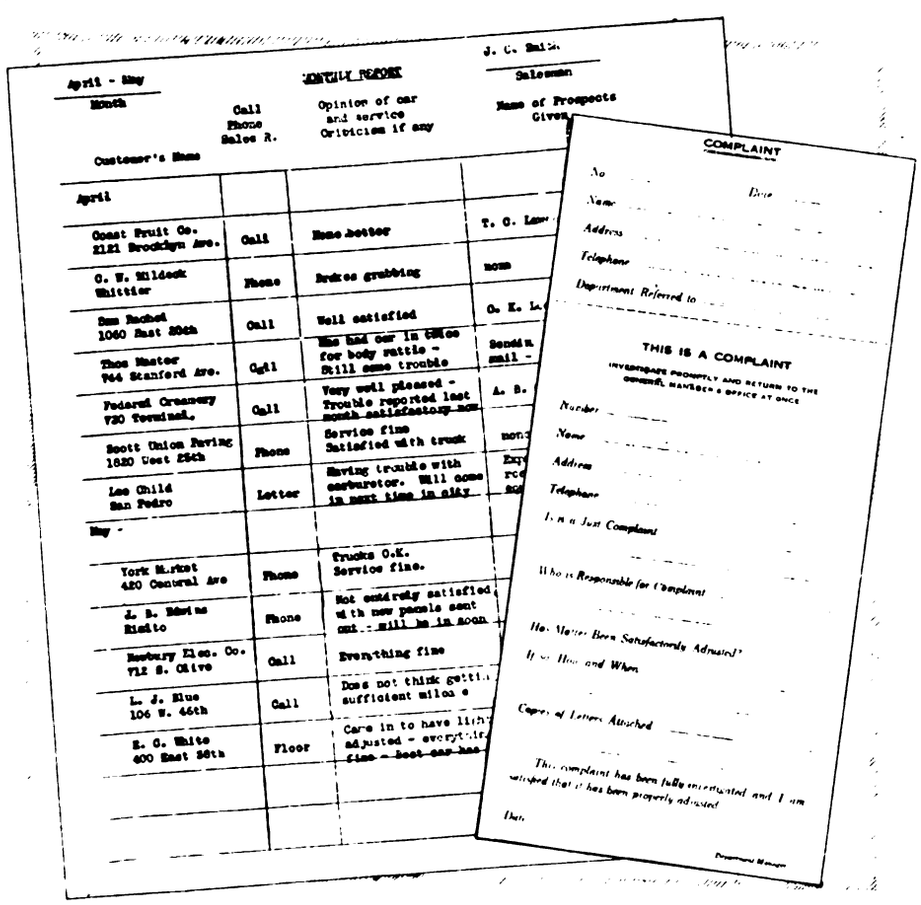
"Why don't you take it down to the place where you bought it and tell them about it?" asked Smith.

"What's the use," he grumbled. "Once they get your money, they're through with you. If I took the car down they would probably soak me a couple of hundred dollars more to fix it up."

"I guess you're right," said Smith.

The dealer who sold this man not only has one deep-seated enemy in his trading territory, but he probably has many others—all because he hasn't kept close to his customers.

IT is a safe bet that the trouble with the car in question was nothing more serious than dragging brakes. A few minutes' work by a mechanic adjusting the brakes would have turned this customer's grouch into a smile.



The report form on the left is used by salesmen to record their calls on owners. All owners must be reached at least once each month. The complaint record on the right assists in following up and smoothing out dissatisfaction

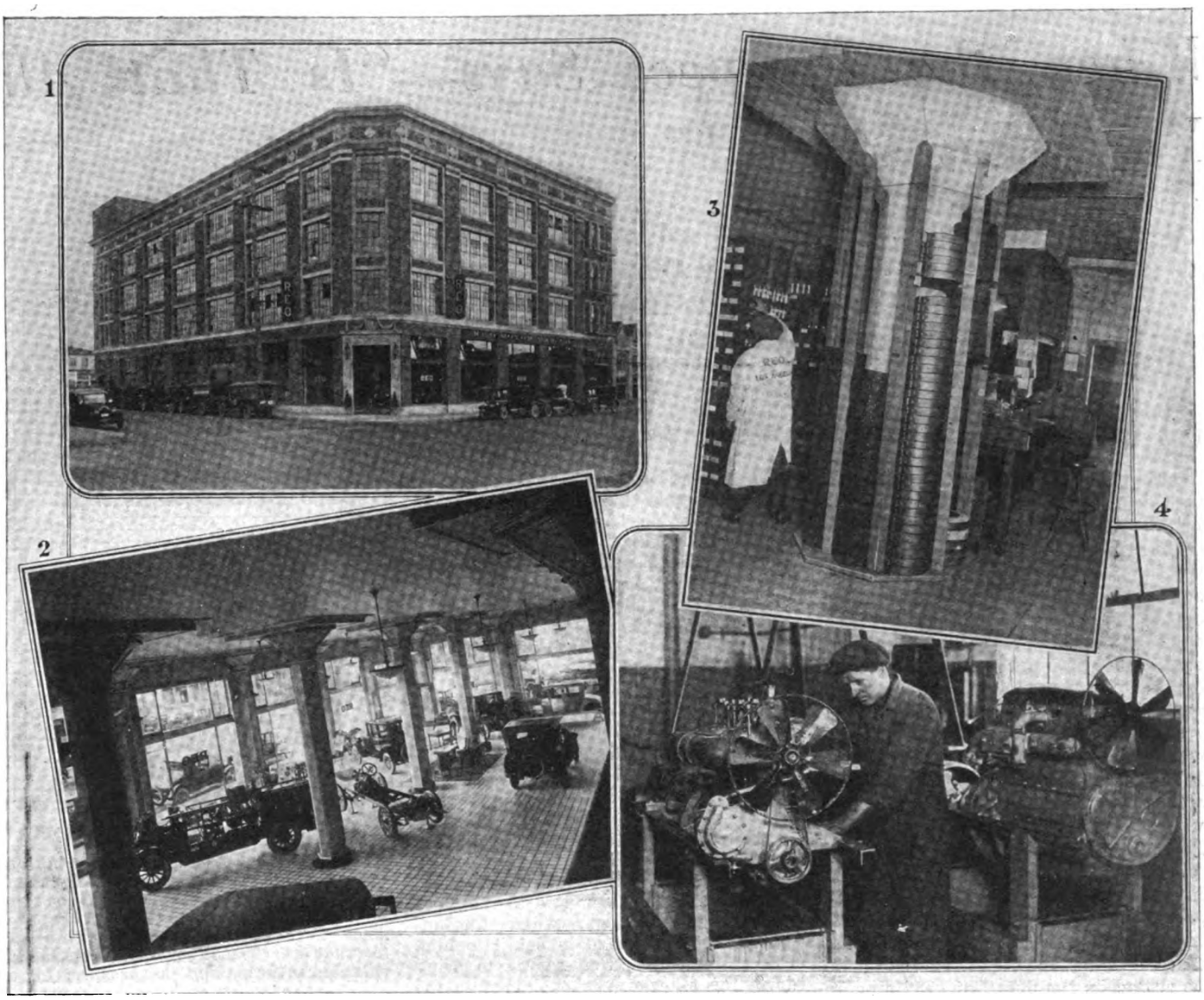
It is only human nature for a prospective purchaser of an automobile to seek the counsel and advice of persons already owning cars of a make in which he may be interested. And nine times out of ten, if present owners knock their cars, the prospect turns his attention to other makes.

Making every owner a booster is the purpose of the thorough and efficient system of owner follow-up being used by the Reo Motor Car Co. of Los Angeles, Cal. After a person buys a car or truck from this company, he receives a call from the salesman who sold him, or from some other representative of the company, every thirty days during the entire time he owns the car. After a car or truck is sold, the customer's name, address and telephone number is practically charged against the salesman's account. In other words, the company makes the salesman immediately responsible for the customer as soon as the car or truck is delivered.

On the first of every month the accounting department submits a monthly report form to all the salesmen, giving them a list of names and addresses of all persons to whom they have sold vehicles. If the customer purchased his car a year or two ago, his name still appears on the "checking up list," providing the owner is still operating the car in the trading territory served by the Los Angeles company. It is up to each salesman to communicate with each of his owners every month to ascertain if they are fully satisfied with the vehicle purchased, service rendered, and if their investment is proving up to their expectations. The salesman must either make a personal call, telephone or talk to the customer in some manner every thirty days.

The reports on customers must be

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1—The fine new building recently erected by the Reo Motor Car Co. of Los Angeles. 2—The light and spacious salesroom. 3—An unusual method of storing brake lining and brake bands. The space occupied is a minimum. 4—Running-in stands for rebuilt engines. It is easier to keep customers satisfied with a well-equipped shop

turned in by the salesmen by the first of each month. Before the salary checks are issued to the salesmen, an examination of the reports is made to determine if they have been completely filled out. Failure to get in touch with any customer, save for a sufficiently good reason (such as customer being out of town) means the pay check of the salesman is held up until his report is complete.

The system used by the Reo company eliminates the possibility of a customer being "sore" and keeping cause of his ill-feeling to himself. Second, it gives this organization an opportunity to make certain that the customers get satisfactory service. Third, it enables the company to gain additional new prospects each month from the customers, as the salesmen are instructed to inquire each month upon each call whether the customer knows of anyone who may be in the market for a car.

The Los Angeles company has an unusually thorough system for handling the complaints. Each salesman is required to carry a pad of complaint slips with him at all times. These pads are also hung up in all prominent places about the dealer establishment, so they may be readily available at all times for salesmen to take down any complaints that may be made by customers. On any complaint that is heard by any member of the organization a complaint slip is made out and passed on to the manager's office. If any complaints are received through the mail, a complaint slip is filled out with the gist of the information contained in the letter and sent to the manager's office.

Complaints Handled First

Manager Foy detaches the top of the complaint slip, which also contains spaces for the name, address and telephone number of the owner complaining, and the department the complaint is to be referred to. The manager then sends the main slip, giving the complaint in detail, to the department concerned. When the complaint has been thoroughly investigated and satisfied, the original slip with the copies of any letters that may be involved attached, is returned to the manager's desk, and he in turn communicates with the customer by visit, telephone or letter, and assures himself that the complaint is satisfactorily settled to all concerned.

No matter what the volume of other business details awaiting attention may be, complaints get attention first.

When investigation of a complaint reveals that the house is at fault, naturally the house makes things right without any charge to the customer. But when it is apparent the owner is at fault, the owner pays for the service rendered. The fact that the owner may have to pay to correct the trouble that has developed with his machine does not cause him to retain his grouch if he is properly handled. It is on this score that business diplomacy must enter.

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When the Prospect Says—"Is That All You Can Allow!"

How an Appraisal Report Is Used to Prepare the Customer for a Low Offer on His Old Car—A Plan for Handling Prospect Cards

ONLY $200 for that car in a trade in—I expected you to offer me at least $500!

It's an old, old story. How many times each week does a dealer who has led his prospect step by step to a point of burning enthusiasm for a new car, see that warm enthusiasm frozen into solid sales resistance at the mention of the used car appraisal figure?

Probably the prospect for months has been thinking about buying a new car and for months he has told himself over and over again, "The old bus surely will bring $500, maybe I can wheedle out $150 more on a good deal." In the meantime the old "bus" has steadily depreciated through age and wear. Put yourself in his own shoes. Pretty tough, isn't it? You've led him on and on until in his heart is a burning desire to sit behind the wheel of your bright, new, sweet running new car creation as its owner. He has decided he must have it. All that is to be settled is the detail of swapping in the old car.

And then—out of the blue sky, without a word of preparation of softening the blow, the prospect hears the "sad news"—only $200.

It's pretty cruel treatment some prospects will tell you. The cooling off process takes as many forms as there are personalities. Some prospects sizzle and protest and fume, like a glowing bolt of iron thrust into the blacksmith's water barrel. In some prospects the glow of enthusiasm just fades gradually like a coal plucked from the fire. And in some the change is hardly perceptible until the atmosphere reflects it, like your steam radiator when the fire burns out.

Disappointed Prospects

So long as dealers trade in used cars, they're going to disappoint many prospects, but there are some who believe that the process of leading the customer down to a reasonable figure on his "old bus" may be made much less painful. When the procedure is made as painless as possible there is just so much less development of sales resistance.

Interesting among the plans of some dealers for making appraisals painless is the one used by the Lexington Los Angeles Co. When a car is turned in for appraisal here the service department makes a thorough examination covering twenty-three different items as follows: Engine, transmission, rear end, brakes, front axle and steering gear, electrical system, starter, generator, ignition, battery, lights, horn, ammeter, springs, tires, body, paint, fenders, doors, upholstery, windshield, floor mats, top, top boot, curtains, lamps, starter crank, speedometer, tools, pump, jack, tire tools, tire repair kit. The appraiser must make a notation in each instance as to the condition of every item and the work necessary and cost of repairs. The cost of all repairs is totaled when the examination is finished.

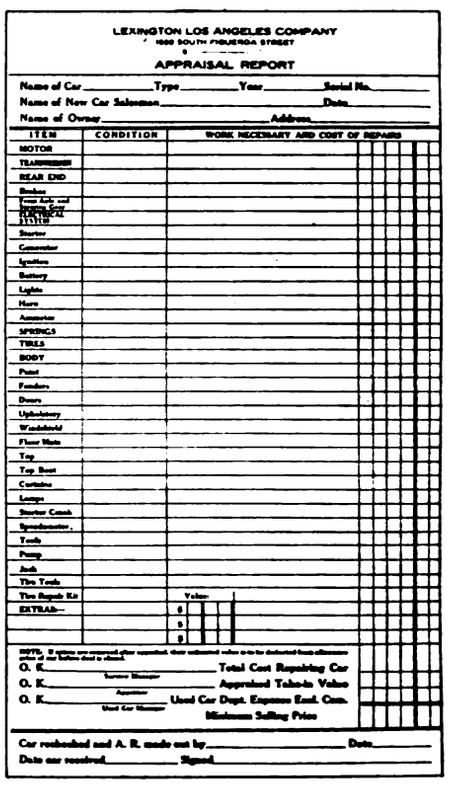
Sales Manager Gives Report

When the owner comes to inquire as to the allowance, he is invited to the office of the sales manager where the appraisal report is read in detail to him. Every single item that served to bring down the allowance is explained to the owner, and when he is finally informed as to the take-in value, he is in a much more receptive frame of mind to hear a figure considerably lower than his expectations than if the figure were quoted to him by a salesman without analyzing the appraiser's report.

These reports generally are given to the prospective trader by the sales manager. But, whether the sales manager or the salesman meets the customer, the appraisal report is used and care is taken not to kill the prospect's enthusiasm for the new car by the bluntness of the trade-in appraisal.

Besides the psychological effect that this presentation of the appraisal figure has on the prospect there is another very important phase to the arrival at trade-in figures through this method. It is in the systematic handling of appraisals which guards the dealer against some of the "wild" deals he may be led into through his enthusiasm to make the deal.

With the use of the appraisal report in the manner described there is much less danger of the prospect carrying the deal his way because of the defensive position he is in. At the same time the dealer, with the complete appraisal report before him, is less liable to weaken in his position and succumb to prospect's selling of the old car.



LEXINGTON LOS ANGELES COMPANY
1600 SOUTH FIGUEROA STREET

APPRAISAL REPORT

Name of Car _____ Type _____ Year _____ Serial No. _____
Name of New Car Salesman _____ Date _____
Name of Owner _____ Address _____

ITEM	CONDITION	WORK NECESSARY AND COST OF REPAIRS
MOTOR		
TRANSMISSION		
REAR END		
Brakes		
Front Axle and Steering Gear		
ELECTRICAL SYSTEM		
Starter		
Generator		
Ignition		
Battery		
Lights		
Horn		
Ammeter		
SPRINGS		
TIRES		
BODY		
Paint		
Fenders		
Doors		
Upholstery		
Windshield		
Floor Mats		
Top		
Top Boot		
Curtains		
Lamps		
Starter Crank		
Speedometer		
Tools		
Pump		
Jack		
Tire Tools		
Tire Repair Kit		
EXTRAS—		
		Value: $
		$
		$

O. K. _____ Total Cost Repairing Car
O. K. _____ Appraised Take-in Value
O. K. _____ Used Car Dept. Expense End. Com.
Minimum Selling Price

Car reconoled and A. R. made out by _____ Date _____
Date car received _____ Signed _____

The Appraisal Report

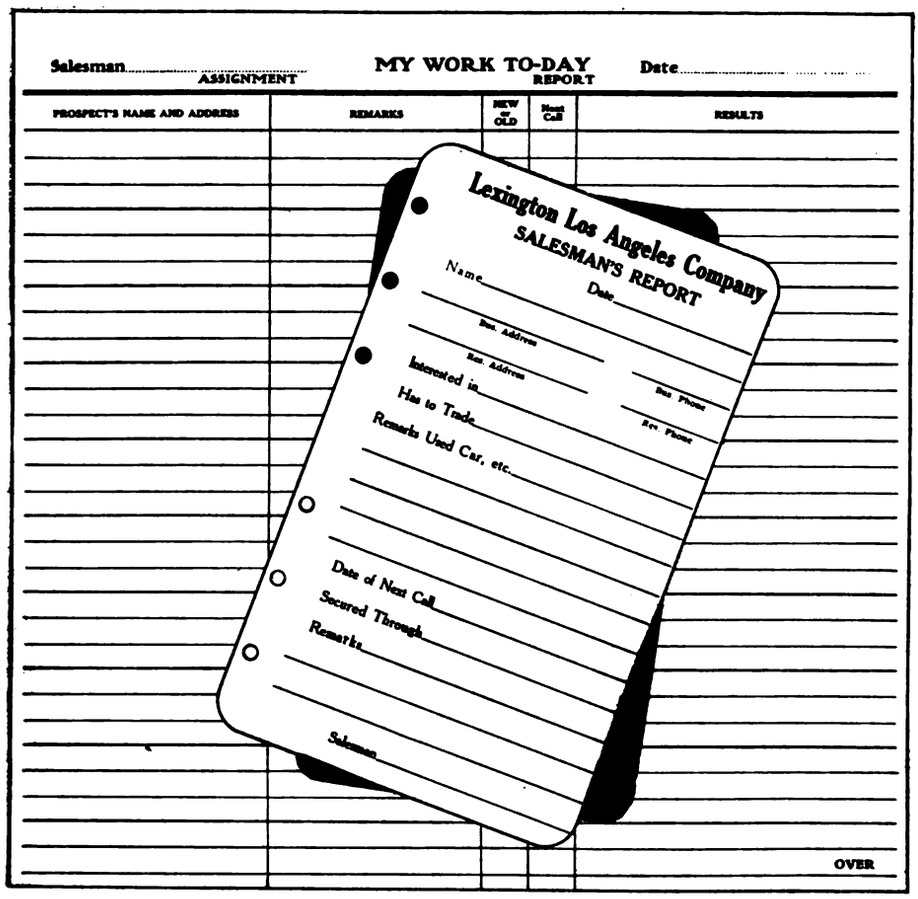
This is the report used by the Lexington Los Angeles Co. It is completely filled in in the service department and goes to the salesmanager who "breaks the sad news" to the new car prospect with a car to trade in. The report has been found valuable in preparing the prospect for a sane value on his old car

Another feature of the Lexington Los Angeles Co. selling plan is the systematic gathering of the names of prospects and the systematic cultivation of these. In the opinion of William Middleton, sales chief, enforced thoroughness should be the all important consideration in a successful prospect system. Without a plan that calls for a constant check on the prospect's frame of mind and the salesman's activities in encouraging an early decision in favor of the car he handles, there is bound to be business lost to competitors. How Middleton obtains thoroughness in his prospect system is of interest to other sales managers.

Handling Prospects

When a new prospect is turned in, either by a salesman or from some other source, it is immediately listed on a report card giving complete information as to name, business and residence address and telephone number; type of car interested in; whether a trade-in is likely; any criticism he may have voiced

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These are the assignment form and the salesman's report which are important in the method of recording and following up prospects used by the Lexington Los Angeles Co.

against the car handled; remarks made upon conclusion of meeting with salesman. One of these cards is maintained by the salesman and a duplicate is held in the files of the office of the sales manager.

On each card, a definite date must be set by the salesman for a "next call" on the prospect, in order that this card will automatically come to the attention of the sales manager on a certain day. At the beginning of each day the salesmen receive a sheet from the office of the sales manager, headed "My Work To-day." On this sheet are listed the names and addresses of the prospects carried in the files. At the close of the day the salesmen must return this "My Work To-day" sheet to the sales manager with a brief resume of the meeting with the prospect or the reason for failure to interview him. He must also fix a definite date for a "next call" in order that the prospect's name will appear on his work sheet at a later date. Not until a sale is completed or the sales manager definitely concludes, after talking with the salesman, that a prospect is hopeless, is the name killed.

In the gathering of prospects, Middleton has found Lexington owners one of the most prolific sources of warm tips. At various intervals Middleton dictates semi-form letters to Lexington owners, inquiring as to how their cars are operating and incidentally (usually in the last paragraph) voicing appreciation for the names of "Any friends or business acquaintances you think may be interested in a Lexington."

Choosing a Name for Your Business

CHOOSING a name for your business is a very important consideration; the success of your firm name is precisely the success of your business—no more, no less—ofttimes.

A name can be a handicap or a stimulator. To select a name that cannot be punned by similarities, parodied by jest or reduced to ridicule by abbreviation is not an easy task. It is easier to make a business successful with a good name than successful in spite of its name.

It is not at all uncommon to find a store called somebody's "place," such as "Jake's Place." This is no reflection upon the conduct of any business so unfortunately labeled, but it must not be forgotten that in the days of the saloon, it was not the respectable, well conducted saloons that were called "places."

Two men start in business, Dick Harris and Tom Handy. They call their store "Dick and Tom's." Does it sound better than Harris & Handy? The men say they are known about town by their given names and merely are capitalizing upon their acquaintance. Perhaps upon first thought they are right, but isn't it a fact that you don't look for the high grade establishment at Dick and Tom's that you expect to find at Harris & Handy's?

A firm is organized to take on the Sennett car. The principal stockholders are Smith, Jones, Robbins and Clark. Yet they cannot incorporate all four names into the firm name, so they call it the Sennett Sales Co.

Too Many "Sales" Companies

There are a thousand and one "sales" companies, yet there are those who are beginning to feel that the word "sales" cheapens the title. Concerns whose business leans toward brokerage, whose function suggests more of the middleman, often style themselves as "sales" companies. Auction houses and specialists in bankrupt stocks use it.

There is also danger in naming your company after the car you handle. In the first place, you eventually may drop the line or have your contract cancelled, whereupon you instantly lose the prestige that your name has quietly built up during the several years and it ceases to have any value in its association.

Second, on the books at the Sennett factory are dozens of Sennett agency organizations—the Sennett Motor Co., the Sennett Auto Co. or the Sennett Distributing Co. You and your Sennett Sales Co. to some extent lose your identity. Clerks in the factory parts department sometimes get your orders mixed up. Sometimes entries are posted to the wrong accounts.

The best name on earth is your own name if you own the business. A change in lines or agencies costs you nothing in good-will, but your own name applied to the business leaves the personality feature undisturbed.

If it is a partnership or a corporation, you can always find a good name that will survive all changes. It will even protect you against a change in partners and stockholders.

Great caution must be used, therefore, in selecting a name. The item of good-will for which a buyer pays a bonus frequently when purchasing four walls and a stock of merchandise is the value of the name.

Were it not for the fact that agencies and dealers change so much, there is not a great deal to be said against adopting the manufacturer's name, when weighed against the advertising the car gets whenever the dealer's name is mentioned, but since it is a fact that this change is constantly taking place, great care should be used.

Successful retail merchandising is the product of a combination where the dealer's reputation locally is as good as the manufacturer's is nationally.

Why work hard to make a reputation and stand the chance of having your name wiped out by some difference of opinion with some maker? Think of these things when choosing a firm name.

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ON this page is a statement regarding the used car question by one of the leaders in the automotive industry. It shows a keen appreciation of the fact that the industry as a whole must concern itself with the improvement of conditions. We believe every automotive man will want to read what Alvan Macauley of Packard has to say about used cars. We hope his comments may start a helpful discussion.

Used Cars the Industry's Most Serious Issue

By ALVAN MACAULEY
President, Packard Motor Car Co.

THE used car problem is the most serious issue now before the motor car industry. It need hardly be explained that by the "used car problem" I refer to the prevailing methods and practices of handling sales involving trades and of disposing later of the replaced vehicles.

Six or eight months ago, when trade conditions were stagnant and thousands of replaced cars were choking the channels of distribution, everyone was discussing this situation; they were compelled to do so.

When business revived and the distribution of these cars began to get under way we allowed ourselves to believe that the replacement problem was in process of being solved.

In my opinion, *the used car is as much of an issue in the prosperous present as it ever was.* Stated in figures of the current year it is probable that half of this year's sales have been made and are being made on the basis of trades. The percentage of trades may be as low as 40 or it may run as high as 65 per cent. Several persons of wide experience in the industry have assured me that the latter figure is more nearly accurate.

IF the production of new motor vehicles of all kinds this year will approximate a total of 2,400,000, as it is now believed, and since sales are keeping pace with production, it is apparent that the used or replaced car problem is one of huge dimensions.

However, the greatest menace in the situation is not the size of the problem, but the fact that the unsound economic methods which have governed the sale of used vehicles in the past are still the governing factor to-day as heretofore. Used cars are being sold without regard to the overhead cost. Used cars are being accepted on an extravagant basis of valuation.

The overhead cost of selling a used vehicle, according to prevailing experience, is hardly less than the cost of selling a new vehicle. Counting the labor necessary to put the replaced car into a salable condition the average overhead of such sales is certainly not less than 10 per cent. Nevertheless, it is not an exaggeration to say that except in a very small percentage of cases the used or replaced vehicle is sold quite regardless of this.

On the score of valuation most observers agree that the case is as bad. I have heard various estimates from competent persons. On the whole, I believe that the average valuation allowance is about $300 and that the average loss in closing out these vehicles will run not less than 10 per cent. In other words, the prevailing practice is such that there is being incurred in all used car transactions a valuation loss of at least 10 per cent and another loss of 10 per cent more due to the non-accounting of overhead costs. The figures covering the situation are interesting.

Number of new motor vehicles sold in 1922 (partly estimated)	2,400,000
Percentage of sales involving trades	50%
Number of vehicles in trades	1,200,000
Average allowance	$300
Total amount of allowance	$360,000,000
Selling cost of used cars	10%
Total amount of selling cost	$36,000,000
Percentage of loss on trade-in sales in addition to selling cost	10%
Amount of such loss about	$36,000,000
Total loss on trades	$72,000,000

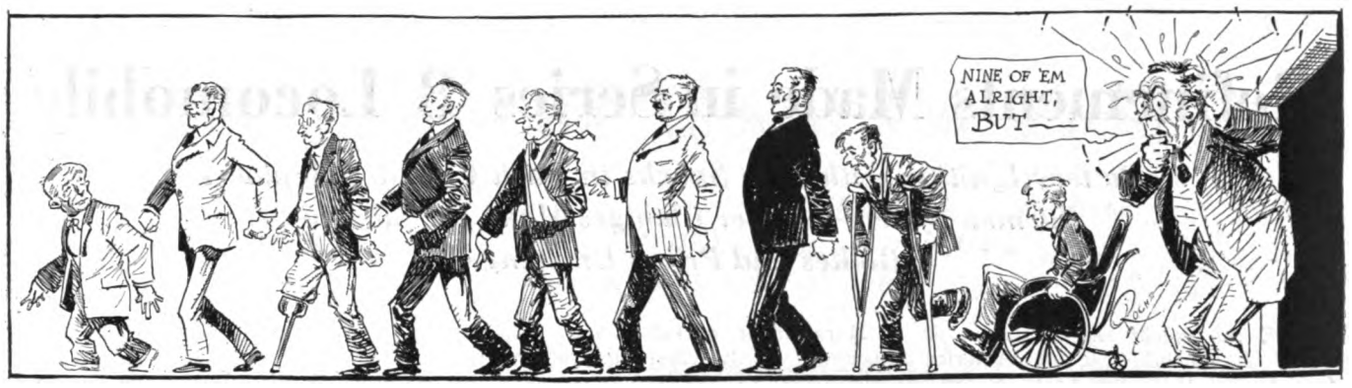
THESE figures will no doubt be questioned. They are not mine, but they have been drawn from competent sources and I believe that on a whole they reflect the situation as it is.

However one may discount them, it is obvious that the present method of handling the used car is still a very serious burden to the motor car industry. For the moment it is being carried with some degree of ease because consumer demand is considerable and profits throughout the industry are satisfactory. It is, nevertheless, a burden. It is more than that. It is a huge item of waste which in some way must be eliminated. Under less favorable conditions than those at present prevailing, it may prove such a handicap to the industry as to check its development and bring serious distress to a considerable number of those who are devoting their energies to its upbuilding.

The conclusions implied in this exhibit are that sales replacement vehicles are being handled without due regard to the actual overhead costs; that these vehicles are being accepted on an extravagant basis of valuation; that there is a loss of many millions of dollars in this phase of distribution—on the basis of the figures cited this loss being upward of seventy million dollars — and finally that this evil condition is the basis of 50 *per cent of the sales of new vehicles made in a prosperous year.*

IT will, perhaps, be sufficient at this time merely to state the crude facts in the case. Certainly they are startling enough to give any one cause for thought. Something can be said as to the responsibility of this situation—much more as to what can be done to remedy it. But first of all the problem must be seen in its full outlines and recognized for what it is—the most serious issue confronting our industry.

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The Nine-Hour Day

By NEAL G. ADAIR

"KNOW anybody that wants to buy a repair business?"

"Whose?"

"Mine."

"What's the matter with it?"

Henry Bennett, Redman dealer, began the conversation, hardly taking time for an exchange of "Good Mornings" with his friendly competitor, head of the house of C. J. Reilly, Inc., the Sennett distributor in Callawassa.

Bennett's answer to the last question indicated that he had something sizable on his mind.

"What's the matter with it? What's the matter with any repair business?" the Redman dealer demanded. "Mine's picked my pockets ever since the year one or thereabouts, and I'm through. That's all. I'm through."

"Then why waste conversation on the subject?" Reilly suggested.

"Because you're due to listen to it," Bennett retorted. "I had a notion a year ago and a year before that—you remember—to shut up my shop, farm my policy service out to a good nearby repairman and let my Redman owners go anywhere they want to go, which a lot of them do anyway, for their general repair work. I had the notion and if I'd had some backbone I'd have seen it through, but you—you—"

Bennett spluttered in indignation, and Reilly jumped into the gap in the Redman dealer's flow of words.

"I told you to keep your service. I told you you couldn't sell Redmans and keep 'em sold without it," Reilly replied, "and if you are asking for it, I'm giving you the same advice to-day."

"But I'm not in business to please old man Redman and a lot of folks around here that drive his cars," Bennett said. "I want to make some real money, and I could do it if I could get rid of that confounded loss in the service station. I've got a good man and a good system handling parts and I've cut out the losses we used to have on missing articles. I've got our tools under an honest fellow's eye, too, and they aren't disappearing the way they used to. We're getting bills out and getting 'em paid promptly, but our service station balance at the end of the year is going to be way over on the red side, just as it has been every year. So I'm through. What ails this darn business of ours anyway, Cornelius? The plumbers and carpenters and bricklayers and a lot of other birds get by with their men working only eight hours a day, and we have a nine-hour day, but—"

"But some of the hours are bum hours, that's the sand in the soup," Reilly interrupted.

"How do you get that way—bum hours?" Bennett demanded. "An hour's an hour, isn't it?"

"Except when it's sixty half minutes or something like that," Reilly said.

"I'm no good at riddles," Bennett retorted.

"Then I'll tell you a story," Reilly continued. "A year or so ago I put myself to quite a lot of trouble to get pretty well acquainted with the nine hours that make up the day out in my shop. They turned out to be a rather surprising bunch of guys. Four or five of 'em were big, strapping, husky fellows, but some of the others were not so good. One was only about half grown, kind of a dwarf, you might say. One had a wooden leg. One shagged around on crutches and one—would you believe it?—used a wheel chair."

"Don't you think you ought to have a guardian?" Bennett asked sarcastically.

"Not now, but I did think so when I discovered the kind of hours I'd been paying sixty cents worth of wages for and realized how long I'd been doing it," Reilly replied.

"I suppose I'll have to hear the rest of the story," Bennett said with mock resignation.

"You need to hear it," Reilly asserted. "And here it is. I had always left details of the service job to Healy—good manager, Healy is, too. But he was a little too close to his job. All of us get that way about once in so often. He had a good gang of fellows out in the shop, first class mechanics, none of them what you would call dishonest, but—but—you know how it is.

"I dug a bunch of job cards out of the files one day and spent most of that day and a lot of others going over them, and then one day I called Healy in and asked him how much time he supposed the men used doing little jobs around the shop—picking up discarded parts, putting tools back where they belong and so on. Healy guessed they didn't take more than a few minutes a day, and you could have blown him over with a palm leaf fan when I read off some figures to him. We had ten men in the shop at the time. We were paying them for nine hours of labor a day, but every day there were four or five hours—twenty or thirty hours a week—that weren't charged to customers or used car reconditioning or anything that we got any money out of. Service station profits—gone!"

"The sons of guns. I wonder if my men—" Bennett began.

"Don't start blaming your men; take a shot at yourself while I finish the story," Reilly broke in.

"Healy and I had quite a bit of conversation," the Sennett distributor continued, "and though he was dumbfounded to know how the little off moments of a man here and another there had piled up, I couldn't blame him much. He was kept pretty well on the go routing jobs and supervising them and giving advice on knotty repair problems here and there, and he couldn't always notice when a man dawdled around fifteen or twenty minutes before he really began to work in the morning or killed a few minutes between jobs or started to get ready to go home a quarter of an hour before six o'clock. With the job card system the man's time had to be recorded, of course, so these crippled hours were charged as shop hours. We still have too many of them, I suppose, but they don't stack up the way they did, because Healy watches 'em like a hawk and the men know it. And Healy's going to keep right on watching 'em because he knows I'm interested."

"Expensive luxury, isn't it—loafing?" Bennett commented.

"Especially when the big boss is one of the loafers," said Reilly.

A couple of months later, at a dealer association dinner, Reilly had to dodge a well aimed roll when he asked if Bennett's repair business was still for sale.

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Refinements Made in Series 8 Locomobile

Battery Ignition with Two Sparks in Each Cylinder Replaces Former System—Other Changes Make for Silence—Bodies and Prices Unchanged

SINCE the recent reorganization of the Locomobile Co. of America under the leadership of W. C. Durant, a new series of Locomobiles, known as Series 8, has been announced. The general features of the car remain the same, but important changes have been made in numerous details. It may here be recalled that some of the characteristic features of the Locomobile are the six-cylinder, low speed, side valve engine, with a bronze crankcase and cylinders cast in pairs; a full-floating rear axle with radius rods and torque arm, and double brake drums on the rear wheels.

A change of considerable importance is the adoption of battery instead of magneto ignition. The system adopted is the Delco dual system, consisting of two independent units, each with its own coil, breaker and distributor. With this system two sparks are produced in each cylinder at different points of the combustion chamber, thus ensuring more rapid completion of the process of combustion and adding to the power and economy of the engine. The two sparks are purposely not synchronized, that over the exhaust valve being set to occur from 5 to 7 deg. earlier than that over the inlet valve, this having been found to prevent detonation. A wider speed range on high gear and more silent operation are claimed as other advantages resulting from the use of the new ignition system.

More silent operation has evidently been one of the chief aims of the Locomobile engineers in revising the design of the car, for most of the important changes have some bearing on this feature. Thus a new camshaft drive has been adopted, comprising camshaft gears of a new non-metallic material known as Textoil, manufactured by the General Electric Co. The cams have also been redesigned, and the pitch of the inclines so altered that their operation is noiseless at all engine speeds, it is claimed. The spiral angle of the camshaft gears has been increased materially, to 28 degrees.

Numerous minor changes have also been made in the engine. Thus, for instance, the pistons are now given greater relief, and the piston pins are secured in the piston bosses by a single pin screw extending all the way through the piston boss, instead of by two screws, as has been Locomobile practice in the past. The oil reservoir is now cast integral with the engine.

Slight modifications have also been made in the carbureter and its connection to the engine. The inlet manifold is now hot water-jacketed and is so connected to the engine cooling system as to induce a powerful circulation of hot water through the manifold jacket.

The clutch is a new design of the dry disk type, involving a novel principle in that the driving set of disks are made of molded Raybestos and one set of metal disks is eliminated. In order to reduce the pressure on the driving teeth, both the internal and external diameters of the disks have been increased somewhat, and the driving disks are cut with 183 teeth on their outer circumference, with the result that the full load driving pressure on these teeth is only about one-half pound each. There are seven disks to the clutch. Right within the clutch is a Thermoid fabric universal joint which tends to prevent chatter of the clutch due to the periodicity of the universal joints in the final drive. The pressure required to release the clutch has been reduced.

For the gearset the Locomobile Co. has adopted the Maag system of ground gears. These gears are used for the constant mesh, the reverse and the third speed set, the latter being the pair most used of the intermediate gears. A splined shaft has been substituted for the square shaft heretofore used. This splined shaft is ground on the sides and at the bottom of the splines, which, of course, tends to insure accurate mesh of the gears. The direct drive clutch has been changed from a four-tooth to a three-tooth design, the object being to make it possible to grind the engaging faces of the teeth by running a grinding wheel right through between teeth. With the direct drive clutch teeth ground after hardening, there is absolutely no shake in this member. The teeth of the gearset are tested on the Maag tooth outline indicator and must be within 0.002 in. of the correct involute form. The pressure angle of the transmission gears is now 20 deg. instead of 14½ deg., as formerly.

Improved riding qualities are provided by a change in the spring design, whereby an increased number of leaves are provided in the springs. Each front spring has 16 leaves of varying gage, while the lower part of the rear springs has 11 leaves of the same character.

There has been no change in body styles. The chassis price is $6,800, while car prices range from $7,600 for the touring car to $11,000 for the sedan.

Haynes 1923 Model 55 Sport Coupelet, $2,195



This is a three-passenger car carrying full sport equipment including six disk wheels with cord tires 32 x 4½ in., the two extra wheels being mounted on the side to the body at the front. The radiator, cap and head-lamps are nickel plated and other equipment includes visor, bumpers, at front and rear, combination tail light and stop light, etc. The gasoline gage is on the dash

The Wellman Electric Auto Hoist

In the Sept. 27 issue of Motor World, on page 40, we showed an illustration of an automobile hoist installation in the garage of J. E. Sloan Co. of San Jose, Cal. The impression was given in the story that the device was made by the Sloan company, but later information makes it possible to state that the equipment is made by the Auto Palace Sales Co., 1551 Alice Street, Oakland, Cal.

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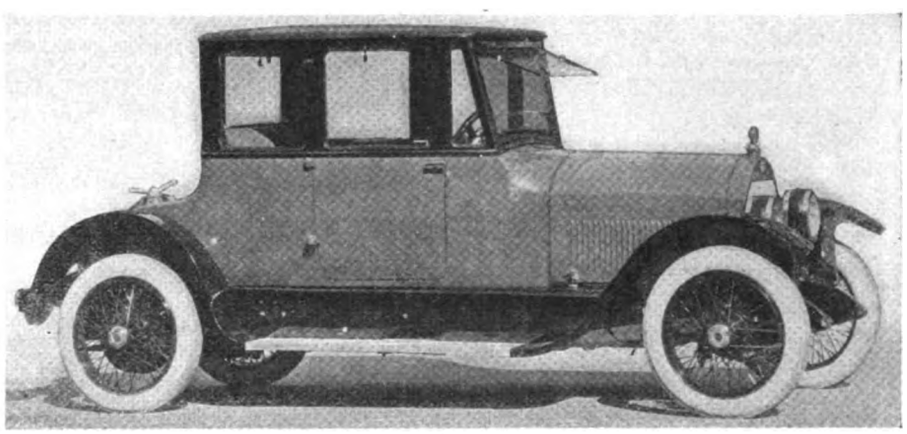
Stutz Enters the Closed Car Field

Touring Sedan and Four-Passenger Coupe Have Very Complete Equipment—Wire Wheels Will Be Used on New Jobs—Sedan Makes Provision for Trunk

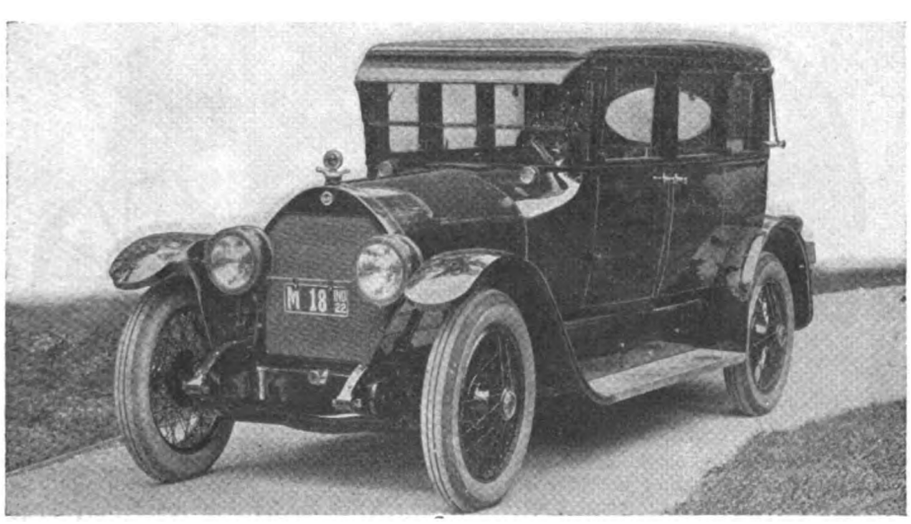
FOR the first time in its history, the Stutz Motor Car Co. is producing closed bodies as a regular part of the line. The two models are a touring sedan at $4,450 and a four-passenger coupe at $3,490. The touring sedan carries four passengers and is of a four-door type with square cornered doors. The front doors hinge forward and the tonneau doors hinge at the rear, giving a drawing room effect when the doors are open. The seating arrangement is conventional with a one piece cushion both front and rear, allowing for an extra passenger. The windshield is of the wide vision type, with a leather sun visor. The design provides for a trunk deck and built-in luggage rack in the rear. The upholstery is covered with a special Windsor weave material of strong texture. The springs are Marshall. The body frames are made from ash and elm, and the body to belt line is covered with 14 gage aluminum. Above the belt line it is covered with long grain top leather stretched over a top frame of aeroplane construction.

The door windows are raised and lowered with Ternstedt window regulators. The tonneau windows have lifts of the Dura notch type. The tonneau has foot hassocks built, and doors to these hassocks conceal carrying spaces for jack and tools. The equipment includes dome light, reading light, tonneau entrance lights and mahogany toilet spaces. The coupe is of a four-passenger type and has two full doors which are hinged at the rear.

The seating arrangement is staggered, the driver's seat extending ahead of the passenger seat, which seats two people. One person is accommodated on a single leg auxiliary seat, which folds under the instrument board when not in use. The deck is built similarly to that of the roadster to carry extra tires. A special equipment for spare tires can be set on the rear end of the frame and the trunk, which carries two suitcases, can be put in the deck. There is also a box or compartment directly behind the driver's seat, this being provided with a hinged cover. The compartment extends under the deck and represents a double box, where parts can be put and kept separate from the main compartment back of the driver's seat. The windshield is of the three-piece construction, and the lower glass is of the "jump the fence" type. The car is equipped with a Perfection heater, the operating lever being integral with the heater. It is also equipped with a smoking case.



The Stutz four-passenger coupe, $3,490



The Stutz touring sedan, $4,450

British Rolls-Royce Brings Out Smaller 20 H.P. Model

The British Rolls-Royce Co. is bringing out for 1923 a smaller model. The bore is 3 in. and the stroke is 4½ in., giving it a piston displacement of but 190 cu. in. for the speed range up to 3000 r.p.m.

One of the outstanding differences between the new engine and the existing model is the use of overhead valves, with heads of high chrome steel. The use of a single block casting for the cylinders is another innovation, and the throttle governor, which is a feature of the large Rolls-Royce, has been omitted from the smaller 20 hp. model, the lever and pedal both acting direct.

The price of the chassis is £1100, as compared with £1850 for the larger model. This new model will not be manufactured in America. The chassis weight is 2020 lb. and wheelbase 129 in.

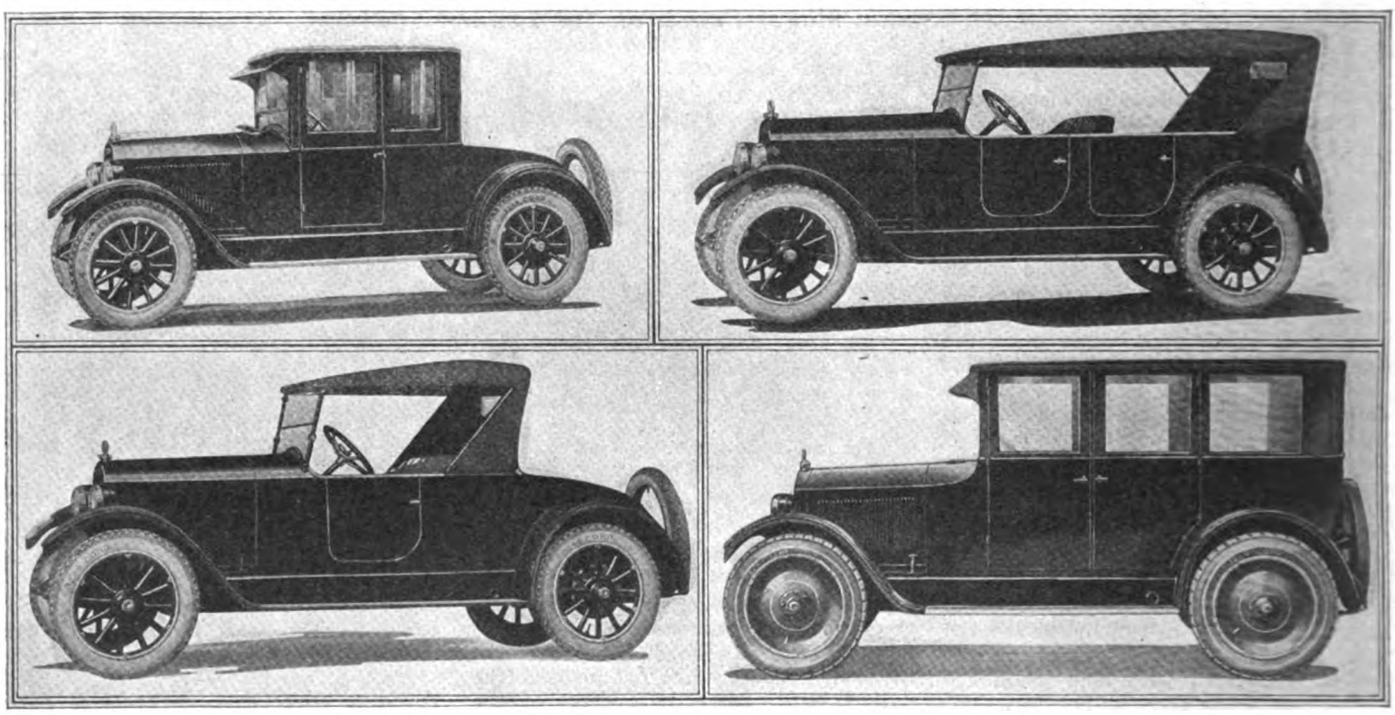
New Studebaker Big Six Coupe, $2,375

The Studebaker Big Six line has been increased by the addition of a 5-passenger coupé which includes such features as nickel plated front and rear bumpers, automatic windshield wiper, rear view mirror, Moto-Meter and ornamental radiator cap. The coupé has a two-door body and upholstery is in dark brown velour. Equipment includes heater, transmission lock, cowl ventilator, automatic windshield regulators, three-piece rain vision windshield, eight-day clock and a trunk in the rear.

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New Gardner 1923 Models Show Many Changes

New Model Lycoming Engine with Greater Power and Refined Chassis Details—Prices Higher



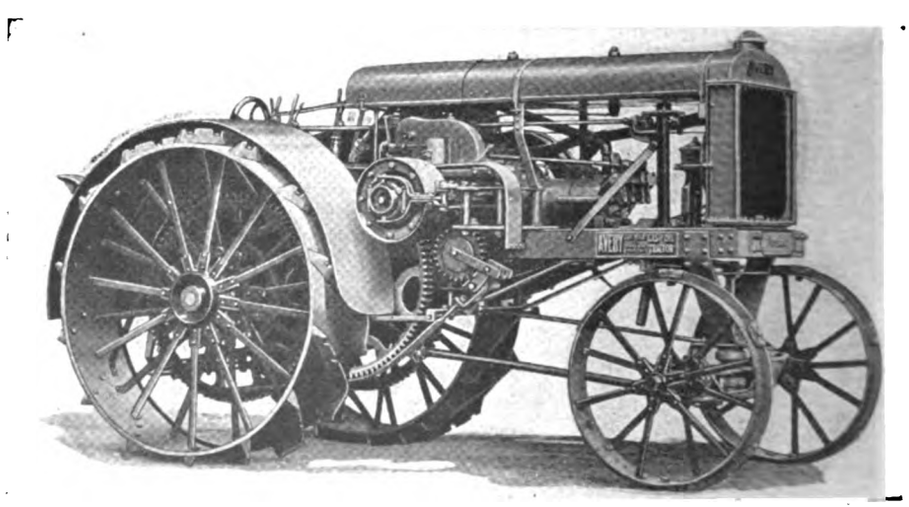
At the upper left is the coupe, **$1,115**; *upper right, the phaeton,* **$965**; *lower left, the roadster,* **$965**, *and lower right, the sedan,* **$1,345**

ANNOUNCEMENT has just been made of the new Gardner models for 1923 which will be powered with a new Lycoming four-cylinder engine recently described in Motor World. The new engine has a bore of 3 11/16 instead of 3½ in. and will develop considerably more power than the old one, which was also of Lycoming make. Other features of the new model include an improved carbureter, a 16-in. four bladed fan, with bronze bearing and thrust washer, a larger (10 in.) Borg & Beck clutch requiring a pedal pressure of only 25 lbs. as against 45 lbs. on the 1922 model, an emergency brake on the gearset, a spoon type emergency brake lever release, larger and improved service brakes, a heavier rear axle, an improved frame front cross member which makes the timing gears and forward end of engine readily accessible, a heavier frame, improved anti-rattle hood catches, genuine leather seat ends in addition to leather cushions and backs, door pocket flaps with metal fillers and improved trimming around the doors.

The total brake frictional area on the new model is 200 sq. in. The method of fastening the top back curtain to the body has been improved, and the muffler has been increased in length and set back further in the chassis, which, together with the fact that the tail pipe extends to the rear, is claimed to insure more quiet operation of the car. The instrument board has been redesigned and the seats have been made lower and deeper, which adds materially to the riding comfort. There is also more leg room in the front compartment, which is secured by extending the front seat back and moving the dashboard forward.

The new model will be furnished in four body styles, roadster **$965**, touring **$965**, coupe **$1,115** and sedan **$1,345**, which represent an increase in price of **$70** on open models and **$20** on closed.

Avery Improved 20-35 Tractor



The substitution of a cellular radiator for the tubular type and the elimination of the cab are the most noticeable changes in the Improved 20-35 *Avery tractor. The cooling system now includes a water pump and a fan. The working parts of the engine are now lubricated by a Madison Kipp mechanical lubricator. The fuel tank runs back from the radiator above the engine. The engine is a four-cylinder double opposed type with cylinder dimensions of* 4⅞ *x* 7 *in.*

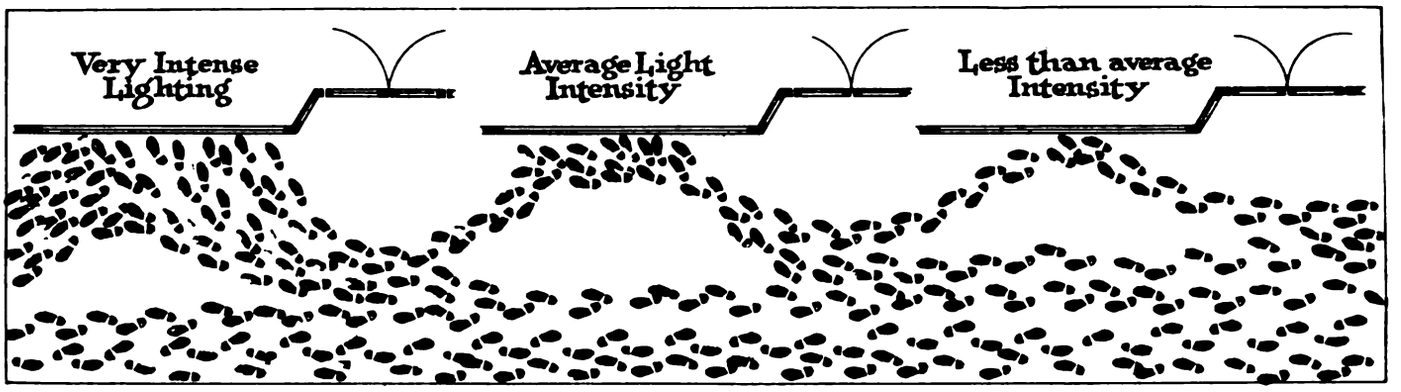
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Displaying the Car in Winter Settings



SEASONABLE displays always are attractive. Here are three particularly striking examples. At the top is shown a beautiful setting in which an Elgin was shown by the Elgin Motor Car Sales Co., Chicago. The effect accomplished was secured by suspending a gold mesh curtain as the rear setting, which together with colored lighting effects made an unusually attractive scene. This company has contracted with one of the leading theatrical concerns to furnish a setting once each month. In the middle is shown a distinctive salesroom display by the Oldsmobile Branch, Detroit. The oval picture shows a Stutz coupe exhibited in the salesroom of the William Parkinson Motor Sales Co., Broadway, New York

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Strong Light Will Make Your Window Displays More Effective

MORE light on your window displays will make more people stop to look at them. That means that the selling messages of your displays are reaching more people. A good display helps to advertise and sell merchandise. A good display well and strongly lighted is of even greater assistance to sales.

It is rather difficult to measure the effectiveness of a window display. A count of the people who stop to look at the display is probably as good a way as any to make this measurement inasmuch as the purpose of the display is to interest people in the merchandise exhibited. The effect of light intensity on the pulling power of a window display was measured recently by some tests conducted on the windows of a Cleveland store. These tests indicate that the effectiveness of a window display is enhanced by increasing the intensity with which the display is lighted.

Before going further, let us stop to explain what light intensity is and how it is measured. Light intensity is expressed in foot-candles. In a way, foot-candles measure the amount of light. Some idea of the size of a foot-candle may be obtained from the fact that an intensity of from four to six foot-candles is required for comfortable reading.

Two adjacent display windows of similar size were used for the tests. One of them was dressed in an unusually attractive way, and the other contained an ordinary display. These windows were wired so that any one of three light intensities could be obtained in either window by operating switches. The lowest intensity used was about 15 foot-candles which is about three times that required for reading. The other intensities used were 40 and 100 foot-candles which are approximately eight and 20 times respectively the light intensity required for comfortable reading.

The test procedure was to light one window at one of these intensities and to light the other at the next higher or lower intensity. Accurate counts were made of the people stopping to look at each window during the test period. Only those were counted who actually were attracted to such an extent that they either definitely stopped in front of the window or came close to the plate glass and reduced their rate of travel to a slow walk.

The first two tests will illustrate the procedure. In the first test, the ordinary display was lighted at 100 foot-candles and the good display at 40 foot-candles. The duration of this test, as well as the second test, was 45 minutes. During this time, the ordinary display attracted 95 people and the good display 122 people. In other words, the good display attracted about 28 per cent more people than the ordinary one.

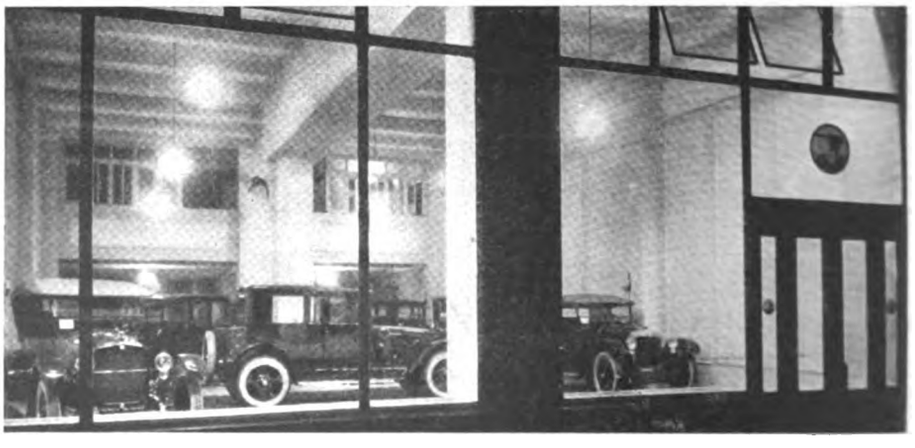
The second test was started five minutes after the completion of the first, but, being later in the evening, there were fewer people on the street so the conditions were not exactly the same as during the first test. In this test, the ordinary display was lighted at 40 foot-candles and the good display at 100 foot-candles. The good display attracted 115 people and the ordinary but 67. In other words, the good display was 72 per cent more effective than the ordinary display.

Twelve such tests were conducted in all. Averaging the results, it was found that increasing the intensity of the light on a window display from 15 to 40 foot-candles, increased its effectiveness by 24 per cent. By increasing the light intensity from 15 to 100 foot-candles, the increase in effectiveness is 42 per cent. Inasmuch as window displays are designed to attract the attention of people on the street, their effectiveness may be measured by the number of persons attracted during a given period of time.

It costs the Cleveland merchant 12 cents more per hour to light his windows at 100 foot-candles than it does at 40 foot-candles. The increase in light intensity, however, makes the windows 15 per cent more effective. He values his windows, when lighted at 40 foot-candles, at $100 of sales per hour. By increasing the light intensity to 100 foot-candles, he increases the sales value of his window by $15. The extra cost of 12 cents is insignificant in comparison.

Only a display window on an important street in a large city would have an advertising value of $100 per hour. Of course, it is only possible to guess at the advertising value of a display window as there is no way of measuring this value. But these tests furnish rather conclusive evidence that, whatever the advertising value of a particular window is, that value may be increased by increasing the intensity of the light on the display.

Your window displays will be more valuable advertisements for your merchandise if they are well and strongly lighted. The lighting system should provide for comfortable vision without glare or deep shadows. Lastly, make the light intensity in your windows greater than the intensity in any nearby windows.



This salesroom is well lighted both as a store and as a display window. The picture is of the Wills St. Claire salesroom in New York

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Making Customers Want to Spend More

This Dealer Shows Accessories to Persons Waiting for Their Bill—It Beats Talking About the Weather and Telling Jokes, He Finds

SOMETIMES it is a hard job to work up any enthusiasm over repairing a motor car. Particularly is this a problem with the garageman of the small town.

The salesman who sells the work and the cashier who takes the money know that the customer had to have the work done, or he would not have come in. About all either of them can do is to expatiate on the quality of the work, and help the customer to feel that the money is being properly spent. It's dangerous to smile too broadly, or the customer might feel that he is being stung.

How can a garageman or tire dealer bridge over that hazardous situation when the customer pays, so that the visitor will leave with a pleasant taste in his mouth?

One might talk about the weather, or crack a joke; but that would be glossing over the subject.

A. E. Fieth, motor car dealer and garageman, tire and accessory dealer, in Higginsville, Mo., seems to have solved the problem. His customers usually leave with some pleasant thought about motor cars in their minds, instead of a grouch over paying a repair bill.

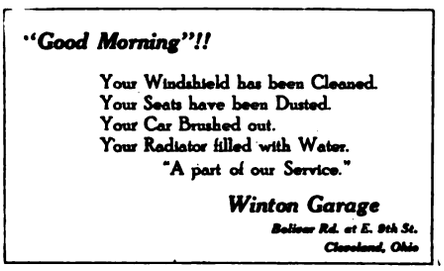
The way he does it, is to bring every customer to the office, which is the accessory department, to pay the bill. The customer stands in front of a display case, which has clean glass, and shows interesting accessory items. The customer can hardly avoid glancing at the display; and almost always his eye lights on some particular item.

If the customer seems especially interested in his survey of the accessories, the making out of the bill may be prolonged a minute or so. When the receipt is handed over, the salesman or clerk reaches into the case, and picks up an item that he decides might interest the customer. He tells in a few words, its utility and desirability, and unless the customer shows fairly strong interest, promptly puts it back in the case again. If the customer lingers, the salesman mentions an item in another show case, and perhaps is given opportunity to demonstrate it.

There is no persistent effort to sell every visitor; but there is effort to cause every visitor to note the accessories. And when they leave the place they have partly forgotten about their repair bills; they are thinking of the accessory that appealed to them—and are wanting to spend more money with Fieth, instead of regretting that they have spent any money.

They won't come back, of course, unless they have been given first class service on the thing they had paid for. But if they are satisfied with the work done, they will then have two reasons instead of one, for coming back. They will come back for more service, and they will return to look again at the accessories, and often to buy them.

"Good Morning" Cards Build Good Will in Garage



The Winton Garage, Cleveland, has found this card to be one of its best advertising activities. They have found that when these cards are left in the cars stored in their garage they create a very fine impression upon the customer and he invariably retains them and shows them to others. These cards are post card size.

Demonstration Sells Automotive Equipment

JOHN HALL of the Hall Motor Co., Ford dealer in Ida Grove, Iowa, recently employed an effective means of stimulating the sale of additional equipment with new cars. Hall equipped a new Ford with wire wheels, bumper and other equipment worth about $100 and drove it around his territory. Within a week, as a result of the traveling advertisement, he had sold five cars with a total of $500 worth of new equipment. He employs the idea periodically with different equipment items, and finds that it yields definite results in increasing equipment business.

Ideas On Selling and Management

You will find them on this and the opposite page—ideas that will make dollars or save dollars for the

Car Dealer Truck Dealer
Equipment and Tire Dealer
Tractor Dealer Repairman

Some of our readers are contributors to this section of Motor World. Have you developed a plan that might help some other men? If you have, will you write it out and send it in?

Specializes in Truck Tire Sales and Service in Winter

WALTER WAGNER, who trades as The Buffalo Tire Service in that city, and whose yearly turnover is more than a quarter of a million dollars, has two distinct yearly business cycles. In fall and winter he specializes in the sale and repair of truck tires, and in the spring and summer in the sale and repair of ———tires.

On Aug. 1, each year, Wagner starts to line up his fall and winter truck business. This he does by sending letters soliciting business to all of Buffalo's truck owners. He keeps his lists of such owners up to date.

In connection with the direct mail method of selling tires, Wagner points out that persistency is the strongest success factor in such work. Wagner finds that at least three letters are necessary to stir the average prospect to a point where he is really interested, and he makes it a rule not to look for results until a prospect has received at least three letters. After the third letter the prospect becomes a subject for personal solicitation.

"Dolled Up" Car Sells Accessories

FRED V. CLUTE, Chevrolet dealer at Cohoes, N. Y., always has on his sales floor a car dolled up like a Christmas tree. He puts every accessory on it it will carry, particularly those which are showy or obviously useful. The buyer frequently falls for the dressed up car, which is priced to cover all the extras it shows. Clute says this is a very effective way to display and sell accessories as one in place on a car makes a much more effective appeal to the customer than does the same accessory shown in the show case. As soon as a car goes off the floor another is dressed up to take its place. The result is that hardly ever is a car sold by Clute which does not go out with a greater or less variety of accessories on it.

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Rear Axle Adjustment on Buick Four-Cylinder Models

A Standard Method of Checking Ring Gear and Pinion Adjustment and the Procedure for Adjusting the Brakes

THE rear axle assembly includes not only the axle itself, but the propeller shaft, brakes, wheels and all mechanism contained therein or attached thereto. The construction and operation of the units are entirely conventional and need no special explanation. The principal adjustments are in the meshing of the pinion and ring gear, differential and brakes.

The Ring Gear and Pinion

The ring gear and pinion on the Buick Four are of the spiral bevel type. In order that they may operate correctly, the rear axle must be in perfect alignment. In other words, the differential axis must be in the same plane as the pinion axis. If there is any variation at all, the pinion axis must not be above the gear axis as this would tend to throw the contact or load on the heel of the tooth.

Another point to be observed before making any actual adjustments is the inspection of bearings. Where single row ball bearings are used they may have a slight angular movement but must not have any radial play. In other words, the shaft can vary slightly from right angles to the bearing, but the bearing itself should have no perceptible shake nor should there be lost motion between the shaft and the cone or the housing and the cup. Also see that the balls themselves are not damaged. If they spin freely, this is almost positive proof that they are all right from this standpoint. If the bearing sticks, wash it thoroughly with gasoline to make sure that there is no foreign matter present which would tend to wedge the balls. After cleaning, they should be kept in clean containers so that no dirt will get in before they are installed.

Where bearings of the roller type are used, the rollers are to be examined for pits or worn places. The sleeves should also be examined with the same idea in mind. All parts which go into the inside of the gear housing should be thoroughly cleaned and all chips, grit or other hard substances removed. All studs and nuts must be a good fit in threads so as to hold the gears and bearings in place, otherwise the gears will vibrate and will break down in a short time.

1—In mounting the ring gear on the differential, inspect the ring gear seat of the differential to see that it runs true with the bearing hubs. If it runs off more than .002 in. it should be faced off in a lathe.

2—When riveting the ring gear on the case, make certain that it is tight. The ring gear should not run out more than .008 in., using the bearing hubs of the differentials as centers.

3—When driving the pinion on the shaft see that it does not ride the key and that it is driven on tight. The pinion must not run out more than .004 in. on the shaft.

4—Roll the pinion around the ring gear by hand and note the position which the pinion takes at the large or small end, whether it sticks out or runs in.

5—Assemble them in the axle as nearly as possible in the position they assume in operation No. 4, allowing between .005 and .008 in. backlash.

6—Place the axle under the car and give the gear teeth a thin coat of white lead.

7—Jack up the rear wheels, start the engine and engage the high gear. Set the emergency brake until there is a slight load so that the teeth of the pinion will bear against the teeth of the ring gear. The brake should be equalized so that approximately the same load is carried on each wheel.

8—The various markings that may be observed are shown in Fig. 2. The shaded portions represent the contact of the gear. No. 4 illustrates the desirable form of contact. If the condition illustrated at No. 9 is present, this indicates that the load is pulling on the top portion of the teeth and the pinion should be moved in or toward the rear one, two or three notches of the adjusting nut until the marking in No. 4 is shown.

9—The conditions resulting in No. 4 marking show that the contact is just a trifle heavier on the toe of the tooth than on the heel. The pinion always has a tendency to lift and this lifting will take up the difference under operating conditions and bring about ideal meshing

10—Conditions shown at No. 8 mean that the load comes on the flank of the gear tooth and that the pinion is in too far toward the axle. Gears set up this way are noisy.

11—Conditions shown at No. 6 mean that there is too much back lash between the ring gear and pinion, and gears set up this way will eventually break off at the heel.

12—Conditions shown at No. 7 indicate heavy on the small end or the toe of

Better Mechanics

Article No. 268

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.

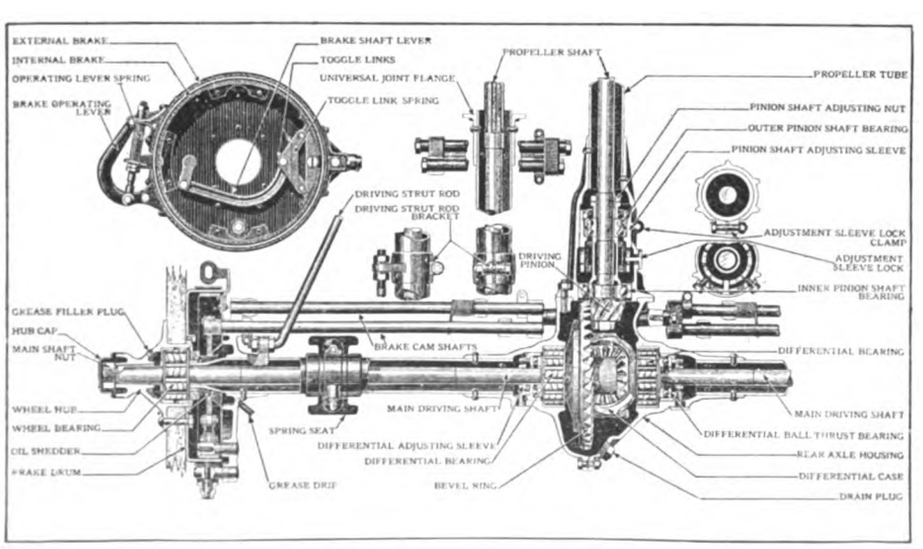


Fig. 1—Sectional views showing the construction and adjustment points of the Buick Four rear axle

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the tooth. While not a bad setting, it does not want to be centered there too much or the teeth will eventually break off at the toe. To correct this, move the ring gear away from the pinion. Under no circumstances should the gear pass with a heavy contact on the heel.

13—The illustration at No. 10 shows two cones representing the spiral bevel gears. It illustrates the difference obtainable in backlash by moving either the pinion or ring gear the same amount. On a 4 to 1 axle it would take four times the movement of the pinion to produce the same change in backlash that it would on the ring gear.

14—After the gears are meshed as nearly perfect as possible, the car is taken out on the road for a test run of about a mile with no lubricant in the rear axle. This test will indicate whether the axle runs quietly. Oil will not deaden the noise to any extent. If the axle is noisy, repeat the tests with the white lead, trying to get the markings as near No. 4 as possible. Full tooth contact is necessary to carry the load.

The method described here is very much superior to the guess method, and it has the further advantage of making the results of trial adjustments visible so that the mechanic will know whether the adjustment is getting better or worse. The whole operation is quicker because it is not necessary to test out so many times for noise as the markings will tell, with a little experience just how much noise is to be expected.

Brake Adjustment

Adjustment of the brakes for wear is made at the brakes rather than at the turnbuckles on the pull rods. When adjustment is necessary,

1—Disconnect the pull rods from the brake levers on the axle.

2—Turn the adjusting screw in the anchor pin at the rear.

3—Turn the lock nuts for the lower part of the band and the hexagonal nut for the upper half.

4—These adjustments are to be made in the order named and to get a uniform clearance of 3/32 in. between the drum and the lining when the brakes are released.

5—After making the adjustments connect the rods to the levers, varying the length by adjusting the turnbuckles so that the ends of the rods will register with the eyes in the levers.

6—While the rear axle is still on the jacks, try the brakes to see that both sides hold evenly. If not, make a slight adjustment at the brake only. The foot pedal should travel 3 in. to set the brakes properly.

The emergency brakes are adjusted by shortening the rods with the turnbuckles.

Straightening Bent Steel Parts

Steel parts of a car which are bent should be straightened cold if they have been heat treated at the factory. The front axle, steering spindles, etc., should never be heated for bending. Heat treatments of these parts leave them in such shape that they can generally be bent back cold if the bend is not too sharp or if a fracture has not been started.

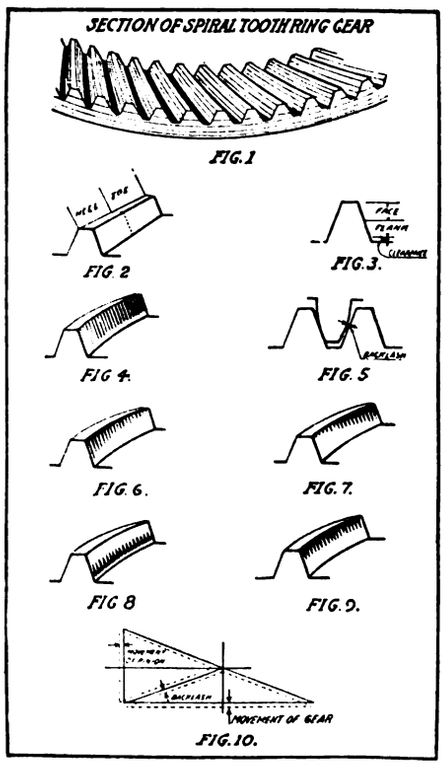


Fig. 2—Gear markings made under various conditions of adjustment. No. 4 is the marking that is considered best

Cause of Rapid Valve Seat Wear

INVESTIGATION by the Bureau of Standards has shown that high temperature causes excessive wear of valve seats on automobile engines. In order to find the cause of this trouble with a certain make of engine, the government experts found it necessary to make several tests.

There were several instances in which valve seats were sunk into the cylinder block to a depth of nearly ¼ inch. In every instance, the trouble was found in connection with the exhaust valve seat, but it occurred only in a small number of engines of a given type, and even in the same engine all the exhaust seats were not equally affected.

The metal (cast iron) of which the cylinder blocks were constructed was first examined, but this proved to be typical of the material usually employed in cylinder construction, and no difference was noted between the metal of the valve seats showing excessive wear and those showing normal wear. Next it was thought that difficulty might have been encountered in regrinding the valves, some of the valves not being affected by the grinding compound. This would result in the seat being ground away in a vain attempt to get satisfactory tightness. A few experiments were sufficient to eliminate this as a cause of the trouble.

Attention was next directed to conditions of operation which might account for the trouble. To determine the effect of cam outline and spring pressure, a cam was designed which would give the valve about twice its normal lift and permit it to close very rapidly, thus striking the valve seat with considerable force; but operation with this arrangement failed to show an abnormal rate of wear. However, when this valve and seat were heated to a dull red color, conditions were changed and the rate of wear was amply rapid to explain the trouble.

It should be mentioned in this connection that a reducing flame was used in these experiments to avoid any possibility of rapid wear through oxidation of the metal. The temperatures reached in this experiment might result in actual operation from pre-ignition or a very slow-burning mixture, such as might occur, for example, when, due to poor distribution, one cylinder receives an excessively rich or excessively lean mixture. It is probable that one of these conditions, coupled with inadequate cooling of the valve seats, was responsible for the abnormal wear in the engines under investigation.

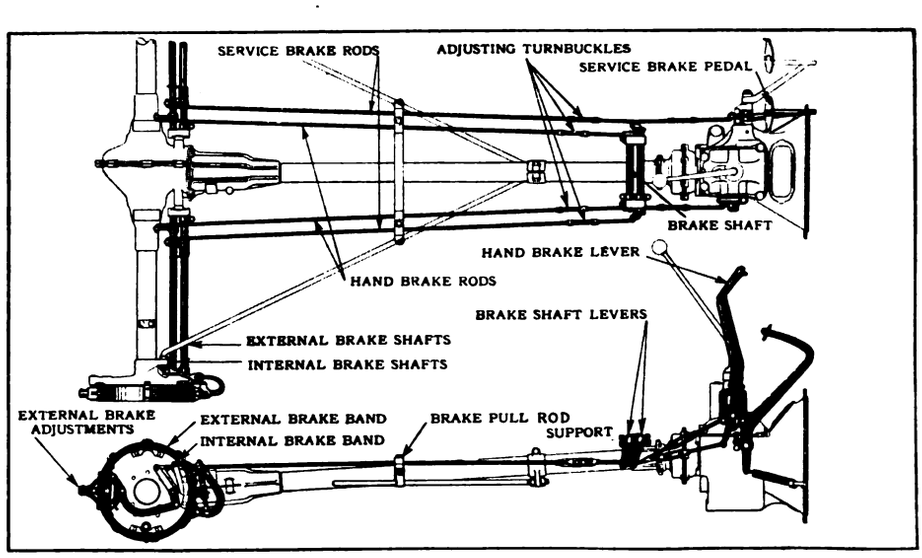
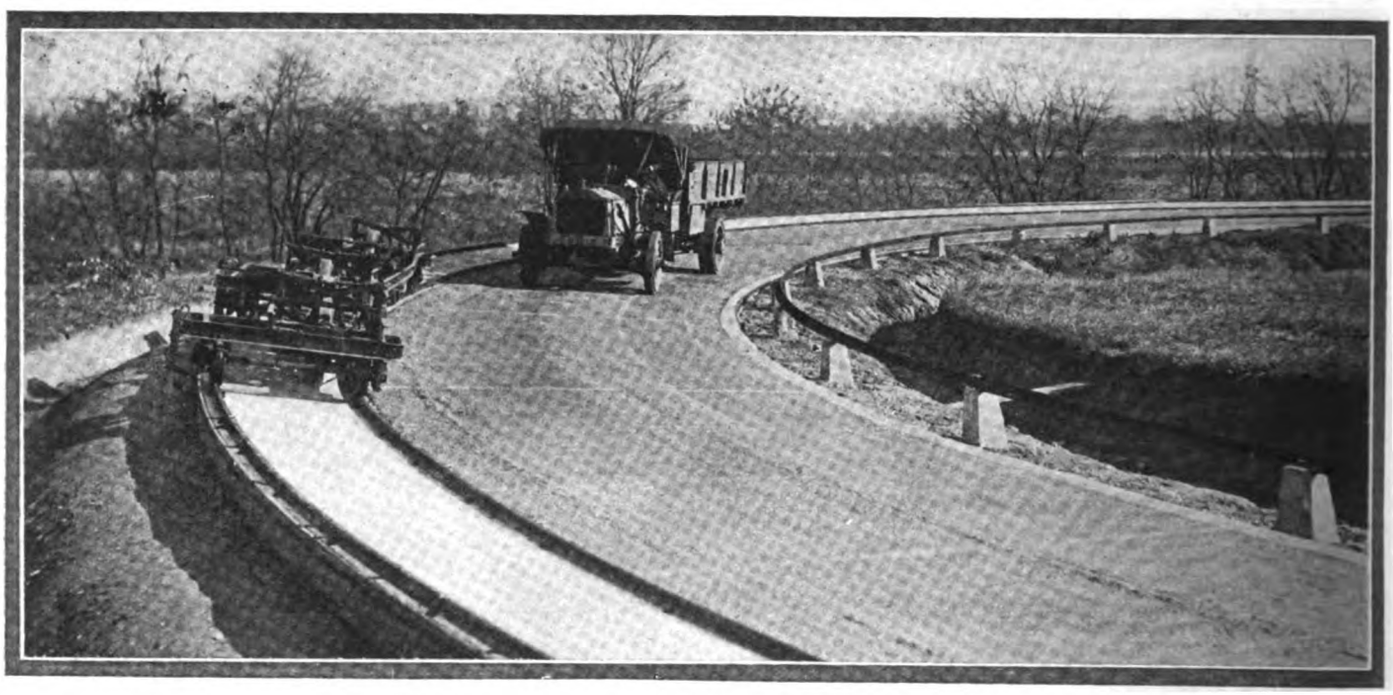


Fig. 3—Layout of the Buick chassis to show brake adjustment points

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Interesting Things Automotive



THE Bureau of Public Roads, Department of Agriculture, has a circular track on which the wear of different kinds of roads are tested. In this test experts are studying the wear of concrete roads and the "waves" in bituminous pavements.

BEAUTIFUL bronze towers soon will replace the temporary ones which have been so successful in regulating traffic on Fifth Avenue, New York City. The design shown here was selected in competition by the Fifth Avenue Association. The design is by Joseph H. Freedlander, an architect of international fame. The towers will be the gift of the association to the City of New York. The first one is expected to be installed during December.

Photo by Underwood and Underwood





EUROPEAN automotive circles are interested in this machine, originally designed for women and elderly men. Its comfortable riding qualities and power are features.



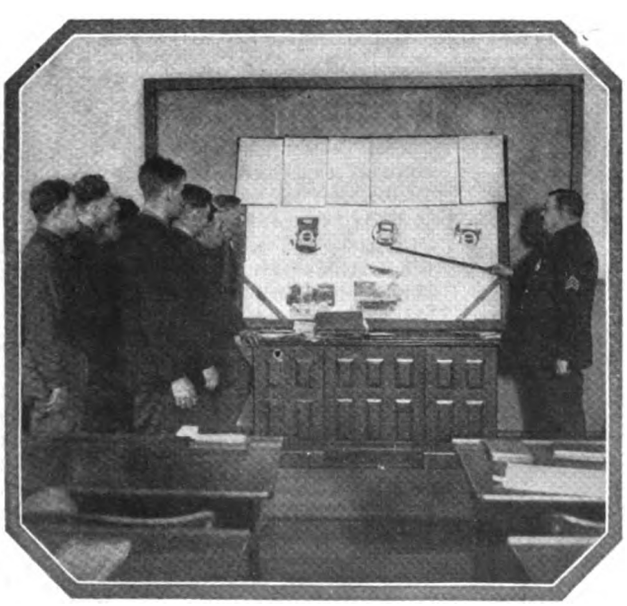
KING ALFONSO of Spain is an ardent automotive enthusiast. In this picture he is shown inspecting some heavy springs used in three-ton lories which were shown at the recent automobile show at San Sebastian, Spain.

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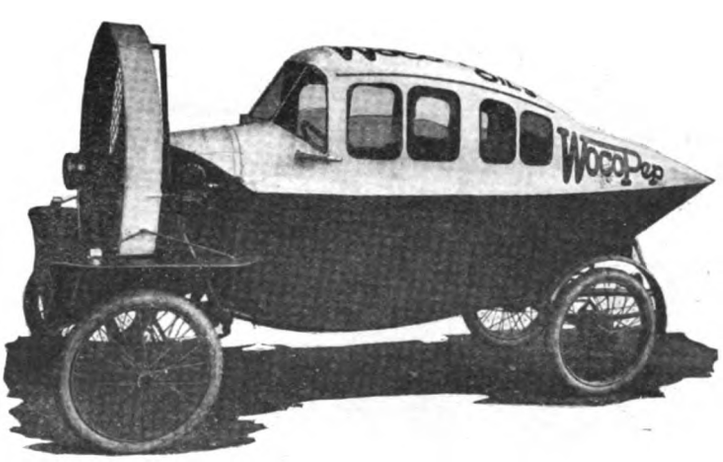
Here and There in a Day's News



WOULDN'T it be a strange sight today if anything but motor cars were used when illustrious persons pass through acclaiming crowds. This picture shows a fleet of automobiles carrying Georges Clemenceau, "Tiger" of France, and his party in his recent visit at Boston.



THE New York police department is especially training men to catch motor car thieves. Here an instructor is explaining some of the means resorted to to remove identification numbers and other marks from stolen cars.



THIS aero-automobile was imported by a Southern oil company for advertising purposes. It has two-cylinder airplane engine, torpedo body and metal chassis. It can travel at fifty miles an hour, pulled along by the wire-encased propeller.

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Extra Display Window Features Garage Building

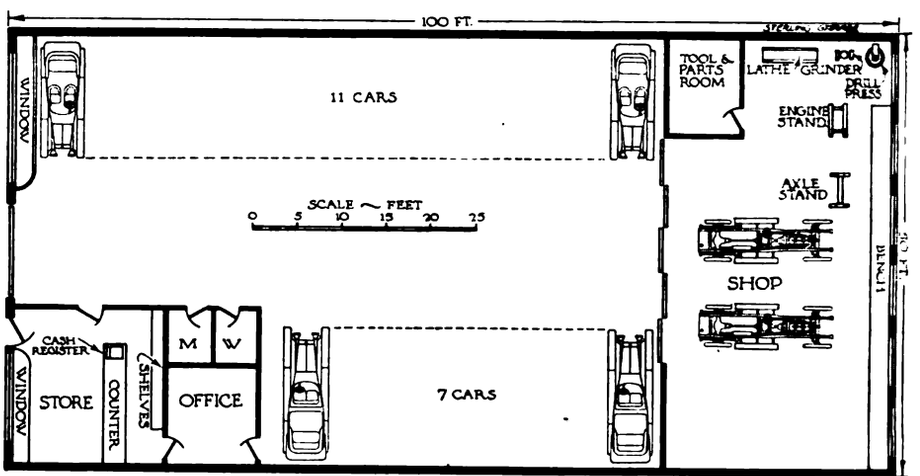
One Story Building on Lot 50 x 100 Ft. Has Typical Interior Arrangement—Storage Capacity 18 Cars

THE plan shown on this page is typical of many garages all over the country. The business for which it is to be erected will derive its income from the sales of automotive equipment, service and storage. The display windows on either side of the entrance driveway are an unusual feature. Usually a display window is placed in front of the store but the space on the other side of the doorway is seldom used for this purpose. By utilizing both sides of the doorway for display purposes, the commercial advantages of the location are fully realized.

The store is small but is about in proportion to the size of the building. The office and toilets are situated in back of it. Entrance to the latter is from the garage floor as this is more convenient for customers. The office and toilets will be lighted and ventilated by skylights.

The arrangement of the cars in storage is conventional for a building of these dimensions. Two rows of cars facing a central aisle provide a maximum of convenience. The roof over this portion of the building should be supported by trusses as columns would interfere seriously with the movement of cars within the building. Ample light and satisfactory ventilation will be furnished by the skylights.

The shop is located at the rear. One corner of it is occupied by a tool and parts room. The special shop equipment includes lathe, grinder, drill press, engine stand and axle stand. The capacity of the repair shop is from three to four cars.



Floor plan for one-story garage building 50 x 100 ft. Provision is made for accessory sales, car storage and service. The storage capacity is 18 cars

Motor World's Department of

Better Business Buildings

Is a weekly feature of the paper.

Size of plot, with rough sketch showing shape and its relation to adjoining plots; name and number of departments operated; number of cars to be shown in salesroom; number of cars in garage should be given when making inquiries.



This is the home of the Layman Motor Co., Buick dealer in Louisville, Ky. The exterior is simple yet its novelty makes it attractive

Book Review

Motor Vehicles and Their Engines by Edward S. Fraser and Ralph B. Jones. A. Van Nostrand & Co., New York City, price $2. Three hundred and seventy-four pages, 319 illustrations.

This is the second edition of this book. Since the first edition was published, the book has been revised and modernized and much new descriptive matter introduced, taking care of many mechanical changes that have been developed since 1920.

Many chapters have been entirely rewritten and a large number of new illustrations have been added and a number of obsolete price descriptions of machinery eliminated.

The book contains elementary, theoretical and practical information to assist in the operation, upkeep and adjustment of motor vehicles. It is written especially as a guide for the personal instruction of the car owner and is a handbook for chauffeurs, garagemen and repairmen. Technical language has been avoided as far as possible, and all descriptions are given in the simplest possible way, so that anybody can understand them. The fundamentals of gasoline engine operation, as well as the care and operation of the principal accessories, are discussed in detail, and at greater length than is usually the case in a book of this kind.

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Repairshop Shortcuts

This Means YOU

REPAIRS strictly cash. Positively no credit. This means you. This sign was hung in a service station that we visited. Nice friendly way to greet the customer. We felt like saying, "This job I want done must be strictly first class. No monkey wrench mechanics. This means YOU." Sure we want to do business for cash and nine-tenths of the customers will pay cash without being asked to. But don't insult the customer that you have advertised to, written to and otherwise worked hard to get into your place. The wall is no place to hang these insults to customers. Take the signs down. If he asks for credit or you doubt the value of his check, tell him so in words, not signs. This is an opportunity to explain your policy.

No. 3461—Oil Petcock Extension for Chevrolet Superior—To prevent soiling the hands or clothing when testing the oil level of the Chevrolet Superior model, an extension is made to the upper oil cock. This consists of a piece of ⅛-in. rod bent at right angles at the top and bottom, the lower end going through the petcock handle and the rod head through a bracket.—H. Walter Maass, M. & M. Motor Sales Corp., New York City.

No. 3462—Piston Holder—A piston holder or jig for drilling holes at an angle to drain oil from the piston ring grooves is made of two triangular-shaped boards mounted on a base with a piece of tin between shaped to hold the pistons.—W. C.

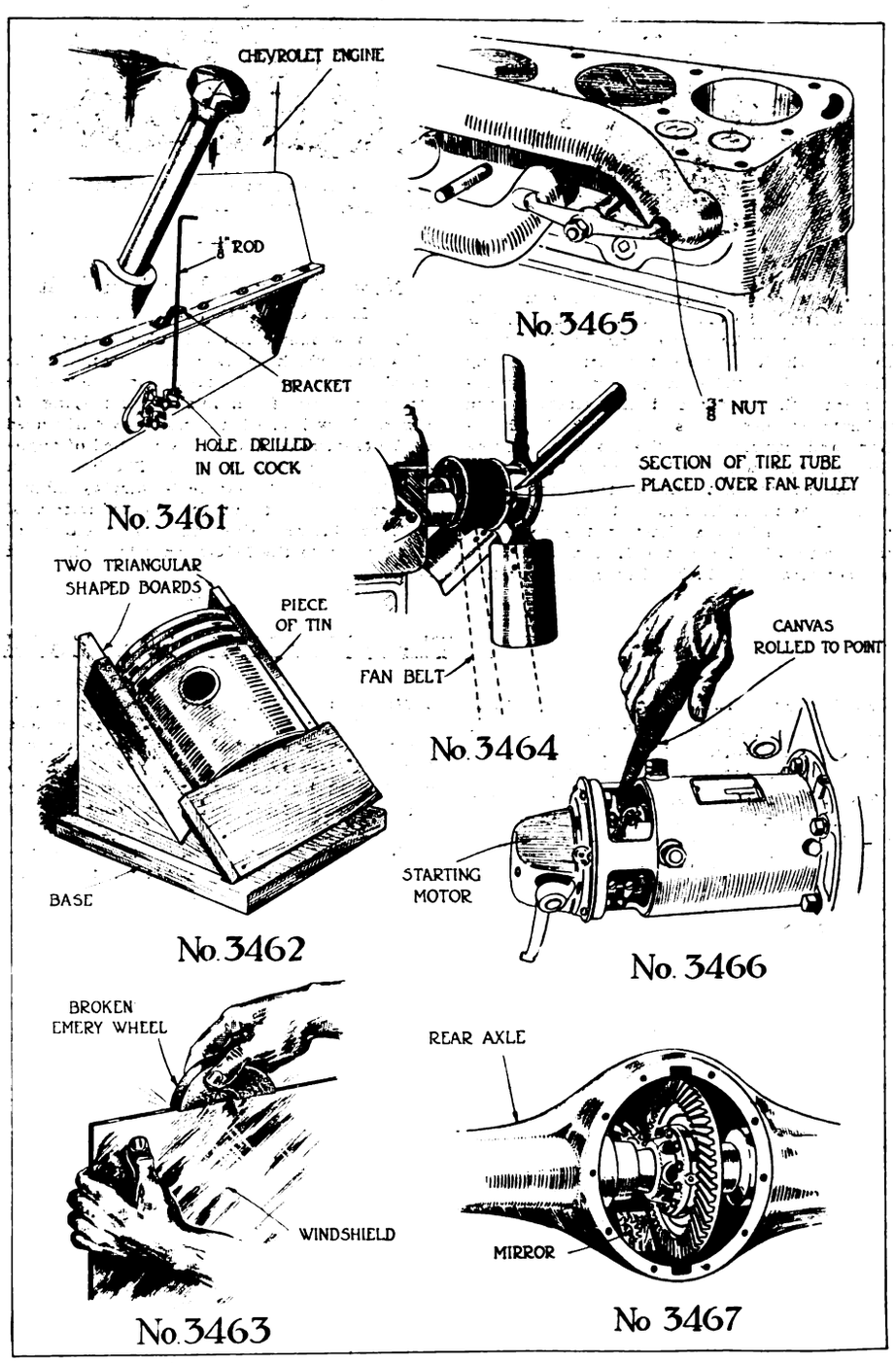
No. 3463—Fitting Windshield Glass—When cutting and fitting new windshield glass a smooth edge is obtained by finishing the cut edge with an old or broken piece of emery wheel.—Hayes D. Pettit, Wilmington Motor Service Co., Wilmington, N. C.

No. 3464—To Prevent Fan Belt Slipping—If the fan pulley is so smooth that the belt slips, a piece of inner tube, a great deal smaller than the pulley is cut the right width and stretched over the rim for the belt to rest on.—C. A. Newquist, Ledan, Ky.

No. 3465—Replacing Ford Manifolds—The exhaust manifold is put in place and one of the clamps put in position on the stud. Before tightening the clamp a ⅜-in. nut is placed between the clamp and the exhaust manifold which will hold the clamp out enough so that the intake manifold can be put in place, at the same time holding the exhaust in position.—F. R. Hartsock, Warren, Ind.

No. 3466—Cleaning a Commutator—A commutator is cleaned by rolling up a piece of heavy canvas, bringing one end to a point. This is soaked in clean gasoline and applied to the commutator from the side of the generator after removing the cover.—Lapierre's Garage, St. Paul, Canada.

No. 3467—Adjusting Axle Gears—Axle gears that are hard to see can be adjusted by placing a small mirror in the bottom of the differential case at such an angle that the make can be observed.—Clayton Rogers, Medford, Wis. (Clayton Rogers is 11 years old).



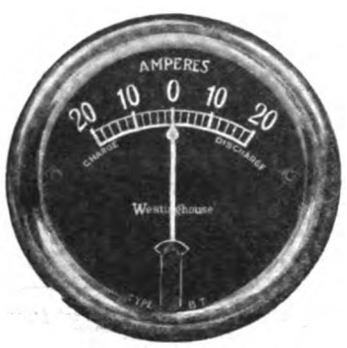
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Equipment to Sell

New Devices for the Car and Truck

Westinghouse Type BT Ammeter

Westinghouse Electric & Mfg. Co.,
East Pittsburgh, Pa.



No wire connections or coils are used in this meter. The case of the instrument has a magnetic yoke projecting to the rear, through which is passed the current carrying the wire. The yoke has pole pieces extending into the meter and the strength and polarity of these poles vary with the direction and strength of the current passing through the wire. There is also a fixed permanent magnet inside the instrument with poles at right angles to those on the yoke. Pivoted on a shaft in the center of this group of poles is a soft iron vane with pointer attached which takes up the position



which is dependent on the amount of current carried by the wire.

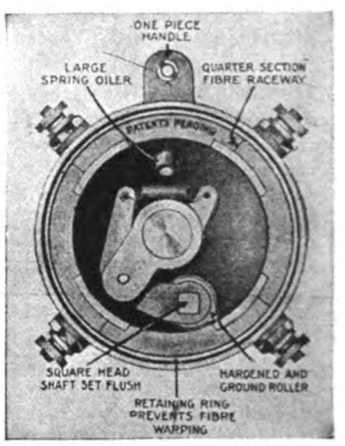
New Gilmer Fabric Fan Belt

L. H. Gilmer Co., Tacony, Pa.

The new fabric fan belt uses a new type of weave which is said to accomplish the double purpose of preventing excessive stretching and of minimizing the fraying of edges. New ingredients, not previously used in the treatment, and a new method of application have also been used. The belt has a metallic finish. A new dealer display cabinet is also being put out for the exhibition of radiator lacing, showing the method of attachment to the ledges on which the hood rests.

M. and R. Timer for Ford Cars

McCulloch Mfg. Co., 216 High St.,
Boston, Mass.



The raceway of the timer is made in four sections from seasoned rock grain fiber. The retaining ring binds the four-piece raceway and in combination with the fiber washer fitted around the contact posts, keeps the raceway rigid and prevents the posts from touching the shell. The contact segments are made of steel which has the same wearing qualities as the fiber.

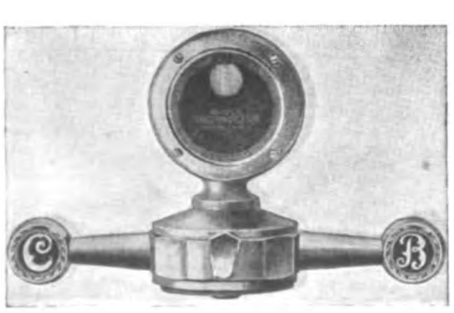
Three New Moto-Meter Models

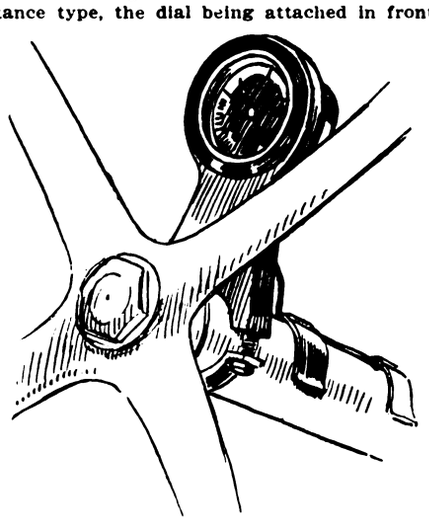
Moto-Meter Co., Inc., Long Island City, N. Y.
Prices: Midget, $4 with black cap, $3.50 without cap; Aristocrat, $7; steering column type, (approximately) $15.

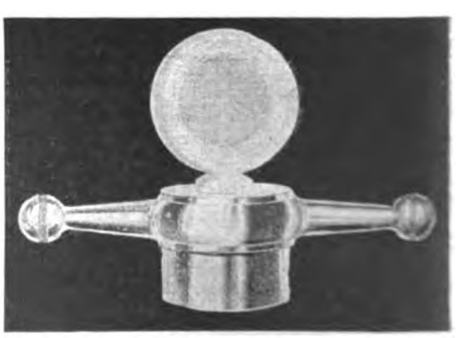
Two new models of Moto-Meters have been announced and a combination of instrument and locking cap, making three new selections. The Midget model is specially designed for Fords. It is made in a substantial manner and is superior to the previous models made for this car. Glass is used on both sides which adds to the appearance and also protects the markings from the elements. This model is furnished either with or without a black radiator cap. The Aristocrat model for Fords incorporates a Midget model with a locking cap which has ball handles. The balls carry spaces for the owner's initials which are secured from the factory through a postal card to be filled in by the owner thus eliminating the necessity of the dealer carrying a stock of initials.

The steering column model is of the distance type, the dial being attached in front of the steering column under the wheel and connected by a cable to the bulb of alcohol solution which is mounted at some point in the water circulation system. An entirely new feature is seen in the fact that this type can be used on air cooled cars by locating the bulb in the air which is just leaving the cylinders, say in the chamber behind the flywheel.

A service assortment of screws, rims, crystals, etc., is supplied for $5. A three way socket wrench is included in the outfit, this being to take nuts that hold the Moto-Meter in the filler cap.







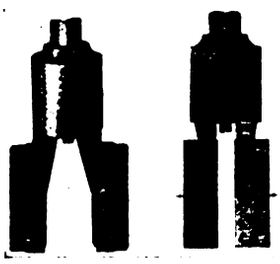
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Equipment for the Shop

New Machinery and Tools

Hinckley-Meyers Cylinder Reboring Tool

Hinckley-Meyers Co., Jackson, Mich.



Some of the distinctive points claimed for this new cylinder reboring tool are a pilot centering device and adjustable bronze bushings, which eliminate chattering and assure a true bore. It is said that an ordinary mechanic can operate the machine and that the average time required to rebore four cylinders will be about 30 minutes.

Usaco Air and Water Towers

United States Air Compressor Co.,
Cleveland, Ohio



The head of this tower revolves in a complete circle on ball bearings and serves a radius of 15 ft. The hose arm is counterbalanced and returns to a vertical position automatically. The water hose is fitted with a quick-acting, easily operated faucet. Model 6 includes air hose and chuck only. Model 5 includes air and water connections. No. 4 is the same as No. 6, except that it has a waterproof globe light. No. 3 is the same as No. 5, except that it has a light. The one illustrated is No. 5.

Acme Reamers

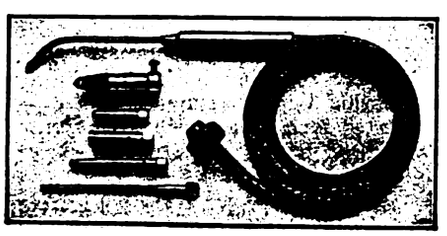
Acme Tool Co., Mason City, Iowa
Price $4.50



A single-bladed piston pin bushing reamer. It will handle bronze and cast-iron bushings. It is made .025 in. oversize and the blades will expand 1/8 in. Sizes run in sixteenths of an inch from 5/8 to 1 in. Extra blades 75 cents each.

Torit No. 13 Acetylene Torch

St. Paul Welding & Mfg. Co.,
St. Paul, Minn.
Price $7.50



The outfit consists of a torch about 10 in. long, a set of four tips, one of which is made especially long and slim for radiator and battery work, a soldering copper which clamps over one of the tips, five feet of rubber hose and a connection through the acetylene tank.

Speed-O Multiple Valve Spring Lifter

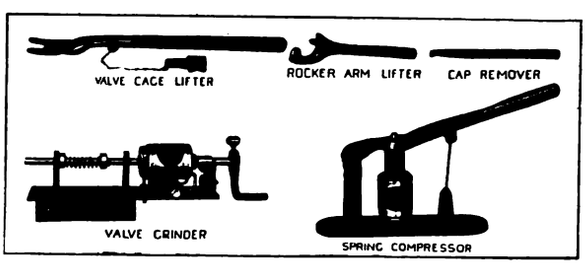
Speed-O Multiple Valve Lifter Corp.
611 Amsterdam Avenue, New York

This tool is made in the following styles: No. 1, four-valve spring lifter for Fords; No. 2, eight-valve spring lifter for Fords; Nos. 3, 4, 5 and 6, eight-valve spring lifters for Dodge, Maxwell, Overland and Cadillac, respectively. Nos. 7 and 8 are twelve-valve spring lifters for six and twelve-cylinder Packards, respectively. These tools compress the valve springs and provide free access to the keys.

Marvel Valve Grinding Outfit

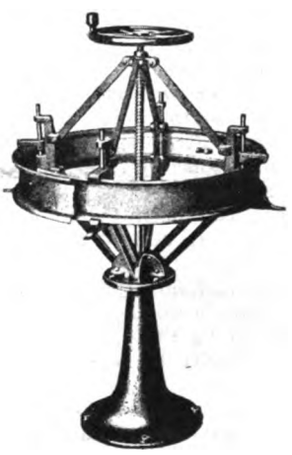
Autoquip Manufacturing Co.,
Rochester, N. Y.

A special outfit for the Buick Six. Included in the outfit are a valve cage lifter, rocker arm lifter, cap remover, valve grinder and spring compressor. These tools make up a complete equipment for removing, grinding and reassembling the valves on a Buick Six.



Hudson Tire Changer

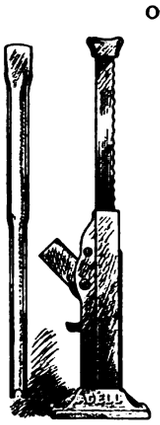
Hudson Products Co.,
153½ Grand Avenue, Portland, Ore.
Price $35



This is a special tool for collapsing and expanding split rims. The height is 40 in. over-all. It may also be used on solid rims.

Adell Jack No. 109

Adell Manufacturing Co., Inc.,
Orange, Mass.



This is a quick-acting, light-weight jack. It weighs 2½ lbs. and has a lift of 6½ in. It is constructed of pressed steel. Each jack is individually packed. The shipping weight of a carton containing 12 jacks is 32 lbs.

Swing-Spout Measure

Swing-Spout Measure Co.,
145 West 63rd Street, New York



The spout is made of seamless steel tubing. There is an automatic valve in the bottom of the measure which is operated by moving the spout. In the upright position of the spout the valve is closed. When the spout is pushed all the way down the valve is wide open. The curved tops prevent spilling. The measures are copper plated.

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Garageman Responsible When Car Is Removed Without Owner's Permission

Carelessness in Insisting on Rule Often Leads to Losses Through Theft and Accident

A SHORT time ago, I was told of a case where a motor car owner gave his brother permission to use his car. The brother went to the public garage where the car was stored and took the car out. Neither the garageman nor the garage attendant inquired of the brother what authority he had to use the car. Fortunately for the garageman, the brother had been given permission to use the car and it was returned in good order. If, on the other hand, the brother had not had permission to take the car, or some other person had claimed to be the car owner's brother, when in reality he was merely a stranger, the garageman would have paid dearly for his carelessness.

When a car is put in the care and custody of a garageman, he must keep it and care for it until it is re-delivered to the owner. If, through his carelessness, while he has possession of the car, it is stolen or injured, he must pay damages for the loss the owner sustains.

This principle of law is well understood. I do not think that there is any garageman who does not know about it, yet from time to time, a case comes to my notice where a car is allowed to be taken out of a public garage without the garageman attempting to find out if the person taking the car has the owner's permission to do so. It may be a little more trouble to make this investigation each time a brother or a friend of the owner comes along for the car, but in the end, it will be worth while, because if it becomes generally known that the garageman is careless in this respect, he will not only lose trade, but sooner or later a car will be stolen, suit will be brought, and he will have to pay for his legal liability in each case is absolute.

Vendor Has Priority Lien in Virginia

Editor Motor World:—We have had considerable discussion as to who is entitled to payment first on a car.

"The original seller who holds a lien contract against the purchaser's car, or a garageman to whom the purchaser has carried his car for repairs?"

We would also like to know if the seller has the right to go to the garageman and repossess the car without paying the repair bill that they have against same if the purchaser of the car is delinquent in his payments. M. S. & S. Co., Norfolk, Va.

Practical Questions of

Business Law

Are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

Answer:—As your business is located in Virginia I must assume that you are interested in a case which arises under the law of that state. In some states garagemen's liens have priority as in New Jersey and New York—in others the lien of the conditional vendee takes priority as in Illinois and in Texas—while in a third class of States priority is determined by the date of the filing of the respective lien claims as in Michigan.

In your State you have no specific statutory garageman's lien law, only the common law lien that all mechanics and artisans have for repairing property, and I believe for that reason the lien of conditional vendors and holders of chattel mortgages will take priority over the lien of a garageman for repairs.

Buyer Entitled to Interest When Money Is Returned

That under a contract for the sale of an automobile which provides for the return of the purchase price upon a breach of warranty given against defects in construction, the buyer is entitled to a return of the amount he has paid with interest from the time he rescinds the contract to the time judgment is entered in his favor in the suit he has brought against the dealer was the decision of the Supreme Judicial Court of Maine in the late case of Le Blanc vs. Le Vasseur reported in 118 Atlantic Reporter at page 376.

Must Safeguard Customers

That every business man is under a duty to use a reasonable degree of care to prevent his customers from being injured while on the premises he uses for the purposes of his business is the decision in the recently decided case of Chapman vs. Clothier reported in 118 Atlantic Reporter at page 356.

The Court in this case pointed out that while a business man is under a duty to use ordinary care to keep his place of business in a reasonably safe condition so as not to expose his customers to unnecessary dangers he is not liable for accidents they may sustain except upon their giving proof of his default or their showing his want of care in keeping the premises safe, when they sue him.

Dealer Cannot Rescind Without Finance Company's Approval

In the recent Maryland case of Bea... Motor Car Co. vs. Narer, it was the decision of the court trying the case that a company selling an automobile on the deferred payment plan and accepting a note for unpaid installments cannot assign the contract and the note to a finance company and then rescind the contract without the permission of the finance company.

It was held, therefore, that an action could not be brought by the buyer to recover his money paid on account of the purchase price based on such a rescission on the part of the seller unless the consent of the finance company to the rescission was shown.

Conditional Purchaser a Party in Suit on Policy

That a purchaser of an automobile under a conditional bill of sale is a necessary party in an action on an automobile policy started by a conditional seller, was the decision in the recent Indiana case of Auto Owners' Protective Ex. vs. Edwards, reported in 136 N.E., page 577.

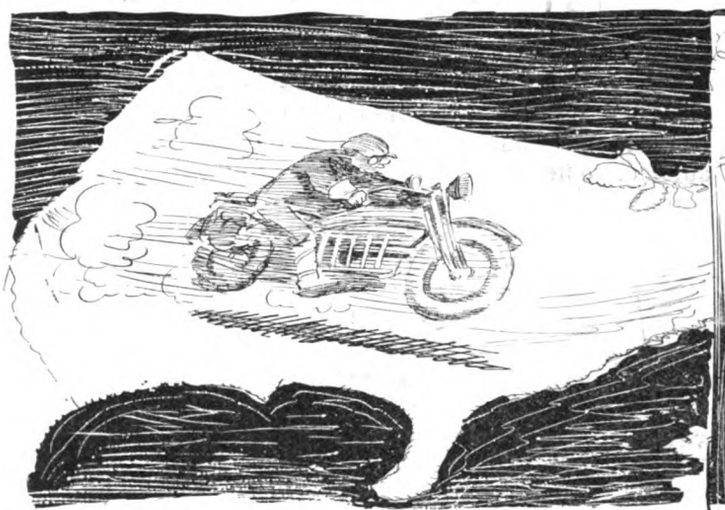
Seller May Retain Payments

That in Indiana a vendor, under a contract of sale payable in installments which provides that on default in the payment of any installment, the seller may rescind the agreement and cancel the contract, the vendor may retain any payments already made, at the time such a default and rescission occur, was the decision in the case of Hawkins vs. Robertson, 136 N.E., page 576.

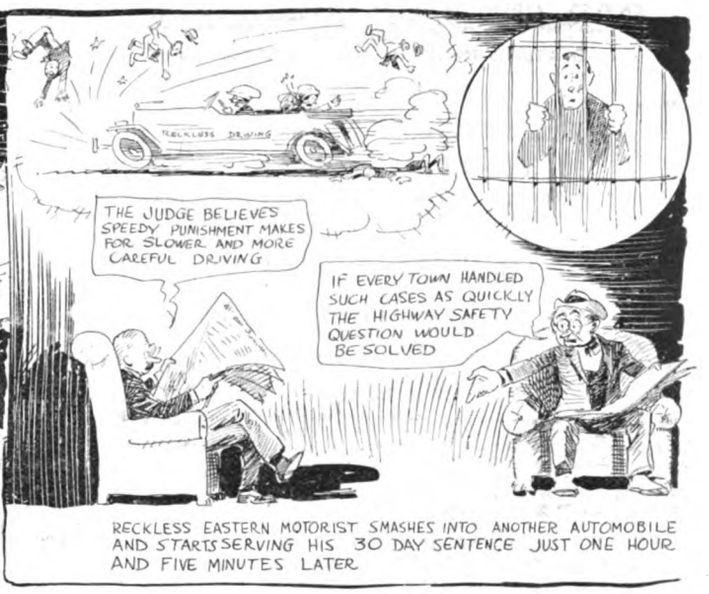
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Along the Automotive Newsway

By Leo Roche



WELLS BENNETT MAKES NEW TRANSCONTINENTAL MOTORCYCLE RECORD LOS ANGELES TO NEW YORK IN SIX DAYS, 15 HOURS AND 13 MINUTES



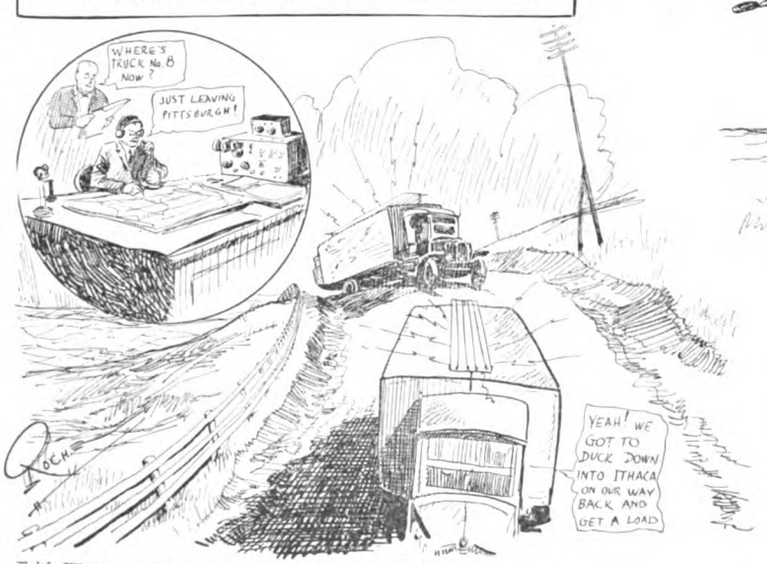
RECKLESS EASTERN MOTORIST SMASHES INTO ANOTHER AUTOMOBILE AND STARTS SERVING HIS 30 DAY SENTENCE JUST ONE HOUR AND FIVE MINUTES LATER



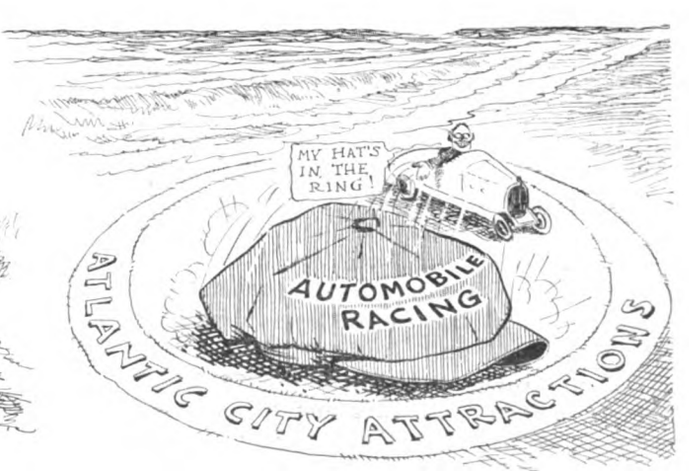
NEWARK DEALERS ADOPT PLAN TO HANDLE USED CARS.



OUT IN FORT WAYNE, IND., THE Y.W.C.A HAS STARTED A CLASS IN AUTOMOBILE MECHANICS FOR WOMEN.



F. W. FENN OF THE N.A.C.C. PREDICTS RADIO WILL CONTROL MOTOR TRUCK FLEETS



ATLANTIC CITY TO HAVE $4,000,000 SPEEDWAY

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MOTOR WORLD
DEALERS, JOBBERS AND GARAGEMEN
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The After Market

CONSERVATIVE estimates fix the number of motor vehicles in use in the United States at eleven and one-half millions. This is a gain of approximately one million over a year ago.

These pictures present a vivid picture of the bigness and growth of motor transportation but do they not mean more than that to the automotive industry? Do they not suggest, in unmistakable terms, the vastness of what has been termed the after market, that is, the business of serving this great fleet of cars and trucks with the replacement and additional equipment and the labor for repair work which is necessary to keep these vehicles satisfactorily in service?

Car and truck manufacturers and their distributors and dealers are assured of a tremendous business in supplying the demand for new vehicles on the basis of a probable replacement of a million a year and a growth of another million, but there is another tremendous business for jobbers, dealers and garagemen in catering to the after market which is bound to grow larger year by year as motor vehicle registrations increase.

The after market calls for a thousand and one items of replacement equipment to keep cars and trucks in serviceable condition. It also calls for hundreds of items of additional equipment to give owners greater satisfaction from their cars and trucks. It also calls for the labor of many thousands of men performing operations which have to do with repairs and equipment installations and replacements.

This after market belongs to the entire industry but has not the automotive dealer—the man with the car or truck agency—often been guilty of overlooking its profit possibilities? Hasn't he overlooked many chances to strengthen his business position and his customers' good will by letting many of these profitable activities of the after market slip away into the hands of specialists, many of them businesses wholly or in part outside the automotive field?

It is not conceivable that in the United States there will ever again be less than eleven and one-half million motor vehicles, and it is virtually certain that this registration will be increased year by year for a number of years at least. This means that the after market about which we have been talking will grow stronger and stronger, and offer greater and greater profit possibilities. It is a market which should be getting the keenest attention of men in all branches of the automotive trade.

One Salesman, One Dealer, One Million

HEADS of the Automotive Equipment Association have begun work on a campaign which is bound to command interest among dealers because some of them are to be made subjects of an experiment on which the campaign is based.

As readers of Motor World know, the A. E. A. is a national association of automotive equipment manufacturers and jobbers which has been engaged for upwards of a year and a half in a campaign to promote business by broadening the retail sales outlet. Equipment manufacturers and jobbers cannot make profits unless dealers do and the campaign has been directed toward assisting dealers in building business and profits.

The A. E. A. merchandising campaign has been proceeding along lines of broadcasting better business propaganda. The campaign set out to place before the retail trade ideas which would help dealers to "Ask 'em to buy" more automotive equipment. Now it is proposed to add an additional feature, that is, to concentrate on a dealer here and a dealer there and help him individually to build up his sales and profits. The two-fold object, of course, is to help these selected dealers increase their sales and to prove to the rest of the trade by the experience of these selected dealers that it can be done.

If the idea works out according to plans, the salesmen of jobbing houses will pick out a dealer each for concentrated assistance during the next six months. The salesmen will try to show these dealers how they can sell more accessories and replacement equipment and how they can make more money in the shop by combining good workmanship, good management and good salesmanship. If one thousand jobber salesmen go to work with a dealer each there will be one thousand dealers engaged in the campaign, and if these dealers increase their business one thousand dollars each in the next six months the increased volume of business for the industry will be one million. This is where the A. E. A. got its new slogan, "One Salesman, One Dealer, One Million."

We imagine that in a good many towns throughout the country the right kind of dealer, with the co-operation of the right kind of jobber salesman, will slice off

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for himself a sizable share of this million-dollar sales increase. It is purely a plan of co-operation in which no dealer need enter unless he can see that he will get constructive advice and assistance from the jobber salesman. Nobody is going to be exploited. The plan is simply one to promote business and profits for the entire trade by serving the car and truck owner.

Committee on Highways

AT a convention some time ago of a national association in the automotive field only four out of eleven members of a committee on highways put in an appearance at the committee meeting, which was twice postponed before it was finally held because nobody but the chairman showed up at the first two "meetings." When the four committeemen got together they were unable to adopt anything in the way of constructive recommendations to the convention, not so much because of the small attendance as because the committee had given no preparatory thought to information to work on. As our readers have suspected by this, this was a committee on highways in name only. There is much of this indifference in all branches of the automotive trade, which ought to be concerned more than any other single group in the country in the promotion of better highways. If only a strong minority, at least, of manufacturers, distributors, jobbers, dealers and garagemen take a hand, as they should, in working for improved roads in their cities, counties, States and the nation we shall begin to get public officials and the public interested in the really progressive measures that are necessary to assure American transportation the kind of highways it must have.

How Many Used Cars?

IN two cities recently a census was made of used cars in dealers' hands and in a city of approximately a million population dealers' used car stocks averaged 53 at the end of November, while in a city of half a million the average was 15.

The dealers in the smaller city obviously were in a better position to begin the winter season. Their assets were largely liquid, making it possible for them to begin soon the stocking of cars for the heavy demand of spring. Their wealth was in money in the bank rather than in used cars bound to eat their heads off during the cold months, and possibly to shrink in value because of new car price deductions or other developments between now and spring.

The trade has probably sold at least two million of the more than two and a quarter million cars shipped from factories so far this year. On this two million new cars it is safe to say that at least a million used cars have been taken in trade, and it is quite possible that the number has reached a million and a half on the estimate of many dealers that they have trades on 75 per cent of their business. How many of this million or million and a half cars are still in the hands of dealers nobody knows but the figure would doubtless shock a great many people if it were obtainable.

Dealers should realize that it is the dealers who are carrying these used cars. The manufacturer and his branches, of course, are interested in this predicament but not so keenly as the dealer himself. The situation in the city of a million people as compared with the brighter picture in the city of half a million suggests that dealers would do well to give the keenest attention to the results obtainable by holding these car stocks down to a reasonable minimum.

At a recent dealers' meeting in a large city the speaker asked for figures on used cars on hand, and one dealer said: "Twenty is our limit." Trading in his establishment stops when there are twenty cars on the floor and until the stock is reduced the attention of new as well as used car salesmen is devoted to clearing out this merchandise. This is a policy which a great many dealers have found practical. It keeps them away from reaching the danger point on frozen assets. Undoubtedly at periods it slows up the sale of new cars, but it is well to remember that the sale of new cars must always be kept in reasonable relation to used car sales, else we shall have an industry demoralized by lack of dealer profits.

An Automotive Legislator

IN Philadelphia W. H. Metcalf, branch manager of the Wire Wheel Corp. of America, has been elected to the Pennsylvania Legislature. He is not the first automotive man so honored, but he is one peculiarly fitted for the office through broad knowledge not only of the automotive business but of business and public affairs generally. It may be expected that among other things Metcalf will exert a sane influence on legislation that has to do with motor vehicles and the kindred subject of highways.

There is no reason why in every State there should not be a legislator or a number of them drawn from the ranks of the automotive trade. Only two things are necessary: Find the man and organize to support his campaign.

Things to Think About

"KEEP your powder dry and your assets liquid," Wayne Hearn wrote the other day to the dealers in a city where he lectured almost a year ago. Hearn, traveling all over the country, has seen enough of excessive and immovable used car stocks to have a pretty definite idea of the meaning of liquid assets.

It has been said that curiosity is the foundation of scientific progress. Have you a curious clerk or mechanic in your establishment? Let him exercise his curiosity in odd moments. It may produce a money-making or money-saving idea for you.

How people talk about the little cup of black coffee, the "eye opener," that is served with the morning paper and the breakfast menu card on one of the limited trains! Why? Because it's an extra touch of service. Are you using some extra touches of service to get people talking about you—and liking you?

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American Coachwork Dominates De Luxe Models in New York Salon

Wide Selection of Beautiful Custom Jobs for All Chassis a Feature of Exhibits—California Top and Folding Glass Sash an Interesting Development

THERE can be no doubt of the beauty of the 1923 automobile, but if it were possible to make a success of painting the lily, the exhibitors at the Eighteenth Annual Automobile Salon at the Hotel Commodore in New York certainly would seem to have qualified themselves for the contract.

Motor car makers from eight nations have combined with body builders to present in exhibition the very finest in chassis and coachwork. As usual, the show is entirely a custom show. It is held essentially to reach wealthy prospects to whom the regular stock chassis and bodies do not appeal and who want something different.

The Salon this year has more chassis and body models than last year. The eight nations represented are: England, France, Belgium, Italy, Germany, Spain, Austria and the United States. Twelve coach builders of prominence in the United States have fitted their offerings to American and foreign chassis of the higher price class.

Of considerable interest to those interested in American cars is the first presentation of Leon Rubay Voitures De Ville, which were described in MOTOR WORLD a few weeks ago.

Several manufacturers have worked out very clever California top types with the glass sashes folding into a compartment when not in use. The Leon Rubay car has such an arrangement in which the sashes hinge downward into a cavity between the front and rear doors. The outside shell of the body simply hinges downward and the sashes hinge upward. In this case there are four sashes. In a Rubay body for the Peerless with a front door on the left side and a rear door on the right side, there are only two sashes on each side, those on the left side folding into a cavity where the rear door would ordinarily be, and those on the right folding into the space ordinarily occupied by the front door. A rather complicated but apparently efficient system of catches and springs keep these parts from rattling whether the sashes are in use or folded up.

Folding Step Appears

Another innovation in design is shown in one of the Isotta Fraschini limousines. When the doors are closed no steps or runningboard are visible, and the effect of the terminating front and rear fenders is odd. When any door is opened, a step is automatically folded down under it. This particular model incidentally is the extreme in appointments. All interior fittings, door handles, etc., as well as the exterior handles, are in ivory. There are shades for all windows, even including the front ones, and the heavy plate glass in the windows is cut with an ornamental design in the corners. All windows operate with lever regulators.

While most of the larger closed bodies are built to be chauffeur-driven, there are a number of open models on more of the sport type with racy lines and a minimum of top hamper. A Locomobile phaeton with a Victoria top has a separate hinged cowl attached to the back of the front seat with a one-piece windshield which almost meets the front part of the Victoria top.

Soft tops on closed bodies predominate, and there seems to be a general attempt to reduce the total height of the cars. A Lanchester coach with a soft top and dark colored interior finish has fore and aft stringers and cross carlins finished in light natural wood, giving a somewhat unusual appearance.

Some Unusual Features

A Le Baron body on an Isotta Fraschini chassis is probably the extreme in sport closed models. The top part of the hood, starting at a point in front and broadening out past the windshield, is painted a dark brown, and the edge of the point is accentuated by a raised bead. Below the body is a dark gray. The front runningboards are very long and have a long slope to a point beneath the front door. The slope of the fender nearly parallels the angle of the brown point on the hood.

A Hume Body on a Marmon is of the California type, with a very low appearance, the sashes being nearly square and the frames inset. The inside of the body, although conventional, is very luxurious. A seat arm in the center of the rear seat is removable, so that three passengers can be accommodated, if desired.

Among the interesting chassis that are not so well known yet in this country are the small FIAT and the two Hotchkiss models. The Hotchkiss models are a four and a six, both having front wheel brakes and a number of mechanical and constructional ideas not heretofore seen in this country. The rear springs on the six are 63 in. long, of the cantilever type, but with a compensating and shock absorbing lever under the springs to make for easy riding on rough roads at high speeds. The valves on the six are overhead and are operated positively by eccentrics instead of cams, the eccentric not only lifting the valve but returning it to its seat. The valves on the four are cam-operated.

While the four speed gearset has practically disappeared from American chassis, a number of the foreign cars at the Salon are so equipped. This is doubtless due to the fact that the engine sizes and gear ratios suited to city driving in the third gear would not be productive of sufficient speed on the open highway. On most of these gearsets, the reverse is protected by a latch.

Four wheel brakes, transmission brakes, metal dashboards and V-type or rounded radiators characterize many of the foreign cars as well as some of the American models. Most of the bodies, even on the foreign cars are the products of American coach builders.

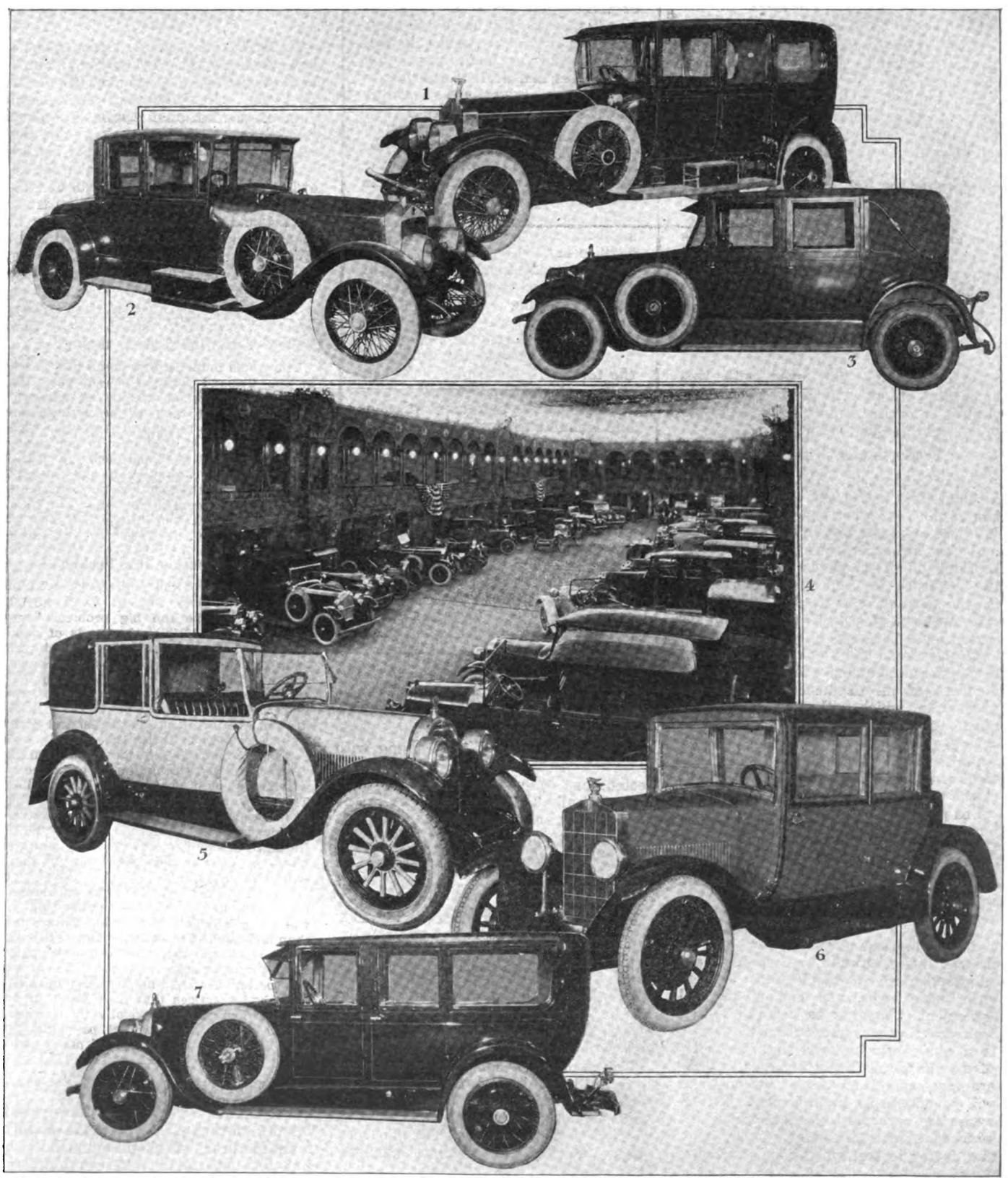
The colors displayed are for the most part rich but unobtrusive, although there are a number of bodies of the sport type in pink, fire engine red and cream. However, there is not the preponderance of bizarre colors that has characterized some of the previous Salon exhibitions. Wheels are mostly wire or disk, although there are a number of models with artillery type wheels. There is a general tendency to provide a place for baggage and many interesting designs are shown. A Winton phaeton with a Healey body has a recess on the rear with wooden strips on the bottom and aluminum guard rails. Sufficient space between the front of the recess and the spare tires allows for carrying a good sized trunk.

The Exhibitors

The car manufacturers exhibiting are Benz, Brewster, Cunningham, Daniels, Duesenberg, Fiat, Hispano-Suiza, Hotchkiss, Isotta Fraschini, Lanchester, Mercedes, Minerva, Panhard, Rolls-Royce, Rubay, Sunbeam, Voisin and Winton. Cars exhibited by coach makers are Cadillac, LaFayette, Lincoln, Locomobile, Marmon, Packard and Peerless. Coach exhibitors are Brewster, Brooks-Ostruk, DeCausse, Demarest, Fleetwood, Healey, Holbrook, Hume, Judkins, Le Baron, Locke and Rubay.

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Among the Exhibits Seen at the New York Salon



1—The new Rolls-Royce berline. 2—The Lanchester coupe. 3—The Cunningham landaulet sedan. 4—A general view of the Commodore ball room with the exhibits of cars. Large rooms at each end and a spacious corridor also contain cars. 5—The new Peerless chassis fitted with a Demarest cabriolet. 6—The Leon Rubay coupe. 7—The Duesenberg berline

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OUTPUT IN NOVEMBER PLACED AT 220,000

Ninth Consecutive Month to Pass 200,000 Mark—2,500,000 Year in Sight

NEW YORK, Dec. 4—With production of cars and trucks estimated at 220,000, November not only establishes a new record for that month but becomes the ninth consecutive month to pass the 200,000 mark. This figure was reached in the face of a short working month, inclusive of a holiday, which was the only factor keeping the total output from equaling that of October.

As it is, the high mark in the production history of the industry for a year's output has been passed by a substantial margin, and the end of December will probably see the total production for the twelve months around 2,500,000. There will be some curtailment of operations this month, due to the closing of many of the plants for the regular inventory-taking. But even with this done, the output will have to be only slightly in excess of 150,000 to bring the year's total to that figure.

Production at High Level

Manufacturing is being maintained at a remarkably high level, despite the season of the year when there is a seasonal lull both at plants and in the sales fields, and few producers are reporting any tapering off of schedules. They are being governed in their operations solely by the demand, and as yet there is no wide evidence of a decline in the call for cars.

While closed cars continue foremost in the manufacturing program, there is evidence of an expansion in open car production, which will grow steadily to meet the anticipated demand in the spring. Body plants are working full blast to catch up with back orders as well as to meet those current. So great is the press for closed bodies that factories producing them will work at maximum capacity throughout the winter. Greater relief will come with the opening of additional plants after the first of the year, but probably not before spring.

Transportation Improves

Some improvement is noted in the transportation situation. Shipments are being received by Pacific Coast dealers with more regularity and added rail equipment is moving carloads that have been awaiting movement for some weeks. It is confidently believed that the worst of the difficulties in getting cars to dealers have passed and from now on there will be noticeable improvement. Driveaways are reported to be decreasing, and while fewer cars are being sent by boat, that factor in transportation is still important.

All branches of the industry show a healthy condition. Trucks are meeting with better demand and plants are reporting increased operations. Tire makers are now working on improving their finished inventory situation to forestall any possible shortage. In the parts branch manufacture is progressing with much less shrinkage than had been expected, and shipments are being made on practically the same basis as in the past. Collections show an improvement over last month.

USED CAR MANUAL IS NEARLY READY

NEW YORK, Dec. 1—The Manual of Used Car Co-operation, compiled by the National Association of Automobile Show and Association Managers, will be off the press within a few days, when it will be available for trade association secretaries and dealers desiring to study it for suggestions regarding used car co-operation in their communities.

The manual, a 16-page book, has been priced at $2, which covers the cost of compilation, printing and distribution.

The book confines itself to one subject: that is, to suggesting a definite method by means of which a dealer association or a group of dealers can co-operate to eliminate losses resulting from over-allowances on used cars. It contains all the necessary forms for a co-operative plan and instructions for using the forms.

Its authors are Herbert Buckman, manager, Cleveland Automobile Manufacturers and Dealers Association; L. B. Sanders, secretary, Boston Used Car Statistical Bureau, and Neal G. Adair, editor Motor World and executive secretary, National Association of Automobile Show and Association Managers.

The book may be obtained by application to the association, 239 West Thirty-ninth Street, New York.

NEW NAME IS GIVEN TO EQUIPMENT BODY

CHICAGO, Dec. 4—A new name, Automotive Manufacturers' Association, was adopted at a meeting here by the organization heretofore known as the Association of Automotive Equipment Manufacturers. New constitution and by-laws also were adopted.

This association has been in existence since 1916, but until early this year its activities were confined chiefly to Chicago. It has now become a national organization with nearly 100 members. George Fritz is the general manager. New officers and directors under the new constitution are to be elected within the next 60 days. General offices are maintained in the Consumers' Building, Chicago.

OUTPUT OF 2,400,000 EXPECTED BY REEVES

Ten Per Cent of Total Year's Production, He Says, Will Be Trucks

NEW YORK, Dec. 4—After spending two weeks on the road visiting from 25 to 30 plants in Ohio, Indiana, Illinois and Michigan, Alfred Reeves, general manager of the National Automobile Chamber of Commerce, is back at his desk again, convinced, as a result of his trip, that 1922 production will reach the record-breaking total of 2,400,000, of which approximately 10 per cent will be trucks.

"I found that business generally has had a chance to get its second wind, live down many of the mistakes of the past and get set for 1923," commented Reeves. "Next year promises to excel 1922 provided we can get enough closed bodies. That's the rub."

Reeves continued with saying:

The whole industry now has a new market in the demand for the closed car. This market will increase rapidly as the prices get closer to the open car prices, and especially where the roads are improved. Closed car production in 1919 was 10 per cent of the total; in 1920, 17 per cent; in 1921, 22 per cent, while this year it will exceed 25 per cent, with the last quarter's production running 31 per cent of the total. In time it is expected that more than half the production will be the closed or year-around type.

Distribution Big Problem

Next year will find engineering and production on a very efficient basis, but distribution will be the big problem for all manufacturers. While thousands of dealers have gone out of business, the ranks have been pretty well replaced by new ones so we now have more than 33,000 merchants retailing motor cars and trucks, all of whom must be aided by the manufacturer in connection with financing his stocks and passing the vehicles on to the public.

We will see still greater production next year, especially during the first six months, provided enough closed bodies are available. The industry normally makes 25 per cent of its year's production in the first quarter, 31 per cent in the second, 24 per cent in the third and 20 per cent in the last quarter. The last quarter this year will be better than the average.

Farmer buying will make for an increased production next year. His crops this year will bring a billion and a half dollars more than last, and he must have cars and trucks.

The truck industry is more promising than it has been for some time but it needs more and better dealers and the elimination of some bad practices that have crept in during the depression, especially the selling of trucks on too small a first payment, with too long a time for full payment.

Shop Equipment Credit Plan

CHICAGO, Dec. 2 — Canedy-Otto Manufacturing Co. of Chicago Heights, manufacturer of shop equipment, has put into operation a credit plan that permits the sale of its equipment by jobbers on time payments. The plan is underwritten by the Continental Guaranty Corp., New York.

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MAKERS SPEEDING UP DELIVERIES OF CARS

Forestalling Winter Complications—Big Schedules Shown for December

DETROIT, Dec. 1—Production figures for factories in the Detroit district show November to have run considerably ahead of production in November, 1921, and to have maintained a pace which will give the industry another approximate 200,000 month. Manufacturing in December will show a gradual decline, owing to the lateness of the season and the holiday inventory period, but will compare favorably with any other similar month.

While there is continued large buying of closed models, most of the open cars are going to dealers for stocking over the turn of the year. This is especially true in the middle priced field, there being still large buying of open models in the low and better priced lines. Price changes and new models in a number of lines have kept a larger volume of business coming through than usual at this time of the year.

Pushing Through Cars

Manufacturers generally are rushing through a large number of cars before winter weather complicates the railroad situation. Shipping during the early months of the year may be greatly curtailed because of the rail situation, and it is desired to provide ample stocks against this. There is, however, a large amount of ready business, and schedules are very conservatively based.

Ford sales during the month will exceed 100,000, practically all of which are in the domestic field and due largely to the recent price cut. Sales following the reduction have exceeded expectations and will necessitate the manufacture of 100,000 vehicles in December despite inventory period. Closed car business is about 25 per cent of the total. Tractor manufacturing is approximately 200 daily.

Schedules for Month

Chevrolet is building 1200 cars daily and is increasing this total. Business is running strong on closed cars, and orders are several months ahead in practically every model. There is a large ready market for its open models, and the company is intensifying its sales efforts in all territories.

Companies manufacturing closed cars of the utility type report these behind orders in almost every instance. From ten to thirty days are required for deliveries. In this group are Dodge Brothers, Maxwell, Hupp, Dort and Studebaker. Schedules in these plants on all models show Dodge Brothers to be manufacturing about 500 daily; Maxwell, 200 daily; Hupp, 100; Dort, 100, and Studebaker, 400, in all plants.

Buick is continuing heavy production. Schedules in all plants, including Canada, approximate 600 daily, a large part of which is in its touring sedans. Hudson and Essex are building about 250 daily with coach models leading in popularity. Closed car Hudson and Essex business is now close to 60 per cent.

Better priced lines are running close to capacity. Cadillac with new low prices in effect is building about 100 daily, and will increase this total in December. Packard is increasing its production in December to 2250 a month, a 25 per cent increase over its earlier year schedules. Lincoln production at the rate of about 30 daily is sold through the winter. Wills Sainte Claire, despite its temporary financial difficulties, is operating at the rate of about 20 cars daily.

Oldsmobile and Oakland are continuing operations at the rate of about 100 daily. Paige-Jewett schedules call for production of about 100 a day. Reo is approximating 100 daily in cars and speed wagons. Rickenbacker is building about 20 cars daily and has scheduled 10,000 cars for 1923, or 40 daily. Durant is approximating 100 daily each in both Durant and Star models. Gray is building 100 daily and will increase this steadily to more than 200 daily by Jan. 1.

Earl Motors, under the change in control which places George C. Scobie in the presidency, is outlining an extensive production for 1923 and is gradually increasing operations. Columbia has outlined a schedule of about 28,000 for 1923, on which it is now beginning. Liberty is now arranging for its 1923 output and is operating on a regular winter schedule.

Dort Reduces Debt

DETROIT, Dec. 4—Dort Motor Car Co. during the year has made a 50 per cent reduction in its indebtedness of more than a million and a half, according to a statement by F. A. Aldrich, treasurer of the company, to financial and commercial companies. This is regarded as highly satisfactory by the company.

FIRST OFFENDERS TO BE PLACARDED

SACRAMENTO, CAL., Dec. 2—San Diego has put into effect a plan proposed by F. H. Bacon, mayor, for the checking of motorists with a tendency to speed, which is to be adopted by other cities in the State, according to reports filed with the State Motor Vehicle Department here.

The plan is to attach to the front and rear of the speeder's car a large red placard bearing the word "DANGEROUS" printed in black. The judges give first offenders the option of carrying this placard for a certain number of days, or going to jail for a similar period. Second and third offenders get the jail sentence, without the option of being tagged as dangerous.

EDUCATORS DISCUSS SERVICE TRAINING

Federal Board and Industry Cooperate to Establish Adequate Standards

DETROIT, Dec. 4—As a result of the educational conference at the Hotel Tuller, the Federal Board of Vocational Education will undertake to establish a contact between those interested in automobile mechanical education and the automobile industry. The objective of this contact is to learn from the industry what the industry wants and expects from the automobile mechanical schools.

The conference was called by the Federal Board during the Regional Conference in Vocational Education, and this one session was set apart for the discussion of automotive educational problems. Seventy educators and representatives of the industry registered, and practically all of those present spoke during the day. Frank Cushman of Washington, chief of the Industrial Education Service, presided and directed the discussion along progressive lines. J. C. Wright, director of the Federal Board of Vocational Education, was present much of the time and personally accepted the task of forming the contact as outlined in the following resolution:

Resolution of Conference

Be it resolved, that it is the consensus of opinion of the conference held in Detroit, Nov. 29, 1922, for the purpose of considering job specifications and standards of training for automotive repair men, called by the Federal Board for Vocational Education and and participated in by representatives of State departments of vocational education, representatives of the National Automobile Chamber of Commerce, the Society of Automotive Engineers, public schools, the Y. M. C. A., the K. of C., private automotive schools, automotive manufacturers and other automotive interests that as, at the present time, there seem to be no adequate standards of training for this important and rapidly growing phase of the transportation field, and as some adequate standards are greatly needed, the Federal Board for Vocational Education is urgently requested to give active consideration to the problem and to make contact with such national organizations in the automotive industry as have a common interest in the problem, to the end that some agreement may be reached which will function on a national scale for improving the training of repair men for the automotive industry and the upgrading of those in service in this field.

Be it further resolved, that copies of this resolution be sent to each of the members of the Federal Board for Vocational Education.

Adopted Enthusiastically

The resolution was enthusiastically adopted and Wright accepted the assignment. He said it was his belief that this movement would fit into other work under way by the board and that it was of great industrial importance that the education should be adjusted to the practical needs of the industry, and in this way gain the confidence of the industry.

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FORBES IS SELECTED AS PIERCE PRESIDENT

Succeeds Col. Charles Clifton Who Continues Chairman of Board

BUFFALO, Dec. 2—Continuing Col. Charles Clifton as chairman of the board, the Pierce-Arrow Motor Car Co., has named Myron E. Forbes president of the company, thus relieving Col. Clifton of detail work and leaving him a free hand to map out and direct the policies of Pierce-Arrow. Forbes has been prominently identified with the company as treasurer, vice-president and chief executive. He will be succeeded as treasurer by S. O. Fellows, formerly comptroller.

This division of labor is interpreted to mean that Col. Clifton has completed his work of reconstruction undertaken two years ago. Prior to that time he had retired from the presidency to become chairman of the board alone, but the affairs of the company were in such shape that the directors prevailed upon him to return to the head of affairs and reorganize things. With that in mind he has put in a busy two years. Now, it is said, the company is in good shape and the colonel feels that he can give up the presidency and remain as chairman of the board.

Receiver for Wills

DETROIT, Dec. 4—Security Trust Co. of this city has been named as receiver for C. H. Wills & Co., Marysville, Mich., manufacturer of the Wills-Sainte Claire. No statement of assets and liabilities has been filed, but it is understood that the company owes the banks about $6,000,000.

President Wills declares the company is solvent and that the receivership is a friendly one, brought about for reorganization purposes. At present the receiver is making an inventory, and it is expected that production will continue without interruption.

CARS INCREASE TRADE OF STORES IN CITIES

MILWAUKEE, Dec. 4—Protestations from the city of Milwaukee that under the present system of proportioning state, county and city aid for highway construction, the city is compelled to bear an abnormal burden to the advantage of taxpayers in the rural districts, have resulted in investigations tending to show that the centers of population actually derive the major benefit.

Members of the county board of supervisors declared that in conversation with the heads of three of the largest department stores in Milwaukee, they were informed that because of the improved highways leading from all points in the county to the city, their trade has increased approximately 100 per cent.

FISHER BODY REPORTS SURPLUS FOR QUARTER

Amounts to $2,852,964 Which Is Big Gain Over Previous Three Months

DETROIT, Dec. 4—Fisher Body Corp. and subsidiaries, exclusive of the Ohio company, report for the three months ended Oct. 31 last, a surplus of $2,852,964 after charges and Federal taxes, equal after preferred dividends to $5.70 a share earned for the 500,000 shares of no par value common stock outstanding. In the previous three months surplus of $1,733,433 or $3.46 a share on the common was reported, and in the corresponding period last year, surplus of $1,939,541, or at the rate of $3.75 a share on the common was shown.

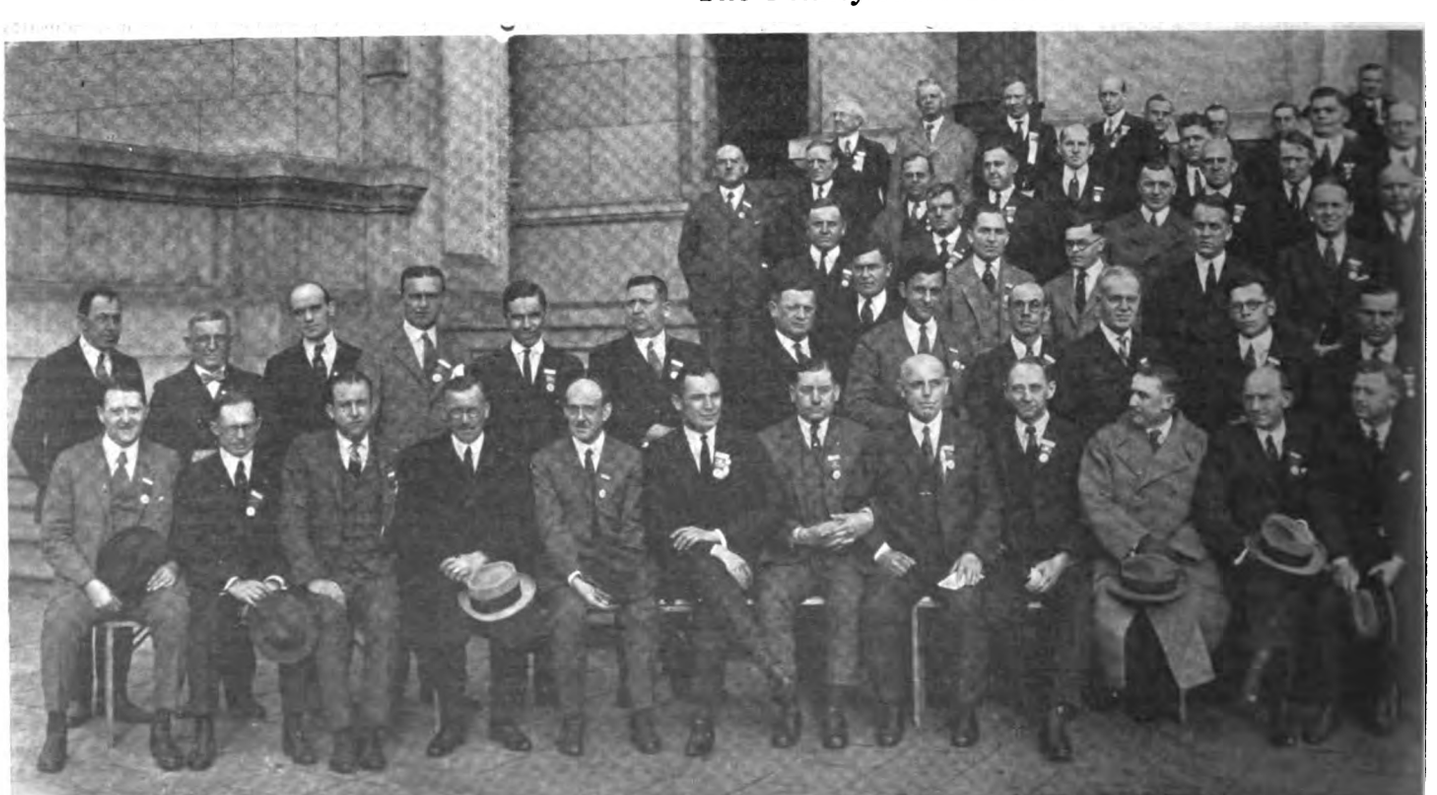
For the six months ended Oct. 31, surplus of $4,586,394 remained after preferred dividends, equivalent to $9.16 a share on the common as compared with $3,151,777 or $6.06 a share in the same period a year ago.

For the quarter ended Oct. 30 last, the Fisher Body Co. of Ohio, reported net earnings of $329,293 after taxes, depreciation and interest.

Named A. E. A. Vice-Chairman

NEW YORK, Dec. 1—A. D. McMullen of the Motor Mercantile Co., Salt Lake City jobber, has been elected vice-chairman of the board of directors of the Automotive Equipment Association.

The Pennsylvania Dealers Held Their Convention



Here are the members of the one-year-old Pennsylvania Automotive Association, photographed on the steps of the the few trade groups in the country who hold their

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EXPECTS FOUR-WHEEL BRAKES TO INCREASE

Rickenbacker, Back from Europe, Says Most Cars Here Will Use Them

NEW YORK, Dec. 4—Four-wheel brakes will be on most American cars within three years, predicts E. V. Rickenbacker, vice-president of the Rickenbacker Motor Co. of Detroit, just back from an extended European trip, which included both the French and English shows.

American traffic conditions, he contends, will force their adoption and they will be just as essential as the self-starter. The need for acceleration in traffic and the control they give are the factors that will bring about their adoption, he thinks.

Rickenbacker says:

In both England and France I found the four-wheel brake coming into general use. Even cars as light as 1000 and 1200 pounds are using them. I should say that a majority of French makers have taken them up. And I believe that some of our own manufacturers are quietly investigating this European practice, for I heard of one big concern, whose representatives were abroad at the same time I was, which bought three of the French front wheel brake patents recently.

I found a great interest in racing, and I think Fiat, Mercedes, Benz, Peugeot, Bollot and others will enter the Indianapolis race.

I feel that racing would re-stabilize our industry abroad, for our engines are not economical enough now for the foreigners.

DIVISIONS FEATURE SHOW IN CINCINNATI

CINCINNATI, Dec. 4 — Range and variety of exhibits featured the second annual Automotive Accessory and Radio Exposition held here.

There were seven distinct divisions—an automobile section, in which latest models of cars were shown; a truck and tractor section; the parts and accessories division; radio section; motor wearing apparel section; an automotive educational section, and the amusement section.

Free instruction and advice to all visitors seeking automotive information and an exhibit by the Federal government relating to good roads were unique features of the educational section.

The exposition was held under the auspices of the Cincinnati Automotive Trades Association, John J. Behle, manager.

Barley Treasurer Dies

DETROIT, Dec. 4—Charles E. Stephenson, treasurer of the Barley Motor Car Co., died at his home in Kalamazoo after a short illness. He was 47 years of age. He was engaged in business in Kansas City, Kan., and at Streator, Ill., before coming to Michigan.

COLUMBIA HAS PLANS FOR 27,000 IN 1923

Company Reports Having Made Sales Connections in Important Cities

DETROIT, Dec. 24—Columbia Motor Car Co. is scheduling a production of 27,000 cars for 1923 and will start operations on that basis the first of the year, according to a report to stockholders mailed this week.

Many new sales connections have been made in important cities, the statement declares, and these with development of merchandising plans will absorb production.

Among the cities in which dealer contracts have been signed are Atlanta, Chicago, Indianapolis, Milwaukee, Philadelphia, New York, Brooklyn, Portland, Oregon, Seattle, Spokane, Boston, Detroit, St. Paul, Portland, Me., and Bangor, Me.

A strong foreign sales organization is being formed, the company asserts, tentative contracts being closed and sample car shipments made to over 35 export territories.

Receivership for Ranger Maker

HOUSTON, TEX., Dec. 4 — Southern Motors Manufacturing Association, maker of Ranger cars, trucks and tractors, is in the receiver's hands following the filing of a voluntary petition.

in the State Capitol Again This Year



Capitol at Harrisburg, where they recently held their second annual convention. The Pennsylvanians are one of annual meetings in the meeting rooms of the Legislature

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OFFICIAL SUGGESTS PEDESTRIAN CONTROL

Police Commissioner in New York Thinks It Would Relieve Congestion

NEW YORK, Dec. 4—Traffic cops on the sidewalks to control pedestrians and headlights for the officers are two reforms being considered by Police Commissioner Enright in his efforts to solve the congestion problem which has so alarmed city officials. With this end in view, he is drafting a set of sidewalk traffic rules which will apply only to pedestrians and which will be rigidly enforced, he says.

With New York doubling the number of its automobiles every three years, he realizes that drastic steps must be taken to make it possible for residents of the city to use the streets and sidewalks. So serious does he consider the situation that he says it may be necessary to eliminate the sidewalks on Fifth Avenue and Broadway and give the whole width of the streets to vehicular traffic. To care for pedestrians he would build the sidewalks along the first floors of the stores and office buildings, allowing the stores to display goods in an arcade effect.

Enright also suggests taking down the Second and Sixth Avenue elevated lines and placing them underground with four tracks each. An elevated structure along West Street, the most congested thoroughfare in the city, is favored. This, Enright thinks, should be at least 80 feet wide and extend from the Battery to Seventy-second Street, with runways that would connect West End Avenue and Riverside Drive with Broadway.

TANK-WAGON PRICE OF GASOLINE LOWER

NEW YORK, Dec. 4—Statistics gathered show that at the present time the tank-wagon price of gasoline in 30 cities averages 19.4 cents per gallon, which is 3.5 cents a gallon below mid-August and 5 cents under 1922's high of 24.4. This also is eight-tenths of a cent under the low of 1921 and about 10 cents under the average of 29.3 on Jan. 1, 1921.

The present tank-wagon prices in the leading cities are: Atlanta, 19; Baltimore, 21.5; Birmingham, 17; Boston, 24; Butte, 22.5; Chicago, 18; Cleveland, 20; Dallas, 20; Denver, 19; Des Moines, 19.1; Detroit, 19.4; Houston, 19; Indianapolis, 18.8; Kansas City, Mo., 17.5; Louisville, 19; Memphis, 15.5; Milwaukee, 18.6; Minneapolis, 19.5; Newark, 21.5; New Orleans, 16; New York City, 24; Omaha, 18.25; Philadelphia, 21; St. Louis, 18.2; St. Paul, 21.5; San Francisco, 19; Seattle, 21; Tulsa, 16; Vicksburg, Miss., 17; Wilmington, Del., 21.

Stutz Distributors Meet Schwab



In connection with the sales conference held at the factory in Indianapolis, a testimonial dinner was tendered Charles M. Schwab, who has a controlling interest in the Stutz Motor Car Co. of America, Inc.

This picture was taken in front of the executive building at the Stutz plant and shows in the front row, reading from left to right: I. B. Meers, district manager; W. A. Pungs, Jr., Detroit; E. T. Klee, purchasing agent; F. D. Cerf, Chicago; Fred Wilson, sales manager; H. R. Fletcher, New York; Charles M. Schwab; President W. N. Thompson; William Glickert, factory superintendent; Charles V. Scensa, Buffalo; H. R. Hyman, advertising manager; Harry W. Anderson, district manager; back row: R. H. Schmittdiel, Detroit; J. K. Graves, Nashville; George Kaeser, Hartford; H. R. Wilson, Bethlehem, Pa.; L. V. Bedell, assistant treasurer; George Hooveler, Pittsburgh; Stanley Whitworth, assistant manager; H. S. Thomas, Cleveland; George Norwood, Baltimore; R. D. Baughman, Akron; Earl Devore, order department; Earl Stone, district manager; J. C. Pearson, traffic manager; Bohn E. Fawkes, Minneapolis; L. W. Frizzell, Mansfield, Ohio; Fred Johnson, assistant sales manager; L. D. Brown, service department and William Blair, Buffalo.

TIRE MAKERS PREDICT INCREASE IN PRICES

Each Producer Apparently Is Waiting for Lead to Come from Competitor

AKRON, Dec. 4—Practically every tire manufacturer in the Akron district is frank to admit that tire price increases are entirely logical and almost certain to come within the next 30 days; but none, apparently, is ready to initiate the movement, each manufacturer waiting for the lead to come from his competitor.

The 10 per cent tire price increase announced by the Kelly-Springfield company was not close enough at home to cause Akron manufacturers to fall into line. It will take an announcement by one of the major companies here to start the upward revision of prices, and when that initial announcement comes, a grand rush may be expected.

A survey of Akron manufacturers shows that practically all of them hold the opinion that prices should be raised. They cite the fact that the price of crude rubber has increased more than 10 cents a pound in the last 30 days because of the Dutch-English agreement to curtail production. The curtailment followed the passage of the British Stevenson law, whereby an export tax is laid on all crude rubber exported, with graduation upward as the amount of crude rubber produced increases.

Cotton Prices Higher

At the same time the increase in the price of cotton fabric for tires is cited as making a tire price increase logical. And, in addition, to these, has been a gradual increase in the cost of labor, all three factors having cut the tire manufacturer's margin of profit to a minimum.

Present tire prices average about 40 per cent below the peak prices charged for automobile tires, while they are from 10 to 15 per cent below pre-war prices, when tires did not give more than half the mileage guaranteed for the tire today.

Dealers throughout the country are displaying more optimism and are less conservative in ordering supplies of tires and tubes. Last spring, overly cautious on account of the complicated conditions which arose from the tire surplus which existed, dealers ordered conservatively and sought quicker turn-over of stock on their shelves. In many instances they found they had been too conservative.

Kelly Tire Prices Increased

NEW YORK, Dec. 4—Announcement is made of a 10 per cent horizontal increase in the prices of casings, tubes and truck tires by the Kelly-Springfield Tire Co. This applies only to dealers' orders placed in December. Higher prices of rubber and cotton are said to be the reason for the increase.

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LOS ANGELES SHOWS CARS IN FOUR TENTS

Despite Fifty-Cent Admission Charge, Attendance Is Largest on Record

LOS ANGELES, Dec. 4—From every viewpoint the Los Angeles automobile show was the most successful ever held. Despite the fact that a fifty cent admission fee was charged, the crowds were the largest on record. Four tents having an aggregate of 135,000 sq. ft. of floor space proved inadequate. The attendance was so large that dealers said it was almost impossible to give prospective purchasers the attention they deserved. This handicap, however, did not prevent more actual orders being taken than in any previous event.

Forty-four passenger car dealers showed 61 different makes. Twelve truck dealers displayed 14 makes, with a total of almost 300 vehicles exhibited. There were twenty-two 4-cylinder, thirty-six 6-cylinder, twelve 8-cylinder, and one 12-cylinder types of engines.

The first showings of new models was much larger than is customary. Latest types of Chalmers, Hupmobile, Star, Barley, Durant, Jewett, Cleveland, Rolls-Royce, Rickenbacker, Earl, Peerless, Dort and Stearns made their first appearance before the public.

In previous shows it has been thought necessary by the exhibitors to dress up their cars but the special job was an exception this year. Only a very few de luxe models appeared, and in the main these were close to stock with the exception of extra equipment. More sport models than ever were to be seen.

The show was staged without the services of a professional promoter. A committee selected from the Motor Car Dealers Association had entire charge. Burt Roberts, executive secretary of the association, acted as manager. Space was sold at $1 per sq. ft. Fifty per cent of the profits will go to the association and the remainder refunded to members of the association in proportion to the amount of space they purchased.

RICHMAN PURCHASES BUSINESS ON COAST

SAN FRANCISCO, Dec. 5—One of the largest deals, financially, recorded in automotive circles in northern California in some years, was consummated when Richman Motor Co. bought for cash the business of the Charles H. Kaar Motor Co. The appointment of the Richman company as distributor of the Rickenbacker car in northern California goes with the sale.

The principals in the new firm are well known in automotive circles in California, and throughout the West. Charles S. Richman, president and general manager, has been the owner of the firm of Johnson & Richman, one of the largest automobile repair shops in San Francisco. He will take personal charge of the service department and the repair shop.

F. B. Kip, vice-president and wholesale manager, was retail sales manager for the Lozier Co., in New York in 1908 and later became manager for the Chandler Motor Car Co. Louis Cohen, secretary and sales manager, has been identified with the trade in San Francisco since 1900.

PENNSYLVANIA JOBBER HOLDS A. E. A. MEETING

JOHNSTOWN, PA., Dec. 4—Ray W. Sherman, merchandising director of the Automotive Equipment Association, addressed more than 100 employees of the Johnstown Automobile Co., distributor of automotive equipment and Cadillac cars. Eight Cadillac dealers from the Johnstown territory were also present.

Cadillac's new film, or "The Story of a V-Type Eight-Cylinder Motor Car," which will be shown in collaboration with the United States Department of Commerce, was given its first showing in Pennsylvania. W. W. Lewis, District Manager of the Cadillac central territory, spoke. The "Shop Profits" film also was displayed.

Sherman came here in company with George L. Brown, a former A. E. A. director, and J. H. Leppert, a director in the Pennsylvania Automotive Association, both of whom are connected with the sales department of the Johnstown company. All three had been in attendance at the State convention at Harrisburg.

BOOSTING OPEN CARS WHILE SHORTAGE LASTS

Dealers, Unable to Get Closed Models, Intent on Making Sales Anyway

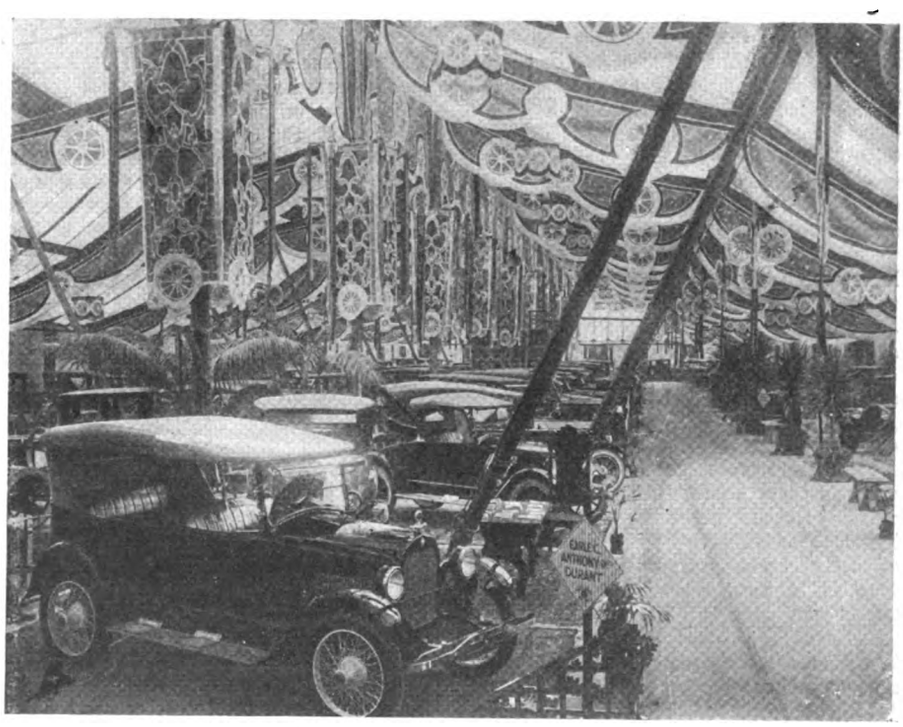
KANSAS CITY, MO., Dec. 4—American Royal Week in Kansas City, when the first of the enlarged stock show and merchandise exhibits was held in the newly constructed building here, was made the occasion by the Kansas City Motor Car Dealers Association for displaying closed cars.

The cars were exhibited in the various dealer establishments, where special pains were taken to provide closed models. The total results were good, the week's sales having far exceeded those of any previous American Royal Week, or previous week of the same calendar days. There were handicaps, however, chief of which was the shortage of closed models.

The holding of the show undoubtedly has stimulated interest in both open and closed models, even though many of the visitors to the showrooms may do their buying in their home towns.

The holding of the show forced the dealers to take steps to offset the heavy call for closed models this winter that cannot be met completely. It demonstrated that there are a great many people actually ready to buy new cars; and it is obviously up to the dealers to find ways to sell them the models they can get, whether closed or open.

"See America" Tent at Los Angeles Show



This tent in the Los Angeles show typified "See America." The side walls were painted with scenic views and the liberal use of automobile wheels in the decorations left clear the significance as to the proper way to "See America"

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FAR WEST MAY HAVE SAME GASOLINE TAX

Governors Will Urge Levy of Two Cents—Also Will Unite on Anti-Theft Law

SAN FRANCISCO, Dec. 4—A tax of two cents per gallon will be placed on gasoline next year in eleven western states, if the governors of those states are able to press such a law through their respective state legislatures.

This agreement among the executives of California, Arizona, Nevada, Colorado, Idaho, Montana, New Mexico, Washington, Utah, Oregon and Wyoming was reached at a conference held in this city, attended by Governors Louis Hart of Washington; Emmet D. Boyle of Nevada and William D. Stephens of California and the secretaries of the other eight governors, the executives themselves being in attendance at the Colorado River conference at Santa Fe, N. M., and unable to leave. Funds from this tax are to be applied to building and maintenance of roads.

Anti-Theft Legislation

The governors and their representatives also decided to present to their respective legislatures, as soon as it could be drawn, a uniform law for the pursuit, arrest, identification and punishment of automobile thieves seeking to escape by fleeing from state to state, or driving stolen cars from state to state in an effort to sell them.

The gasoline tax law will be copied after the one now in force in Washington, Oregon and Arizona, but all the governors will co-operate on an automobile theft law under which pictures and identification tags of known automobile thieves and of suspects will be broadcasted to the police of all these states immediately on the theft of a car, with full information concerning the car, and, if possible, a photograph of it.

Under this head also, comes a plan for a state automobile constabulary, mounted on motorcycles, for the patrol of the highways and the immediate pursuit of automobile thieves. In so far as possible state lines will be eliminated in the work of these mounted police, by making them members of the force of each state in the agreement.

Uniform Traffic Laws

More equitable automotive taxation, and uniform traffic rules for all the states also are to be considered by the legislatures of each of the eleven states at their coming sessions. The present plan is to have a later conference between members of the legislatures of these states, to draft uniform laws and to arrive at an agreement on more equitable taxation.

The meeting of the governors was brought about by the state automobile trade associations of Oregon, Washington and California. The program laid before the conference was drawn up by representatives of these associations, who met in the Palace Hotel here the day before the conference, at the call of L. E. Titus, president of the Washington Automotive Trade Association, and Robert W. Martland, secretary-manager of the California Automobile Trade Association.

The governors uniformly favored the plans presented.

Automobile trade association men who drew up the program, besides Titus and Martland, were L. W. Harkins, chairman of the Executive Board of the Washington Automotive Trade Association, and William A. Simonds, secretary of the same body; James H. Cassell, manager of the Oregon Automotive Trade Association, and Walter Fawcett, chairman of the Legislative committee of the California Association.

The outstanding result of the conference is a uniform movement among all eleven of the western states for uniform tax on automotive vehicles; uniform traffic and automobile theft laws, and a tax on gasoline which shall be the same in all the States.

COUZENS SELECTED FOR U. S. SENATE

DETROIT, Dec. 2—The name of James Couzens, mayor of Detroit, as United States Senator from Michigan to succeed Truman H. Newberry, places in the Senate one of the foremost automobile men of the country, and as such the appointment is regarded very favorably by the industry.

Couzens became identified with Henry Ford in the early days of the Ford Motor Co. and was Ford's chief executive for many years. His original investment in the company brought him about $29,000,000 when he sold out.

Since leaving Ford Couzens has been elected Mayor of Detroit, devoting practically all of his time to the duties of that office.

Buick Texas Dealers Confer

SAN ANTONIO, Tex., Dec. 5—Buick dealers from all sections of the Southwest Texas territory were in convention here this month. Dealers and salesmen mingled with home office men, heard the main features of the Buick explained and learned of the extensive sales campaign which is to be launched next year. The next meeting will be held at El Paso.

Wayne Tank Has Convention

FORT WAYNE, IND., Dec. 4—Managers of the district offices in the United States and Canada of the Wayne Tank & Pump Co. held a three-day conference at the home office here recently. The new office building of the company is now completed, and the various departments are being transferred to the building.

MURPHY WINS TITLE AS YEAR'S CHAMPION

Captures Los Angeles Event, Which Is Last on Racing Schedule of A. A. A.

LOS ANGELES, Dec. 3 — Jimmy Murphy, the only American to win a foreign road race—the French Grand Prix last year—added to his laurels this afternoon by winning the 250 mile race at the Beverley Hills speedway, the final event on the A. A. A. championship schedule. The victory carried with it the title of champion driver of the year, Murphy finishing the season with a total of 3420 points to his credit, gained through winning six firsts, three seconds and one third in the twelve championship events contested during the year.

Since winning at Indianapolis, Murphy never has been headed in the title race, finishing 1510 points ahead of Tommy Milton, last year's champion. Harry Hartz is third in the championship table with 1788 points; Elliott, fourth with 875; Hill, fifth with 459, and Hearne, sixth with 383.

Earl Cooper Second

The race to-day was postponed from Thanksgiving Day because of rain, but the postponement did not detract from the public interest, the attendance being in excess of 80,000. Murphy, driving a Durant Special instead of the Murphy Special which he has been piloting all season, was hard pushed to the very finish, beating Earl Cooper, also in a Durant Special by only a slight margin.

A skid near the wire threw Hartz into the wall, but the car bounded back on the course and slid across the line into third place and only 20 feet back of Cooper, who was only a car's length back of Murphy. The 250 mile race was driven in 2 hours, 10 minutes, 53.10 seconds, an average of 114.6 m.p.h., or 3.4 miles faster than Murphy's record, made at San Francisco last year.

Hill, Hilton and Klein finished fourth, fifth and sixth.

ADDITIONAL BRANCHES OPENED BY CHEVROLET

DETROIT, Dec. 4—Chevrolet Motor Co. has opened new wholesale offices in Philadelphia and Charlotte, N. C., for the general supervision of wholesale business in these territories. The Philadelphia office will be in charge of Harry L. Porton, sales manager, and will cover the territory in eastern Pennsylvania, most of New Jersey and all of Delaware.

Chevrolet dealers in Pennsylvania and New Jersey will be advised by special bulletin as to the specific limits of the Philadelphia territory. The Charlotte office will be in charge of L. F. Garlock and will control territory in North and South Carolina.

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CHANGES IN THE TRADE

Cooley Motor Co. has taken the agency for the Gray in Westfield, Mass.

Russell Motor Car Co., Columbus, has been made central Ohio distributor for the Dort.

H. B. Tait & Co., Columbus, has taken over the distribution of the Nash line for Central Ohio.

The Buck Company, Studebaker dealers in Indianapolis, have taken the State distribution of Dort and Chandler.

Clarence M. Wellman has bought the Roberts Garage in Brattleboro, Vt., and will remove his Exide battery station there.

W. H. Krueger Motor Co., Milwaukee, has been appointed distributor of the Columbia in Wisconsin and Upper Michigan. The Krueger company has been for many years distributor of the Cole and retains this connection.

Fauntleroy Motor Co. has been incorporated for $100,000, with **Thomas T. Fauntleroy** and **Percy Richter** as incorporators, to sell Ford cars, trucks and tractors in Cincinnati.

Peck & Adler Co. of Syracuse has taken over the agency for the Davis car in nine counties in that part of the State. The company also has the agency for the Westcott car in four counties.

Service Chevrolet Co. has been chartered at Youngstown, Ohio, to operate a sales agency and service station by **Charles Deibel, F. C. Joyce, D. P. Conway, Walter Pritchard** and **Kathryn A. Kirchner.**

Frank W. Hayes, pioneer automobile man of Amarillo, Texas, has obtained the Oldsmobile franchises for northwest Texas and parts of New Mexico. He is now establishing agencies in a score of towns.

C. M. Bradford, Inc., of New Haven, Conn., will handle the Dorris with New Haven and Connecticut selling rights. In addition to the New Haven organization, Bradford intends appointing sales and service representatives in the larger cities of Connecticut.

A. A. Ledermann Co. has been appointed distributor for the Cleveland in Onondaga, Cortland, Cayuga, Madison and Oswego counties, New York. Ledermann has been in the automobile business since 1898, and for 17 years has been merchandising cars.

Lee Matthews, president of the **Matthews Motors Co.**, Cincinnati Overland and Willys-Knight distributor, has appointed **Charles Russell**, formerly manager of parts for the retail branch of **Willys-Knight, Inc.**, Toledo, as parts manager for the Cincinnati company.

T. J. Mariler Co., Milwaukee, has been appointed distributor of the D-A-C (Detroit Air-Cooled) car in the Wisconsin and Upper Michigan territory. **Ted J. Mariler**, head of the company, has been engaged in automotive service in Milwaukee for more than 15 years.

Union Motors Co., Inc., headed by **George Pearson, Jr.**, and **George Walling**, has been formed in Houston, Tex., to take over the Chalmers and Maxwell franchises for 27 counties. The company will organize the territory immediately and establish new agencies.

S. I. Kirby, a district sales representative for the Buick Motor Car Co., in Illinois from 1916 to 1919, and later assistant manager of the Buick Philadelphia branch, is now district sales manager for the Peerless in New Jersey. **L. H. Nelson**, Ridgewood, N. J., has taken on the agency of the Peerless.

Franklin Automobile Co. has appointed the following new dealers: **Franklin Motor Sales**, Quincy, Ill.; **Peabody Garage Co.**, Houlton, Me.; **Hill & Holgate**, Lockport, N. Y.; **Franklin-Marlboro Co.**, Marlboro, Mass.; **Franklin Motor Car Co.**, Poughkeepsie, N. Y. and **Franklin Coughenour Motor Co.**, Pittsburg, Kan.

H. A. Waldron, General Motors Building, Detroit, has been appointed by the **National Seal Co., Inc.**, of Brooklyn as its western sales manager for the sales of Sears-Cross locks for automobile bodies and its general line of automobile hardware. Waldron takes the place of **T. P. C. Forbes**, who formerly represented this company.

Smith-Sauer Motor Co., distributor for the Case car in Northern Illinois and Northern Indiana, has moved from 2534 Michigan Avenue, Chicago, to 2436-2438 Michigan Avenue. The new salesroom and service station is three times as large as the old. The move was occasioned by the growth of the company's business, which has more than doubled in the last eight months.

Dort Motor Car Co., announces the following new dealers: **Baird & Collins**, Sturgis, Mich.; **F. R. Hiner**, Plainwell, Mich., **Ora P. Stewart**, River Junction, Mich.; **Tuchtenhagen Garage**, Albion, Mich.; **Howard L. Smith**, Adrian, Mich; **Boulevard East Garage**, Guttenberg, N. J.; **Painter-Jones Motor Co.**, New Kensington, Pa.; **E. K. Eckelberry**, Republic, Ohio, and **Gehan Motor Sales Co.**, St. Paul.

Hepie Garage, Salinas, Cal., has been appointed Maxwell dealer. Other new dealers in Maxwell are as follows: **Anderson Motor Co.**, Winona, Minn.; **Mankato Motor Co.**, Mankato, Minn.; **J. G. Condiff & Sons**, Osawatomie, Kan.; **Palace Automotive Sales Co.**, Chester, Pa.; **Automotive Sales Co.**, St. Petersburg, Fla.; **Magill Motor Sales**, Monterey, Cal., and **Charles H. Kanehl**, Big Rapids, Mich.

Bruce E. Adams has been appointed manager of the Chicago branch of Rolls-Royce, succeeding **Howard S. Hamilton**, resigned. Adams is one of the pioneers of Chicago's automobile row, having become identified with the industry there as far back as 1906, with the Alco car. His last association, previous to accepting the Rolls-Royce appointment, was as manager of the Stevens-Duryea branch of Chicago. **R. B. Jackson**, western sales manager, has headquarters also located at the Chicago branch.

C. R. Teaboldt has been appointed manager of the Dort branch in New York to succeed **Frank C. Mattern**, resigned. Teaboldt has been affiliated with the sales end of the automobile business since the early days of the industry. Originally he was affiliated with the Thomas Co., and later joined the Packard in a managerial capacity. For four years he served as assistant general manager of Gaston, Williams & Wigmore, exporters. For two and a half years he has been connected with Dort in foreign and domestic fields.

F. A. Detwiler, for six years with the Maxwell-Chalmers Co., has been appointed district manager for the Atlanta territory of the Anderson Motor Co. His headquarters will be in Atlanta at the Hotel Winecoff. The **Anderson Motor Co.** announces the appointment of the **Garland Sales Co.**, Detroit, Mich., as distributor for Michigan and the Province of Ontario, Canada. **Berg Auto Co.**, St. Paul, will act as distributor in the St. Paul territory. The central Pennsylvania territory has been assigned to the **Ambler-Beaman Motor Co.**, Reading.

Western Iron Stores Co., Milwaukee, wholesaler and retailer of metal and woodworking machinery, mechanics' tools, transmission supplies, etc., has reopened its remodeled and enlarged store and display rooms. The corporation has been reorganized, with **John A. Camm**, formerly director of sales, **Kearney & Trecker Corp.**, manufacturer of machine tools, as president and general manager. **J. W. Van Horne** is general sales supervisor; **Walter E. Ethier**, vice-president in charge of purchases; **R. M. Friend**, treasurer, and **William Strickler**, supervisor of engineering service.

Roskam-Scott Co., Inc., 1846 Broadway, is Columbia's new distributor in New York. The principals are well known to the trade in Manhattan, although this is their début as a distributing organization. In Philadelphia the **Columbia-Kissel Motor Co.** has been organized to distribute the Columbia in that city and in eastern Pennsylvania. The new firm formerly was known as the **National Motor Sales Corp.**, distributor of the Maxwell-Chalmers line. **Kanouse Auto Co.** of Indianapolis has taken the Columbia franchise for that territory. The company also handles the Stephens, H. C. S. and Westcott.

Geo. H. Williams Co., Franklin distributor, and the **Sanger Automobile Co.**, Franklin dealer, Milwaukee, have consolidated their interests. The **Sanger-Williams Co.** has been incorporated in Wisconsin, with 1000 common shares without par value, by **George H. Williams** and **William F. Sanger.** The merged concerns will continue business at 485 Jefferson Street. The distributing territory embraces the southeastern section of Wisconsin. The Sanger company until about three years ago was exclusive Franklin distributor and dealer. Then the Williams company became distributor, dividing the retail business in Milwaukee city and county with the Sanger company.

F. M. Leeston-Smith, who has been with the Studebaker in Portland, Ore., almost continuously for ten years, has been named sales manager for the **John K. Leander Co.**, Studebaker dealer in Portland. Leeston-Smith held this position with the **W. C. Garbe Co.** for several years and until that concern went out of business a little over a year ago. He then went to the middle west, establishing a business as factory representative for automotive accessory manufacturers, with headquarters in Minneapolis. He recently sold out this business to return to Portland and take up work again with Studebaker. Clinton Hunter, who has been sales manager, has joined the Covey Motor Car Co. of Portland.

A. L. Bengle has been appointed Hudson and Essex dealer in the Indian Orchard district of Springfield, Mass. **T. J. Connelly**, formerly with the **J. M. Bownes Co.**, Pittsfield, Mass., has been allotted the Great Barrington territory. Other local dealers designated by **J. S. Harrington, Inc.**, Hudson and Essex distributor in Springfield, are: **Walnut Street Garage**, Palmer, Mass.; **William E. McGrath**, Ware and Monson, Mass.; **Frank W. Kellogg**, Feeding Hills, Mass.; **Merrill's Garage**, Thompsonville, Conn.; **John Daub**, Clarksburg, Mass.; **Ruther & Co.**, Williamstown, Mass.; **O. R. Hutchinson**, Lenox, Mass.; **Philip Robinson**, Blandford, Mass.; **Live Wire Garage**, Chester, Mass.; **Harold E. Perkins**, Huntington, Mass.; **Frank Helmes**, Russell, Mass.; **Madson & Fowles**, Southampton, Mass.; **Clifford W. Clark**, Woronoco, Mass.; **Herbert Hieres**, Granville, Mass.

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ASSOCIATION ACTIVITIES

Louisville Car Week Results

LOUISVILLE, KY., Dec. 4—Results of Closed Car Week were highly satisfactory to the twenty members of the Louisville Automobile Dealers Association who took part in it. Fifty-three automobiles were sold, which dealers attributed directly to the results of advertising, publicity and special decorations.

In addition to these actual sales there were numerous prospects obtained. Stimulation of business generally has resulted it is felt by the association members. There is considerable talk among the dealers, in view of the success of the week, of staging a closed car show or salon in some central location next fall. Sentiment in favor of this project is developing rapidly, according to officials of the association.

It is believed that a fall show of closed car models similar to that held in many other cities would be of great interest to the public. No attempt would be made to stage it on the same large scale as the annual show in February. Less floor space would be needed, it is pointed out, than is used at the Armory, for the reason that only closed models would be exhibited.

Hay Speaks by Radio

CHICAGO, Dec. 1—Thomas J. Hay, president of the Chicago Automobile Trade Association, recently delivered an address on the magnitude of the automobile industry for broadcasting over the KYW radio station.

South Dakota Convention

SIOUX FALLS, S. D., Dec. 4—The first annual meeting of the Automobile Trades Association of South Dakota will be held in this city on Jan. 15. The membership mark is set at 1000, the enrollment now is 135. Preliminary steps to make a State-wide organization were taken at a meeting of 35 men representing seven towns of the State Nov. 24 in Huron. The directors chosen are: O. M. Phelps, Huron; Iver Dybdal, Brookings; H. J. Hanson, Watertown; E. R. Judy, Aberdeen and J. J. Carson, Wessington Springs. The directors elected Phelps president, Hanson vice-president and Judy secretary.

Dallas Changes Its Name

DALLAS, TEXAS, Dec. 4—The name of the Dallas Automobile Trades Association has been changed to the Dallas Automotive Trades Association. A new by-laws and constitution, which broadens the scope of activities of the association, has been adopted and provisions made for the employment of a full time executive secretary. He will take the place of the recording secretary and will be paid a salary of something like $3,000 to $3,600 per year.

In the future the association will meet twice monthly. The association hopes in the coming year to solve the used car problem, to work out a solution for collection of accounts and proper handling of notes given in payment of cars, to assist the authorities in meeting the theft question and to formulate a plan for co-operating with other associations of the State in the matter of going after helpful legislation and good roads.

The association will make an effort to have included in the membership during the coming year all automotive concerns of the city.

At the last meeting of the year held this week the following officers were elected for the coming year.

William Morriss, president; R. C. Langley, vice-president, and George W. Goodwin, secretary-treasurer. Morriss succeeds F. E. McLarty.

In addition to the newly elected officers and the retiring president, the following compose the board of directors: J. R. Bower, D. F. Burks, Don Safford, J. H. Shelton, W. G. Langley, J. H. Connell, H. L. Battle, H. E. Spencer, H. J. Cohen, Morgan H. Cox and A. A. Richeson. John A. Atwood was elected a life member of the board. The board will elect the executive secretary for the association.

Election Held in Portland, Ore.

PORTLAND, ORE., Dec. 2.—The following officers of the Portland Automotive Trades Association were elected for the coming year at the annual session of the association. President, V. C. Unden; first vice-president, L. L. Blumenthal; second vice-president, H. M. Nisbet; third vice-president, John Weber; secretary, Guy Spencer; treasurer, F. H. Hildebrand; directors, Don G. Bates and A. E. Foss. The organization has a large membership among all branches of the automotive industry outside the automobile dealers who have their own separate body in Portland.

Distributor Entertains Force

SPRINGFIELD, ILL., Dec. 4—Jennings Auto Sales Co., distributors of the Ford and Lincoln cars and Fordson tractors in this territory, entertained 60 members of its sales, service, assembly and shop departments at the Sangamo Club. Frank Jennings, president of the company, presided, and members of the forces were speakers.

G. M. Service Heads Organize

DETROIT, Dec. 2—Service managers and other men interested in the service problems of General Motors divisions have formed an organization to discuss individual questions and to pool their knowledge for the benefit of the service station and the "boss"—the customer. Under the chairmanship of M. W. Franklin, the organization has held its first meeting.

The New Car and Truck Description Index

Giving the date and page number on which they appeared

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Barley Light 6.....Oct. 4, 1922-19
Buick Special Six-55 Sport..May 17, 1922-22
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Cadillac Victoria.....July 26, 1922-24
Chandler
Five Pass. Limousine.....Sept. 27, 1922-11
Chandler Town Car.....Sept. 27, 1922-11
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Chesterfield Special.....Aug. 9, 1922-30
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Packard Limousine-Sedan
Single Six.....Oct. 4, 1922-21
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Reo Model C Sedan.....Sept. 27, 1922-11
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Calendar of Trade Events

CONVENTIONS

Indianapolis.....Dec. 12
Second Annual Convention and Get-together Dinner of the Indiana Automotive Trade Association.

Sioux Falls.....Jan. 15
First Annual Meeting. Automobile Trades Association of South Dakota.

Chicago .....Jan. 29-31
Annual Meeting, Automotive Electric Service Association, Congress Hotel.

Quincy, Ill.....March 19
Annual Meeting of the Illinois Automotive Trades Association.

SHOWS

New York.....Dec. 3-9
Eighteenth Annual Automobile Salon, Commodore Hotel.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, auspices of the Automobile Body Builders Association.

Oakland, Cal.....Jan. 13-20
Fifth Annual Automobile Show, Civic Auditorium, under the auspices of the Alameda County Automobile Trade Association, Robert W. Martland, Manager.

Buffalo .....Jan. 13-20
Twenty-first Annual Automobile Show, 174th Regiment Armory, under the auspices of the Buffalo Automobile Dealers Association, Carl Proctor, Executive Secretary.

Philadelphia.....Jan. 13-20
Twenty-second Annual Automobile Show, Commercial Museum Building, under the auspices of the Philadelphia Automobile Trade Association, Louis C. Block, chairman.

Scranton, Pa.....Jan. 15-20
Annual Automobile Show, under the auspices of the Scranton Motor Trades Association, Hugh B. Anderson, manager.

Hudson, N. Y.....Jan. 16-20
Hudson Automobile Show, State Armory, under the auspices of Company M, J. M. Callahan, Manager.

Detroit .....Jan. 20-27
Twenty-second Annual Automobile Show, Inclusive of Passenger Cars, Trucks and Accessories, Municipal Garage Building, under the auspices of the Detroit Automobile Dealers' Association, H. H. Shuart, manager.

Baltimore .....Jan. 20-27
Annual Automobile Show, Fifth Regiment Armory, under the auspices of the Baltimore Automobile Trade Association, John E. Raine, Secretary.

Milwaukee.....Jan. 20-27
Fifteenth Annual Automobile Show, Auditorium, under the auspices of the Milwaukee Automotive Dealers Association, Bart J. Ruddle, Manager.

Cleveland.....Jan. 20-27
Annual Automobile Show, New Public Auditorium, under the Auspices of the Cleveland Automobile Manufacturers and Dealers Association, Herbert Buckman, Manager.

Scranton, Pa.....Jan. 22-25
Commercial Car Show, under the auspices of the Scranton Motor Trades Association, Hugh B. Anderson, manager.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Chicago .....Jan. 27-Feb. 4
Annual Automobile Salon, Drake Hotel.

Ann Arbor, Mich.....Jan. 29-Feb. 2

Wilkes-Barre.....Jan. 29-Feb. 3
Fourteenth Annual Automobile Show, Armory, under the auspices of the Automobile Dealers' Association of Wilkes-Barre, Norman Johnstone, secretary.

Atlanta .....February
Annual Southern Automobile Show, Atlanta Auditorium, under the auspices of the Atlanta Automobile Association, Virgil W. Shepard, manager.

Minneapolis .....Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Portland, Ore.....Feb. 3-10
Annual Automobile Show, under the auspices of the Portland Automobile Dealers Association.

Troy, N. Y.....Feb. 3-10
Ninth Annual Automobile Show, State Armory, under the auspices of the Troy Used Car Sales Corp., Frank M. Baucus, manager.

Winnipeg, Man.....Feb. 5-10
Third Annual Automotive Equipment Show with Radio Exhibits in Connection, under the auspices of the Western Canada Automotive Equipment Association, W. L. Williams, secretary.

Charlotte, N. C.....Feb. 5-10
Annual Automobile Show, Made-in-Carolinas Exposition Building, under the auspices of the Charlotte Automotive Trade Association.

Lansing, Mich.....Feb. 5-10

Toledo.....Feb. 5-10
Annual Automobile Show, Terminal Auditorium, under the auspices of the Toledo Auto Shows Co., H. V. Buelow, Manager.

Waterbury, Conn.....Feb. 5-12
Third Annual Show at the New State Armory, under the auspices of the Waterbury Automotive Dealers Association. Passenger Cars and Accessories. M. A. Doolittle, Chairman of the Show Committee.

Cincinnati.....Feb. 7-14
Automobile Show, under the auspices of the Cincinnati Automobile Dealers Association, Harry T. Gardner, manager.

Kansas City, Mo.....Feb. 10-17
Annual Automobile Show, under the auspices of the Kansas City Motor Car Dealers Association, George A. Bond, Secretary.

Kalamazoo and Flint, Mich.....Feb. 12-17

San Francisco.....Feb. 17-24
Seventh Annual Pacific Automobile Show, under the auspices of the San Francisco Motor Car Dealers Association, Exposition Auditorium, George A. Wahlgreen, Manager.

Grand Rapids and Mt. Clemens, Mich. Feb. 19-24

Louisville, Ky.....Feb. 19-24
Fifteenth Annual Automobile Show, under the auspices of the Louisville Automobile Dealers Association, George T. Holmes, secretary.

Trenton, N. J.....Feb. 21-24
Annual Automobile Show of Passenger Cars, Trucks and Accessories, Armory, under the auspices of the Trenton Automobile Trade Association, Frederick Petry, Jr., Manager.

Brooklyn, N. Y .....Feb. 24-Mar. 3
Annual Automobile Show under auspices of the Brooklyn Motor Vehicle Dealers Association, 23rd Regiment Armory.

Des Moines.....Feb. 25-March 5
Fourteenth Annual Automobile Show, Coliseum, Passenger Cars and Accessories only, under the auspices of the Des Moines Automobile Dealers Association, Dean Schooler and C. G. Van Vliet, managers.

Omaha.....Feb. 26-March 3
Seventeenth Annual Show of Passenger Cars, Trucks and Accessories, Municipal Auditorium, under the auspices of the Omaha Automobile Trade Association, A. B. Waugh, Manager.

Muskegon, Mich.....Feb. 26-March 3

Syracuse.....Feb. 26-Mar. 3
Annual Automobile Show under auspices of the Syracuse Automobile Dealers Association.

Springfield, Mass.....Feb. 26-March 3
Annual Automobile Show under the auspices of the Springfield Automotive Dealers Association.

Bay City, Mich.....March 5-10

Indianapolis.....March 5-10
Spring Automobile Show, under the auspices of the Indianapolis Automobile Trade Association.

Newark, N. J.....Mar. 10-17
Annual Automobile Show under the auspices of the New Jersey Automobile Exhibition Co., Claude E. Holgate, manager.

Washington, D. C.....March 10-17
Third Annual Spring Show of Passenger Cars and Accessories, Convention Hall, under the auspices of the Washington Automotive Trade Association, Rudolph Jose, Chairman of Show Committee.

Port Huron, Mich.....March 12-17

Battle Creek, Mich.....March 19-24

Alpena, Mich.....April 2-7

RACES

San Diego.....January

Auburn Increases Capacity

AUBURN, IND., Dec. 2—Auburn Automobile Co. has increased the capacity of its factory by the installation of a department for drying paint on bodies. The addition of the department gives the factory a thoroughly modern painting system. This comprises, in addition to the body-drying department, a complete enameling department and a moving line of chassis through steam-heated ovens.

Must Drive Own Cars

PHILADELPHIA, Dec. 4—In Pennsylvania holders of owners' licenses cannot drive any but their own cars, according to a ruling of the Attorney General.

New Carlisle Policy

STAMFORD, CONN., Dec. 2—Operating under a new policy, that of doing away with the distributor and dealer entirely, and selling its tires direct to buyers through branches, the Carlisle Tire Co. has opened its third branch, this one at Boston, under the management of F. G. O'Reilly.

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾–1	$1650a	3¾x5	34x5n	34x5n	W
Acason RB	1½	1950	3¾x5¼	36x3½	36x6	W
Acason H	2½	2750	4⅜x5¾	36x4k	36x8k	W
Acason L	3½	3450	4⅜x5¾	36x5k	36x10k	W
Acason M	5	4350	5 x5¼	36x6	40x12	W
Ace 30	1½–1½	2400	3½x5	34x3½	34x6	W
Ace 40	2	2850	4⅛x5¼	36x4	36x7	W
Ace 60	2½–3	3400	4⅛x5¼	36x4	36x8	
Acme 20	1	....	3¾x5	35x5n	35x5n	W
Acme 30	1½	....	3¾x5	34x3½	34x5	W
Acme 40	2	....	3¾x5	34x3½	34x5	W
Acme 60	3	....	4⅜x5¼	36x4	36x7	W
Acme 60L	3	....	4½x5½	36x4	36x7k	W
Acme 90	4½	....	4½x5½	36x5	40x10	W
Acme 125	6¼	....	4¾x6	36x6	40x12	W
American 25	2½	3350	4 x6	36x4k	36x4dk	W
American 40	4	4275	4½x6	36x5k	36x5dk	W
American 50	5	4500	4½x6	36x5	36x12	W
Armleder 20	1	....	3¾x5¼	34x3½k	34x6k	W
Armleder 21	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder 40-B	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder 40-C	1½	....	4⅛x5¼	34x3½k	34x6k	W
Armleder HW-B	2½	....	4¼x5½	36x4k	36x7k	W
Armleder HW-C	2½	....	4⅛x5¼	36x4k	36x7k	W
Armleder KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder KW-C	3½	....	4½x5½	36x5k	36x5dk	W
*Atlas 22	1	1495	3¾x5⅛	34x4½n	34x4½n	W
*Atlas 44	1½–2	1950	3¾x5⅛	36x6n	36x6n	W
Atterbury 20R	1½	2175	3¾x5	34x3½	34x5	W
Atterbury 22C	2½	3375	4⅛x5¼	36x4	36x4d	W
Atterbury 22C	2½	3175	4⅛x5¼	36x4	36x4d	W
Atterbury 22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury 22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury 8E	5	4975	4¾x6	36x5	40x6d	W
Atterbury 8E	5	5125	4¾x6	36x5	40x6	W
Autocar 21UF	1½–2	1950	4¾x4½	34x4k	34x6	D
Autocar 21UG	1½–2	2050	4¾x4½	34x4k	34x6	D
Autocar 27H	2–3	2950	4 x5½	34x5	36x7	D
Autocar 27K	2–3	3075	4 x5½	34x5	36x7k	D
Autocar 26Y	4–6	3950	4¼x5½	34x6	36x12	D
Autocar 26-B	4–6	4100	4¼x5½	34x6	36x12	D
Available H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available H2	2	2775	4 x5	36x3½k	36x6k	W
Available H2½	2½	3160	4 x5	36x4k	36x8k	W
Available H3½	3½	4175	4½x5½	36x5	40x5d	W
Available H5	5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x4s	34x5n	34x5n	I
Beck A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	I
Beck B-30	1½	1350	3¾x5	34x5	36x6	
Beck C-40	2	1550	3¾x5	36x6	36x6	
Beck D-50	2½	1950	4⅛x5¼	38x7	40x8	
Bell M (Iowa)	1	1495	3⅝x5⅛	35x5	35x5n	W
Bell E (Iowa)	1½	2100	3¾x5¼	34x3½	34x5	I
Bell O (Iowa)	2½	2550	4¼x5½	34x4	34x6	I
Bessemer G	1	1450	3½x5	35x5n	35x5n	I
Bessemer H-2	1½	1990	3¾x5	36x3½	36x5	D
Bessemer J-2	2½	2895	4⅛x5¼	36x4	36x4d	D
Bessemer K-2	4	3395	4½x5½	36x5	36x10	D
Bethlehem KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem GN	2	1795	4 x5¼	34x4	34x6k	D
Bethlehem GN	3	2195	4 x6¼	36x4k	36x8k	D
Bridgeport A	1½	....	3¾x5⅛	34x3½	34x6	W
Bridgeport B	2½	....	4½x5½	36x4	36x4d	W
Bridgeport C	3½	....	4½x5½	36x5	36x10	W
Brinton C	2	2500	3¾x5	34x4	31x5	W
Brinton D	3	2975	4⅜x5¼	36x4	36x7	W
Brockway E	1	....	4 x5	33x5n	33x5n	B
Brockway S-5	1½	....	4 x5	36x4	33x6	W
Brockway SK	1½	....	4⅜x5¼	36x4	36x6	W
Brockway K6	2½	....	4½x5½	36x4	36x8	W
Brockway K-5	2½	....	4⅛x5¾	36x4	36x8	W
Brockway R1	3½	....	4¾x5½	36x5	36x10	W
Brockway R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway T-4	5	....	4¾x5½	36x6	40x6d	W
*Buick	½	915b	3⅜x3¾	31x4n	31x4n	B
Case	2	....	4¼x5¼	36x6	38x7	I
*Chevrolet	¼	510b	3⅛x4	30x3½n	30x3½n	B
*Chevrolet G	¾	650	3¾x4	31x4n	31x4½n	B
*Chevrolet T	1	1095	3½x5¼	33x4n	35x5n	W
Chicago C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago C3½	3½	....	4½x5½	36x5	36x10	W
Chicago D5	5	....	4½x5½	36x6	40x12	W
Clydesdale 10	¾–1¼	1485	3¾x5	34x5n	34x5n	B
Clydesdale 10A	¾–1¼	1535	3¾x5	34x5n	34x5n	B
Clydesdale 18	¾–1¼	1890	3¾x5	34x5	34x5	W
Clydesdale 20	1–1½	2385	3¾x5	34x5	34x5k	W
Clydesdale 42	1½–2	2475	3¾x5	36x3½	36x6	W
Clydesdale 65X	2½–3	3250	4⅜x5¼	36x4	36x8	W
Clydesdale 65EX	2½–3	3150	4½x5½	36x4	36x8	W
Clydesdale 90	3½–4½	4100	4½x5½	36x5	36x10	W
Clydesdale 120	5–6	4500	4¾x6	36x6	40x12	W
Commerce 9	¾–1¼	1150	3¾x5	32x4½n	32x4½n	B
Commerce T	¾–1¼	1450	3¾x5	34x4½n	34x4½n	B
Commerce 10	¾–1¼	2500	3¾x5	33x5n	33x5n	B
Commerce 12	1½	1695	3¾x5	34x3½	34x4	I
Commerce 12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce 16	2	1995	3¾x5	34x4	34x6	I
Commerce 16	2	2150	3¾x5	35x5n	36x6n	I
Commerce 18	2½	2150	4¼x5¼	36x4	36x7	I
Commerce 18	2½	2495	4⅛x5¼	36x6n	40x8n	I
Commerce 25	2½	2425	4⅛x5¼	36x4	36x7	W
Commerce 25	2½	2770	4⅛x5¼	36x6	40x8n	W
Cook 51	2½	3600	4 x5⅛	36x6n	40x8n	W
*Corbitt	¾–1	1250	3½x5	33x5n	33x5n	
Corbitt E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt D-22	1½	2200	3¾x5	34x3½	34x5	W
Corbitt C-22	2	2600	4½x5¼	36x3½	36x7	W
Corbitt B-22	2½	3000	4½x5¼	36x4	36x7	W
Corbitt R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt A-22	3½–4	3800	4½x5½	36x5	36x10	W
Corbitt AA-22	5	4500	4⅜x6	36x6	40x6d	W
Day-Elder AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder E	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn E	1	1600	3⅝x5⅛	35x5n	35x5n	W
Dearborn FX	1½	2300	3¾x5¼	34x4	34x5	W
Dearborn F	1½	2180	3¾x5¼	34x4	34x5	W
Dearborn 48	2	2590	3¾x5⅛	34x4½n	34x7	W
Defiance G	1	1525	3¾x5	35x5n	35x5n	B
Defiance D	1½	1845	3¾x5	35x5n	36x6n	I
Defiance E	2	2075	3¾x5	35x5n	38x7n	I
Denby 31	1¼	1485	3¾x5	35x5n	35x5n	B
Denby 33	1½	2145	3¾x5	35x5n	38x7n	I
Denby 35	2½–3	2795	4⅛x5¼	36x4	36x7	I
Denby 27	4	3895	4½x5½	36x5	36x5d	I
Denby 210	5	4295	4½x5½	36x6	40x6d	I
Dependable A	¾–1	1650	3⅝x5⅛	34x5n	35x6n	W
Dependable C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable D	2½	2650	4 x5½	34x5	36x6	W
Dependable E	3	2950	4¼x5½	36x4	36x7	W
Diamond T O-5	1–1¼	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T U	2–2½	2650	4 x5¼	36x4	36x7	W
Diamond T K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T S	5	4500	4¾x6	36x6	40x6d	W
Doane	2½	4100b	4¼x5¾	36x5	36x7	C
Doane	3½	5100b	4⅝x5¾	36x5	36x5d	C
Doane	6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers	¾	730	3⅞x4¼	32x4n	32x4n	B
Dorris K-2	1	2490	4 x5½	33x5n	33x5n	B
Dorris K-4	2–2½	3400	4¼x5½	36x4	36x7	W
Dorris K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort 103	½	685a	3½x5	31x4n	31x4n	B
Double Drive B	3	4000	4¼x5½	36x6	36x6	W
Duplex A	2	2775	4 x5¼	35x5n	38x7n	W
Duplex E	3½	3500	4¼x5½	36x8	36x8	I
Duty 22	2	1590	3½x5	34x3½	34x5	I
Eagle 101	1½	1875	3⅝x5⅛	34x5	34x5	I
Eagle 10J-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D. B	3	4200	4⅜x5½	36x6	36x6	B
Fageol 1½	1½	3000	3¾x5½	34x3½k	34x6k	W
Fageol 2½	2½	3930	4⅜x5¾	34x4	36x7	W
Fageol 3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol 5	5	5700	4½x6¼	36x6	40x6d	W
Fargo R	2	1700	3¾x5	36x4	36x6	I
*Federal	1½	1375	3¾x5	—x5n	—5n	
Federal SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal TE	1½	2175	4⅛x5¼	36x3½	36x5	W
Federal UE	2–2½	2425	4⅛x5¼	36x4	36x7	W
Federal WE	3½–4	3150	4½x5½	36x5	36x5d	W
Federal X2	5–6	4500	4¾x6	36x6	40x6d	W
*Ford TT	1	380	3¾x4	30x3½n	32x4½n	W
Front Drive C	1½	2830	3¾x5½	36x6	36x6	W
G.M.C. K15	1	1295	3½x5½	34x5n	34x5n	B
G.M.C. K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K-41T	5†	2450	4 x5½	36x4	36x8	W
G.M.C. K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C. K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C. K-71T	10†	3700	4½x6	36x5	40x12	W
G.M.C. K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C. K-101T	15†	4050	4½x6	36x5	40x14	W
G.M.C. K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W.	1½	1850	3¾x5½	35x5	35x5	I
*Garford 15	1	1590	3⅜x5⅛	34x5n	34x5n	W
Garford 25-B	1½	1990	3¾x5⅛	36x3½	36x5	W
Garford 70-H	2½	2750	4¼x5½	36x4	33x8	W
Garford 77-D	4	3750	4½x6	36x5	36x5d	W
Garford 63-D	5	4500	5 x6½	36x6	40x5d	W
Garford 150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary F	1–1½	1775	3¾x5	33x3½	36x5	W
Gary I	2	2450	4 x5½	36x3½	36x6	W
Gary J	2½	2850	4¼x5½	36x4	36x8	W
Gary K	3½	3790	4½x6	36x5	36x5d	W
Gary M	5	4450	5 x6½	36x6	40x6d	W
Gersix M	1½	3100	4 x5½	36x3½	36x7	W
Gersix K	2½	3500	4½x5½	36x4	36x8	W
Gersix	3½	4500	4½x6	36x5	40x12	W
Gotfredson 20	1	2075	3¾x5⅛	34x5	34x5	W
Gotfredson 31	1½–2	3000	4 x5¼	36x6	38x7n	W
Gotfredson A	2½	3375	4 x5¼	36x4	36x7	W
Gotfredson B	3½–4	4475	4½x5½	36x5	36x10	W
Gotfredson 100	5–6	5500	5 x6½	36x6	40x14	W
Graham Bros.	1	1265	3⅞x4½	33x4½n	34x5n	B
Graham Bros.	1½	1325	3⅞x4½	33x4½n	36x6n	B
[1]Gramm-Pion. 10	1	1245	3½x5	33x5n	33x5n	B
[1]Gramm-Pion. 15	1½–2	1750a	3¾x5	36x3½k	36x5k	I
[1]Gramm-Pion. 65	1½–2	2250a	3¾x5	36x3½k	36x5	W
[1]Gramm-Pion. 20	2–2½	2475a	4½x5¼	36x4k	36x7k	W
[1]Gramm-Pion. 30	3	3300a	4¼x5½	36x5k	36x5dk	W
[1]Gramm-Pion. 75F	3½	4225a	4½x5½	36x6n	42x9n	W
[1]Gramm-Pion. 40	4	3850a	4½x5½	36x5	36x5dk	W
[1]Gramm-Pion. 50	5–6	4450a	4¾x6	36x6	40x6dk	W
Hall 1	1½	3100	3¾x5	34x5n	38x7n	W
Hall 2	2½	3275	4½x5¼	36x4	36x6	W
Hall 3	3½	4100	4½x5½	36x5	36x5d	W
Hall 5	5	5100	4½x5½	36x5	40x6d	W
Hall 7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey W OA	2	2650	4¼x5½	34x4	34x7	W
Harvey WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye O	1	1375	3⅝x5½	34x5n	34x5n	
Hawkeye K	1½	1645	3¾x5½	34x3½k	34x5k	I
Hawkeye M	2	2145	4¼x5	36x4k	36x6k	I
Hawkeye N	3½	3700	4½x6¾	36x5k	36x10k	I
Hendrickson O	1½	2200	3⅝x5⅛	36x4n	36x5n	W
Hendrickson N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson M	3½	3000	4¼x5	36x5k	36x5dk	W
Hendrickson K	5	4000	5 x6¼	36x6	40x6	W
Huffman B	1½–2	1795	3¾x5	34x3½	34x6	W
Huffman C	1½–2	1695	3¾x5½	36x3½	36x6	I
Huffman D	2–3	2895	4½x5½	36x4	36x7	
Hurlburt A-A	1–1½	1950	3¾x5	34x5n	34x5n	W
Hurlburt B-B	2–2½	2800	4¼x5½	36x4	36x4d	W
Hurlburt C-C	3–3½	3175	4¼x5½	36x5	36x5d	W
Hurlburt D-D	4–4½	4150	4½x6	36x5	36x6d	W
Hurlburt E-E	6–6½	4850	4⅝x6½	36x6	40x6d	W
Indep'd't(Iowa) B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa) G	1½	2010	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.) H	2½	2940	4¼x5¼	36x4	36x7	I
*Indiana 10	1	....	3¾x5¼	34x5n	34x5n	B
Indiana 12	1½–2	....	3¾x5¼	34x3½k	34x5k	W
Indiana 20	2	....	4¼x5½	36x4k	36x7k	W
Indiana 25	2½–3	....	4¼x5½	36x4k	36x8k	W
Indiana 35	3½–4	....	4⅝x5½	36x5k	36x5dk	W
Indiana 51	5–7	....	5 x6¼	36x5k	40x6dk	W
*International S	1	1250	3½x5	32x4½n	32x4½n	I
International 21	1	1550	3½x5¼	36x3½k	36x3½	I
International 31	1½	1650	3½x5¼	36x3½k	36x5k	I
International 41	2	2100	3½x5¼	36x3½k	36x6k	I
International 52	2½	3500	4¼x5	36x6n	36x5dn	I
International 61	3	2400	4¼x5	36x4k	36x7k	I
International 62	3	2600	4¼x5	36x4	36x7	I
International 101	5	3800	4¼x5	36x5	40x12k	I
International 102	5	3800	4¼x5	36x5	36x12	I
Jackson 4WD	3½	3850	4½x5½	36x7	36x7	B
K-Z 1	1	1750	3½x5	34x3½	34x5	W
K-Z 1½	1½	2075	3¾x5	36x4	36x6	W
K-Z 2½	2½	2550	4¼x5¼	36x4	36x8	W
K-Z 3½	3½	3350	4½x5½	36x5	40x10	W
K-Z 5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo SK	4	3845	4¼x6	36x5	36x12	W
Kalamazoo OK	5	4350	4½x6	36x6	40x6d	W
[2]Kelly-S. K-31	1½	2700	3¾x5¼	36x3½	36x6	C
[2]Kelly-S. K-34	1½	2700	3¾x5¼	36x3½	36x6	W
[2]Kelly-S. K-38	2½	2900	3¾x5¼	36x4	36x4d	W
[2]Kelly-S. K-35	2½	2900	3¾x5¼	36x4	36x4d	C
[2]Kelly-S. K-40	3½	3900	4½x6½	36x5	40x5d	C
[2]Kelly-S. K-41	3½	3900	4½x6½	36x5	36x10	W
[2]Kelly-S. K-42	3½	3900	4½x6½	36x5	40x5d	W
[2]Kelly-S. K-50	5	4400	4½x6½	36x6	40x6d	C
[2]Kelly-S. K-60	6	4600	4½x6½	36x6	40x7d	C
[2]Kelly-S. K-61	5–7	4800	4½x6½	36x6	36x7d	W
Kimball AB	2	3675	4 x6	36x4	36x7	W
Kimball AC	2½	3975	4¼x6	36x4	36x8	W
Kimball AK	3	4500	4½x6	36x4	36x10	W
Kimball AE	4	5000	4⅜x6	36x5	40x12	W
Kimball AF	5	5500	5 x6	36x6	40x7d	W
*Kissel Express	1	1585	3⅞x5½	34x5n	34x5n	W
Kissel Utility	1½	1975	3⅞x5½	36x3½	36x6	W
Kissel Freighter	2½	2875	4¼x5½	36x4	36x8	W
Kissel H.D.	4	3675	4¼x5½	36x5	36x12	W
Kleiber AA	1	2200	4½x5¼	34x3½k	34x5k	W
Kleiber A	1½	3100	4½x5¼	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor. †Capacity with semi-trailer.

1—Gramm Pioneer. 2—Kelly-Springfield.

Passenger Car Specifications on pages 51 and 52

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5¼	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....D	1½	2150	3½x5	34x3½	34x5	W
Koehler.....M	2½	3175	4 x5½	36x4	36x7	W
Koehler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Koehler.....F	3½	4470	4½x5½	36x5	36x10	W
Koehler,MT.Trac	5	3275	4 x5½	36x4	36x7	W
Krebs.....23	¾	1360	3¾x5	34x4½	34x4½	B
Krebs.....24	1	1675	3¾x5	34x5	34x5	W
Krebs.....45	1½	2275	4½x5¼	36x4	36x7	W
Krebs.....75	2½	2550	4½x5½	36x4	36x8	W
Krebs.....110	3½	3175	4½x5½	36x5	40x10	W
Krebs.....140	5	....	4¾x6	36x6	40x6d	W
Larrabee.....X-2	1	1925	3¼x4½	34x5n	34x5n	B
Larrabee.....U	1½	2400	3¾x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4½x5¼	36x4	36x7	W
Larrabee.....K-5	2½-3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5-7	4800	4¾x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5¼	36x4	36x6	W
Maccar.....H-A	2	....	4½x5¼	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack.....AB D.R.	1½	3450	4 x5	36x4k	36x3½dk	D
Mack....AB Chain	1½	3000	4 x5	36x4k	36x3½dk	D
Mack....AB Chain	2	3300	4½x5	36x4k	36x4dk	C
Mack....AB D.R.	2	3750	4½x5	36x4k	36x4dk	D
Mack....AB D.R.	2½	3850	4½x5	36x4k	36x4dk	D
Mack....AB Chain	2½	3400	4½x5	36x4k	36x4dk	C
Mack....AC Chain	3½	4950	5 x6	36x5k	40x5dk	C
Mack....AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack....AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack....AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4½x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Mapleleaf.....**	1½	3000	3¾x5¼	34x5n	36x6n	W
Mapleleaf.....AA**	2	3600	4 x5¼	36x4	36x7	W
Mapleleaf.....BB**	3	4050	4½x5½	36x4	36x4d	W
Mapleleaf.....CC**	4	4800	4½x5½	36x5	36x5d	W
Mapleleaf.....DD**	5	5625	4½x5½	36x6	40x6d	W
Mason.....	1	1200	4 x5	34x5n	34x5n	B
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x6	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4½x5½	34x4	36x8	W
Master.....DD	2½	3190	4½x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x8	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4½x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3¾x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee....HT	1-1¼	2000	3¾x5	34x3½	36x5	W
Menominee....H	1½	2475	4 x5	36x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	36x5	36x10	W
Menominee....J-3	5	4250	4¾x6	36x6	40x12	W
Meline.....10	1½	1985	3½x5	34x5n	36x6n	I
3Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5¼	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-5	4600	4¾x6	36x6	40x6	W
Nash.....2918	1-1½	1595	3¾x5¼	34x4	34x5	I
Nash.....3018	2-2½	2150	3¾x5¼	34x4k	34x7k	I
Nash.....Quad.	2-2½	2750	4¼x5½	36x6	36x5k	I
Nash. 3018, LWB	2-2½	2200	3¾x5¾	34x4k	34x7k	I
Nash Quad. LWB	2-2½	2800	4¼x5½	36x6	36x6	I
Nash.....5018	2½	2250	3¾x5¼	34x4k	34x7k	I
4Nelson.....G2	1½	....	4½x5¼	36x3½	36x6	W
4Nelson.....G3	2½	....	4½x5¼	36x4	36x7	W
4Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
4Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5¼	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5¼	36x4k	36x7k	W
Noble.....A21	1¼	1750	3½x5⅜	34x5	34x5	W
Noble.....B31	1½-2	2395	3¾x5¼	36x4	36x7	W
Noble.....D51	2½-3	2795	4¼x5½	36x4	36x8	W
Noble.....E71	3½-5	3495	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3¾x5¼	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4¼x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4½x5¼	34x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E.Spec	1½	2285	3¾x5¼	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	36x3½	36x5	W
Ogden.....E	2½	....	4½x5¼	36x4	36x8	W
Old Hickery...W	1	$1775	3¾x5	36x3½k	36x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4½x6	34x4	36x4d	W
Old Reliable....C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6¼	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5½	35x5n	35x5n	I
Olympic.....A	2½	3200	4¼x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	2½	3200	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	2485	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	2585	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3485	4 x5⅛	38x7n	38x7n	B
Oshkosh.....BB	2½	3585	4 x5⅛	38x7n	38x7n	B
*Overland.....4	½	425	3½x4	30x3½n	30x3½n	B
Packard.....EC	2-3	3100	4¼x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4¼x5½	36x6n	40x8n	W
Packard.....ED	3½x4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige.....54-20	2½	2420	4¼x5½	34x4	34x8	W
Paige.....51-18	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot....Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot....Lincoln	2	2050	4 x5¼	34x4	34x6	W
Patriot....LS-Exp	2	2175	4 x5¼			
Patriot..Washgt'n	3	2900	4½x5½	36x5	36x7	W
Pierce-Arrow.....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow.....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow.....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3½x5	36x4	36x6	
Pittsburgher.....	3	3800	4½x5¼	36x5k	36x7	W
Power.....	2	3150	4 x5¼	36x5	36x7	W
Power.....C	3½	....	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4½x5¼	34x4	34x6	W
Rainier.....R-20	2½-3	....	4½x5¼	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-25	3½-5	....	4½x5¼	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	36x6	40x6d	W
Rainier.....R-27	6	....	4¾x6	36x6	40x6d	W
Ranger..TK-20-2	1½	1450	3¾x5	36x6n	38x7n	W
*Ree.....F	¾-1½	1185	4½x4½	34x4½n	34x4½n	B
Reliance.....10A	1½	2400	4 x5⅛	36x3½	36x5	I
Reliance.....20B	2½	3100	4¼x5½	36x4	36x4d	I
Republic.....75	¾	1396b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3¾x5	34x3	34x4	I
Republic.....11X	1½	1795	3¾x5	34x4	34x6	I
Republic.....19	2½	2195	4⅛x5¼	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rewo.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rewo.....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rewo.....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rewo.....G.P.W.	3	5250	3¼x5r	38x7n	42x9n	W
Rewo.....HW	4	4500	4¼x6	36x5	36x6d	W
Rewo.....F.W.	5	4850	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4-3½x4	32x4n	32x4n	B
Samson.....25	1¼	....	4-3½x5½	35x5n	35x5n	B
Sanford....W-15	1½-2	2150b	3¾x5	36x3½k	36x5k	
Sanford.....25	2½-3½	....	4½x5¼	36x4	36x4d	W
Sanford.....35	3½-5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5-7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ton	3	3800	4¼x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5¼	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½-2½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½-2½	3350	4½x5¼	34x5n	38x7n	W
Selden.....50	2½-3½	3250	4½x5¼	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½-5	$3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4¾x6	36x6	40x12	W
Seneca.....M	½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3¼x4½	32x4½n	32x4½n	B
*Service.....25	1¼	....	3½x5½	34x5n	34x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4¼x5½	35x5n	38x7n	W
Service.....52	3	....	4¼x5½	36x4	36x8	W
Service.....72	3½	....	4¼x5½	36x5	36x5d	W
Service.....77	4	....	....	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	1150	3¾x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5¼	34x4	36x6	W
Signal.....J	2½	2375	4½x5¼	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x5d	W
Signal.....R	5	3900	4¾x6	36x6	40x6d	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5¼	36x4k	36x8	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x12	W
Standard.....5-K	5-7	4400	4¾x6	36x6	40x14	W
*Star.....	½	610b	3½x4¼	30x3½n	30x3½n	
Sterling.....1½	1½	2885	4 x5¼	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5½	36x4k	36x6k	W
Sterling.....2½	2½	3290	4½x5¼	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6¼	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6¼	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6¼	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6¼	36x6	40x7d	C
*Stewart...Utility	¼-1½	1245	3½x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3½x5½	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3¾x5	34x3½	34x6	I
Stewart.....7-X	2½-3	2390	4¼x5½	34x4	34x8	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x10	I
*Stewart.....	1¼	1245	4-3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1095	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3¾x5¼	34x5n	34x5n	W
Stoughton.....B	1½	2150	3¾x5¼	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5⅛	36x4	36x7	W
Stoughton.....F	3	3150	4¼x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4¼x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Themart.....	1¼	1795	4 x5¼	34x5	34x5	C
Tiffin.....GW	1½	2100	4½x5½	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5¼	36x4	36x3½d	W
Tiffin.....PW	3½	3600a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4¼x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4½x5¼	35x5n	38x7n	W
Tower.....H	2½	2175	4½x5¼	36x4	36x7	W
Tower.....G	3½	3175	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595a	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595a	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3¾x5	36x4	36x7	I
*Transport.....15	1	1295	3½x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¼x5½	34x3½k	34x5k	I
Transport.....35	2	1885a	3¼x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5¼	36x4k	36x8k	I
Transport.....60	3½	2535	4½x5½	36x4k	36x8k	I
Transport.....75	5	3185	4½x6	36x5k	36x12k	I
Trayler.....B	1½	2390	3¾x5½	34x3½	34x5	W
Trayler.....C	2-2½	2850	4 x5½	36x4	36x7	W
Trayler.....D	3-3½	3300	4¼x5½	36x4	36x8k	W
Trayler.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3¼x5	31x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3¾x5¼	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5¼	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5¼	36x4k	36x7k	I
Twin City...B.W.	2	2400	4 x5½	36x6	40x8	I
Twin City...A.W.	3½	3500	4¼x6	36x5	40x5d	W
5Twin City.....B	3½	....	5½x6	36x6	36x6	I
5Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4¼x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4¼x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4¼x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4¼x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
United.....A	1½	2445	3¾x5¼	35x3½k	34x5k	W
United.....B	2½	3150	4¼x5½	36x4k	36x7k	W
United.....C	3½	3975	4¼x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x5	40x6d	W
*United States..U	1¼	1800	3½x5½	34x5n	34x5n	B
UnitedStates.NW	1½-2	2375	3¾x5	36x5	36x3½	W
United States...N	1½-2	2175	3¾x5	36x3½k	36x5k	I
United States...R	3	3300	4 x5¼	36x4	36x4d	W
United States...S	4	4075	4½x5½	36x5	36x5d	W
United States...T	5-7	4975	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Velie.....53	2½	2185	4 x5¼	36x4k	36x7k	I
Veteran.....M***	1½	2699	3¾x5¼	35x5n	35x5n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires.
k—pneumatic tires optional at extra cost. n—pneumatic tires.
a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Veteran.....P**	2	$3699	4¼x5½	36x4	36x7	W
Veteran.....R**	3	4200	4¼x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....50	½-¾	995	4 x5	32x4n	32x4n	B
Walker-JohnsonA	2	2500	3¾x5	34x3½	34x6	W
Walker-JohnsonB	3	3000	4¼x5½	36x4	36x8	W
Walter.....M	2½	3850	4½x5¾	36x4	36x8	D
Walter.....S	5	4850	4½x6¼	36x6	40x6d	W
*Watson.....C	1	1465a	3⅝x5½	35x5n	35x5n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2450	4½x5¼	36x3½k	36x5k	W
Western....L1½	1½	2450	3¾x5	36x3½k	36x5k	W
Western....W2½	2½	3250	4½x5¼	36x4	36x7	W
Western....L2½	2½	2450	4¼x6	36x4	36x7	W
Western....W3½	3½	4000	4½x6	36x5	40x5d	W
*White.....15	¾	2400	3⅜x5½	34x5n	34x5n	B
White.....20	2	3250	3¾x5½	36x4k	36x7k	D
White.....40	3½	$4200	3¾x5¾	36x5	40x5d	D
White.....45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick.....E	1	1225	3¾x5	34x5n	34x5n	W
White Hick....H	1½	1375	3¾x5	36x3½	36x5	W
White Hick....K	2½	1675	4¼x5¼	36x4	36x5	W
Wichita.....K	1	1875	3¾x5¼	36x3½	36x4k	W
Wichita.....M	2	2400	3¾x5¼	36x3½k	36x6k	W
Wichita.....RX	3	3200	4¾x5¾	36x4k	36x8k	W
Wichita.....O	4	$3500	4½x6¼	36x5k	36x5k	W
Wilcox.....AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4¼x5	36x4k	36x3½dk	W
Wilcox.....E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox.....F	5	4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¾x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4½x5¼	36x4	36x7	W
Wilson.....G	3½	3685	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin.....A	1	1750	3¼x5	34x5n	34x5n	W,B
Wisconsin.....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin.....C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin.....D	3½	3000	4⅝x5¾	36x6n	40x8	W
Wisconsin.....E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin.....F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will.....N	1½	2450	3¾x5	36x3½k	36x6k	W
Witt-Will.....P	2½	2900	4½x5¼	36x4k	36x8k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.

r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders; Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P.	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm...	15-25	1185	4	Midw.	4-4½x5¼	Gas.	3
Allis-Chalm...	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm..	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork...2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork.....C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T....	15-30	1900	4	Clim.	4-5 x6½	G,K,D	4
Aultman-T....	22-45	2800	4	Own	4-5½x8	G,K,D	6
Aultman-T....	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Automot...B-3	12-24	1250	4	Here.	4-4 x5⅛	Gas.	2-3
Avery,SR.Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4¾x6	G,K,D	2-3
§Avery.....	....	....	*	Own	4-4x5½	G,K,D	3-4
Avery.....	12-25	....	4	Own	2-6½x7	G,K,D	2-3
Avery.....	14-28	....	4	Own	4-4½x7	G,K,D	3-4
Avery.....	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7¾x8	G,K,D	8-10
Bates Mule.H	15-25	....	4	Midw.	4-4½x5¼	Gas.	3
Bates Mule..F	18-25	....	*2	Midw.	4-4½x5¼	Gas.	3
‡BatesMule.G	25-35	....	*2	Midw.	4-4½x6	Gas.	..
Bear.....	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman Jr...	¾-1½	180	2	B&S	1-2½x2½	Gas.	..
¶Beeman...G	2-4	240	4	Own	1-3½x4½	Gas.	..
Best.....	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best.....	60	....	*2	Own	4-6½x8½	G,K,D	8-9
¶Bolens.....	....	....	4	B&S	1-2½x2½	G.	..
Boring.....	5-10	395	4	LeR.	4-3½x4½	G.	..
Boring...1921	....	1850	3	Wauk	4-4¾x5¾	GorK	2
**Bryan.....	15-30	....	4	Own	2-4 x5	K.	3
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	2-3
Case.....	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case.....	22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case.....	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T35	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar..5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur.....	5-21½	345	2	N Way	2-4½x4½	GorK	1
Cletrac.....F	9-16	595	*2	Own	4-3¼x4½	G,K,D	2
Cletrac.....W	12-20	1345	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Do-It-All,Baby	1	237	..	Own	1-2⅜x2¾	Gas.	1
Do-It-All....A	3-6	495	..	Own	1-4½x5	Gas.	1
Do-It-All, Jack	6	395	..	Own	1-3⅜x3⅞	Gas.	1
Do-It-All....6	12	495	2	Own	2-3⅜x3⅞	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	GorK	4-5
E-B.....AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol.....D	9-18	1175	4	Lyc.	4-3½x5	Gas.	2
Farm Horse..B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Fitch...4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	395	4	Own	4-4 x5	G,K	2
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt...A	18-36	$2150	4	Wauk.	4-4¾x6¾	GorK	4
Gray.....	20-36	1975	3	Wauk.	4-4½x6¼	Gas.	4
Gray.....	22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. WesternSt	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr...20	20	865	4	Own	2-5¼x6½	K,D.	2
Hart-Parr...30	30	1015	4	Own	2-6½x7	K,D.	3
‡Hart-Parr....	....	1395	4	Own	6½x7	K,D.	..
Heider.....D	9-16	628	4	Wauk.	4-4¼x5¾	G,K	2
Heider.....C	12-20	725	4	Wauk.	4-4½x6¾	G,K.	3
Heider...Cul	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light.4	12-25	985	4	Wauk.	4-4½x5¾	GorK	3
Huber Super 4	15-30	1885	4	Midw.	4-4½x6	Gas.	3
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International..	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5¼x8	G,K,D	4
¶Kinkade....	1½-3	190	1	Own	1-3 x3	Gas.	..
La Crosse.....	12-24	985	2	Own	2-6 x7	G,K	3
Lauson.....5	12-25	1295	4	Midw.	4-4½x5¼	Gas.	3
Lauson.....21	15-30	1675	4	Beav.	4-4¾x6	GorK	3-4
‡Lauson Road	15-30	2000	4	Beav.	4-4¾x6	K	..
Leader.....B	12-18	685	4	Own	2-6 x6¼	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K.	3-4
‡Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Little Giant..B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant..A	26-35	3300	4	Own	4-5½x6	K	6
Lombard.1922	85-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2⅝x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	GorK	3
Minne..Gen.P	17-30	1600	4	Own	4-4¾x7	GorK	3-4
Minne.Med.D	22-44	2650	4	Own	4-6 x7	GorK	5-6
MinneHeavyD	35-70	3850	4	Own	4-7½x9	GorK	8-9
Mohawk.1922	8-16	650	2	Light	4-3½x4½	KorG	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch..	9-18	...	2	Own	4-3½x5	Gas.	2-3
‡Monarch....	20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Motor Macult.	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	375	4	Own	2-3¾x4	Gas.	1
Nichols-Shep..	20-42	2650	4	Own	2-8 x10	GorK	3-6
Nichols-Shep..	25-50	3000	4	Own	2-9 x12	GorK	4-8
Nichols-Shep..	35-70	3650	4	Own	2-10½x14	GorK	8-12
Nilson Senior..	20-40	1975	5	Wauk.	4-5 x6¼	G,K	4
OilPull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar...K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Pioneer.....G	18-36	....	4	Own	4-5½x6	G,K,D	4
Pioneer.....C	40-75	....	4	Own	4-7 x8	Gas.	10
Russell.....	12-24	1500	4	Own	4-4¼x5¾	GorK	2-3
Russell.....	15-30	2200	4	Own	4-5x6½	GorK	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	GorK	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	GorK	8-10
Samson....M	....	445	4	Own	4-4 x5½	G,K	2
Toro Cultivator	6	750	3	LeR.	4-3½x4½	Gas.	2
ToroTractor'22	6-10	495	3	LeR.	4-3½x4½	Gas.	2
Townsend.....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend.....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend.....	25-50	2500	2	Own	4-8½x10	Ker.	4-8
TractionMotor	40-50	....	4	....	8-3½x5	Gas.	4-5
Traylor....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar...10	25-40	3750	*2	Wauk.	4-5 x6¼	GorK	4
TwinCity.....	12-20	1200	4	Own	4-4½x6	H,K	3
Twin City....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City....	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle SamC20	12-20	1295	4	Weid.	4-4 x5½	G	2-3
Uncle SamB19	20-30	1985	4	Beav.	4-4¾x6	GorK	3-4
Uncle SamD21	20-30	1895	4	Beav.	4-4¾x6	GorK	3-4
Utilitor....501	2½-4	295	4	Own	1-3½x4½	G	1
Utilitor...501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	....	4	Own	4-4¼x5¾	G,K	3
Waterloo....N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore21-22	12-25	1185	4	Wauk.	4-4 x5¾	G,K	3
Whitney....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin...E	16-30	1850	4	Clim.	4-5 x6½	GorK	3
Wisconsin...F	20-40	2050	4	Wauk.	4-5 x6¼	GorK	4
Wisconsin...H	22-40	2550	4	Clim.	4-5½x7	GorK	4-6
Yuba....12-20	12-20	2400	*2	Wauk.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4¼x6	G,K,D	..
Yuba....20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba.....	25-40	4750	*2	Yuba	4-5¼x7	D	..

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont.—Continental. Dom.—Domas. Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor. ¶Garden Tractor. **Steam Tractor.

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (N.A.C.C.)	NAME AND MODEL	Carburetor	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle Type and Make	†Gear Ratios
.....	$4500c	$4500	.....	.....	$6500	136	33x5	Cont..	6-3⅝x5¼	31.54	Ambassador.....R	Strom...	West.....	Bosch.....	m-d B-L.....	B-L.....	f Norwalk..	F Tim...	4.45
1995c	1785	1850	$1885c	.....	2485	127	33x4½	H-S...	6-3½x5	29.40	American.....D-66	Strom...	G-D.....	A-K.....	s-p B&B....	B & B..	m Hartford..	F Salis..	4.50
.....	1650	.....	.....	.....	.....	127	33x4	Own..	2-	.....	American.....Steamer	None...	L-N.....	L-N.....	None.....	None.....	.....	Own..	1.75
.....	1195	.....	.....	$1450c	.....	114	32x4	Cont..	6-3½x4¼	23.44	Anderson...Aluminum 6	.....	West.....	West.....	s-p B&B....	.....	.....	Salis..	.....
1495	1495	1595	(1595c	1995c	1995d	120	33x4	Cont..	6-3⅜x4½	27.34	Anderson.....Series 40	Rayfield.	Remy.....	Remy.....	s-p B&B....	Durston.	f Snead.....	⅜F Salis..	4.50
1785p			(1945c																
.....	2620	2645	.....	3625	3695	130	34x4½	Own..	8-3½x5	33.80	Appersen.....8-21-S	Johnson.	Bijur.....	Remy.....	m-d Own....	Own....	m Sterling...	½F Own..	4.25
1575	1475	1545n	(1895n	2275	2345	121	32x4	Cont..	6-3⅜x4½	27.34	Auburn.....6-51	Strom...	Remy.....	Remy.....	s-p B&B....	G-L.....	m Universal..	F Salis..	4.75
			(1995n																
.....	1395	.....	.....	.....	1850d	118	32x4	Cont..	6-3½x4¼	23.44	Barley.....	.....	Delco ...	Delco....	s-p B&B...	Fuller...	f M&E.....	Col.....	.....
1800	1800	.....	.....	2400	2500	121	32x4	Cont..	6-3½x4½	25.35	Bay State.....	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Spicer....	¾F Col....	4.67
2950	2950c	.....	.....	3950	3950	121	32x4	Buda.	4-3¾x5½	22.50	Biddle.....B1 & B5	Zenith..	G-D.....	Simms.....	s-p Warner .	Warner..	m Spicer....	½F Std....	4.50
5000	5000	.....	.....	.....	7000	125	32x4½	Own..	4-4 x5½	25.60	Brewster.....91	Zenith..	USL.....	Bosch.....	c Own.....	Own....	F Own.....	F Own..	3.92
865	885	725g	.....	1175	(1395	109	31x4	Own..	4-3⅜x4¾	18.23	Buick..1923-34-5-6-7-38	Marvel..	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	¾F Own..	4.66
					(1326														
1175	1195	975g	.....	1935	1985	118	33x4	Own..	6-3⅜x4½	27.34	Buick....1923-41-4-5-47	Marvel..	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	¾F Own..	4.60
.....	.....	1435	(1625a	1895	2195	124	34x4½	Own..	6-3⅜x4½	27.34	Buick.1923 45-9-50-4-55	Marvel..	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	¾F Own..	4.90
			(1675c																
2885	2885	2885	.....	(3675	(3950	132	33x5	Own..	8-3½x5⅛	31.25	Cadillac.....61	Own....	Delco.....	Delco.....	m-d Own....	Own....	m Spicer....	F Tim...	4.50
				(3750d	(4300														
1750	1790	.....	.....	2480	2575	122	32x4½	Cont..	6-3⅜x4½	27.34	Case.....X	Rayfield.	Delco.....	Delco.....	m-d Own....	Own....	f Snead.....	½F Col....	5.25
.....	1990	2250	1950	2480	2975	129	31x4½	Cont..	6-3⅝x5¼	31.54	Case.....W	Rayfield.	Delco.....	Delco.....	m-d Own....	Own....	f Arvac.....	¾F Col....	4.45
1185	1185	.....	.....	1595	(2295	117	32x4	Own..	6-3½x4½	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own....	m Hardy.....	½F Adams	5.13
		1345	.....	.....	(1585	122	32x4	Own..	6-3½x4½	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own....	m Hardy.....	½F Adams	5.13
1495	1495c	1645	1595a	1995c	(2295d	123	33x4	Own..	6-3½x5	29.40	Chandler.....Six	Rayfield.	Bosch.....	Bosch.....	s-p B&B....	Own....	f Own.....	F Own..	4.45
					(2375f														
510	525	425g	.....	(840c	860	102	30x3½	Own..	4-3¼x4	21.53	Chevrolet.....Superior	Zenith	A-L.....	Remy....	c Own.....	Own....	m Own.....	½F Own..	3.66
				(680k								Holley		A-L....					
1085	995	.....	1260	1295d	1495	112	32x4	Own..	6-3 1/16x4½	22.50	Cleveland.....41	Strom...	Bosch.....	Bosch.....	s-p Own....	Own....	m Mech.....	¾F Own..	4.45
2685	....	2685	2685c	3285b	(3285c	127¼	33x5	Nort..	8-3½x4½	39.20	Cole.....890	Johnson	Delco.....	Delco.....	c North...	North...	m Spicer....	F Col....	4.46
					(3685f														
1475	1475	.....	1475c	1925c	1995d	115	32x4	Cont..	6-3⅜x4½	27.34	Columbia.....Elite	Strom...	A-L.....	A-K.....	s-p B&B....	Durston.	m Spicer....	¾F Tim....	.....
995	985	.....	.....	.....	1395d	115	31x4	Cont..	6-3⅛x4¼	23.44	Columbia.....Light Six	Strom...	A-L.....	A-L.....	s-p B&B....	Durston.	m Spicer....	¾F Tim....	.....
1395	1395	.....	(1495b	2065b	2165d	116	32x4	Falls.	6-3½x4¼	23.44	Courier.....	Till.....	Bijur.....	A-K.....	s-p B&B....	Muncie..	f Norwalk.	¾F Col....	5.00
			(1495c																
3000	3000	3000	.....	.....	4500	122½	32x4	Cont..	6-3⅝x5¼	31.54	Crawford.....22-6-60	Strom...	West.....	Bosch.....	m-d B-L....	B-L.....	Spicer....	½F Tim...	.....
.....	.....	.....	3500	.....	.....	135	33x5	Cont..	6-3⅝x5¼	31.54	Crawford-Dagmar..6-60	Zenith..	West.....	Bosch.....	m-d B-L....	B-L.....	Spicer....	½F Tim...	.....
.....	.....	.....	.....	.....	.....	142	33x5	Own..	8-3¾x5	45.00	Cunningham.....V	Strom...	Delco.....	Delco.....	m-d Own....	Own....	f Snead.....	F Tim...	4.23
4350b	4350c	4350	.....	5250	6000	132	33x5	Own..	8-3½x5¼	39.20	Daniels.....D-19	Zenith..	Delco.....	Delco.....	m-d Own....	Own....	m Spicer....	F Tim...	4.50
.....	1195	.....	1495	1795	1795	114	31x4	Cont..	6-3⅛x4¼	23.44	Davis.....71	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Peters....	½F Tim...	5.10
1595	1595	.....	1095	2095	.....	120	32x4	Cont..	6-3⅝x4½	27.34	Davis.....61-67	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Peters....	¾F Tim...	5.15
1175	1175	1295c	1215	1545	1595	112	32x4	H-S...	4-3½x5	19.60	Dixie Flyer.....H-S-70	Strom...	Dyneto....	Eisemann..	s-p B&B....	G-L.....	f Hardy.....	F Peru..	4.75
850	880	.....	.....	980b	1195d	114	32x4	Own..	4-3⅞x4½	24.03	Dodge Brothers.....	Stewart..	N.E.....	N.E.....	m-d Own....	Own....	m Own.....	½F Own..	4.16
3350g	3950c	3950	.....	4985c	5750f	132	33x5	Own..	6-4 x5	38.40	Derris.....6-80	Strom...	West.....	Bosch.....	m-d Own....	Warner..	m Spicer....	F Tim...	4.23
865	865	.....	(1015a	(1240	(1370	108	31x4	D-Ly.	4-3½x5	19.60	Dort.....19-14	Carter..	Bosch.....	Conn.....	m-d Detlaff..	Own....	m Mech.....	¾F Flint..	4.66
			(1015d	(1020k	(1070k														
990	990	.....	.....	(1145	(1195	115	31x4	Falls..	6-3⅛x4¼	23.44	Dort.....25-20	Carter..	Bosch.....	Bosch.....	m-d Detlaff..	Own....	Mech.....	¾F Flint..	4.66
				(1365	(1495														
1275	1275	.....	.....	1650	1975	104	30x3½	Own..	4-2⅝x4½	11.03	Driggs.....	Zenith..	Bosch.....	Bosch.....	s-p Hoos...	Mech..	m Spicer....	¾F Own..	4.75
6500	6500	6750	.....	7800	7800	134	33x5	Own..	8-2⅞x5	26.45	Duesenberg...Straight 8	Strom...	Delco.....	Delco.....	s-p Own....	Own....	f Own.....	½F Own..	4.81
3000	3200	.....	.....	3800	4000	124	32x4½	Own..	4-3½x5⅛	24.81	Du Pont.....A	Y&T.....	West.....	Eisemann..	m-d B-L....	B-L.....	m Spicer....	Col....	4.50
890	890	.....	.....	1365	1365	109	31x4	Cont..	4-3⅞x4¼	24.03	Durant.....A-22	Till.....	A-L.....	A-L.....	s-p Own....	Own....	m,f Spicer...	¾F Adams	4.30
1600	1650	.....	.....	2250	2100	123½	32x4½	Anst..	6-3½x4½	25.35	Durant.....B-22	Rayfield.	A-L.....	A-L.....	s-p Ansted..	Warner..	m,f Spicer...	½F Tim...	5.15
1485	1095	950g	.....	1395c	1795	112	32x4	Own..	4-3 1/16x5½	18.91	Earl.....40	Scoe....	A-L.....	Conn.....	s-p B&B....	Own....	f Own.....	½F Own..	3.66
1095	1095	.....	1095	1345	.....	118	33x4	Lyc...	4-3½x5	19.60	Elcar.....K-4	Strom...	Delco.....	Delco.....	s-p B&B....	Muncie.	m Peters....	¾F Salis..	4.50
1395	1395	.....	1395	1975	2065	118	33x4	Cont..	6-3⅜x4½	27.34	Elcar.....8-R	Strom...	Delco.....	Delco.....	m-d Warner .	Warner..	m Spicer....	¾F Salis..	4.50
1125c	1125	.....	1165	1695	1615	118	33x4	Falls..	6-3⅛x4¼	23.44	Elgin.....K-1	Strom...	West.....	Wagner....	s-p B&B....	Mech..	m Mech.....	¾F Col....	4.66
.....	1045	.....	.....	1145k	(1895	108½	32x4	Own..	4-3⅝x5	18.23	Essex.....	Own....	Bosch.....	Bosch.....	m-d Own....	Own....	m Spicer....	½F Own..	4.66
					(1245k														
269r	298s	235g	.....	530	(595	100	30x3½	Own..	4-3¾x4	22.50	Ford.....T	Own....	Own.....	Own.....	m-d Own....	Own....	m Own.....	½F Own..	3.63
					(725														
3900	3900	.....	.....	4900	4900	132	32x4½	Own..	6-3⅜x5	27.34	Fox.....7F	Zenith..	West.....	Bosch.....	m-d B-L....	B-L.....	Spicer....	½F Tim...	4.45
1900	1950	1750g	.....	2750	2850	115	32x4	Own..	6-3¼x4	25.35	Franklin.....10	Own....	N.E.....	A-K.....	s-p B&B....	Own....	m Spicer....	½F Own..	4.73
965	965	.....	.....	1115k	1365d	112	32x4	Lyc...	4-3½x5	21.76	Gardner.....T-R & G	Carter..	West.....	West.....	s-p B&B....	Mech..	m Mech.....	¾F Flint..	4.80
1385	1385	.....	.....	1895	1915	116	32x4	Own..	6-3⅛x4½	23.44	Grant.....	Strom...	Bijur.....	A-K.....	s-p B&B....	Durston.	m Spicer....	¾F Col....	4.66
490	490	.....	.....	.....	760	100	30x3½	Own..	4-3⅝x4	21.03	Gray.....	Scoe....	West.....	West.....	m-d Own....	Detroit..	m Mech.....	½F Tim...	3.90
2475	2475c	.....	3250	.....	3475	120	32x4½	Weid..	4-3¾x5½	22.50	H.C.S.....Series 4	Strom...	Delco.....	Delco.....	m-d B-L....	B-L.....	m Spicer....	¾F Own..	.....
.....	.....	2650	.....	3450	3450	125	32x4½	Own..	4-4⅛x5½	27.23	Handley-Knight.....	Till.....	A-L.....	A-L.....	m-d Warner .	Warner..	m Spicer....	½F Tim...	4.90
	995	.....	.....	.....	.....	114	31x4	Cont..	6-3⅛x4¼	25.35	Hansen.....30	Marvel..	Delco.....	Delco.....	s-p B&B....	Detroit..	.....	¾F Tim...	.....
1595	1595	1795	.....	2475c	2585	121	32x4	Cont..	6-3⅜x4½	27.34	Hanson.....60	Marvel..	Delco.....	Delco.....	s-p B&B....	Detroit..	.....	¾F Tim...	.....
.....	1345	1345c	.....	1950	1950	115	32x4	H-S...	4-3½x5	19.60	Hatfield.....A-42	Zenith..	Dyneto....	Conn.....	s-p B&B....	G-L.....	m Spicer....	¾F Col....	4.66
2395	(2395c	2595	2700f	(3350d	3675	132	33x5	Own..	6-3½x5 1/16	29.40	Haynes.....75	Strom...	L-N.....	King.....	s-p Warner .	Own....	m Universal..	¾F Own..	4.60
	(2700p			(3475p															
1545	1695	.....	(1895a	(2035b	(2595d	121	32x4½	Own..	6-3½x5	29.40	Haynes.....55	Rayfield.	L-N.....	King.....	s-p Warner .	Own....	m Universal..	½F Own..	4.11
			(1950d	(2135p	(2695p														
.....	2500c	2500	.....	3300c	3000f	126	34x4½	Own..	6-3½x4¼	29.40	Holmes.....Series 4	Strom...	Dyneto....	Eisemann..	m-d B-L....	B-L.....	m Spicer....	½F Tim...	4.90
.....	1525c	1575	.....	2570c	(16 75k	126	34x4½	Own..	6-3½x5	29.40	Hudson.....Super 6	Own....	Bosch.....	Bosch.....	m-d Own....	Own....	m Spicer....	½F Own..	4.45
					(2295														
1395	1395	.....	.....	.....	2295	120	32x4	Cont..	6-3⅜x4½	27 34	Huffman.....	Strom...	Dyneto....	Conn.....	s-p B&B...	Covert..	.....	F Salis..	.....
(1150	1150	.....	1250a	(1635	1785	112	32x4	Own..	4-3¼x5½	16.90	Hupmobile.....Series R	Strom...	West.....	A-K.....	m-d Own....	Own....	m Universal..	¾F Own..	4.87
(1025g				(1335k															
.....	1485	1685c	.....	2085	2985	121	32x4½	Cont..	6-3¼x4½	25.35	Jackson.....638	Strom...	A-L.....	Remy.....	s-p B&B....	Covert..	f Snead.....	¾F Salis..	4.75
995b	995	.....	1095a	1445c	1465d	112	31x4	Own..	6-3¼x5	25.35	Jewett.....Six	Strom...	Remy.....	A-K.....	m-d Long....	Warner..	m Mech.....	½F Tim...	4.45
1895	1795	.....	.....	2785	2485	120	32x4	Own..	6-3 1/16x4¾	26.38	Jordan.....MX	Strom...	Delco.....	Delco.....	s-p Detroit..	Detroit..	m Spicer....	½F Tim...	4.42
.....	.....	.....	2150c	.....	.....	124	32x4	Own..	6-3 1/16x4¾	26.38	Jordan.....H	Strom...	Delco.....	Delco.....	s-p Detroit..	Detroit..	m Universal..	½F Tim...	4.42
.....	985	.....	.....	1450	111	32x3½	Gray..	4-3½x5	19.60	Kelsey.....4	Scoe....	Bosch.....	Bosch.....	f-d Own....	f-d Own.....	.....	Own..	4.50	
.....	985	.....	.....	.....	1450	111	32x3½	Gray..	4-3½x5	19.60	Kelsey.....4	Scoe	Bosch.....	Boscn....	s-p B&B....	Detroit..	Snead.....	½F Std....	4.75
.....	1525	.....	.....	.....	2175	118	32x4	Walk'r	6-3½x4½	23.44	Kelsey.....6	Strom...	Bijur.....	Bosch.....	f-d Own....	f-d Own.	.....	Own..	.....
5000	5000	5250	.....	5000	6000	130	32x4½	Own..	8-3 x5¼	28.80	Kenworthy.....8-90	.....	.....	.....	.....	.....	.....	.....	.....
1495	1495	.....	1495c	2200	2400	120	32x4½	Own..	8-3 x5	28.80	King.....K	Ball&B..	West.....	A-K.....	s-p Detroit..	Own....	f Hardy.....	F Col....	4.08
.....	.....	.....	.....	1995	2550f	124	32x4½	Own..	8-3 x5	28.80	King.....K	Ball&B..	West.....	A-K.....	s-p Detroit..	Own....	f Hardy.....	F Col....	4.08
.....	1855	2385	2385c	2975c	3075	124	32x4½	Own..	6-3 1/16x5½	26.38	Kissel.....45	Strom...	Remy.....	Remy.....	m-d Warner .	Warner..	m Spicer....	F Own..	3.92
1690	1690	1690	1890	2750	2890	121	33x4	Cont..	6-3⅛x4½	27.34	Kline Kar.....6-55-K	Rayfield.	Wagner....	Conn.....	s-p B&B....	G-L.....	f Snead.....	½F Std.	4.75

MISCELLANEOUS

a—2 Passenger, d—5 Passenger,
b—3 Passenger, e—6 Passenger,
c—4 Passenger, f—7 Passenger,
g—Chassis Price,
h—All Metal Type,
k—Soft Top Type,
n—Tire Size 32x4½.
p—Sport.
r—Price without starter and demountable rims. Price, complete, $864
s—Price without starter and demountable rims. Price, complete, $898.
†Standard Phaetons.

ENGINE

Anst—Ansted
Cont—Continental
D.-Ly—Dort Lycoming
H-S—Herschell-Spillman
Lyc—Lycoming
Nort—Northway
Walk'r—Walker
Weid—Weidely

CARBURETOR

Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg
Y & T—Yale & Towne

CLUTCH

f-d—Friction drive
c—Cone
m-d—Multiple disc
s-p—Single plate
B & B—Borg & Beck
B-L—Brown-Lipe
North—Northway

STARTING, LIGHTING IGNITION

A-L—Auto Lite
G-D—Gray & Davis
L-N—Leece Neville
N. E.—North East
West—Westinghouse

GEARSET

f-d—Friction Drive
B-L—Brown-Lipe
G-L—Grant-Lees
Mech—Mechanics
North—Northway

UNIVERSAL

f—fabric
m—metal
M &E—Merchant & Evans
Mech—Mechanics

REAR AXLE

F—Floating
½F—Semi-Floating
¾F—Three-Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
Tim—Timken

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (N.A.C.C.)	NAME AND MODEL	Carbureter	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle: Type and Make	†Gear R
$2985	$4090e	$4090	.....	$5500	$5500	132	33x5	Own..	8-3¼x5¼	33.80	LaFayette	Johnson	Delco	Delco	m-d Own	Own	m Own	F Own	4
5500	5500	5500	.....	5500	5500	134	32x4½	Own..	6-3¾x5¼	33.75	Leach....999	Rayfield	Delco	Delco	m-d	Own	m,f	Tim	
1695	(1695	(1795	$2045d	2345e	(2545d	123	32x4½	Anst..	6-3¼x4½	25.35	Lexington....23	Rayfield	G-D	Conn	m-d Ansted	Warner	f Snead	¾F Own	3
	(1995	(2095			(2145d														
1575	1395	.....	1575	(2085	2245	117	32x4	Own..	6-3½x5	23.44	Liberty....10-D	Strom	Wagner	Wagner	s-p B&B	Detroit	m Spicer	½F Tim	4
				(1695k															
3800	3800e	3800	.....	4400d	4700d	136	33x5	Own..	8-3⅜x5	36.45	Lincoln	Strom	Delco	Delco	m-d Own	Own	m Spicer	F Tim	4
6890g	7600e	7600	.....	10500	11000	142	35x5	Own..	6-4½x5½	48.60	Locomobile....Series 8	Ball&B	West	Delco	m-d Own	Own	m Own	F Own	2
3385	3185e	3185	.....	3985	4385	136	32x4½	Own..	6-3¾x5⅛	33.75	Marmon....34	Strom	Delco	Delco	m-d Own	Own	m Spicer	¾F Own	2
885	885	.....	.....	(985	1335	109	31x4	Own..	4-3⅝x4½	21.03	Maxwell	Stewart	A-L	Simms	c Own	Own		¾F Own	6
				(1235															
6300	6300e	6300	.....	7500	7500	140	33x5	Own..	6-4½x6	48.60	McFarlan....1922	Rayfield	West	Splitdorf	s-p B&B	B-L	m Peters	F Tim	3
3950	3950e	3950e	.....	4850	5250	132	32x4½	Own..	4-3¾x6¾	22.50	Mercer....Series 5	Ball&B	West	Eisemann	m-d Own	Own	m Spicer	F Own	2
.....	3750	3750	.....	5000	5000	132	32x4½	Own..	6-3¾x5	33.75	Mercer....6	Strom	.....	Eisemann	.....	.....	.....	¾F	3
1895	1895	.....	.....	.....	.....	119	32x4	Cont.	6-3¼x4½	25.35	Merit	Strom	Delco	Delco	s-p B&B	Muncie	f Snead	F Col	4
1490b	1590	.....	1850c	2050c	2275d	120	32x4	Own..	6-3½x5	29.40	Mitchell....F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4
.....	.....	1690	.....	.....	.....	127	32x4½	Own..	6-3½x5	29.40	Mitchell....F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4
950	950	.....	.....	.....	.....	115	32x4½	Own..	4-3¼x4½	16.90	Monroe....1922-S-9	Zenith	A-L	Conn	m-d Own	Mech	m Universal	¾F Own	3
1295	1195	p1445d	1885c	1585c	1695	115	31x4	Cont.	6-3⅛x4½	23.44	Moon....6-40	Strom	Delco	Delco	s-p B&B	Warner	m Spicer	½F Tim	4
1785	1785	1785	1885	2785	(2785f	128	33x4½	Cont.	6-3⅜x4½	27.34	Moon....6-58	Strom	Delco	Delco	B&B	B-L	m Spicer	½F Tim	5
					(2485e														
1210	1240	.....	1395c	.....	2040d	121	33x4	Own..	6-3¼x5	25.35	Nash....691-96-97	Marvel	Delco	Delco	s-p B&B	Own	m Own	½F Own	4
.....	.....	1390	1615	1890c	2100f	127	34x4½	Own..	6-3¼x5	25.35	Nash....692-94-95	Marvel	Delco	Delco	s-p B&B	Own	m Own	½F Own	4
915	935	.....	.....	(1385b	(1545d	112	33x4	Own..	4-3⅜x5	18.23	Nash Four....41-4	Schebler	Delco	Delco	s-p B&B	Own	m Own	½F Own	4
				(1195k	(1275k														
2175b	2475c	(2375	.....	(3250c	3825f	130	32x4½	Own..	6-3½x5¼	29.40	National....BB	Rayfield	West	Delco	s-p B&B	B-L	m Arvac	F Col	5
		(3150		(3725e															
2500	2500e	2600e	.....	.....	3500d	128	32x4½	Cont..	6-3¼x4½	25.35	Noma....3C	Claudel	Delco	Delco	s-p B&B	Detroit	m Spicer	½F Tim	4
2500	2500	.....	.....	.....	5500	128	33x5	Bea..	6-3½x5¼	29.40	Noma....1D	Zenith	Delco	Delco	s-p B&B	Detroit	f Spicer	½F Tim	4
.....	1035	.....	.....	.....	.....	116	32x3½	Lyc..	4-3½x5	19.60	Norwalk....430-KS	Zenith	Dyneto	Delco	s-p B&B	G-L	m Universal	¾F Col	5
975	995	795g	1165c	(1445d	1545	115	32x4	Own..	6-2⅞x4¾	18.99	Oakland....6-44	Marvel	Remy	Remy	c Own	Muncie	m Mech	F Own	4
				(1185a															
3750c	3750	3850	3750c	4500c	4800f	134	33x5	Cont..	6-3⅝x5¼	31.54	Ogren....6 T D Luxe	Rayfield	Bosch	Bosch	m-d B-L	B-L	m	F Col	4
955	975	1350d	1075	1475	1595	115	32x4	Own..	4-3½x5¼	21.86	Oldsmobile....43 A	Zenith	A-L	Remy	s-p B&B	Warner	m Own	¾F Own	4
1735c	1850e	1735	.....	.....	.....	122	33x4½	Own..	8-2⅞x4¾	26.45	Oldsmobile....46	Ball&B	Delco	Delco	c Own	Warner	m Own	¾F Own	4
1625p	1375	.....	1675	1875	2025	115	32x4	Own..	8-2⅞x4½	26.45	Oldsmobile....47	Johnson	Delco	Delco	s-p B&B	Warner	m Spicer	¾F Own	5
525	525	.....	425g	795	875	100	30x3½	Own..	4-3⅜x4	18.23	Overland....4	Till	A-L	Conn	s-p B&B	Own	m Own	½F Own	4
2185	2485	2250g	.....	3175	3275	126	33x4½	Own..	6-3⅜x5	27.34	Packard....Single-Six	Own	A-K	Delco	m-d Own	Own	f Spicer	½F Own	4
.....	2350g	2685	.....	.....	3525	133	33x4½	Own..	6-3⅜x5	27.34	Packard....Single-Six	Own	A-K	Delco	m-d Own	Own	f Spicer	½F Own	4
3850	3850	3850	.....	5240	5400	136	35x5	Own..	12-3x 5	43.20	Packard....Twin-Six	Own	Bijur	Delco	m-d Own	Own	m Spicer	½F Own	6
1165	1465	1290g	.....	1995	2245	119	32x4	Own..	6-3¼x5	25.35	Paige....6-44	Strom	Remy	A-K	s-p Long	Own	m Universal	¾F Sals	4
2195b	.....	2195	2245	3100	3155	131	33x4½	Cont.	6-3¾x5	33.75	Paige....6-66	Rayfield	Remy	A-K	s-p Long	Warner	m Mech	¾F Tim	4
.....	1390	1425	.....	2395	2395	120	32x4½	Cont.	6-3⅜x4½	27.34	Paterson....22-6-52	Strom	Delco	Delco	s-p B&B	Durston	m Hartford	½F Std	5
3300	2990e	2990	.....	(3300a	(3990d	128	33x5	Own..	8-3½x5	33.80	Peerless....23	Ball&B	Delco	Delco	m-d Own	Own	M Spicer	¾F Tim	4
				(3400c	(4090f														
5250	5250c	5250	.....	6800	(6900	138	33x5	Own..	6-4 x5½	38.40	Pierce-Arrow	Own	Delco	Delco	m-d Own	Own	m Spicer	½F Own	3
					(700														
2050	2000	2050	.....	2950	3000	126	32x4½	H-S..	6-3¼x5	25.35	Pilot....6-50	Till	Bijur	Conn	s-p B&B	Muncie	m Hartford	¾F Col	4
3150	3100e	3250	.....	4300	5100	126¾	32x4½	Own..	6-3⅜x5½	27.34	Premier....6-D	Johnson	Delco	Delco	s-p B&B	Own	m Spicer	¾F	5
1095	1095	.....	.....	1750	1825	117	32x4	Falls.	6-3½x4¼	23.44	Premocar....6-40-A	Strom	Wagner	Wagner	s-p B&B	Mech	m Spicer	¾F	4
.....	1665	.....	.....	2385	2475	116	32x4	Own..	4-3¾x5	22.50	R & V Knight....R	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	F Sals	4
2475	2475e	2475	.....	3015	3105	127	32x4½	Own..	6-3½x4½	29.40	R & V Knight....J	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	½F Tim	4
1595	1645	1485	1745	(2355c	(2435f	120	33x4	Own..	6-3⅛x5	24.34	Reo....T6 & U6	Rayfield	N.E	N.E	m-d Own	Own	m,f Own	½F Own	4
				(1835	(1885														
3200	3200	3200	.....	.....	4000	131	32x4½	Dues..	4-4¼x6	28.90	ReVere....C	Strom	West	Bosch	m-d B-L	B-L	m Spicer	¾F Std	4
.....	1485	.....	.....	1885	1985	117	32x4	Own..	6-3⅛x4¾	23.44	Rickenbacker....A	Strom	Simms	A-K	c Own	Own	m Universal	¾F Own	4
2685	2485e	2685	.....	3585	3585	128	32x4½	Cont.	6-3½x5¼	29.40	Roamer....6-54-E	Strom	Bijur	Bosch	s-p G-L	G-L	f Snead	½F Tim	4
3785	3485	3650e	3650c	.....	4650e	128	32x4½	Dues.	4-4¼x6	28.90	Roamer....4-75-E	Strom	Bijur	Splitdorf	m-d B-L	B-L	f Snead	½F Tim	5
10900	10900	10950	.....	.....	(13150	143½	35x5	Own..	6-4½x4¾	48.60	Rolls-Royce	Own	Bijur	Bijur	c Own	Own	m Own	F Own	5
					(12900														
1195	1195	.....	.....	1795	1795	112	32x4	Own..	4-3½x5	19.60	Saxon....125	Strom	Wagner	Wagner	s-p Detlaff	Covert	m Peters	¾F	4
1645	1645	.....	.....	2645	2645	118	33x4	Cont.	6-3¼x4½	25.35	Sayers Six....DP	Strom	Delco	Delco	s-p B&B	G-L	m Arvac	½F Std	4
875	875	.....	.....	.....	.....	108	30x3½	Lyc..	4-3½x5	19.60	Seneca....L-2 & O-2	Zenith	A-L	A-L	s-p B&B	G-L	m Universal	F	4
1095	1095	.....	.....	.....	.....	112	31x4	Lyc..	4-3½x5	19.60	Seneca....50 & 51	Zenith	A-L	A-L	s-p B&B	G-L	Detroit	F	4
980	980	.....	.....	1685	1685	114	32x4	Supr.	4-3⅜x5	18.23	Sperling....A	Zenith	Bijur	Splitdorf	s-p B&B	Warner	m Hartford	¾F Peru	4
2150	.....	2395	2395	2750	3200	127	34x4½	Own..	8-3¼x5	33.80	Standard....98	Zenith	West	Splitdorf	s-p B&B	G-L	m Arvac	½F Tim	4
2750	2750	2750	2425g	3950c	3985f	130	32x4½	Own..	2-4 x5	.....	Stanley....740	None	Bijur	None	None	None	None	½F Own	1
1765	1765	.....	.....	2750	.....	118	33x4	Cont.	6-3¼x4½	25.35	Stanwood Six	Strom	West	A-K	s-p B&B	G-L	m Peters	½F Std	4
319r	348s	285g	.....	580	645	102	30x3½	Cont.	4-3⅛x4¼	15.63	Star	Till	A-L	A-L	s-p		Spicer	Tim	4
2250	2250	2450	.....	3150	3450	125	34x4½	Own..	4-3⅜x5⅝	22.50	Stearns-Knight....SKL4	Rayfield	West	A-K	m-d Own	Own	f Climax	½F Own	4
2700	2700	2850	.....	3500	3700	130	34x4½	Own..	6-3⅜x5	27.34	Stearns-Knight....6	Rayfield	West	A-K	m-d Own	Own	f Climax	½F Own	4
1575	1595c	1625e	.....	2450	2550	122	33x4½	Own..	6-3¼x4½	25.35	Stephens....90	Till	A-L	A-L	s-p B&B	Mech	m Mech	½F Tim	4
7250	6900e	6800	(6900e	8600	8900e	138	35x5	Own..	6-4 1/16x5½	47.27	Stevens-Duryea....E	Strom	West	Berling	m-d Own	Own	m Own	F Own	3
			(5600g																
975	975	785g	.....	1225	1550	112	32x4	Own..	6-3½x4½	23.44	Studebaker....Light Six	Strom	Wagner	Wagner	s-p Own	Own	f Thermoid	½F Own	4
(1250	1275	1275e	1000g	1875	2050	119	32x4	Own..	6-3½x5	29.40	Studebaker..Special Six	Strom	Wagner	Wagner	s-p Own	Own	m Spicer	½F Own	4
(1275e				(2375															
1300g	1650	.....	1785	(2275	2475	126	33x4½	Own..	6-37⁄8x5	36.01	Studebaker....Big Six	Ball&B	Wagner	Wagner	s-p Own	Own	m Spicer	½F Own	3
2450	(2790c	(2640e	2670a	3490	4450	130	32x4½	Own..	4-4⅜x6	30.63	Stutz....KLDH	Strom	Remy	Delco	m-d Warner	Own	m Hartford	½F Own	3
	(3165e	(3015																	
2025	2125	2175e	.....	2650e	2785	118	32x4	Own..	4-3⅜x5½	18.23	Templar....A-445	Strom	Bijur	Simms	s-p B&B	Detroit	f Snead	½F Us	4
1175	1175	.....	.....	.....	.....	117	33x4	H-S..	4-3½x5	19.60	Tulsa....E-1-2-3	Zenith	Dyneto	Conn	s-p B&B	Muncie	m	F Sals	4
1275	1275	.....	1305	1795	1795	115	32x4	Own.	6-3⅛x4½	23.41	Velie....58	Strom	West	A-K	s-p Dooley	Durston	m Thiemer	¾F Own	4
.....	1785	.....	.....	.....	2285	120	32x4	Cont.	6-3¼x4½	25.35	Washington....6	.....	Bijur	Remy	s-p B&B	Warner	Arvac	¾F Col	4
.....	1900f	1890	.....	.....	2890	125	32x4½	Cont..	6-3½x5¼	29.40	Westcott....D-48	Rayfield	Delco	Delco	s-p B&B	B-L	m Peters	½F Tim	4
.....	1690	.....	1890	.....	2690	120	32x4	Cont..	6-3¼x4½	25.35	Westcott....B-44	Rayfield	Delco	Delco	s-p B&B	Warner	m Peters	½F Col	4
2475	2475	.....	.....	3275	3475	121	32x4½	Own.	8-3¼x4	33.80	Wills Sainte Claire..A-68	Zenith	Delco	Delco	m-d Own	Own	m Mech	¾F Own	4
1235	1235	1375	.....	1795	1950	118	32x4	Own.	4-3⅝x4½	21.03	Willys-Knight....20	Till	A-L	A-L	m-d Own	Own	f Own	¾F Own	4
.....	.....	1435	.....	.....	2195f	124	32x4½	Own.	4-3⅝x4½	21.03	Willys-Knight....27	Till	A-L	A-L	m-d Own	Own	f Own	¾F Own	4
3400	.....	3400	3600	4000	4550	132	33x5	Own.	6-3⅜x5¼	33.75	Winton....40	Rayfield	Delco	Delco	m-d Warner	Warner	f Climax	¾F Tim	6

MISCELLANEOUS
a—2 Passenger, d—5 Passenger
b—3 Passenger, e—6 Passenger,
c—4 Passenger, f—7 Passenger
g—Chassis Price.
h—All Metal Type.
k—Soft Top Type.
n—Tire Size 32x4½.
p—Sport.
r—Price without starter and demountable rims. Price, complete, $414.
s—Price without starter and demountable rims. Price, complete, $443.
†Standard Phaetons.

ENGINE
Anst—Ansted
Bea—Beaver
Cont—Continental
Dues—Duesenberg
H-S—Herschell-Spillman
Lyc—Lycoming
Supr—Supreme

CARBURETOR
Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg

STARTING, LIGHTING IGNITION
A-L—Auto Lite
G-D—Gray & Davis
L-N—Leece Neville
N. E.—North East
West—Westinghouse

CLUTCH
c—Cone
f-d—Friction drive
m-d—Multiple disc
s-p—Single plate
B & B—Borg & Beck
B-L—Brown-Lipe

GEARSET
f-d—Friction Drive
B-L—Brown-Lipe
G-L—Grant-Lees
Mech—Mechanics

UNIVERSAL
f—fabric
m—metal
M&B—Merchant & Evans
Mech—Mechanics

REAR AXLE
F—Floating
½ Floating—Semi Floating
¾F—Three-Quarter Floating
Col—Columbia
Sals—Salisbury
Std—Standard
Tim—Timken

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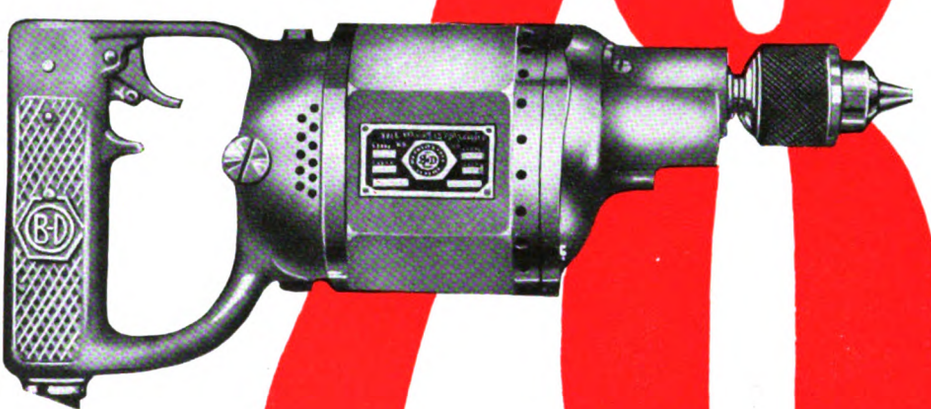
¼ inch PORTABLE ELECTRIC DRILL

"With the Pistol Grip and Trigger Switch"

Price reduced to

$28.00

was $39.00



Owing to the large demand for the Black & Decker Quarter-Inch Portable Electric Drill our production on this unit this year has been practically trebled. This has enabled us to reduce our manufacturing costs, and in accordance with our established policy we are passing the saving on to you.

This is the standard Black & Decker Quarter-Inch Drill, exactly the same as has previously been sold for $39 00 except that it has been improved by the addition of a geared-nut chuck instead of a hand operated chuck.

A new folder describing this unit in detail, INCLUDING SPECIFICATIONS, is yours for the asking

Guaranteed by

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Towson Heights, Baltimore, Md., U.S.A.

BRANCH OFFICES AND SERVICE STATIONS CARRYING COMPLETE STOCKS OF PARTS AND OPERATED BY FACTORY TRAINED MEN LOCATED IN

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NEW YORK	PHILADELPHIA	CHICAGO
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"The Well-Equipped Shop Gets the Business"



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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (N.A.C.C.)	NAME AND MODEL	Carburetor	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle: Type and Make	†Gear Ratios
$3985	$4090c	$4090	.....	$5500	$5500	132	33x5	Own..	8-3¼x5¼	33.80	LaFayette	Johnson	Delco	Delco	m-d Own	Own	m Own	F Own	4.88
5500	5500	5500	.....	5500	5500	134	32x4½	Own..	6-3¾x5½	33.75	Leach.....999	Rayfield	Delco	Delco	m-d	Own	m,f	Tim	
1695	(1695 (1995	(1795 (2095	$2045d	2345c	(2545d (2145d	123	32x4½	Anst..	6-3¼x4½	25.35	Lexington.....23	Rayfield	G-D	Conn	m-d Ansted	Warner	f Snead	¾F Own	5.16
1575	1395	.....	1575	(2085 (1695k	2245	117	32x4	Own..	6-3½x5	23.44	Liberty.....10-D	Strom	Wagner	Wagner	s-p B&B	Detroit	m Spicer	½F Tim	4.89
3800	3800c	3800	.....	4400d	4700d	136	33x5	Own..	8-3⅝x5	36.45	Lincoln	Strom	Delco	Delco	m-d Own	Own	m Spicer	F Tim	4.55
6800g	7600c	7600	.....	10500	11000	142	35x5	Own..	6-4½x5½	48.60	Locomobile.....Series 8	Ball&B	West	Delco	m-d Own	Own	m Own	F Own	3.50
3385	3185c	3185	.....	3985	4385	136	32x4½	Own..	6-3¾x5½	33.75	Marmon.....34	Strom	Delco	Delco	m-d Own	Own	m Spicer	¾F Own	3.75
885	885	.....	.....	(985 (1235	1335	109	31x4	Own..	4-3⅝x4½	21.03	Maxwell	Stewart	A-L	Simms	c Own	Own	.....	¾F Own	4.50
6300	6300c	6300	.....	7500	7500	140	33x5	Own..	6-4½x6	48.60	McFarlan.....1922	Rayfield	West	Splitdorf	s-p B&B	B-L	m Peters	F Tim	3.50
3950	3950c	3950e	.....	4850	5250	132	32x4½	Own..	4-3¾x6¾	22.50	Mercer.....Series 5	Ball&B	West	Eisemann	m-d Own	Own	m Spicer	F Own	3.57
.....	3750	3750	.....	5000	5000	132	32x4½	Own..	6-3¾x5	33.75	Mercer.....6	Strom	.....	Eisemann	.....	.....	.....	¾F	3.77
1895	1895	.....	.....	.....	.....	119	32x4	Cont..	6-3¼x4½	25.35	Merit	Strom	Delco	Delco	s-p B&B	Muncie	f Snead	F Col	4.66
1190b	1590	.....	1850c	2050c	2275d	120	32x4	Own..	6-3½x5	29.40	Mitchell.....F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4.42
.....	.....	1690	.....	.....	.....	127	32x4¼	Own..	6-3½x5	29.40	Mitchell.....F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4.42
950	950	.....	.....	.....	.....	115	32x4½	Own..	4-3¼x4½	16.90	Monroe.....1922-S-9	Zenith	A-L	Conn	m-d Own	Mech	m Universal	¾F Own	5.00
1295	1195	p1445d	1885c	1585c	1695	115	31x4	Cont..	6-3⅛x4½	23.44	Moon.....6-40	Strom	Delco	Delco	s-p B&B	Warner	m Spicer	½F Tim	4.80
1785	1785	1785	1895	2785	(2785f (2485c	128	33x4½	Cont..	6-3⅝x4½	27.34	Moon.....6-58	Strom	Delco	Delco	B&B	B-L	m Spicer	½F Tim	5.09
1210	1240	.....	1395c	.....	2040d	121	33x4	Own..	6-3¼x5	25.35	Nash.....691-96-97	Marvel	Delco	Delco	s-p B&B	Own	m Own	½F Own	4.50
.....	.....	1390	1615	1890c	2100f	127	34x4½	Own..	6-3¼x5	25.35	Nash.....692-94-95	Marvel	Delco	Delco	s-p B&B	Own	m Own	½F Own	4.50
915	935	.....	.....	(1385b (1195k	(1545d (1275k	112	33x4	Own..	4-3⅜x5	18.23	Nash Four.....41-4	Schebler	Delco	Delco	s-p B&B	Own	m Own	½F Own	4.88
2175b	2475c	(2375 (3150	.....	(3250c (3725c	3825f	130	32x4½	Own..	6-3½x5¼	29.40	National.....BB	Rayfield	West	Delco	s-p B&B	B-L	m Arvac	F Col	4.08
2500	2500c	2600c	.....	.....	3500d	128	32x4½	Cont..	6-3¼x4½	25.35	Noma.....3C	Claudel	Delco	Delco	s-p B&B	Detroit	m Spicer	½F Tim	4.45
2500	2500	.....	.....	.....	5500	128	33x5	Bea...	6-3½x5½	29.40	Noma.....1D	Zenith	Delco	Delco	s-p B&B	Detroit	f Spicer	½F Tim	4.45
.....	1035	.....	.....	.....	.....	116	32x3½	Lyc...	4-3½x5	19.60	Norwalk.....430-KS	Zenith	Dyneto	Delco	s-p B&B	G-L	m Universal	¾F Col	5.10
975	995	795g	1165c	(1445d (1185a	1545	115	32x4	Own..	6-2¹¹⁄₁₆x4¾	18.99	Oakland.....6-44	Marvel	Remy	Remy	c Own	Muncie	m Mech	F Own	4.33
3750c	3750	3850	3750c	4500c	4800f	134	33x5	Cont..	6-3⅝x5½	31.54	Ogren.....6 T D Luxe	Rayfield	Bosch	Bosch	m-d B-L	B-L	m	F Col	4.00
955	975	1350d	1075	1475	1595	115	32x4	Own..	4-3¹¹⁄₁₆x5½	21.86	Oldsmobile.....43 A	Zenith	A-L	Remy	s-p B&B	Warner	m Own	¾F Own	4.53
1735c	1850e	1735	.....	.....	.....	122	33x4½	Own..	8-2⅞x4½	26.45	Oldsmobile.....46	Ball&B	Delco	Delco	c Own	Warner	m Own	¾F Own	4.13
1625p	1375	.....	1675	1875	2025	115	32x4	Own..	8-2⅞x4½	26.45	Oldsmobile.....47	Johnson	Delco	Delco	s-p B&B	Warner	m Spicer	¾F Own	5.10
525	525	.....	425g	795	875	100	30x3½	Own..	4-3⅝x4	18.23	Overland.....4	Till	A-L	Conn	s-p B&B	Own	m Own	½F Own	4.50
2185	2185	2250g	.....	3175	3275	126	33x4½	Own..	6-3⅝x5	27.34	Packard.....Single-Six	Own	A-K	Delco	m-d Own	Own	f Spicer	½F Own	4.30
.....	2350g	2685	.....	.....	3525	133	33x4½	Own..	6-3⅝x5	27.34	Packard.....Single-Six	Own	A-K	Delco	m-d Own	Own	f Spicer	½F Own	4.66
3850	3850	3850	.....	5240	5400	136	35x5	Own..	12-3x 5	43.20	Packard.....Twin-Six	Own	Bijur	Delco	m-d Own	Own	m Spicer	½F Own	4.26
1165	1465	1290g	.....	1995	2245	119	32x4	Own..	6-3¼x5	25.35	Paige.....6-44	Strom	Remy	A-K	s-p Long	Own	m Universal	¾F Salis	4.25
2195b	.....	2195	2245	3100	3155	131	33x4½	Cont..	6-3⅜x5	33.75	Paige.....6-66	Rayfield	Remy	A-K	s-p Long	Warner	m Mech	¾F Tim	4.00
.....	1390	1425	.....	2395	2395	120	32x4½	Cont..	6-3⅝x4½	27.34	Paterson.....22-6-52	Strom	Delco	Delco	s-p B&B	Durston	m Hartford	½F Std	4.50
3300	2990e	2990	.....	3300a (3400c	(3990d (4090f	128	33x5	Own..	8-3¼x5	33.80	Peerless.....23	Ball&B	Delco	Delco	m-d Own	Own	M Spicer	¾F Tim	4.50
5250	5250c	5250	.....	6800	(6900 (700	138	33x5	Own..	6-4 x5½	38.40	Pierce-Arrow	Own	Delco	Delco	m-d Own	Own	m Spicer	½F Own	3.31
2050	2000	2050	.....	2950	3000	126	32x4½	H-S..	6-3¼x5	25.35	Pilot.....6-50	Till	Bijur	Conn	s-p B&B	Muncie	m Hartford	¾F Col	4.33
3150	3100c	3250	.....	4300	5100	126¾	32x4½	Own..	6-3⅜x5½	27.34	Premier.....6-D	Johnson	Delco	Delco	s-p B&B	Own	m Spicer	¾F	4.56
1095	1095	.....	.....	1750	1825	117	32x4	Falls..	6-3½x4¼	23.44	Premocar.....6-40-A	Strom	Wagner	Wagner	s-p B&B	Mech	m Spicer	¾F	4.66
.....	1665	.....	.....	2385	2475	116	32x4	Own..	4-3¾x5	22.50	R & V Knight.....R	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	F Salis	4.75
2475	2475c	2475	.....	3015	3105	127	32x4½	Own..	6-3½x4½	29.40	R & V Knight.....J	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	½F Tim	4.80
1595	1615	1485	1745	(2355c (1835	(2435f (1885	120	33x4	Own..	6-3⅛x5	24.34	Ree.....T6 & U6	Rayfield	N.E	N.E	m-d Own	Own	m,f Own	½F Own	4.70
3200	3200	3200	.....	.....	4000	131	32x4½	Ducs..	4-4½x6	28.90	ReVere.....C	Strom	West	Bosch	m-d B-L	B-L	m Spicer	¾F Std	4.00
.....	1485	.....	.....	1885	1985	117	32x4	Own..	6-3½x4¾	23.44	Rickenbacker.....A	Strom	Simms	A-K	c Own	Own	m Universal	¼F Own	
2685	2485c	2685	.....	3585	3585	128	32x4½	Cont..	6-3½x5½	29.40	Reamer.....6-54-E	Strom	Bijur	Bosch	s-p G-L	G-L	f Snead	½F Tim	4.33
3785	3485	3650c	3650c	.....	4650c	128	32x4½	Dues..	4-4¼x6	28.90	Reamer.....4-75-E	Strom	Bijur	Splitdorf	m-d B-L	B-L	f Snead	½F Tim	3.77
10900	10900	10950	.....	.....	(13150 (12900	143½	35x5	Own..	6-4½x4¾	48.60	Rolls-Royce	Own	Bijur	Bijur	c Own	Own	m Own	F Own	3.25
1195	1195	.....	.....	1795	1795	112	32x4	Own..	4-3½x5	19.60	Saxon.....125	Strom	Wagner	Wagner	s-p Detlaff	Covert	m Peters	¾F	4.75
1615	1615	.....	.....	2645	2645	118	33x4	Cont..	6-3¼x4½	25.35	Sayers Six.....DP	Strom	Delco	Delco	s-p B&B	G-L	m Arvac	½F Std	4.75
875	875	.....	.....	.....	.....	108	30x3½	Lyc...	4-3½x5	19.60	Seneca.....L-2 & O-2	Zenith	A-L	A-L	s-p B&B	G-L	m Universal	F	4.75
1095	1095	.....	.....	.....	.....	112	31x4	Lyc...	4-3½x5	19.60	Seneca.....50 & 51	Zenith	A-L	A-L	s-p B&B	G-L	Detroit	F	4.50
980	980	.....	.....	1685	1685	114	32x4	Supr..	4-3⅝x5	18.23	Sperling.....A	Zenith	Bijur	Splitdorf	s-p B&B	Warner	m Hartford	¾F Pere	
2150	.....	2395	2395	2750	3200	127	34x4½	Own..	8-3½x5	33.80	Standard.....98	Zenith	West	Splitdorf	s-p B&B	G-L	m Arvac	½F Tim	4.45
2750	2750	2750	2425g	3950c	3985f	130	32x4½	Own..	2-4 x5	.....	Stanley.....740	None	Bijur	None	None	None	None	½F Own	4.50
1765	1765	.....	.....	2750	.....	118	33x4	Cont..	6-3¼x4½	25.35	Stanwood Six	Strom	West	A-K	s-p B&B	G-L	m Peters	½F Std	4.50
319r	348s	285g	.....	580	645	102	30x3½	Cont..	4-3¼x4¼	15.63	Star	Till	A-L	A-L	s-p	.....	Spicer	Tim	4.67
2250	2250	2450	.....	3150	3450	125	34x4½	Own..	4-3⅜x5⅝	22.50	Stearns-Knight.....SKL4	Rayfield	West	A-K	m-d Own	Own	f Climax	½F Own	4.50
2700	2700	2850	.....	3500	3700	130	34x4½	Own..	6-3⅜x5	27.34	Stearns-Knight.....6	Rayfield	West	A-K	m-d Own	Own	f Climax	½F Own	4.50
1575	1565c	1625c	.....	2450	2550	122	33x4½	Own..	6-3¼x4½	25.35	Stephens.....90	Till	A-L	A-L	s-p B&B	Mech	m Mech	½F Tim	4.00
7250	6900e	6800	(6900c (5600g	8600	8900e	138	35x5	Own..	6-4⅞x5½	47.27	Stevens-Duryea.....E	Strom	West	Berling	m-d Own	Own	m Own	F Own	3.14
975	975	785g	.....	1225	1550	112	32x4	Own..	6-3⅛x4½	23.44	Studebaker....Light Six	Strom	Wagner	Wagner	s-p Own	Own	f Thermoid	½F Own	4.85
(1250 (1275c	1275	1275c	1000g	1875 (2375	2050	119	32x4	Own..	6-3½x5	29.40	Studebaker..Special Six	Strom	Wagner	Wagner	s-p Own	Own	m Spicer	½F Own	4.60
1300g	1650	.....	1785	2275	2475	126	33x4½	Own..	6-3⅞x5	36.04	Studebaker.....Big Six	Ball&B	Wagner	Wagner	s-p Own	Own	m Spicer	½F Own	3.70
2450	(2790c (3165c	(2640c (3015	2670a	3490	4450	130	32x4½	Own..	4-4⅜x6	30.63	Stutz.....KLDH	Strom	Remy	Delco	m-d Warner	Own	m Hartford	½F Own	3.50
2025	2125	2175c	.....	2650c	2785	118	32x4	Own..	4-3⅜x5½	18.23	Templar.....A-445	Strom	Bijur	Simms	s-p B&B	Detroit	f Snead	¼F Us	4.40
1175	1175	.....	.....	.....	.....	117	33x4	H-S..	4-3½x5	19.60	Tulsa.....E-1-2-3	Zenith	Dyneto	Conn	s-p B&B	Muncie	m	F Salis	4.80
1275	1275	.....	1305	1795	1795	115	32x4	Own..	6-3⅛x4½	23.44	Volie.....58	Strom	West	A-K	s-p Dooley	Durston	m Thiemer	¾F Own	4.66
.....	1785	.....	.....	.....	2285	120	32x4	Cont..	6-3¼x4½	25.35	Washington.....6	.....	Bijur	Remy	s-p B&B	Warner	Arvac	¾F Col	4.67
.....	1990f	1890	.....	.....	2890	125	32x4½	Cont..	6-3½x5¼	29.40	Westcott.....D-48	Rayfield	Delco	Delco	s-p B&B	B-L	m Peters	¼F Tim	4.45
.....	1690	.....	1890	.....	2690	120	32x4	Cont..	6-3¼x4½	25.35	Westcott.....B-44	Rayfield	Delco	Delco	s-p B&B	Warner	m Peters	½F Col	4.33
2475	2475	.....	.....	3275	3475	121	32x4½	Own..	8-3¼x4	33.80	Wills Sainte Claire..A-68	Zenith	Delco	Delco	m-d Own	Own	m Mech	¾F Own	4.45
1235	1235	1375	.....	1795	1950	118	32x4	Own..	4-3⅝x4¼	21.03	Willys-Knight.....20	Till	A-L	A-L	m-d Own	Own	f Own	¾F Own	4.44
.....	.....	1435	.....	.....	2195f	124	32x4½	Own..	4-3⅝x4½	21.03	Willys-Knight.....27	Till	A-L	A-L	m-d Own	Own	f Own	¾E Own	5.12
3400	.....	3400	3600	4000	4550	132	33x5	Own..	6-3⅜x5½	33.75	Winton.....40	Rayfield	Delco	Delco	m-d Warner	Warner	f Climax	¾F Tim	4.66

MISCELLANEOUS
a—2 Passenger, d—5 Passenger
b—3 Passenger, e—6 Passenger,
c—4 Passenger, f—7 Passenger
g—Chassis Price.
h—All Metal Type.
k—Soft Top Type.
n—Tire Size 32x4½.
p—Sport.
r—Price without starter and demountable rims. Price, complete, $414.
s—Price without starter and demountable rims. Price, complete, $443.
†Standard Phaetons.

ENGINE
Anst—Ansted
Bea—Beaver
Cont—Continental
Dues—Duesenberg
H-S—Herschell-Spillman
Lyc—Lycoming
Supr—Supreme

CARBURETOR
Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg

STARTING, LIGHTING IGNITION
A-L—Auto Lite
G-D—Gray & Davis
L-N—Leece Neville
N. E.—North East
West—Westinghouse

CLUTCH
c—Cone
f-d—Friction drive
m-d—Multiple disc
s-p—Single plate
B & B—Borg & Beck
B-L—Brown-Lipe

GEARSET
f-d—Friction Drive
B-L—Brown-Lipe
G-L—Grant-Lees
Mech—Mechanics

UNIVERSAL
f—fabric
m—metal
M&E—Merchant & Evans
Mech—Mechanics

REAR AXLE
F—Floating
½ Floating—Semi-Floating
¾ F—Three-Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
Tim—Timken

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BLACK & DECKER

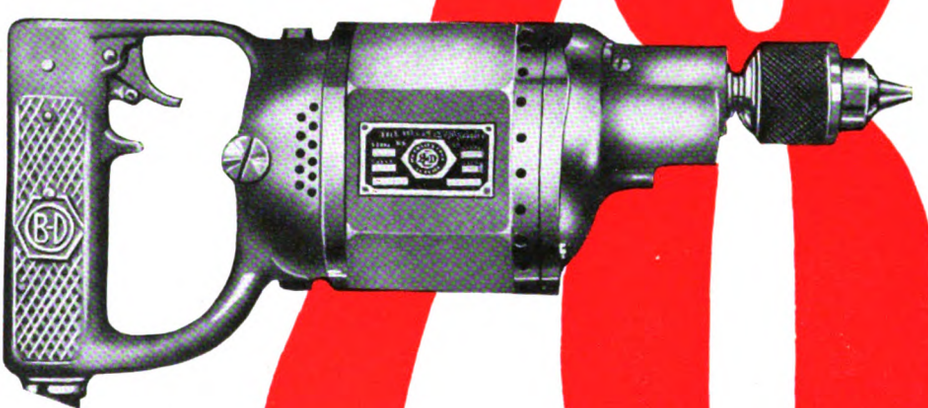
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This is the standard Black & Decker Quarter-Inch Drill, exactly the same as has previously been sold for $39 00 except that it has been improved by the addition of a geared-nut chuck instead of a hand operated chuck.

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BRANCH OFFICES AND SERVICE STATIONS CARRYING COMPLETE STOCKS OF PARTS AND OPERATED BY FACTORY TRAINED MEN LOCATED IN

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NEW YORK	PHILADELPHIA	CHICAGO
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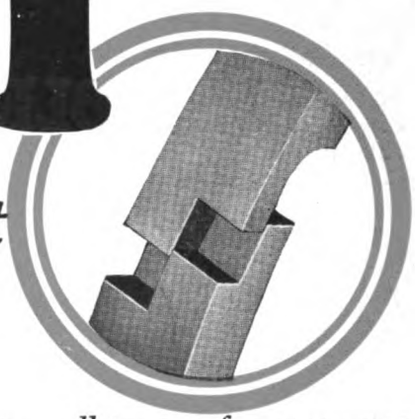


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Gill

Interlocking-Joint

75c



One famous line of piston rings—*all* types—for *every* need.

Gill Interlocking-Joint rings dominate among patented piston rings because of their excellence. Servus Step-Cut rings and the Special Oil-Wiper are equally well made.

All three rings are individually cast of special grey iron that wears longer and holds full tension to the very end. All three rings are lathe turned for absolute precision and quick seating.

These rings serve motorists better. 36 factory branches serve dealers and jobbers better. All sizes and types are carried for immediate delivery. The right rings and the right policy for building business.



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Sole Canadian Distributor—Canadian General Electric Company, Limited
Export—American Steel Export Co., Woolworth Building, New York City

Special

Oil-Wiper

50c



Servus

Step-Cut 40c

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MOTOR WORLD

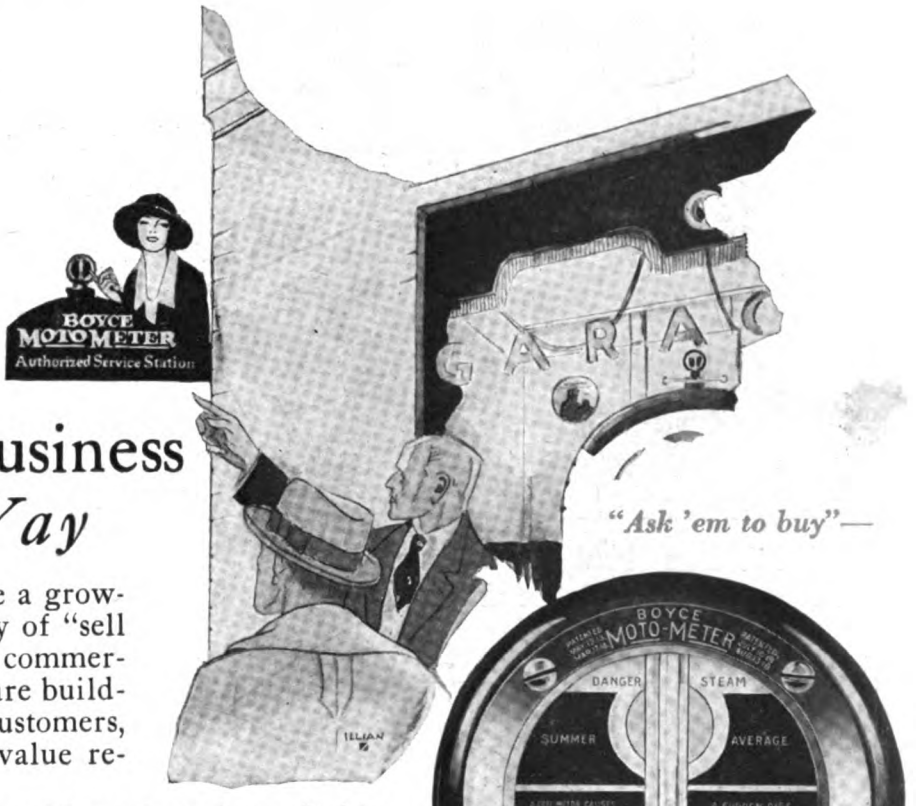
for

DEALERS, JOBBERS AND GARAGEMEN

Volume LXXIII
Number 11

PUBLISHED WEEKLY AT 239 WEST 39th STREET
NEW YORK, DECEMBER 13, 1922

Thirty-five cents a copy
Three dollars a year



Building Better Business
—*the Boyce Way*

A "going" business must be a growing business. Today a policy of "sell 'em once, at any cost," spells commercial ruin. Successful dealers are building on a basis of regular customers, regularly satisfied—through value received and service.

That is why the Boyce Moto-Meter is such profitable business. It gives more value for less money than any other automobile accessory. It gives the car owner constant, reliable service in accurately indicating his motor temperature.

The Boyce Moto-Meter dealer sells more than an article—he sells a definite service that pays him big interest in consumer *confidence* and *good-will.*

We are broadening the scope of Boyce Service through the Boyce Moto-Meter Service Station Appointment, available to all responsible dealers. Write us for details of the new plan.

"Ask 'em to buy"—



BOYCE MOTOMETER

The Motorists' Choice—The Accurate Boyce

"Your car deserves one"

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Car Name-plates Furnished Free with the Bumpers You Buy

Stewart Autoguards *to* Advertise the Car You Sell

Model 175



$22
Western Price $25



Double Rail Clamp

AN entirely new idea which is meeting with great favor. A car name-plate furnished absolutely free with every bumper you buy. The Stewart Autoguard center clamp is now made so that the Stewart name-plate can be taken out by loosening two screws and be replaced by the name-plate of the car you sell.



Car Name-plate Inserted

The car name appears in nickel against a brilliant red background. Let Stewart Autoguards advertise and protect the cars you sell.

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Cadillac	Essex	Maxwell	Rickenbacker
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Chandler	Haynes	Nash	Stephens
Chevrolet FB and 490	Hudson	National	Studebaker
Cleveland	Hupmobile	Oakland	Stutz
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Dodge	Liberty	Packard	Wills Ste. Claire
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Model 158



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$11 to $18
Increase In Western Prices

Stewart

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DEALERS, JOBBERS AND GARAGEMEN
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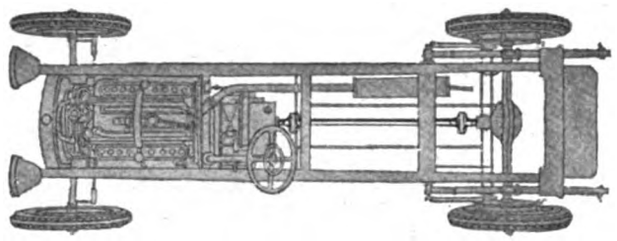
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A Neglected Part and a Dealer's Opportunity

The most conscientious car owner rarely, if ever, lubricates a metal to metal universal joint. Hard to get at, harder to lubricate, in a housing, this vital and busy joint is invariably neglected. And in time this neglect shows up in shaft, rear axle, transmission or clutch trouble.

GOODRICH FLEXIBLE DISC UNIVERSAL JOINTS completely eliminate joint and allied troubles by removing the fundamental cause—metal to metal surfaces. Ends of shafts permanently bolted to discs of fabric and rubber—that is the better way.

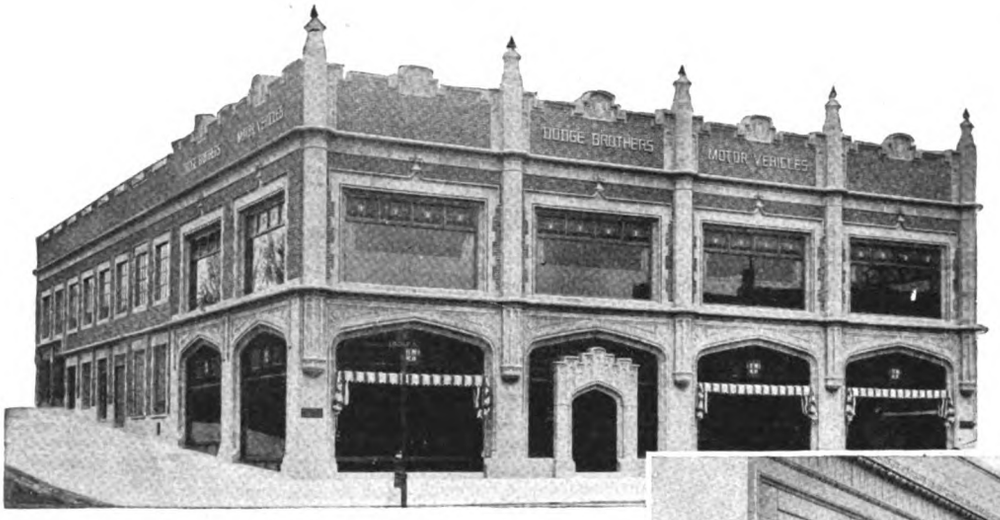
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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXIII New York, U. S. A., Wednesday, December 13, 1922 No. 11

It's a Good Plan to Look for the Mistletoe



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Making the Service Station an Equipment Salesman

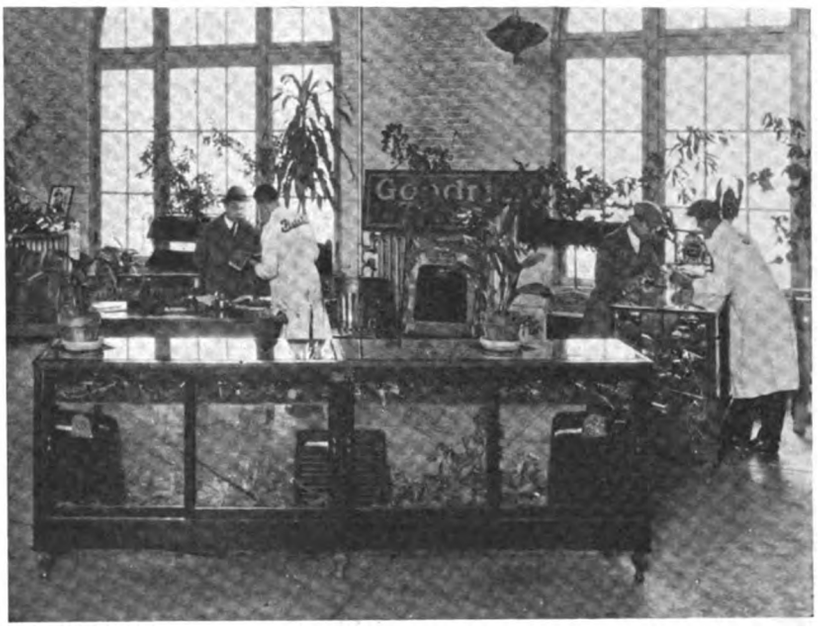
No Excuse for Letting Accessory Profits Go Astray—A St. Louis Dealer Doesn't

By NEAL G. ADAIR

EVERYBODY makes profits off the man who owns an automobile except—we sometimes think—the man who sells it to him.

The roadside filling station or garage sells the motorist gas and oil. The tire station replaces his worn out shoes and tubes. The accessory store induces him to buy windshield wings and stoplights and many other items of additional or replacement equipment.

The automobile dealer sells the motorist his car. Perhaps the dealer over-allows on a used car taken in trade and has no actual profit on the transaction. Possibly he makes a clean sale or a wise trade and makes real money on the new car. In either case, if he is like a good many dealers who might be mentioned, he regards himself as "through" with that car when he has sold it, except that an aggressive dealer will follow it up for service and re-sale.



While maintenance customers wait for their cars in the Vesper-Buick service station in St. Louis service salesmen try to interest them in automotive equipment purchases. It looks as though one customer is going to buy a set of seat covers and the other a spotlight. Not every dealer has so large a service station as Vesper-Buick but every dealer has some sort of place where his customers wait and where accessories could be displayed and sold by repairshop attendants

But a good many other dealers who might also be mentioned are never "through" with a car until it goes to the junk heap. They follow it up not merely for service and re-sale but to provide its owner with all the supplies and equipment he requires as long as he runs the car. They cater not only to the market for cars but to the after market that surrounds every car in operation—and they make additional profits by the additional catering.

There are thousands of passenger car dealers, though perhaps not so many as a year or two ago, who don't want to be "bothered" with accessory and tire sales. They regard themselves as automobile merchandising specialists. It's a high sounding name and there wasn't much ground for criticising it when there weren't quite enough automobiles to go around. Now that competition has reached an acute stage, however, and is getting keener every month, the automobile dealer finds it increasingly difficult to make satisfactory profits out of the car business alone. He feels the need of additional sources of profit, and one that is ready and waiting for him is the after market created by the operation of the very cars he sells.

The automobile dealer has a natural contact with the people who buy his cars. He is the logical source of supply for the many items of replacement and additional equipment, some of which every car must have while others, because they improve its operation, can be sold by progressive merchandising effort. But many dealers, because of topheavy dignity or indifference, have let the supply and equipment business drift out of their hands. Some of it has gone to the garageman, where some of it belongs because he, too, has a natural contact with the motorist and the automotive knowledge to serve him adequately. But some of it has gone to the department store, the hardware store, the druggist and the grocer, none of whom can serve the car owner as economically or as well as the automotive man.

Only a few days ago the editorial representative of a business paper in the drug trade called at the office of Motor World asking for suggestions for the druggist to make winter profits by serving the needs and wants of the motorist. Yet many dealers and garagemen, with supply and equipment prospects coming to their doors every day, overlook this fertile field of profit.

If any passenger car dealer thinks there is no precedent for substantially profitable attention to equipment merchandising let him look about him, even about his own town, and he will find examples of dealer activity that make his presumption ridiculous. It would be possible

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here to mention scores of automobile dealers, large and small, who have highly profitable equipment departments, but a few examples will prove the point.

Take New York, largest city in the world. Stratton-Bliss, dealer in Dodge Brothers cars and trucks, sells accessories at every point of contact with the customer. The new car salesman is the first actor in this profitable drama. He usually sells $50 or more in additional equipment with the car. Second in order of appearance is the man in the delivery department who turns the car over to the buyer; he sells some items that the car salesman "overlooked," having received a copy of the salesman's accessory order as a guide. The courtesy man in the service station, the parts clerk, service station cashiers and other employees who come in contact with customers are also accessory salesmen. They get a commission on all sales and the service station and office managers, who oversee and promote this selling work, also share in the profits. No wonder Stratton-Bliss equipment sales run into many thousands of dollars a year.

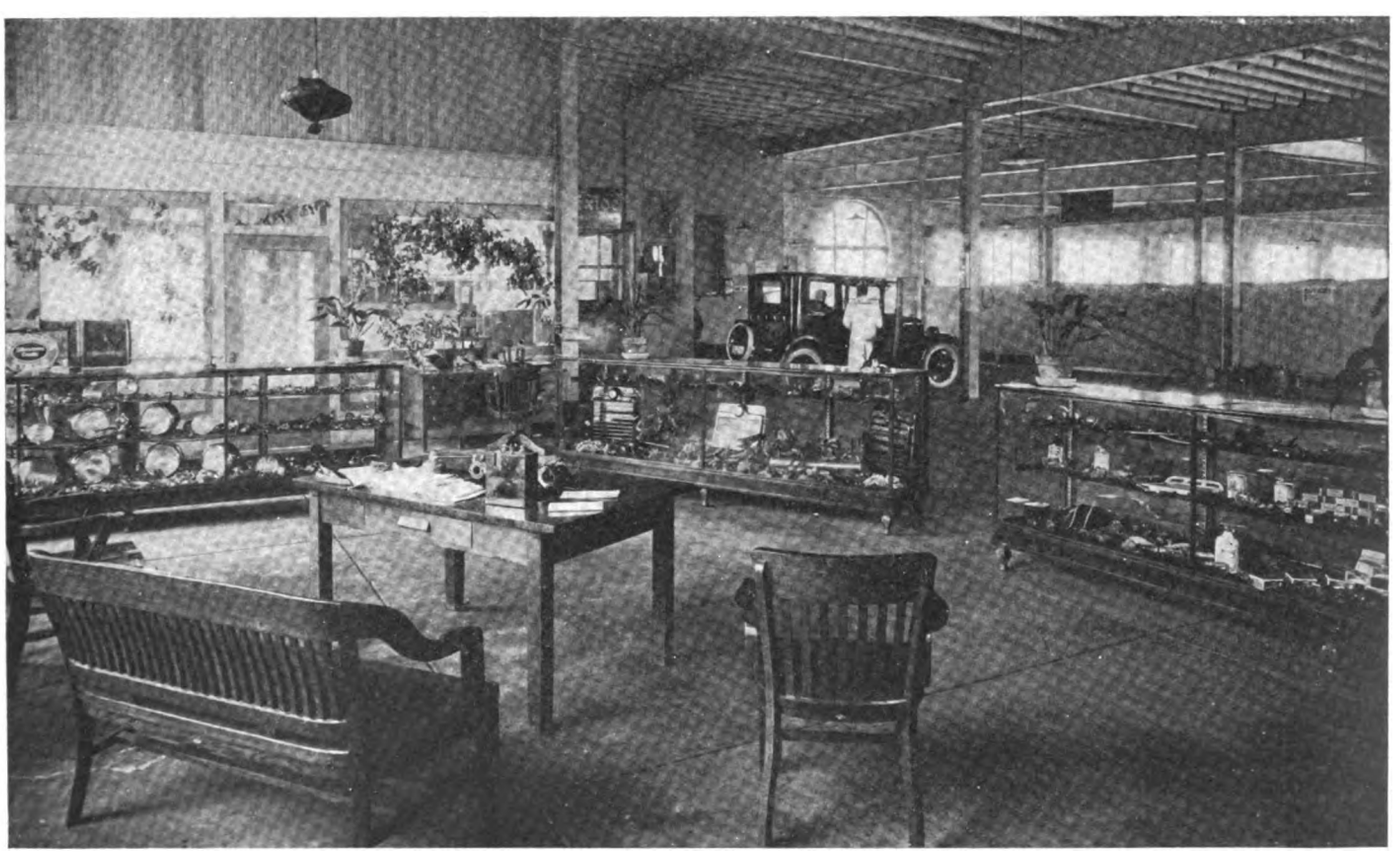
Take Higginsville, Mo., 3000 population. A. E. Fieth, Nash, Dort and International truck dealer, has a repair-shop and sells accessories and tires. His office is his accessory store. Every customer gets into that room sooner or later, and the most noticeable thing in it is a showcase displaying accessory items. If a customer is paying a bill or making an inquiry, Fieth or his clerk don't hurry with their end of the transaction. They give the customer time to get a good look at the contents of the showcase. If he shows interest in anything displayed, Fieth explains its use and often makes a sale. There is no persistent effort to sell accessories to every customer, but no visitor goes away without having seen them, and in many cases sales become just a matter of accommodating a latent desire to buy.

Go back to a bigger town, Kansas City. Hudson-Brace has accessories in the service office and waiting room. A card is kept on every service patron's car, showing what items of high-class utility equipment it ought to have. At opportune times, while service work is being ordered, waited for or paid for, the service clerk mentions some of these equipment articles especially adapted to the car in question, and many sales are made on the basis of additional service to the Hudson or Essex car owner.

Now, go to another Missouri city, St. Louis. Vesper-Buick Auto Co. is one of the country's big Buick distributors. Its annual turnover of Buick cars at wholesale and retail is a huge business in itself. Vesper-Buick sells cars at retail on the foundation of satisfactory operation of its cars already in the hands of owners. A well-equipped service station, called by Vesper-Buick its maintenance division, is largely responsible for this foundation of sales. One might think Vesper-Buick had enough to do selling and servicing Buick cars without getting into the automotive equipment business. But Vesper-Buick saw the additional profit to be made in accessories simultaneous with additional service to its customers and the opening of an accessory store in the service station followed.

The store is nothing more than a grouping of service customers' rest chairs and accessory showcases. In planning this arrangement John O. Lowell, service manager,

Where Accessories Are Shown and Sold in St. Louis Service Station



This is a corner of the maintenance division of Vesper-Buick, where automotive equipment merchandise is attractively displayed before the eyes of waiting service patrons. A customer occupying one of the chairs can hardly look in any direction without seeing accessories that might improve the appearance, comfort or utility of his car. After the customer has been looking the accessories over for awhile a service salesman will ask him to buy

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had in mind the fact that many cars brought in for minor adjustments would be driven back into the shop, leaving the owner to shift for himself until the car was ready.

Three or four comfortable chairs and a bench or two, placed so they would face the showcases, were provided for the comfort of these customers, with the result that the owner who was waiting for a small job to be finished on his car was asked to buy through the suggestions offered by the showcase displays.

These accessory showcases are redecorated frequently. The accessory department as a whole is kept in line with the seasons, holidays and current events.

This not only attracts considerable attention, but creates the impression in the owner's mind that the organization is alert to what is going on outside of the automobile world, with the resultant thought that the owner is dealing with a "live one."

Service Salesmen Sell Equipment

The service salesmen, who are also accessory salesmen, are impressed with the importance of giving each caller more courteous and intelligent service than was ever given before, endeavoring to develop the friendly and personal side of service to the trade.

Without interfering with the service work, these salesmen are instructed to push the sale of seasonable accessories vigorously at all times. One of these boys set for himself a quota of one Winterfront automatic radiator shutter a day from Oct. 15 until Christmas. So far he has kept up his record in good shape, averaging five or six each week, and frequently running higher.

With the coming of the fall and winter months, such accessories as chains, windshield wipers, hood covers, Moto-Meters, etc., are given prominent display space, and their sale is pushed. A steel drum of alcohol is placed on display early in the winter and is kept constantly in sight during the cold weather. Customers are reminded that broken cylinder blocks, frozen radiators and water pumps and other damage from frozen water can be avoided by the use of an anti-freeze solution.

Letters Push Accessory Sales

But Vesper-Buick does not rest with merely selling automotive equipment *in* the service station. The company employs advertising and the mails to *bring in* accessory customers.

Below is a letter that introduced the new department to Buick owners:

There has been added to our Maintenance Division an Equipment, or what is more commonly known as an Accessory Department.

In same we will carry all sorts of accessories for Buick cars, such as bumpers, Moto-Meters, parking and stoplights, mirrors, tires, tubes, etc.

On your next visit to the Maintenance Division, stop over a few minutes and look over our display, and some time when you find need for any article of equipment for your car, we would appreciate the opportunity of supplying you. If some article other than usually carried in stock should be desired, we will get it for you.

The next letter confined itself to one item, sunshades:

We have on hand some very serviceable sunshades, which we believe will interest you. The construction of this shade is the very best, and you no doubt appreciate the advantage of having a sunshade on your car. They are restful to the eyes while driving in the bright sunshine and on the country roads at night, when glaring headlights make driving both inconvenient and hazardous. We are installing same for $16 in either amber or green glass.

We ask on your next visit to our Service Station we be allowed to show you both kinds.

Another letter talked only about spotlights:

When driving along country roads at night, you have, no doubt, been annoyed by the "other fellow's" bright headlights blinding you and also causing you apprehension as to whether you are going to drive off the road.

We have on hand an assortment of spotlights, which we believe will prove satisfactory to you in eliminating this danger by showing you the edge of the road.

In order to get you better acquainted with our Equipment Department we are, for the next few days, selling these lights at a substantial saving to you and are making no installation charge.

We ask that on your next visit to our Service Station we be allowed to show you the lights we have on hand.

Still another letter told the story of the wind deflector:

We now have on hand some very well constructed wind deflectors, which we believe would both add to the appearance of your car as well as driving comfort, that sell for $9. We are wondering whether you would be interested in talking about the installation of a pair on your next visit to the Maintenance Division.

A fifth letter introduced a member of the "spare" family that many motorists never think of until troubles compel them—the fan belt:

You carry on your Buick car a spare tire, in order to eliminate the necessity of repairing the tire on the road and to eliminate chances of ruining other tires.

We are wondering whether the thought occurred to you as to the advisability of carrying a spare fan belt. The same condition holds true on the fan belt as the spare tire. Without a fan belt you always take a chance on injuring your motor, so when you need one you need it very badly and they are not always available.

We sell Buick fan belts, the correct kind for your model, for 66 cents.

On your next visit to our Service Station let us supply you with this essential spare.

Why Overlook Logical Profits?

There have been other accessory sales letters going out from Vesper-Buick; there will be still others. On a par with car sales and car service the automotive equipment department will stand on its own feet and earn its own way in this automotive establishment.

Isn't there a suggestion in this St. Louis story, in many other stories that could be written from many other cities, about the profit possibilities in automotive equipment merchandising? *The need of the day is for well-rounded-out automotive sales and service facilities in every dealer establishment. And the dealer who rounds out his facilities also rounds out his profits.*

This is the way Vesper-Buick looks at it:

"While Buick automobiles, when ready for delivery, are complete so far as the necessary accessories are concerned, there are many owners of both new and old cars who like to dress up their cars, or put on additional accessories. The installation of our accessory department has enabled us to supply our customers with everything they want along this line, and the customer is able to have his car properly serviced and maintained, and purchase his supplies and accessories all at one source."

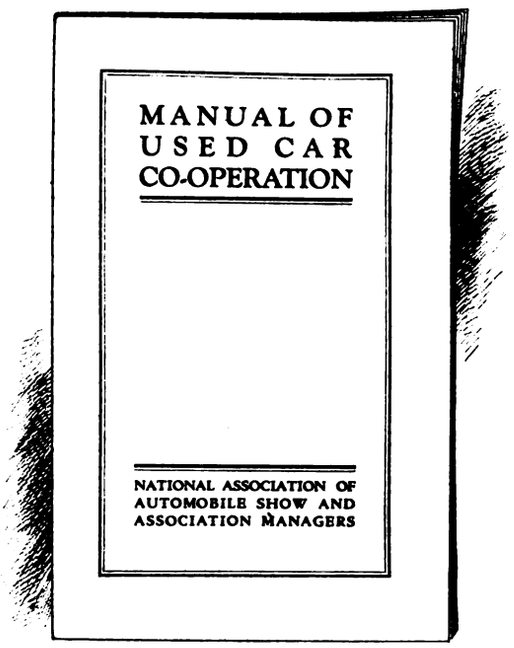
Cultivate the After Market

The hardware merchant doesn't sell you a kitchen range and then expect you to go somewhere else for a coal scuttle. He makes an additional profit on the additional sale. The automobile dealer sells the most expensive single unit, except a house, that the average family ever buys. It is a piece of merchandise on which money will be spent for fittings as well as repairs throughout its life. The automobile dealer who caters to the after market as well as the original market for his cars is laying the foundation for a substantial future.

And the fine part of it all is, it's so easy.

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BOSTON automobile dealers state that they have saved themselves $400,000 since February 1st by co-operating in the valuing of used cars. In many other cities similar co-operation and similar saving is going on. The movement was given impetus by the first National Used Car Conference in history, held in Chicago in September. This conference analyzed the essentials of virtually all the used car plans in operation. On the basis of the analysis a committee of the National Association of Automobile Show and Association Managers, which held the conference, has compiled a Manual of Used Car Co-operation. The cover of this 16-page book is shown at the right. The book and the plan of distributing it are described in the story on this page and forms from the book are illustrated on the next two pages.



Manual of Used Car Co-operation Ready

Book Compiled by National Association Is Being Distributed

THE Manual of Used Car operation, compiled by the National Association of Automobile Show and Association Managers, has come from the presses and is being distributed to trade association secretaries and dealers who have applied for copies. Several hundred copies already are in the mails and others are being sent out as rapidly as orders for them are received.

Distribution is being handled from the association offices at 239 West 39th Street, New York. The book is sent out to any applicant on receipt of $2, a price fixed to cover costs of compilation and distribution.

The book contains a plan, with forms and instructions for using them, which can be used by any dealer association or group of dealers desiring to co-operate to eliminate over-allowances on used cars.

Basic forms in the book are a Used Car Market Report and a Report of Used Cars on Hand, the former serving as a guide to correct allowance prices and the latter giving information on slow and fast moving cars in the community. Supplementary forms are provided for the use of the used car committee or secretary in obtaining from individual dealers and compiling the information contained in the first two mentioned forms. The book also presents the machinery of organization of a maximum allowance plan.

The Manual is the concrete result of the National Used Car Conference, held in Chicago in September. At that conference it was brought out that Boston, Saginaw and a few other cities were operating maximum allowance plans and that Chicago, Cleveland, Detroit, Kansas City and some others had used car market information services which guided dealers in making allowances. Since the meeting and as a result of the publicity given the co-operative movement, a large number of additional cities have adopted either maximum allowance or market information services, the maximum allowance co-operators including Philadelphia, Baltimore, Syracuse, Newark, N. J., and several other large cities.

The trade association secretaries at the conference felt that a service could be done the industry by publishing a plan for used car co-operation which would take the best out of the slightly different plans in use in various cities and make the information available for dealers and dealer association secretaries throughout the country. The committee which compiled the Manual consisted of Herbert Buckman, manager of the Cleveland Automobile Manufacturers and Dealers Association; L. B. Sanders, secretary of the Boston Used Car Statistical Bureau, and Neal G. Adair, editor of Motor World and executive secretary of the National Association of Automobile Show and Association Managers. This committee, after meetings in New York and Chicago, compiled the Manual which is now being distributed.

In the introduction of the forms in the Manual, the committee says:

"It is possible for dealers to make profits in the handling of used cars. The first step is applied knowledge of used car market values.

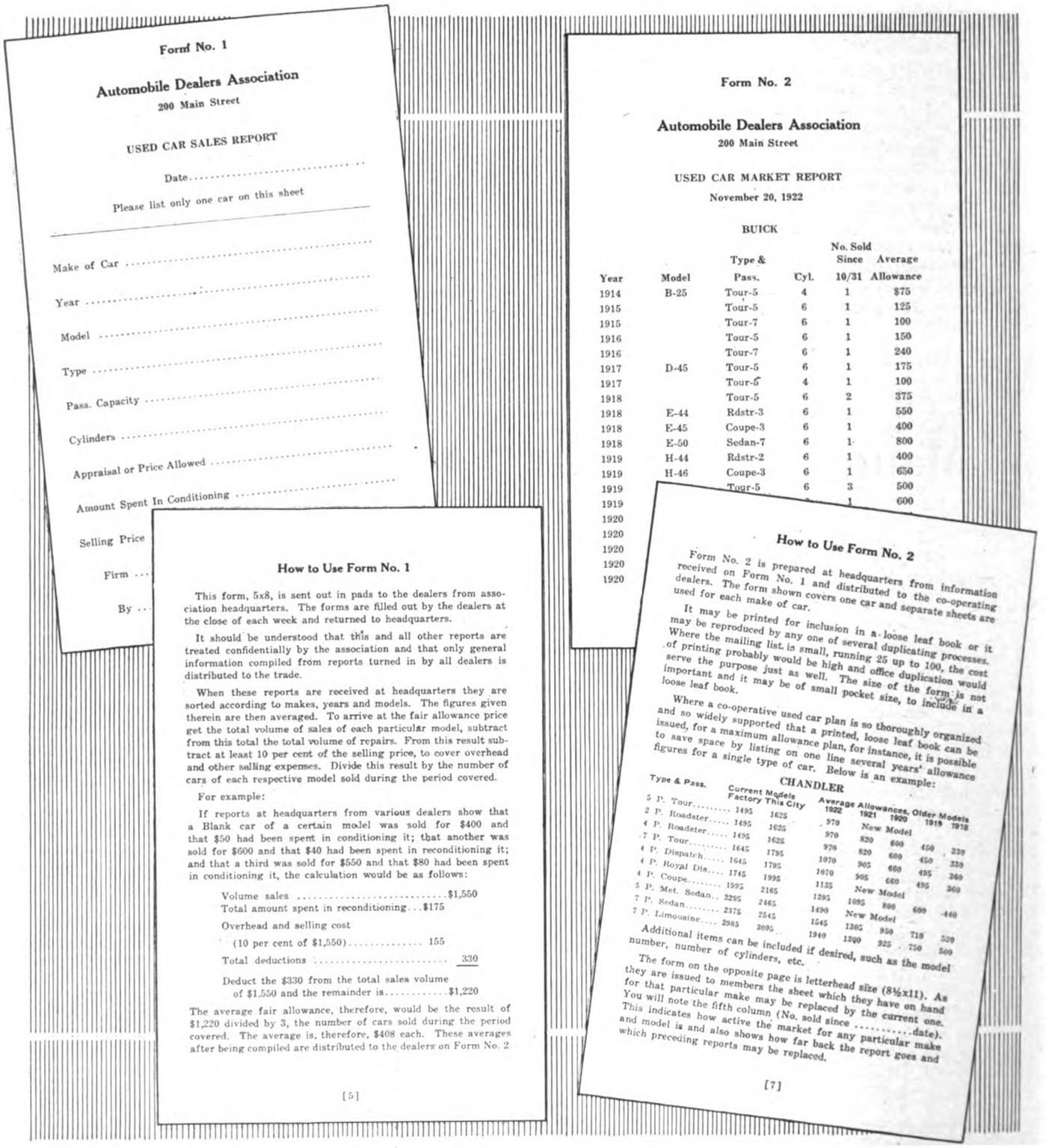
"This manual shows how to take this first step. It is not a modern panacea for the problem that comprises within itself 75 per cent of all the misunderstandings within the automobile industry to-day. It presents, however a method of determining used car values as a basis for businesslike used car merchandising.

"The plan herein presented is not going to tear down and reconstruct in two weeks what the industry has been 20 years in building. However, the used car has taken such an important place in our volume of business, its true value as a commodity must be established.

"Some dealers, individually and in co-operation with others of their own community, have succeeded in reducing losses on cars taken in trade. The first step.

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Taking the Guesswork Out of Used Car Allowances



Form No. 1

Automobile Dealers Association
200 Main Street

USED CAR SALES REPORT

Date.....

Please list only one car on this sheet

Make of Car .....
Year .....
Model .....
Type .....
Pass. Capacity .....
Cylinders .....
Appraisal or Price Allowed .....
Amount Spent In Conditioning .....
Selling Price
Firm ...
By ...

How to Use Form No. 1

This form, 5x8, is sent out in pads to the dealers from association headquarters. The forms are filled out by the dealers at the close of each week and returned to headquarters.

It should be understood that this and all other reports are treated confidentially by the association and that only general information compiled from reports turned in by all dealers is distributed to the trade.

When these reports are received at headquarters they are sorted according to makes, years and models. The figures given therein are then averaged. To arrive at the fair allowance price get the total volume of sales of each particular model, subtract from this total the total volume of repairs. From this result subtract at least 10 per cent of the selling price, to cover overhead and other selling expenses. Divide this result by the number of cars of each respective model sold during the period covered.

For example:

If reports at headquarters from various dealers show that a Blank car of a certain model was sold for $400 and that $50 had been spent in conditioning it; that another was sold for $600 and that $40 had been spent in reconditioning it; and that a third was sold for $550 and that $80 had been spent in conditioning it, the calculation would be as follows:

Volume sales	$1,550
Total amount spent in reconditioning	$175
Overhead and selling cost (10 per cent of $1,550)	155
Total deductions	330
Deduct the $330 from the total sales volume of $1,550 and the remainder is	$1,220

The average fair allowance, therefore, would be the result of $1,220 divided by 3, the number of cars sold during the period covered. The average is, therefore, $408 each. These averages after being compiled are distributed to the dealers on Form No. 2

[5]

Form No. 2

Automobile Dealers Association
200 Main Street

USED CAR MARKET REPORT
November 20, 1922

BUICK

Year	Model	Type & Pass.	Cyl.	No. Sold Since 10/31	Average Allowance
1914	B-25	Tour-5	4	1	$75
1915		Tour-5	6	1	125
1915		Tour-7	6	1	100
1916		Tour-5	6	1	150
1916		Tour-7	6	1	240
1917	D-45	Tour-5	6	1	175
1917		Tour-5	4	1	100
1918		Tour-5	6	2	375
1918	E-44	Rdstr-3	6	1	550
1918	E-45	Coupe-3	6	1	400
1918	E-50	Sedan-7	6	1	800
1919	H-44	Rdstr-2	6	1	400
1919	H-46	Coupe-3	6	1	650
1919		Tour-5	6	3	500
1919				1	600
1920					
1920					
1920					
1920					

How to Use Form No. 2

Form No. 2 is prepared at headquarters from information received on Form No. 1 and distributed to the co-operating dealers. The form shown covers one car and separate sheets are used for each make of car.

It may be printed for inclusion in a loose leaf book or it may be reproduced by any one of several duplicating processes. Where the mailing list is small, running 25 up to 100, the cost of printing probably would be high and office duplication would serve the purpose just as well. The size of the form is not important and it may be of small pocket size, to include in a loose leaf book.

Where a co-operative used car plan is so thoroughly organized and so widely supported that a printed, loose leaf book can be issued, for a maximum allowance plan, for instance, it is possible to save space by listing on one line several years' allowance figures for a single type of car. Below is an example:

CHANDLER

Type & Pass.	Current Models Factory	This City	Average Allowances, Older Models 1922	1921	1920	1919	1918
5 P. Tour	1495	1625	970	New Model			
2 P. Roadster	1495	1625	970	820	600	450	330
4 P. Roadster	1495	1625	970	820	600	450	330
7 P. Tour	1645	1795	1070	905	660	495	360
4 P. Dispatch	1645	1795	1070	905	660	495	360
4 P. Royal Dis.	1745	1995	1135	New Model			
4 P. Coupe	1995	2165	1295	1095	800	600	440
5 P. Met. Sedan	2295	2465	1490	New Model			
7 P. Sedan	2375	2545	1545	1305	950	710	520
7 P. Limousine	2985	3095	1940	1300	925	750	500

Additional items can be included if desired, such as the model number, number of cylinders, etc.

The form on the opposite page is letterhead size (8½x11). As they are issued to members the sheet which they have on hand for that particular make may be replaced by the current one. You will note the fifth column (No. sold since .....date). This indicates how active the market for any particular make and model is and also shows how far back the report goes and which preceding reports may be replaced.

[7]

toward this is to find out what the used car is worth. In other words, if the dealer can know what the used car can be sold for, he can make a more nearly accurate appraisal in taking it in trade. The foundation of the plan, therefore, must be to eliminate guesswork appraisals and give the dealer and his used car organization accurate information on what used cars offered are worth.

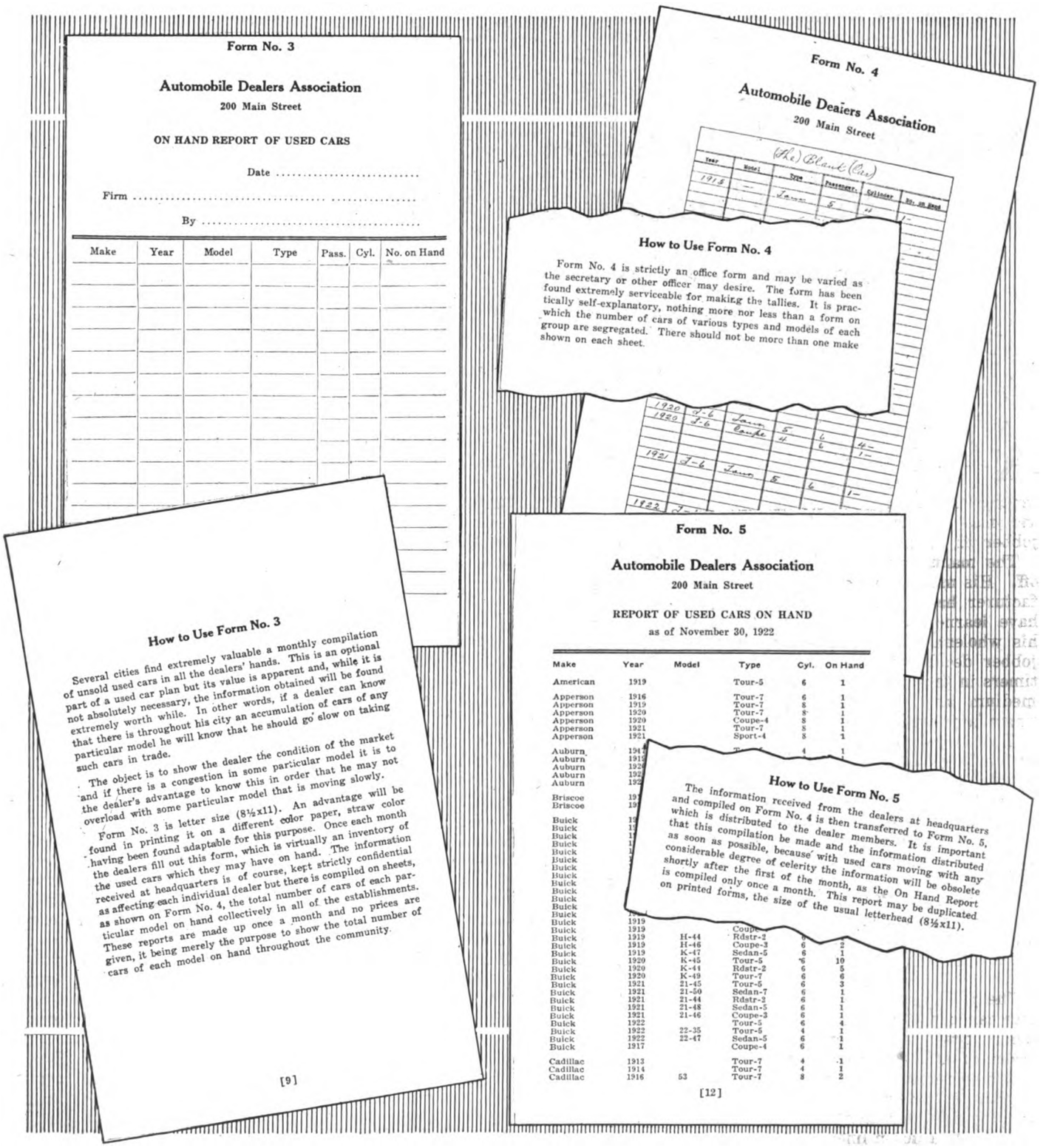
"The plan set forth in this manual shows how to compile such accurate information of marketable values and how it can profitably be used by the dealers of a community.

"What a used car is worth is what it can be sold for.

"But—

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Some Forms from the Manual of Used Car Co-operation



Form No. 3

Automobile Dealers Association
200 Main Street

ON HAND REPORT OF USED CARS

Date .....

Firm .....

By .....

Make	Year	Model	Type	Pass.	Cyl.	No. on Hand

How to Use Form No. 3

Several cities find extremely valuable a monthly compilation of unsold used cars in all the dealers' hands. This is an optional part of a used car plan but its value is apparent and, while it is not absolutely necessary, the information obtained will be found extremely worth while. In other words, if a dealer can know that there is throughout his city an accumulation of cars of any particular model he will know that he should go slow on taking such cars in trade.

The object is to show the dealer the condition of the market and if there is a congestion in some particular model it is to the dealer's advantage to know this in order that he may not overload with some particular model that is moving slowly.

Form No. 3 is letter size (8½x11). An advantage will be found in printing it on a different color paper, straw color having been found adaptable for this purpose. Once each month the dealers fill out this form, which is virtually an inventory of the used cars which they may have on hand. The information received at headquarters is of course, kept strictly confidential as affecting each individual dealer but there is compiled on sheets, as shown on Form No. 4, the total number of cars of each particular model on hand collectively in all of the establishments. These reports are made up once a month and no prices are given, it being merely the purpose to show the total number of cars of each model on hand throughout the community.

[9]

Form No. 4

Automobile Dealers Association
200 Main Street

(The) Blank (Car)

Year	Model	Type	Passengers	Cylinders	No. on hand
1915	—	Tour.	5	4	1
1920	3-6	Tour.	5	4	1
1920	3-6	Coupe	4	6	1
1921	3-6	Tour.	5	6	1
1922	3-				

How to Use Form No. 4

Form No. 4 is strictly an office form and may be varied as the secretary or other officer may desire. The form has been found extremely serviceable for making the tallies. It is practically self-explanatory, nothing more nor less than a form on which the number of cars of various types and models of each group are segregated. There should not be more than one make shown on each sheet.

Form No. 5

Automobile Dealers Association
200 Main Street

REPORT OF USED CARS ON HAND
as of November 30, 1922

Make	Year	Model	Type	Cyl.	On Hand
American	1919		Tour-5	6	1
Apperson	1916		Tour-7	6	1
Apperson	1919		Tour-7	8	1
Apperson	1920		Tour-7	8	1
Apperson	1920		Coupe-4	8	1
Apperson	1921		Tour-7	8	1
Apperson	1921		Sport-4	8	1
Auburn	191			4	1
Auburn	191				
Auburn	192				
Auburn	192				
Auburn	192				
Briscoe	19				
Briscoe	19				
Buick	19				
Buick	19				
Buick	19				
Buick	19				
Buick	19				
Buick	19				
Buick	19				
Buick	19				
Buick	19				
Buick	19				
Buick	19				
Buick	1919		Coupe-		
Buick	1919		Rdstr-2	6	2
Buick	1919	H-44	Coupe-3	6	2
Buick	1919	H-46	Sedan-5	6	1
Buick	1919	K-47	Tour-5	6	10
Buick	1920	K-45	Rdstr-2	6	5
Buick	1920	K-44	Tour-7	6	6
Buick	1920	K-49	Tour-5	6	3
Buick	1921	21-45	Sedan-7	6	1
Buick	1921	21-50	Rdstr-2	6	1
Buick	1921	21-44	Sedan-5	6	1
Buick	1921	21-48	Coupe-3	6	1
Buick	1921	21-46	Tour-5	6	4
Buick	1922		Tour-5	4	1
Buick	1922	22-35	Sedan-5	6	1
Buick	1922	22-47	Coupe-4	6	1
Buick	1917				
Cadillac	1913		Tour-7	4	1
Cadillac	1914		Tour-7	4	1
Cadillac	1916	53	Tour-7	8	2

[12]

How to Use Form No. 5

The information received from the dealers at headquarters and compiled on Form No. 4 is then transferred to Form No. 5, which is distributed to the dealer members. It is important that this compilation be made and the information distributed as soon as possible, because with used cars moving with any considerable degree of celerity the information will be obsolete shortly after the first of the month, as the On Hand Report is compiled only once a month. This report may be duplicated on printed forms, the size of the usual letterhead (8½x11).

"What it should be bought or taken in for is the amount it can be sold for, less the actual cost of reconditioning and a fair margin of profit for handling.

"A dealer in one or perhaps two or three makes of cars naturally will know the market value of his car or cars, and perhaps of a few others, but it is difficult for him to know the prices which he can reasonably expect to obtain for the great number of cars which will be offered to him in trade.

"The forms presented in the Manual have been found simple and effective in gathering, compiling and distributing the information on which the dealer should base his allowance to avoid a loss as the foundation of the used car transaction."

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THESE are changing times in the automotive-equipment industry. Manufacturers are learning that representation by jobbers does not necessarily mean distribution. Jobbers are discovering that having contracts with large numbers of manufacturers, even of widely known products, does not assure them business. The lesson is sinking in that scattered sales effort will not get results, that concentration is necessary. Manufacturers are concentrating their distribution in fewer jobbers. Jobbers are cutting down their lines and at the same time reducing and more intensively cultivating their territories. This story tells about this very modern and very marked movement in the automotive-equipment field. No doubt dealers and garagemen, as ultimate distributors of automotive equipment, will find interest in the story but its suggestions are for manufacturers and jobbers.

Smaller Territories and Fewer Lines the Modern Jobbing Trend

Equipment Manufacturers, Too, Are Discovering New Definition of "Distribution"

By NEAL G. ADAIR

A JOBBER received a letter from a manufacturer of timers for Fords, asking why he was not selling more of the manufacturer's products. The jobber replied that he was not trying to sell them. Thereupon the manufacturer wrote an indignant letter cutting the jobber off his list.

The manufacturer was justified in cutting the jobber off. His mistake was in getting indignant. If the manufacturer had taken the trouble to investigate he would have learned that he should have taken the jobber off his wholesale list six months earlier. At that time the jobber decided to discontinue carrying a dozen lines of timers in favor of selling three lines, one high priced, one medium and one low. The indignant manufacturer's timer happened not to be one of the three.

This incident illustrates a trend in merchandising which is gaining strength every day in the automotive-equipment field. Intensive competition is forcing jobbers to restrict their lines. Scattered gunfire from such a skirmishing line as a catalog containing seven or eight thousand items won't win to-day's battle on the dealer and garage front. The jobber must have a battery of Big Berthas and he is finding it in lines of leaders—a dozen or two dozen fast-selling items with which his salesmen can batter down competition and then mop up with the secondary ammunition of general merchandise.

What the Jobber Needs

The jobber's Big Berthas must be goods that his salesman can make a noise about, which imposes two requirements, first, that the goods must be highly salable, and, second, that the salesman must know the goods. The second requirement is largely responsible for the restriction of lines. A salesman cannot make much of an impression walking into a dealer's establishment and trying to sell him one of a dozen lines of timers or horns or even spark plugs. He cannot talk convincingly about any of them. He cannot tell the dealer why any one is a good piece of merchandise or, what is more important, how the dealer can go at the job of selling it. If he has one or, at the most, two or three lines of each class of merchandise he can learn the construction features and selling points of all of them fairly well. He can open his conversation with the dealer by talking about items which he knows well, obtain an order or group of orders from his line of leaders and then, when he has maneuvered the dealer into a buying mood, work up a reasonable volume of pick-up orders from the pages of his catalog making up his second line of attack.

Jobbers Specializing

Not all jobbers by any means have reached or even approached this stage of semi-specialization but the number who are working along these lines is gaining every day. This trend among jobbers is meeting co-operation in some manufacturing circles, resistance in others.

The jobber who is cutting his timer line, for instance, down to three would like to have fewer competing jobbers handling the same timers. He feels that if he is going to concentrate his timer sales activities on three lines the manufacturers of those lines should co-operate by broadening his market, and they can do this only by cutting down the competition against his work as a distributor. He would like to see, perhaps, two or three of the twenty-odd jobbers in his territory handling these timers, another group of jobbers, another group of timers, and so on, eliminating a condition under which perhaps fifteen to twenty jobber salesmen in a single week approach the same group of dealers with the same list of timers. Some manufacturers are falling in with this line of thought. In fact, some are urging it upon jobbers, with the result that in quite a number of lines manufacturers are gradually but materially cutting down their jobber representation in given territories.

On the face of it the two movements—jobbers restricting their lines and manufacturers cutting down multiplicity of jobber representation—should assist in the much-needed process of reducing distribution costs.

Another instance, rather, a pair of them, will serve to illustrate the workings of the present day trend in the equipment field.

A jobber who had been carrying several lines of brake lining threw out all but one six months ago. In the half-year period he has sold twice as much brake lining as in

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any similar time in the history of his business. It didn't just happen, of course. He pushed the sale of the one brake lining. His salesmen were able to study up on the one line, talk about it as the best line and turn convincing sales arguments into sales.

The other instance is of a manufacturer, one of the most aggressive in the equipment field, whose factory makes a replacement unit. In a wide territory he cut his jobber representation from five to two. Over a year's period accurate check was kept on all the company's products going into that field, and the two jobbers gave him more distribution than the five ever had. When it is noted that these two jobbers had cut their lines of this class of product from six or seven to two or three the full import of what had taken place is seen. The manufacturer did not eliminate competition on his line in the territory. Rather, he intensified it by making it more worth the while of his wholesale representatives to push his goods. Nor did the jobbers give the manufacturer a monopoly of their services. They simply fitted themselves for better merchandising of the class of merchandise in question by restricting the number of lines.

Another manufacturer told a group of jobbers recently that he hoped within two or three years to reduce the number of jobbers on his books from 500 or thereabouts to a little more than 200. He gave it as his opinion that a manufacturer with a salable line of merchandise can cut his jobber list in half, using discretion, without losing sales volume.

Representation or Distribution?

Apparently, judging from the hundreds of names on the wholesale lists of some manufacturers, there are still sales managers who think that representation spells distribution. More and more of them, however, are learning their mistake. They are discovering that shipping a jobber a bill of goods doesn't sell them, and that a jobber who places only small and occasional orders is not a good customer, for two reasons. The first is that he is not giving the manufacturer distribution of his product in the territory and the second and more important reason is that he is not getting a frequent turnover of merchandise and so is not a good credit risk for the manufacturer.

New manufacturers coming into the equipment field cannot alway get representation by the strongest jobbers, nor can they get individual jobbers to push their lines as vigorously as they will push tried and proven merchandise. They are forced to an extent to seek distribution through numerical strength of representation. But it is significant that some of the older and apparently more successful manufacturers are supporting and in some cases leading the movement among the jobbers to intensify selling by lopping off some of the outer fringes of competition. Just as the jobber can work more efficiently selling a restricted line of merchandise, so can the manufacturer get better results, particularly through his field organization, working with smaller groups of jobbers.

Young Industry Is Steadying

The automotive equipment business necessarily is younger than the automobile industry from which it gets its living, and it still has many straggling features. The trend toward centralization of selling effort may be regarded as one of the reforms developing with age. This movement, aside from lightening burdens and tending to assure profits of manufacturers and wholesalers, may gradually influence lower retail prices through the process of reduced distributing costs. It is not difficult to understand why an article which cost the manufacturer $1.85 must take $10 out of the consumer's pocket after one has seen twenty jobber salesmen, in a day, calling on a garageman on the outskirts of one of our Eastern cities and, added to that spectacle, has visualized the vast army of manufacturers' salesmen and missionary men working continually on the many thousands of wholesalers and retailers in the equipment field.

But the young and struggling industry is getting steadier on its feet. Through its several associations and its group meetings of manufacturers and jobbers it is learning more about the laws of supply and demand. The manufacturers' inclination toward limitation of jobbers, together with the jobbers' leaning toward curtailment of lines, seems to be a move in the direction of operation along more soundly economic lines. Add to this the additional tendency of jobbers to restrict territory and so cultivate it more intelligently and we find much that the manufacturer, veteran or novice, needs to keep closely under his eye in the automotive equipment field.

Before Shows Number

THIS always popular annual number of Motor World will be issued Dec. 27—the last number in the year.

It will present to the trade THE SHOW SEASON AS A SELLING OPPORTUNITY.

There will be three principal features, all handsomely illustrated.

1—**The 1923 Shows**—A look ahead at the New York and Chicago shows and the show season all around the country.

2—**Making the Shows a Selling Force**—Telling how the show committee, the dealer and the salesman can make the most of the showtime opportunity. In this section there will be some ideas for show season selling that dealers can take right out of the pages of Motor World AND USE.

3—**Selling the 1923 Car**—A merchandising study of the automobile of to-day. This story will get right down to tacks with the selling points of the modern car and show what's back of those selling points. It will be interesting, practical reading for the dealer or salesman who wants to know his own car better. More pictures, a wealth of them, in this section.

If you want to put the telescope on the coming show season and enjoy yourself while you are getting some useful information make a note to watch for this Before Shows Number of Motor World.

Next Week's Number

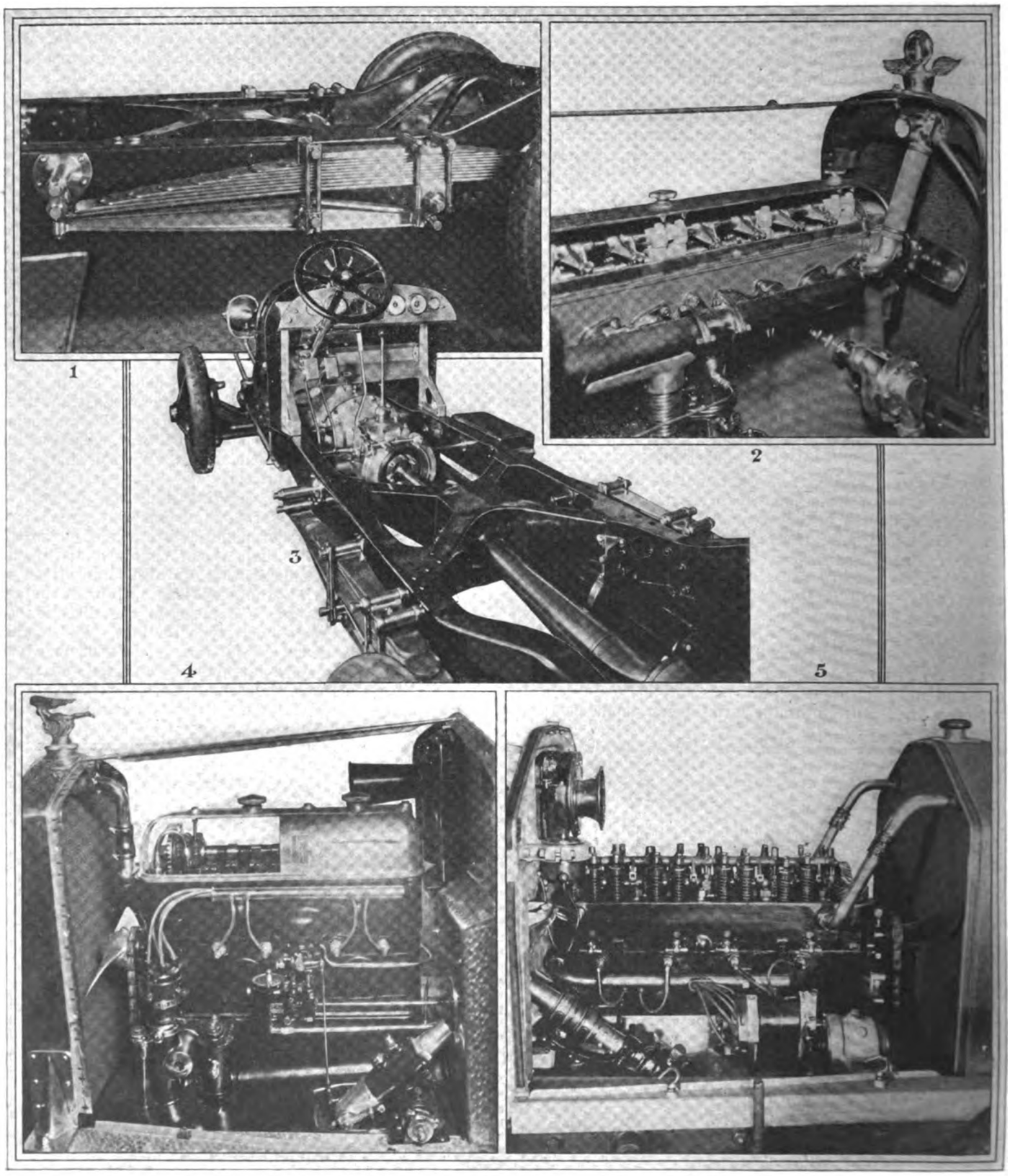
Hiring and Training a Retail Automobile Sales Force—By one of the most successful automobile merchants in the country. Ideas in the story for every dealer.

Some Facts About Used Cars—By two decidedly well informed practical used car men, one a dealer, the other the head of a used car co-operative plan.

Sales and service information, news of the industry, interesting pictures, all the features that make up the regular weekly issues of Motor World.

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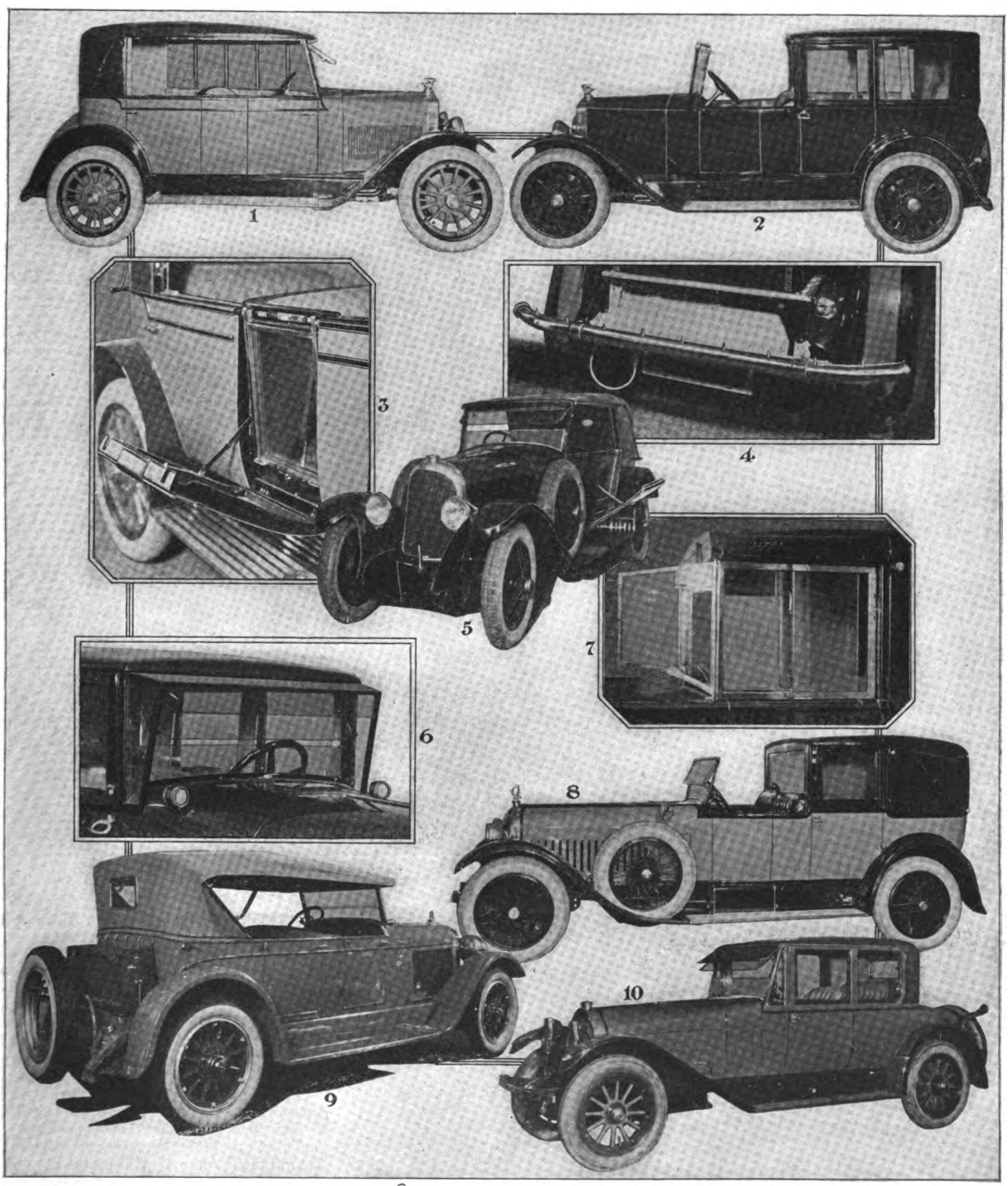
Mechanical Ingenuity and Beauty of



1—The rear spring of the Hotchkiss six showing the shock absorbing member underneath the cantilever spring. 2—The Duesenberg engine showing the thermostat inserted in the water outlet to automatically control the engine temperature. 3—The frame of the Hotchkiss is extremely heavy and is braced with heavy X cross bracing. 4—Left side of the Leon Rubay engine with the front part of the valve cover removed. The carbureter and the ignition units are on this side. 5—The Lancia eight cylinder engine with the cylinders set at a slight angle and all cast in one vertical cylinder block

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Coachwork Seen in Salon Exhibits



1—*The Leon Rubay phaeton with California top, the sash folding as shown in picture 3.* 2—*The Leon Rubay town car.* 3—*Showing how the sashes of the Rubay phaeton fold into the space between the doors.* 4—*The rear bumper of the Isotta-Fraschini has spurs.* 5—*The Voisin with folding sashes.* 6—*A vacuum type windshield on a LeBaron body on a Peerless chassis.* 7—*Folding sashes on the Voisin.* 8—*A Brooks-Ostruk cabriolet on a Minerva chassis.* 9—*A LeBaron body on a LaFayette chassis.* 10—*A Brooks-Ostruk body on a Locomobile chassis*

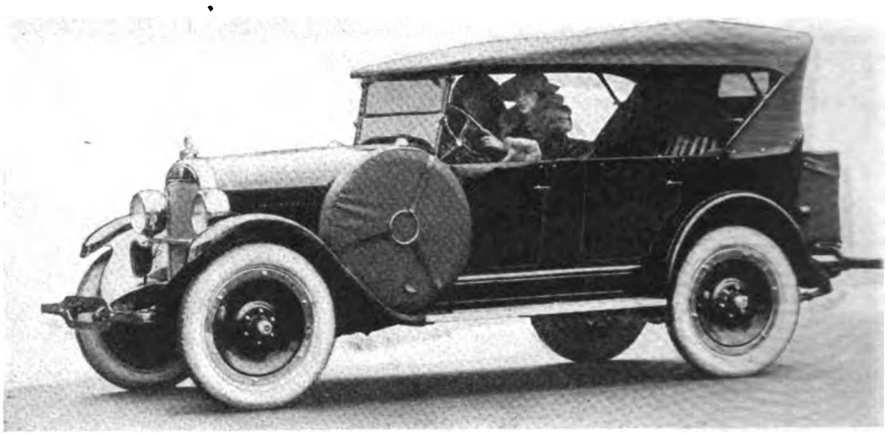
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Maxwell Brings Out Sport Models

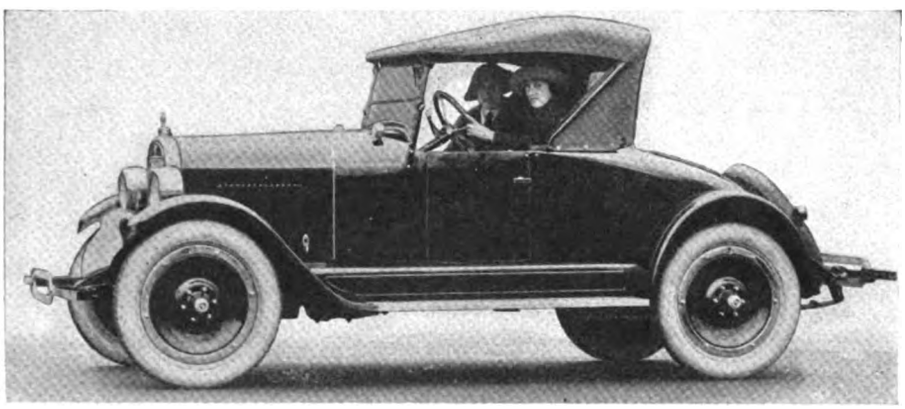
TWO sport models are added to the Maxwell line. A sport phaeton at $985 and a sport roadster at $960. The bodies are painted Chester hunt red with running gear and disk wheels in black. The additional equipments include drum-type head lamps and tie-rod and parking lamps. The radiators, Moto-Meter and door handles are in nickel, the latter having a black aluminum inlay. An aluminum bead runs around the hood at the cowl. The upholstery is long-grained patent leather and the top is olive drab with rubber insert. The equipment also includes a spare cord tire which is incased in an envelope type olive drab duck tire cover. The left front fender of the phaeton model is designed and countersunk to receive the tire.

On the roadster the extra carrier is on the rear. Nickeled spring bumpers are furnished both front and rear. An innovation is the assurance against theft of the Moto-Meter for one year.

The phaeton is equipped with a large trunk and dust cover mounted on a nickel plated trunk rack at the rear. Bright finish aluminum trunk bars protect the body.



The Maxwell sport phaeton $985



The Maxwell sport roadster $960

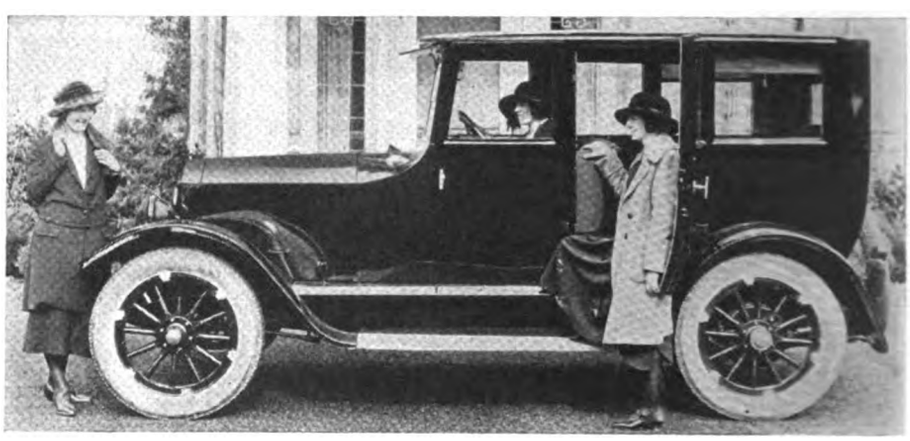
A New Phaeton and Sedan Model for 1923 Dixie Flyer

FOR 1923 the Dixie Flyer chassis will remain practically the same as before, but the bodies have been changed in many minor details. The phaeton front cowl is one solid sheet of metal attached from one side of the sill to the other side, thus forming a complete brace over the front cowl and dash. The front dash is made of hardwood and the side posts are mortised to fit corresponding gaining in the sills; all being glued and screwed in place.

The top irons are drop forgings bolted to at least two parts of the body to distribute the strain. The center panels are double braced and reinforced with brace irons extending through to the main sill at lock post of front doors, and the hinge pillar post is reinforced with the front seat fillet extending from main sill to the top of the front seat top rail, thereby making one continuous seat.

The rear side and back panels are made of one piece, spot welded, forming a continuous piece of metal with no nailing or moulding to cover the joints.

The curtain box in the phaeton is built into the rear of the front seat and is roomy enough to lay the curtains flat without breaking the windows.



Dixie Flyer sedan



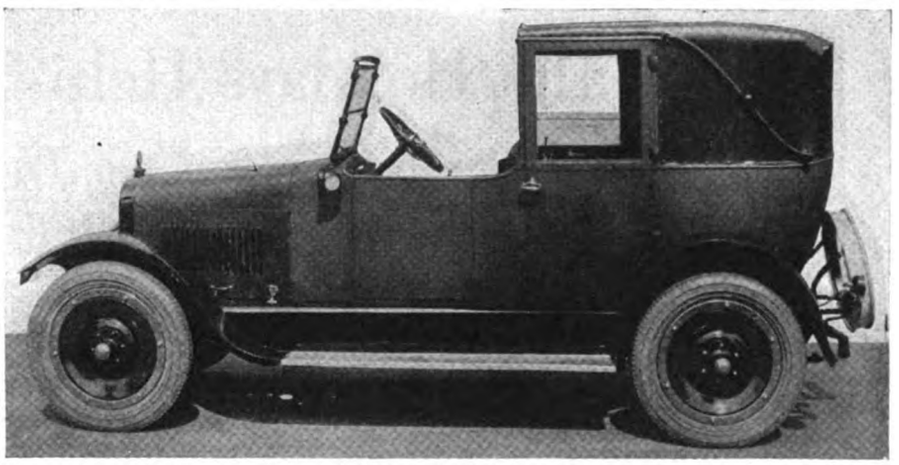
Dixie Flyer phaeton

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Federal Adds a 2-2½ Tonner

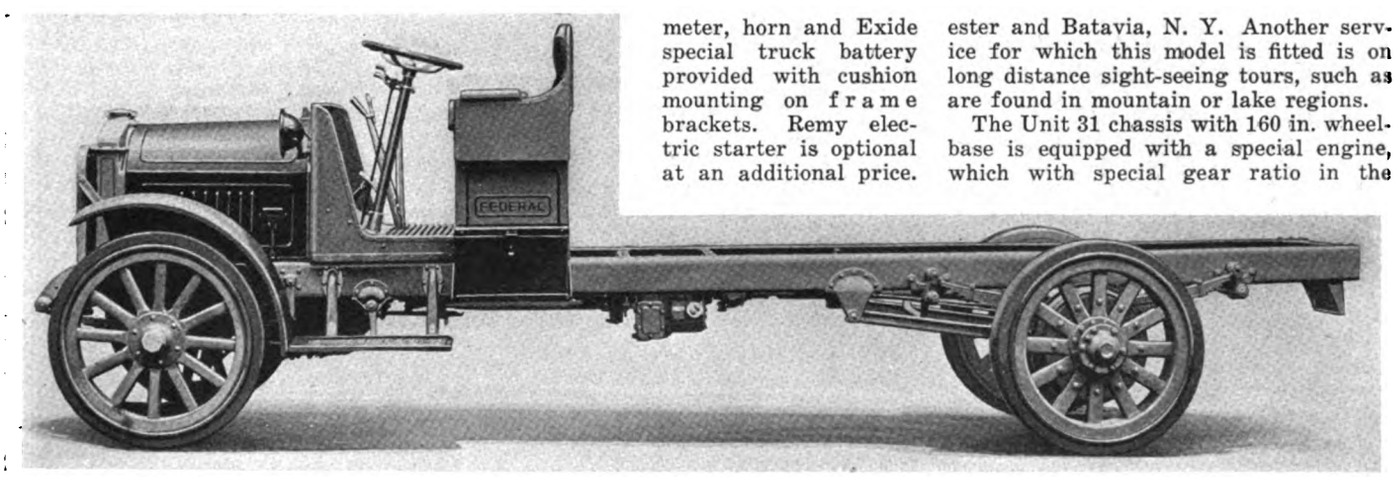
THE Federal Motor Truck Co. has added a new 4000 to 5000 lb. capacity truck to its line under the model number U-2. This chassis will be made up in three wheelbase lengths, the shortest being 12 ft., the standard 13 ft. and the longest 14 ft. It will be provided with a short or dumping loading space of 110 in., standard 134 in. and the longest 158 in. On this chassis there is a body allowance of 1500 lb.

The chassis is equipped with a Continental K-4 motor, this being a 4-cylinder, vertical, L-head mono block type with a 3-bearing crankshaft. It has a bore and stroke of 4⅛ by 5¼ in. and a 35-hp. output at 1300 r.p.m. The truck is fitted with an Eisemann G-4, high tension magneto ignition, Zenith carburetor, Pharo centrifugal oil type governor, Borg & Beck clutch, Detroit Gear & Machine Co. gearset. The front axle is Federal design and manufacture and the rear axle



Elcar Landaulet Taxicab

The Elkhart Carriage & Motor Car Co., Elkhart, Ind., has announced a new landaulet taxicab. The chassis used is the same as the standard Elkhart touring car, but it is equipped with special truss rods in the frame and other features suited to taxicab construction



Side view of new Federal Model U-2, 4000 to 5000 lb. capacity truck

Timken-Detroit. The clutch is provided with four forward speeds and one reverse, the ratios in the box being 5.899 to 1, 3.206 to 1, 1.752 to 1 and direct on fourth. The reverse is 7.078 to 1, and the final ratio at the rear axle is 7.75 to 1 on the standard truck with 8.5 and 9.25 optional.

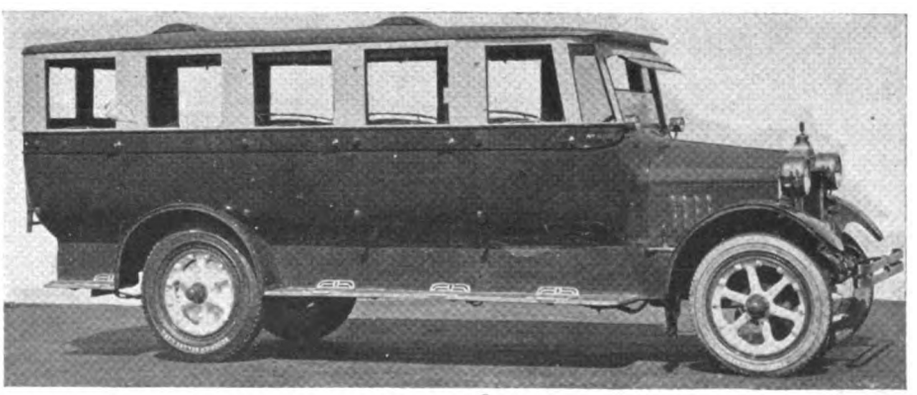
The chassis follows along the usual lines, the gearset being mounted as a separate unit with divided propeller shaft and four Spicer universal joints. The truck propels through radius rods with the torque taken through the springs. The tire equipment includes 36 by 4 front, 36 by 7 single or 36 by 4 dual rear. The steering gear is Gemmer type with 18 in. hand wheel. The gasoline system is provided with a 20 gal. tank mounted on the chassis frame under the seat, and the fuel feed is through a Stewart-Warner vacuum system. The frame is pressed steel channel section 6 in. deep and ¼ in. section, 34 in. wide. The height of the frame from the ground when loaded is 29 in. front and 30½ in. rear. The chassis is lubricated throughout by the Alemite system. The electrical equipment provides Remy electric generator, electric side, tail and instrument lamps, ammeter, horn and Exide special truck battery provided with cushion mounting on frame brackets. Remy electric starter is optional at an additional price.

Selden Nineteen-Passenger De Luxe Bus

BUILT particularly for interurban and long distance sight-seeing service, the Selden Unit 31 De Luxe model is equipped with a Brown body seating 19 passengers, including the driver.

These buses are in use as "through" or "limited" buses between Cleveland and Loraine, Ohio, making no stops en route. Another route is between Rochester and Batavia, N. Y. Another service for which this model is fitted is on long distance sight-seeing tours, such as are found in mountain or lake regions.

The Unit 31 chassis with 160 in. wheelbase is equipped with a special engine, which with special gear ratio in the worm-drive rear axle gives plenty of speed and yet all necessary power for hard pulls. The body is 16 ft. 8 in. long back of the driver's seat. The exterior paneling is 18 gage terne plate, and the roof is solid panel covered with heavy white duck heavily painted. The interior is lighted with six dome lights The tire carrier is under the chassis frame at the rear. Curtains, heaters and collapsible luggage carrier on the rear are provided as equipment.



The Selden Unit 31 bus which seats nineteen passengers

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Making the Holidays Help Sell More Cars

How a Boston Dealer Used Thanksgiving to Attract Prospects and Build Good Will

THE holiday season is on and between now and next summer nearly every month presents the opportunity of doing something unusual in a merchandising way by linking it with some particular holiday.

Special window and salesroom displays are always in order for holiday efforts. These may be as simple or as elaborate as the dealer wishes to make them. The important thing is to get into these displays the keynote of the particular holiday.

One way in which a dealer can cash in strongly on a holiday effort of any kind is to make it an occasion for inviting people to visit the salesroom during the holiday week.

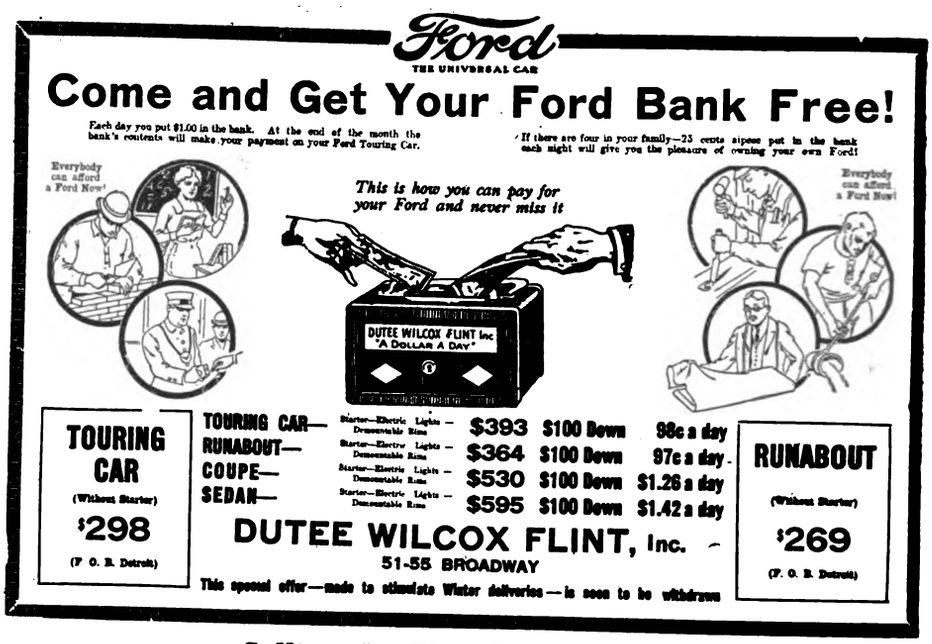
This idea was used effectively by C. P. Rockwell, distributor of Nash cars in New England, this Thanksgiving. On Nov. 15 C. P. Rockwell, Inc., had delivered twice as many cars in the ten and a half months of 1922 than for the entire twelve months of 1921. This increase was in a measure due to the co-operation of Rockwell's owners in his system of following them up for new car prospects.

As an appreciation of this co-operation Rockwell sent out a little Thanksgiving message to his owners. It expressed his appreciation of their friendship and faith in his company and Nash cars. The message told the reader of the success of the company during 1922 in short paragraphs which made comparisons with last year and closed with the Nash merchandising slogan, "These Are Nash Times."

Inclosed with the letter was a card inscribed as follows: To you, Our Thanksgiving Message. For proper celebration of this extraordinary business increase, what more fitting time could be desired than the one which is approaching—THANKSGIVING.

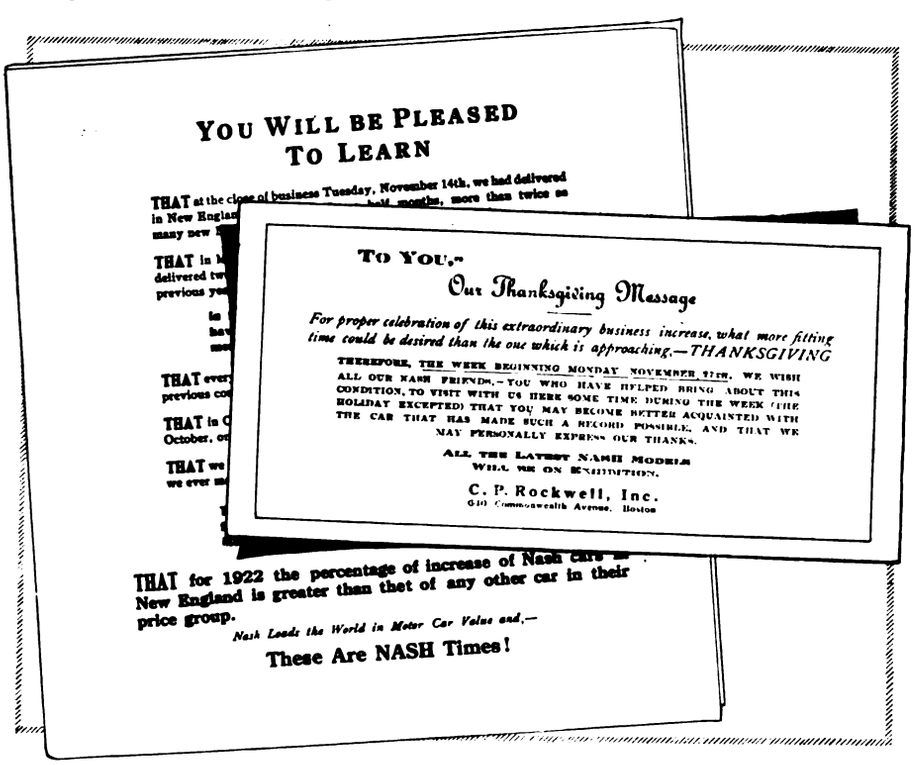
Therefore the week beginning Monday, Nov. 27, we wish all our Nash friends—you who have helped bring about this condition—to visit with us here some time during the week (the holiday excepted) that you may become better acquainted with the car that has made such a record possible, and that we may personally express our thanks.

There was a personal touch to the invitation that was effective, and the results were highly satisfactory.



Selling the Time Payment Idea

This advertisement in a New Haven paper reveals an interesting development of the time payment plan. It utilizes the savings bank idea of providing purchasers with individual banks in which to put their savings



This is the way a dealer invited his patrons to visit his establishment. The oblong card is the formal invitation. The folder underneath it told about the phenomenal year's business he had enjoyed. The two pieces were mailed in a single envelope

Sears Tire Equipment Sold

DAVENPORT, IOWA, Dec. 12—James A. Kerrigan and Leon A. Hass, trustees for the Sears Tire Equipment Co., at a sheriff's sale bought in the entire property for $32,168.

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After-Sale Service Sells Accessories

Dealer Sells Equipment with Cars by Mentioning Definite Needs of the New Car Buyer

FRED V. CLUTE, Chevrolet dealer at Cohoes, N. Y., has a very practical way of putting over the "Ask 'Em to Buy" idea.

When he sells a new car, he says:

"You want a license, don't you? You don't want to be pinched first thing. Let us fix you up right here.

"And suppose you should get a puncture first thing. That's very likely to happen. You'd better have a spare tire and tube anyway, in case of an emergency, don't you think so?

"Then, too, we filled your tank with gasoline and crank case with oil. Now, you'll find in breaking in a new car, that you ought to use the oil that's recommended for it. How about a 5-gal. can of oil? Fine, we'll fix you up.

"You ought to have a motometer, too, because you are liable to overheat your engine at first, and a motometer will keep you posted. Sure, we'll put one on right now.

"Then you'd better take this service coupon book along. It's good at the shop for 10 hours' free service. If any little thing goes wrong, run right in and we'll fix it and just tear out coupons for the time. So long; good luck."

Clute has sold 175 Chevrolets so far this year, and less than 10 have gone out without the above list of accessories. These amount approximately to $37 a car—in the aggregate quite a nice little item in the year's business.

Do You Circularize Doctors for Tire Sales?

Here is a letter that was effectively used by the Bargain Tire Co., Fort Worth, Tex.:

Dr. A. C. Jones,
City.

Dear Doctor:

There is an old saying which runs: "When a doctor makes a mistake, he buries it."

That was applicable to the medical profession of a hundred years ago, but not of to-day when the modern physician knows the human anatomy like the old time schoolboy knew his multiplication table.

If the modern doctor makes a mistake, it is not in the practice of medicine, but rather in overlooking some things in his consuming desire to do everything possible for his patient.

How are your automobile tires? Better let us examine them or fix you up with a couple of extras in case of punctures or blowouts when you are rushing to the bedside of some patient far from a repair or service station. These things happen sometimes.

You do not wish to make a mistake. Your patient doesn't want you to. We are prepared to prevent it. Drive around or call us, and we will give you service that satisf.es.

Yours to serve,
The Bargain Tire Co.

Ideas On Selling and Management

You will find them on this and the opposite page—ideas that will make dollars or save dollars for the

Car Dealer Truck Dealer
Equipment and Tire Dealer
Tractor Dealer Repairman

Some of our readers are contributors to this section of Motor World. Have you developed a plan that might help some other men? If you have, will you write it out and send it in?

Service on an Annual Payment Basis

THE Auto Maintenance & Service Station, a large independent repairshop in New York City, is getting results with an active campaign to sell car owners maintenance on an annual basis. The station has a plan under which it offers owners monthly inspection and lubrication, together with necessary adjustments and repairs, at a flat rate of $120 a year. The plan includes labor, grease and oil without extra charge, but requires the owner to pay for replacement parts.

This service station is using salesmen to sell the plan to car owners and is backing up the sales campaign with circulars and pamphlets telling about the station's facilities for service work.



An ad like this can be used to merchandise a combination offer of accessories. Note the prominent mention of the price and the grouping of the accessories—all for the purpose of improving vision. Dealers will think of other combinations

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Crankshaft and Connecting Rod Alignment Tests

Roundness, Straightness and Parallelism to Be Considered in Rebuilding Engines

THE testing of crankshafts and connecting rods is one of great importance in the rebuilding or overhauling of engines. In years past, not very much attention was paid to these details with the result that a high percentage of refitted bearings went bad shortly after the engines went into service again, and nobody seemed to know what was the matter. It has only been within the past two or three years that precision instruments have generally been used in the automobile repairshop, but with their more general use, it has been possible to cut down considerably the number of jobs that go wrong.

It is a waste of time and effort to hand scrape or machine fit bearings to a shaft that is not true. Under no possible conditions can a bearing so fitted give good service, and the shop is almost always called upon to do the work over again at its own expense. If the parts were somewhere outside the engine where they could be easily reached, this might not be so serious, but this kind of a bearing job done over again practically means the rebuilding of the engine. Great importance should therefore be attached to the correct measurements and indications of the shaft before the bearings are fitted.

Although the crankshaft is the most important member as far as measurements are concerned, the gear distance, the parallelism of the holes in the connecting rod, the piston diameter and the cylinder bore are also very important, and it is upon the correct fitting of these various parts that the success of the work is dependent.

Gaging the Crankshaft

First of all the portions of the crankshaft that are carried in the bearings must be round to within certain limits. It is physically impossible to make anything absolutely true because there is no such thing as absolute roundness. If magnified several hundred times the surface of a finely ground shaft would have the appearance of mountains and valleys. However, there are certain mechanical limits within which the parts will give good service and the operation and use determine the limits. A crankshaft should not vary in roundness more than half a thousandth.

The method of determining the diameter is shown in Fig. 1. A pair of micrometer calipers reading directly to one thousandth is used and interpolations can easily be made to a half thousandth. Measurements are taken across at least three points as shown in the diagram, and if there is any doubt about the shaft, four or five measurements are taken. Micrometers usually operate only over a range of 1 in. The larger sizes are usually provided with devices for extending the barrel by increments of 1 in. so that smaller diameters can be measured. It is therefore necessary to select a micrometer with a range in which the diameter of the crankshaft falls. Assuming the diameter of the shaft to be 2⅛ in., as shown, a micrometer reading from 2 to 3 in. would be used. The micrometer shown in Fig. 1 reads exactly 2.125 or 2⅛. This is arrived at by counting the number of graduations exposed on the shank, in this case numbering 5 and as each one of these are equal to .025, the total would be .125. Each graduation on the barrel represents .001, but as in this case it is 0, there would be none to add.

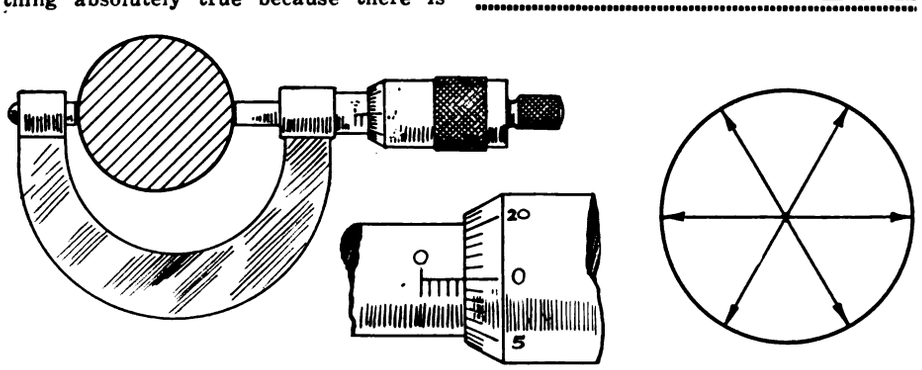


Fig. 1—Using a micrometer on a crankshaft. The reading shown here is 2.125 in. The diagram shows where to take the readings

Better Mechanics

Article No. 270

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.

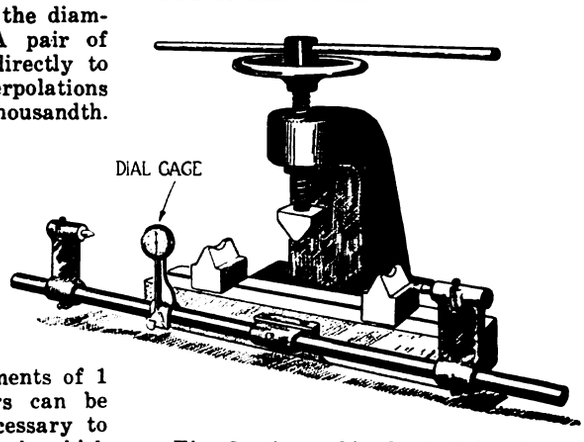


Fig. 2—A combined straightening press and testing jig for crankshafts and camshafts

The ratchet stop at the end of the barrel allows all measurements to be made with uniform pressure. This should always be used as it is quite possible to force the barrel from 5 to 10 thousandths which would give a false reading.

Each main bearing and each connecting rod bearing is measured in this way and with a little experience this can be done in much less time than it takes to tell it.

The allowable variation would be one-half a graduation on the barrel on a micrometer reading to one thousandth. If a micrometer reading to one ten-thousandth is used, then the limit of variation between any measurements would be five ten-thousandths. It is not necessary that each of the bearing parts of the shaft be the same diameter as long as each one measures round or the same diameter at several different points. In fact, many crankshafts have main bearing surfaces of different diameters.

Alignment Tester and Press

Having gaged the crankshaft for roundness, the next point is to ascertain whether it is in alignment. This is determined by one of two methods.

There are a number of tools on the

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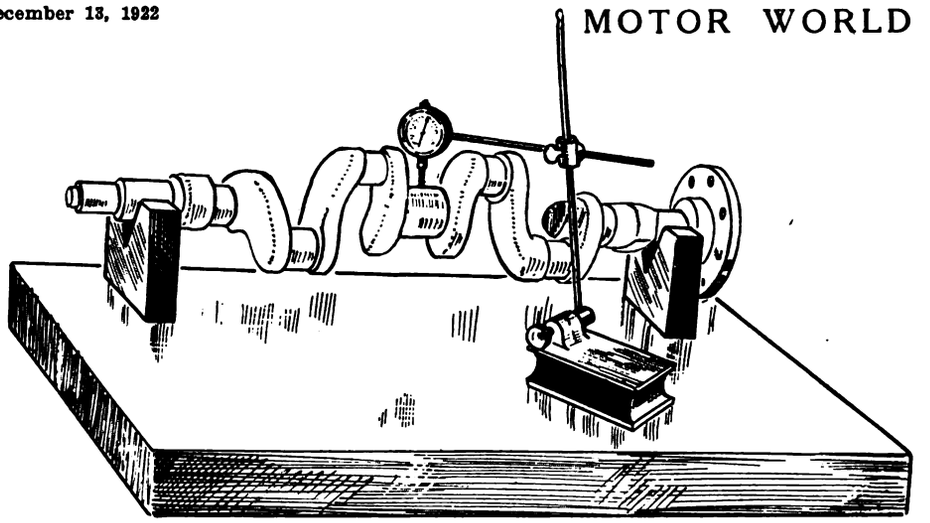


Fig. 3—Testing crankshaft alignment on a surface plate with V-blocks, a surface gage and dial gage

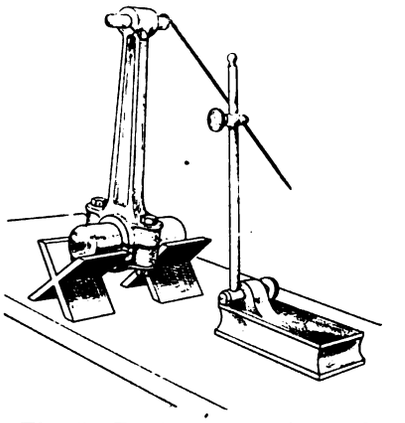


Fig. 5—Testing connecting rod alignment with a surface plate, V-blocks and a surface gage

market having a combination feature of centers to swing a shaft and a screw press to straighten it. One of these is shown in Fig. 2. The centers are usually mounted on a bar in front of the press, one being stationary and the other movable. A spring holds one of the centers firmly against the shaft. A swinging arm also mounted on the shaft carries a dial gage with graduations in thousandths of an inch.

In order to make an accurate test, the centers of the shaft must be absolutely clean and free of chips, filings or dirt. The slightest trace of foreign matter in the center holes will make it impossible to get a correct reading. For this reason some mechanics prefer to make the tests by swinging the shaft on a pair of V-blocks instead of the centers.

The dial gage is brought in contact with each main bearing in turn and the shaft swung around a complete revolution. A variation of half a thousandth is permissible, and in the case of a center bearing, the allowance could be increased to one thousandth, although this is not so desirable. It can be easily seen that if the shaft is bent that the dial will show variations which will show exactly the extent of the bend. In reading the dial it can be set to zero by turning the bezel till the zero point is opposite the pointer, but this is not necessary as the movement of the hand can be very easily seen no matter where it is on the dial.

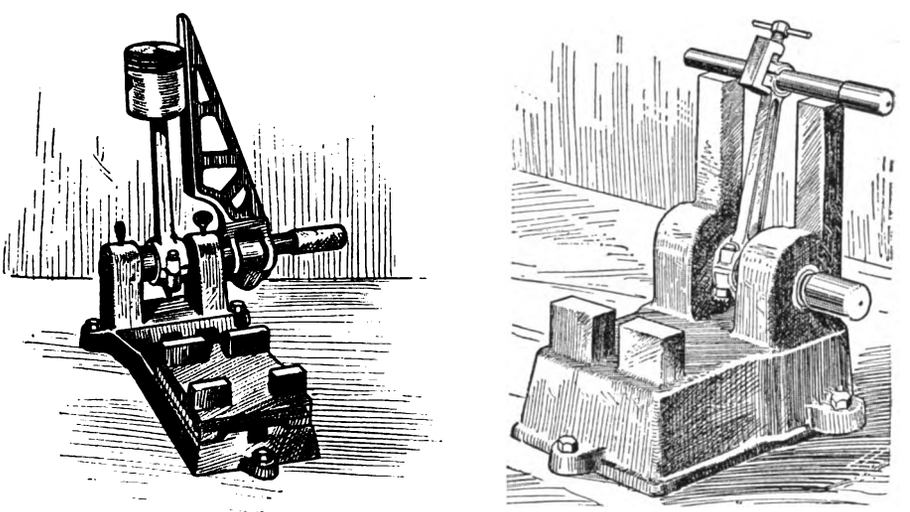


Fig. 4—Two types of connecting rod alignment gages

An alternate method where a straightening press is not available is to build up two V-blocks on a surface plate until the shaft can be swung clear. A surface gage is then fitted with a dial gage and the same procedure is followed as in the case of the straightening press attachment. The layout of the equipment is shown in Fig. 3. If the V-blocks are not heavy enough to sit firmly on the surface plate they should be clamped.

(*Continued on page* 44)

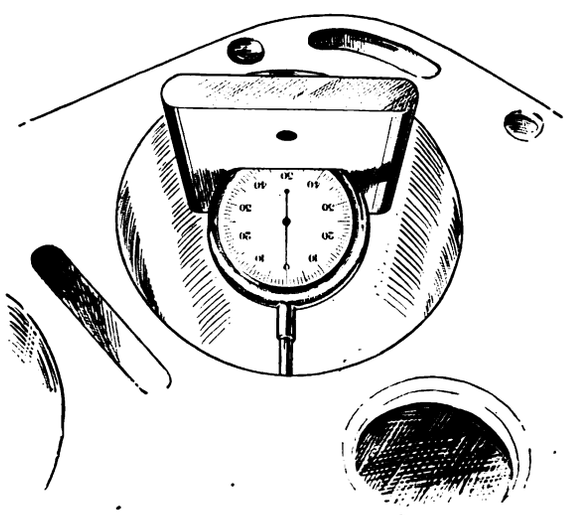


Fig. 6—A three point mounting for testing cylinder roundness with a dial gage .

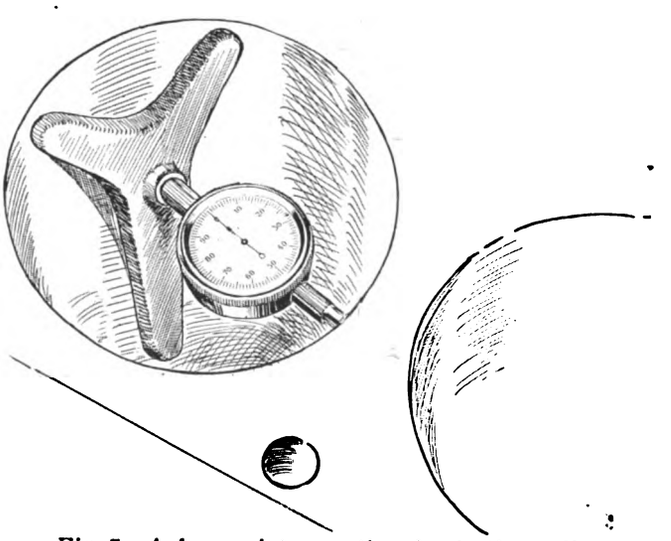


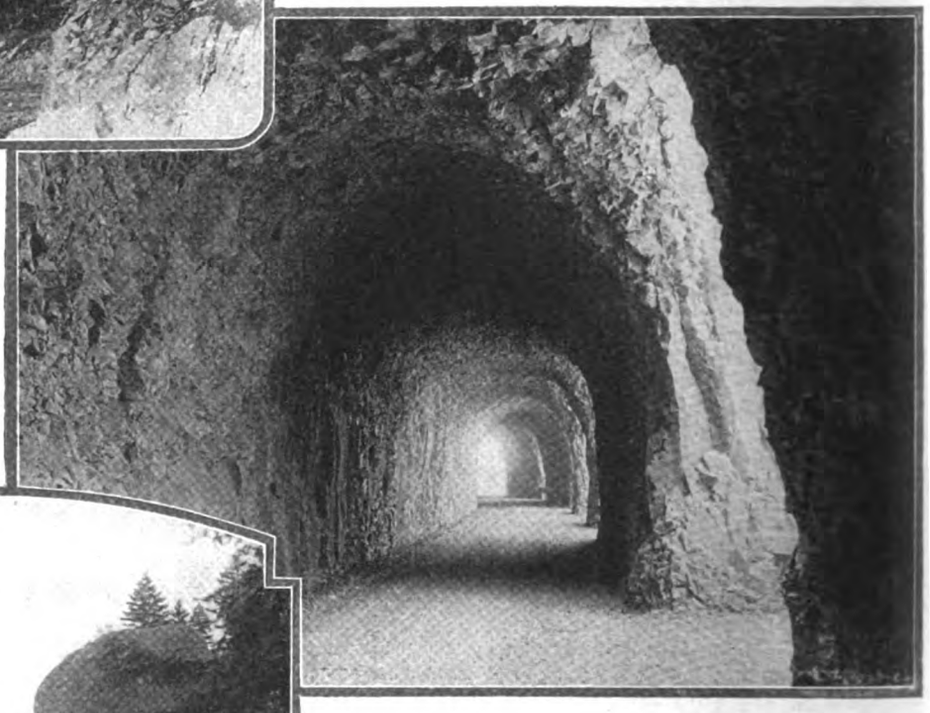
Fig. 7—A four point mounting for testing cylinder straightness with a dial gage

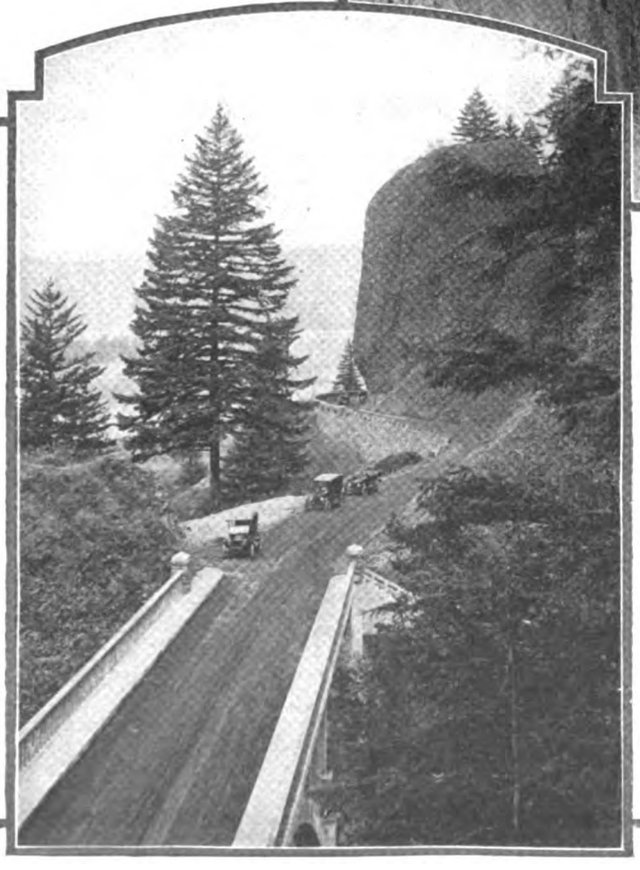
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Highway Builder Is Revealing to the Motor Tourist



BEAUTY and utility are combined in some of Oregon's remarkable highways. One remarkable example of road building is the great scenic highway now under construction which circles Mount Hood, beginning and terminating in Portland. This road penetrates wild country, rising to an altitude of 7000 feet, touching the snow line of the mountain in some places and entering Portland at sea level. The highway, which will be open only during the summer months, being closed by snow the rest of the year, will cost several millions of dollars.



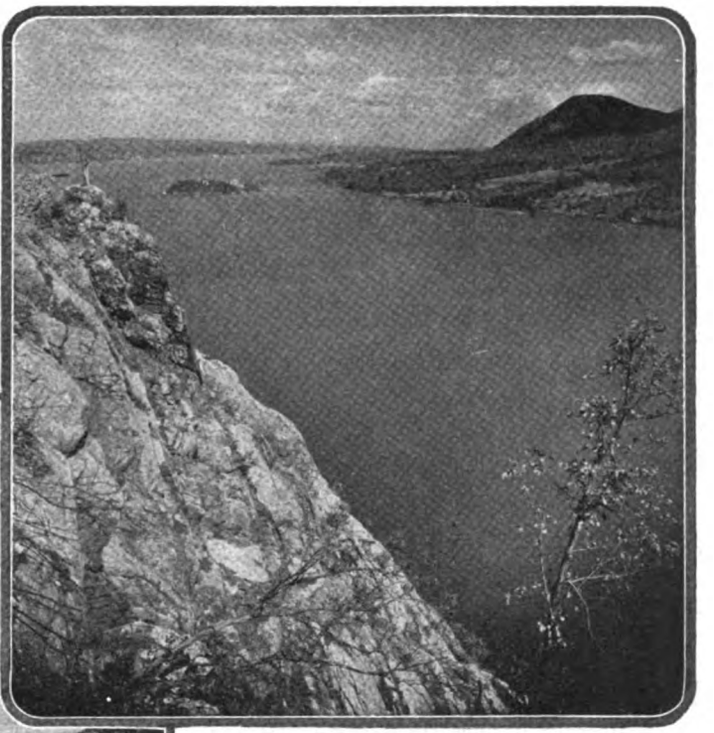


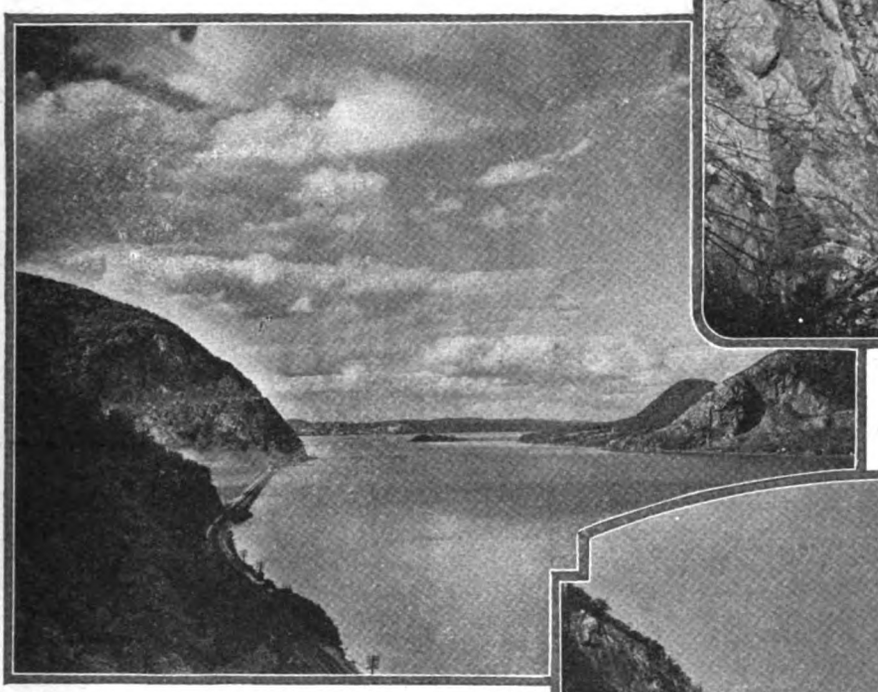
AN interesting example of combining beauty and utility in highway construction is the Columbia River highway, in Oregon, 200 miles of which are finished in hard surface pavement. It is the main commercial highway east and west across the State as well as being, perhaps, one of the greatest scenic highways in America. The photographs, left and above, are typical of the scenery where the highway follows the river, which has cut a path through the Cascade Mountains at this point. Handsome concrete arches and some hewn through the side of the mountain are interesting features of this portion of the road.

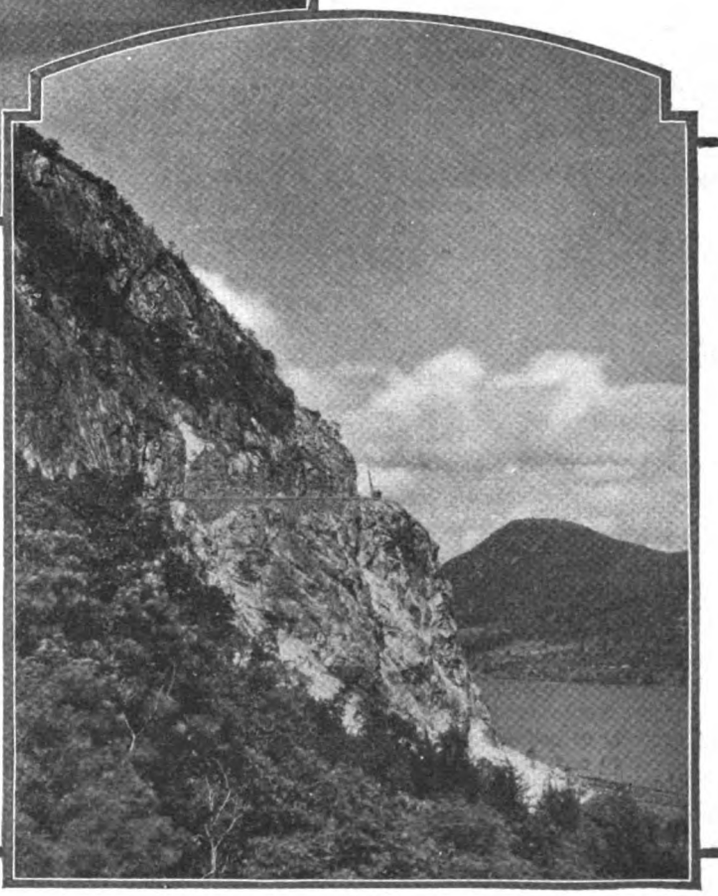
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Many of America's Most Gorgeous Scenic Treasures

THE Storm King Mountain road, three views from which are shown on this page, has taken its place among America's most picturesque and useful highways. The road, four miles long, was constructed around Storm King Mountain at a cost of $700,000, an accommodation for motorists made necessary by the enormous increase in automobile traffic between New York and Albany, the desire for an accessible road into the Catskills and the plans for opening of the Interstate Palisades Park.







THE new road gives two routes south from Newburgh and eliminates the wide detour through Orange and Sullivan counties to reach New York from the north. It connects at Highland Falls with the route which extends through the southern tier of counties to the Pennsylvania State line at Lake Erie. At Albany it connects with improved highways leading to Montreal, Buffalo and Massachusetts. At Bear Mountain it connects with the roads through Palisades Park. The road is twenty-four feet wide with a sixteen-foot bituminous macadam pavement. It follows the beautiful Hudson River at an elevation from 200 to 400 feet above the river. The center and lower pictures give a glimpse of the highway rounding the mountain.

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Must Provide Safe Working Conditions

Negligence as an Employer May Prove Costly to Garage or Repairshop Proprietor

THE proprietor of every modern garage and repair shop is, to some extent, an employer of labor. He hires men to run machinery, to do repair work, to drive cars and for a number of other purposes.

The question then becomes important: How much care must he use to prevent his employees from being injured in the course of their work? In states like Massachusetts, New Jersey and New York, which have a Workmen's Compensation Act, which gives the mechanic some stated sum per week during the period of his disability, the employer is covered by an insurance policy in a great majority of cases, but in other states, where there is no law of this kind, the dealer has not thought it necessary to secure insurance, preferring to take a chance.

In cases like these the dealer should spare no effort to procure safe machinery and to see that it is kept in a safe condition, and, further, he should not forget that his workmen are entitled to a safe place in which to work.

An example of what an injury to an employee may cost an employer is a late case which was decided in Michigan. In that case a man who was employed by a motor car manufacturer was struck in the eye by a chip from a cast-iron frame. At the time the accident occurred he had been walking down an aisle in what was called the assembly room and was carrying some sheet brass to one of the departments in that building.

He brought suit against his employer and claimed that (1) he had not been provided with a safe place in which to work; (2) there was negligence because his fellow workmen were chipping off a cast-iron frame, which was used to support the chassis of motor cars, with a cold chisel and hammer, and (3) that he had not been notified that dangerous work was being done, nor had any screens or covering been erected at the place where it was being done.

The manufacturer very naturally set up the contention that the injury was one which could not have been reasonably anticipated, as it was merely work of a temporary character.

The Court held that the manufacturer was negligent and that a judgment for $1,741, which the employee recovered for the loss of his eye, was not too much, because the former should have warned the latter of the flying chips or else should have prevented them from flying, and that the manufacturer was not relieved because the work was temporary work. Webb vs. Buick Motor Co., 148 N. W. (Mich., 793).

Not only does this principle of law apply to machinery, such as power drills, lathes, etc., but it also applies to motor cars which might be used for emergency or repair work on the road and towing disabled cars into the garage.

In one late case it appeared that a motor car manufacturer had provided a one-half mile dirt track for testing purposes. The testers employed by the manufacturer were accustomed to take the completed cars out on this track and test them as regards speed. One day while a car was being tested it was driven too rapidly around a curve and an accident occurred which caused the death of the tester. His representatives started suit against the manufacturer, claiming they had been negligent in the construction of the track and for that reason they were entitled to damages for the tester's death.

The Court decided against them, however, because it was shown on the trial that the straightaway portions of the track were safe for high speed driving. The Court said that the tester should not have relied upon making the turns at high speed but should have slowed up each time he approached a curve.

The theory of the employee's representatives, who brought this action, undoubtedly was that he had not been provided with a safe place to work, but the Court discarded this theory.

Practical Questions of

Business Law

are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

The Trust Agreement

Editor Motor World:—In your April 5 issue you have an article on the advantages of doing business under a Trust Agreement. Will you kindly give me an outline of organizing under the same and if it will be better than a limited partnership?

I am contemplating enlarging my business and take in a partner, but as I don't care to jeopardize my homestead by any miscues on his part, I want to get started right.—W. T. S., Gilette, Wyoming.

Answer:—There is nothing we can add to our former article as to the advantages of doing business under an agreement of trust. It is the up-to-the-minute way of doing business, having neither the disadvantages of doing business as a corporation or as a copartnership.

Your local counsel can prepare the necessary papers for you. If perchance he has never heard of doing business in this fashion, however, you can refer him to "Sears on Trust Estates as Business Companies." Only the states of Massachusetts and Oklahoma have statutes regulating the doing of business in this fashion, so you will not be unduly restricted in your State, as you will organize and do business under the old common or unwritten law.

Creditor Liable for Repairs in This Case

That where a debtor and a creditor agreed that the latter should accept the former's automobile in payment of the debt and advised a garageman who was repairing the automobile to that effect and the garageman treated the person to whom the car was transferred as the owner he was liable for the repairs according to the rule laid down in the Pennsylvania case of Selznick vs. Holmes reported in 118 Atlantic Reporter at page 552.

Repairing Car on Left of Road Lawful

That a traveler may use the left hand side of a public highway to examine or repair his motor car in Wisconsin without being liable to a charge of unreasonably interfering with other cars on the highway was the decision in the case of Schacht vs. Orwick reported in 190 Northwestern Reporter at page 88.

Driver Responsible for Safety of Guest

That a guest entering an automobile takes it and its driver as they are but nevertheless the owner of the car is liable if the guest is injured through the driver's failure to use ordinary care and diligence so that no new danger is created, was the decision in the Connecticut case of Dickerson vs. Camm reported in 118 Atlantic Reporter at page 518.

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Repairshop Shortcuts

The Well Equipped Shop Gets the Business

THERE is a great deal of truth in this slogan which has been adopted by several shop equipment manufacturers. The shop that still uses hand methods of grinding valves and takes nuts off with a solid wrench instead of a speed wrench cannot expect to compete in price with the shop that has all up-to-date facilities. And not only should the more expensive equipment be good and complete, but the minor shop helps and shop made equipment should be just right for the purpose or it is of no use to the mechanic and creates a bad effect on the mind of the customer.

Send your shortcuts to Motor World. You will receive one dollar for each one accepted. Those which are practical and not previously printed will be accepted and printed in this department.

No. 3468—To Remedy Squeaking Wheels—Wooden wheels that have dried out and squeak can be silenced by using a special screw jack which can be constructed in the shop. A thin cut washer is placed between the end of the spoke and the felloe to take up the lost motion.—H. R. Grigsby, Oklahoma Gas & Electric Co., Oklahoma City, Okla.

No. 3469—Adjustable Work Stand—An adjustable work stand enables one man to handle large or long work in a forge fire. It is made of 1 in. pipe, to which are welded three ⅝ in. iron rods, 18 in. long, to serve as legs.—H. J. Engel, New Braunfels, Tex.

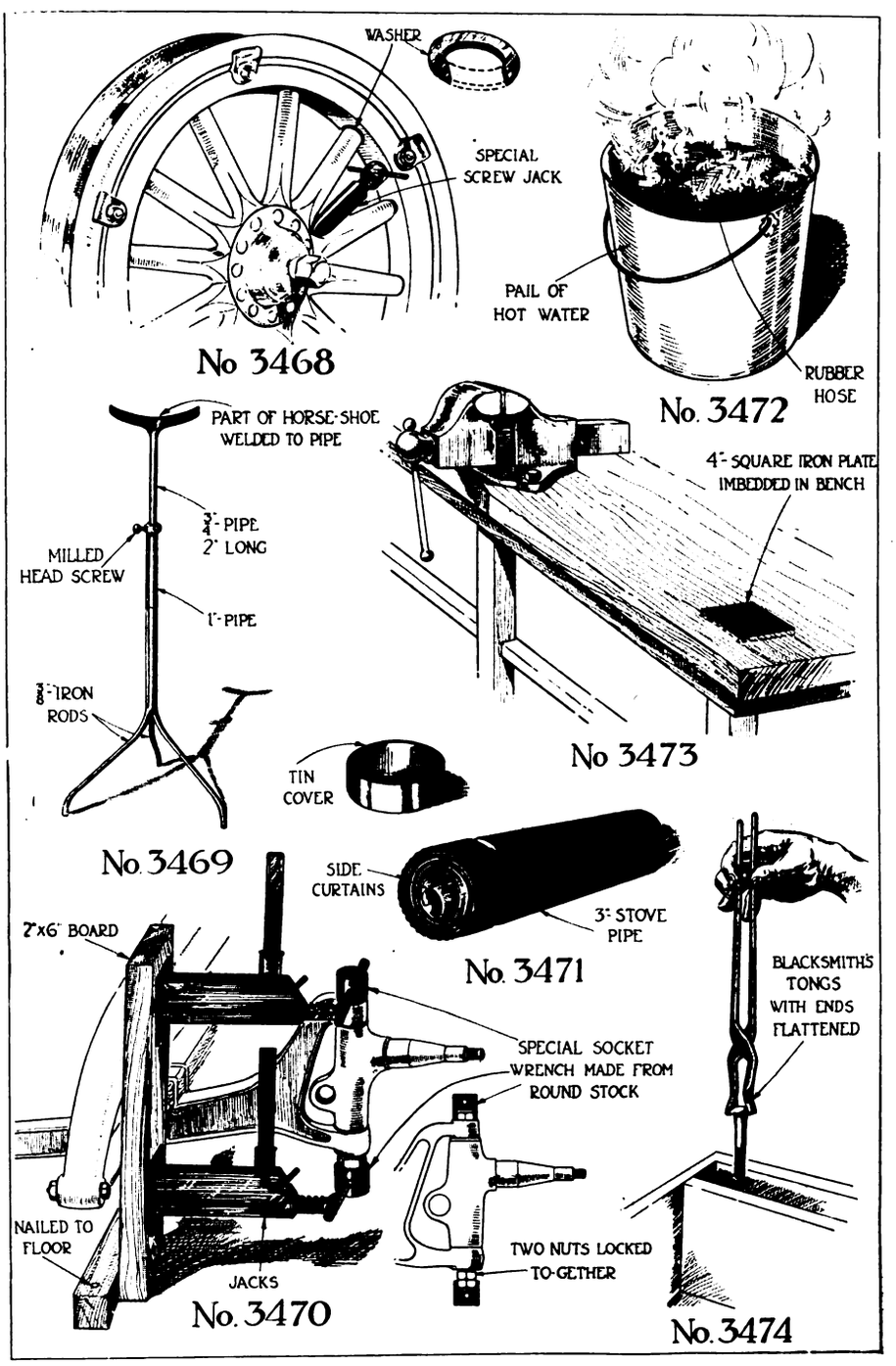
No. 3470—Removing Frozen Spindle Bolt—A frozen spindle bolt can be started by using a special socket wrench on top of the bolt and two nuts locked together on the bottom. Both of these wrenches are pushed by means of jacks footed against the board held by the frame at the upper end and by a board nailed to the floor at the lower end.—R. G. Dasse, Burlington, Vt.

No. 3471—Stowing Curtains—Side curtains are stowed away in a piece of 3 in. stove pipe, to which can be fitted a tin cover. This prevents breaking of the celluloid windows.—H. R. Grigsby, Oklahoma Gas & Electric Co., Oklahoma City, Okla.

No. 3472—Installing Radiator Hose—In cases where it is difficult to force the hose over the male joint, the hose can be soaked for a few minutes in a pail of hot water which expands the hose slightly and also makes the rubber soft so that it can be clipped and placed.—Bayard Sharpe, Los Angeles, Cal.

No. 3473—Bench Anvil—A handy bench anvil that is out of the way and which protects the work bench is made of a piece of iron about 4 in. square. A square hole is made in the bench over a post and the iron set in flush to the top of the bench.—Edward Bredar, Rock Island, Ill.

No. 3474—Bolt Inserter—A tool for placing bolts in inaccessible places is made from a pair of blacksmith's tongs with the ends flattened and bent over at right angles. This gives a firm grip on the bolt head.—H. J. Engel, New Braunfels, Tex.



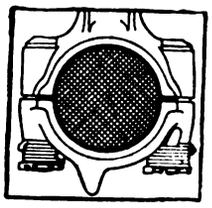
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Equipment for the Shop

New Machinery and Tools for Saving Labor and Time

VEC Bearing Adjusters

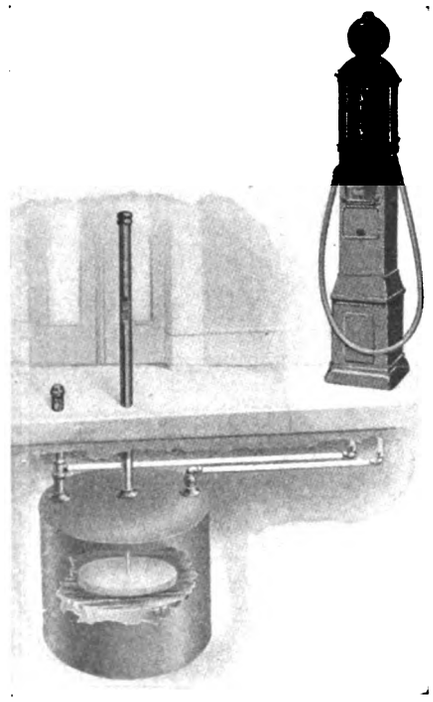
VEC Products Co., Cedar Rapids, Iowa



The adjusters are placed underneath the nuts on the connecting rod cap bolts, where they automatically adjust for wear. They are made in sizes to fit ⅜-in., 7/16-in. and ½-in. bolts.

Beacon Visible Gasoline Dispenser

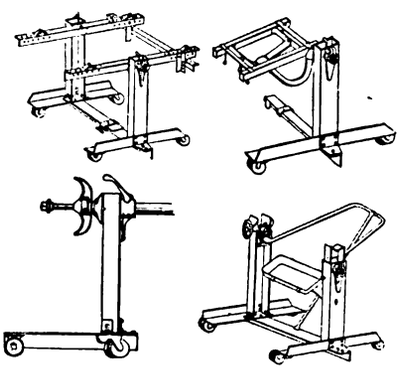
Beacon Visible Pump Co., Inc.
720-724 West Breckenridge Street,
Louisville, Ky.



This is a visible gasoline dispensing system consisting of a curb filling station, underground tank and necessary accessories. The curb outfit has the glass bowl mounted on top and surrounded by a steel crate. Illumination and light at night is secured from an electric light in the crate. The anti-drip valve is self-closing and the drain valve is opened by closing hinged cover to the opening in dispenser case, thus draining the 5-gal. container. The angle check valve is located above the underground tank, is accessible and has the approved leather seat. The ⅓ h.p. motor is vapor proof and is self-oiling and the vacuum strainer and primer are quite accessible. The pumping unit is very rapid, dispensing 5 gals, in approximately 12 sec. Will handle 10,000 gals. of gasoline for $1.50 at 10 cents per kw. The height of the machine is 8½ ft.; weight 650 lbs. By removing a few bolts the entire outer case can be removed in two parts and all working parts are accessible.

Four-in-One Universal Stand for Engines, Axles and Radiators

Motor Service Equipment Co.,
Hunts Spur, Mich.

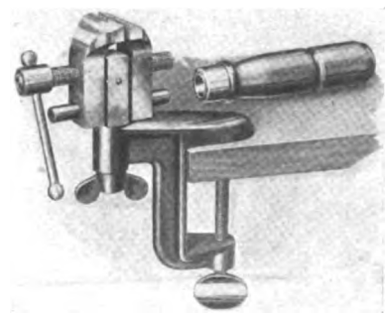


Prices: Universal Stand, $37.20; Axle Attachment, $10.80; Ford Engine Stand, $17; Radiator Attachment, $8.40; Interchangeable Stand, including Radiator Attachment, $50.

This is a universal stand for engines, axles, Ford engines and radiators, requiring only 2 to 5 minutes to make the change from one stand to another. The spindles of the engine's supporting rails are of the tubular type, 1 15/16 in. in dia. The upright members are heavy steel plate, bent in the shape of 6-in. channel having 3-in. legs. The adjustment of this stand is made in the base cross members, which telescope and are locked with one hand wheel. The radiator attachment tilts in all necessary positions, and the locking clamp takes care of one and a hand lever takes care of the other tilting position. The net weight of the entire assembly is 350 lb.

Starrett Combination Vise

L. S. Starrett Co., Athol, Mass.
Price $4, with clamp $5



This convenient new hand vise will be known as No. 86. A ball-end handle is used for tightening the jaws. A clamp is furnished which makes it possible to use this tool as a bench vise. When used with the clamp, the vise can be adjusted to any point in a complete circle. The capacity of the vise is about 1½ in.

Pumpless Blow Torch

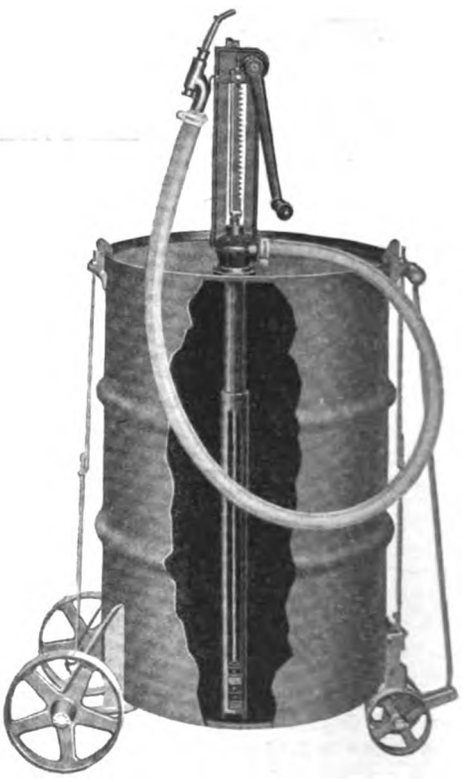
Pumpless Blow Torch Co., Inc.,
Keystone Building, Pittsburgh, Pa.



The fuel used in these torches is Bu-Tane, which is supplied in steel cylinders. The torch may be started and operated in any position. It is simply necessary to open the valve and light the burner to start the torch.

Handy Ben Self-Measuring Grease Pump

Bennett Injector Co., Muskegon, Mich.



This is a self-measuring, 1-lb. grease pump for steel or wooden barrels with 2 in. bung. It is adjustable and attached to half or full size barrels. The suction chamber and piston plunger are down at the bottom of the barrel where the grease is trapped and lifted out. The pump will handle grease that will barely flow or gravitate. The pump shoots 1 lb. of grease at each stroke of the piston and a large set screw on the head of the pump enables the operator to adjust for different consistencies of grease. A 20 per cent range of adjustment takes care of every requirement. The hose is fitted with a pistol grip, non-drip nozzle which stops the flow of grease. A portable truck enables the grease outfit to be moved about easily.

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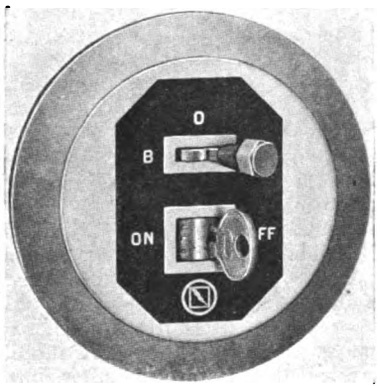
Equipment to Sell

Profit for the Dealer in New Devices for the Car and Truck

Connecticut Replacement Switch

Connecticut Telephone & Electric Co., Meriden, Conn.

Price $4.50

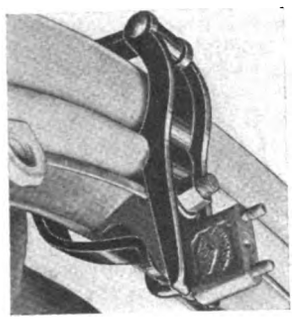


The new Connecticut replacement switch will be known as 190-Y. It has a beveled and black enamel aluminum face plate, of the proper size to cover opening left by the round type switch it replaces. Studs long enough for mounting on either wood or metal dash are included. Both lighting and ignition switches are of the toggle type.

Hercules Spare Tire Protector

Hercules Mfg. Co., Indianapolis, Ind.

Price $1, without padlock



The device consists of a hinged clamp which fits around the spare tire and rim. The front part of the device is a malleable casting, which takes the place of the regular wedge used to hold the rim and tire on the carrier. The hinged part is a band of high carbon steel. The device is installed by slipping the front part on over the threaded stud, from which the original nut and rim wedge have been removed. The nut has been replaced on the threaded stud and tightened, the hinged band swung up into place and the padlock hooked through both ends of the clamp and the tire carrier bracket.

Melville Foot Rest

Melville Machine Co., 500 Bellevue Avenue, Detroit.

Price $3.75.

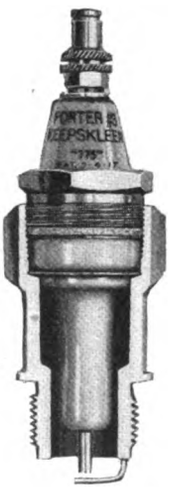


This device will fit either button or lever type accelerator pedals. The friction hinge offers the necessary resistance to the weight of the foot without interfering with the operation of the pedal. It is made of polished aluminum.

Porter Spark Plug

Porter Spark Plug Co., 4356 Cottage Grove Avenue, Chicago.

Price $1.



Made in sizes to fit all car, truck and tractor engines. The chamber surrounding the lower portion of the porcelain is said to make this spark plug self-cleaning.

Stover Arrow-Site Rear Warning Signal

Paul A. Stover, Racine, Wis.



The signal is attached to the left rear fender and shows a green light when the car is going ahead. The green changes to red when the brakes are applied or when the clutch is released. It also indicates right and left turns in red by means of the arrows. When the car is standing the lamp is used as a parking light.

Check-Stop Signal

Meilicke Mfg. Co., 940 Wrightwood Avenue, Chicago

Price $7.50



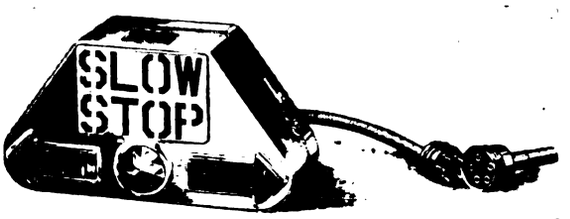
This signal combines stop signal and taillight. It is operated by the brake pedal. Price includes a check-lite. The housing is a one-piece aluminum casting.

Diamond Automatic Automobile Safety Signal

Automotive Distributing Corp., 703 Finance Bldg., Philadelphia

Price, Standard Model—$12.50

Special Model—$15.00

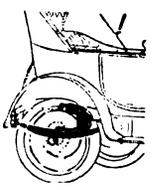


This device signals Rite in green, Left in red, Slow in orange and Stop in red, or in such other colors as may be required. The taillight and a license plate bracket are also parts of the signal. The left and right signals are operated by a switch on the steering arm, and the slow and stop signals by a switch on the service brake rod. The standard model is finished in black enamel and the special model in nickel.

Loadacar Shock Absorber

Fike Drop Forge Co., 953 Harrison Street, Indianapolis, Ind.

Price $5 per set of four.



The device takes the place of the load giving the same spring action and eliminating rebound. It is claimed to give an easy rocking-chair motion while driving over rough roads. It acts to give a full load on the springs when the car is empty.

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Dealer Proposes Seasonal Discounts on Cars

Believes Plan Would Benefit Dealer and Manufacturer —What Do You Think?

EDITOR Motor World:—Why not a seasonal discount to eliminate the deadlock between a good many manufacturers and a good many dealers on the question of stocking cars in winter? Some dealers don't buy cars in winter for spring delivery because they haven't the funds. Others who have the funds won't buy them in adequate numbers, because the carrying charges eat up too much of their profits. As a result, manufacturers have to operate their plants on the costly basis of rush periods and dull periods. The result all around, for manufacturers and dealers, is a cutting down of profits that might not be necessary on a sliding, seasonal discount plan. Let's look it over.

We'll say a car's discount to a retail dealer is 20 per cent. If he borrows money to carry a stock of cars three months to insure spring deliveries, we'll say, he pays a quarter of 6 per cent, or 1½ per cent, in interest on the investment, and in addition has rental and insurance charges. So he holds his winter stocks down as low as the demands of the manufacturer and the dictates of his foresight will let him. Suppose the manufacturer's list price was so adjusted that he could offer a 30 per cent discount during November, December and January, perhaps even for a longer period on open cars. The dealer could carry stocks without cutting into his minimum discount of 20 per cent; he would even have a margin over that, in fact. His banker, knowing of the plan, would see the wisdom of winter stocking and be more willing than he now is to loan funds. The manufacturer could spread his production more evenly over the year, cutting down his overhead and giving his employees steadier employment.

What do the manufacturers think of the idea? What do the readers of Motor World think of it? I would like to hear from some of them.—Veteran Eastern Dealer.

The Tourists' Ideal Filling Station

Editor Motor World: I've been touring a lot this summer, and I've gotten some very definite ideas as to what is the ideal filling station from the viewpoint of the average tourist.

In the first place, it should be on a marked highway. The average motorist passes through towns only on the marked highways. He dislikes getting off the highways to go to filling stations, no matter how fine these stations may be, because once the tourist has left a marked highway in a city it is generally a pretty hard thing to get back on the highway.

The ideal filling station, too, should be equipped with enough gasoline pumps to handle a considerable amount of business without delays. I know for my own part that there is nothing I hate worse when touring than to get held up at a filling station which is inadequately equipped for the handling of a good amount of business. Time lost in this way is time that is wasted and I think all motorists will bear me out in hating to waste time.

The ideal filling station, too, should have plenty of oil all ready in quart bottles for putting into the car. It should also have a machine ready for shooting in a pound of grease if it is needed. Also, of course, there should be free air and water and I prefer the filling stations where you get the water for your radiator through a hose instead of having to pour it in from a can or a bucket.

But this is only about half of the service which my ideal filling station performs for the touring motorist. Now I'd like to see on a filling station's outside walls some road maps of the territory within a fifty-mile radius. It would be a very easy proposition to get such maps on to the walls of the filling stations and to have these maps so arranged that they would be impervious to weather conditions.

On these maps the distances to all the important points named on the maps could be plainly marked so that everyone visiting the stations could get the distances at a glance.

Then beneath the maps on a blackboard there could, from day to day, be notations regarding the road conditions on the main highways leading out of the city. Only the highway conditions would need to be noted, because the touring motorist cares nothing at all for road conditions on side roads.

There could also be on file at the filling station information regarding the city's hotels and the prices charged. Also there could be information as to eating places and as to garages where cars could be stored for the night and where repair work could be secured.

And, this would be a very important point, there should be information at the filling stations as to the nearby free and pay camps. This camp information could include data about accommodations, water supply, toilets, whether or not there are tents at the camp which can be rented, whether or not there is a store at the camp and what supplies are carried at the store, whether or not there is a place to cook food and whether or not there is a bathing beach at the camp. If the camp is a pay proposition there should also be information as to the prices charged. It would help a lot if the filling station indicated the locations of camps on the maps on its walls and if it had definite and specific information how to reach the camps if they are located off the highways.

Of course, the ideal filling station would have a wash room and a rest room for women. And, of course, it would have cool drinking water for thirsty tourists.

A very important factor in the ideal filling station would be the attendants. Practically all filling station attendants nowadays are courteous and helpful to tourists, but not many of them have actually been over the roads over which they are directing tourists. So at the ideal filling station only those attendants would be employed who had actually been over the highways within a radius of fifty or seventy-five miles of the station. Imagine how much more authoritatively such attendants could talk to motorists about road conditions and distances. And imagine how deeply such attendants would impress themselves upon tourists and how the tourists would talk to other tourists about these attendants. All of which would, of course, make for more business for the filling station.

Filling stations nowadays so often call themselves service stations. That's exactly what the tourist's ideal filling station is—a service station at which it is possible for the tourist to get all the service he can possibly need. And in this letter I've tried to indicate some of the outstanding services which would most greatly appeal to the tourist who patronizes filling stations.—*Indiana Merchant.*

Write to Motor World About It

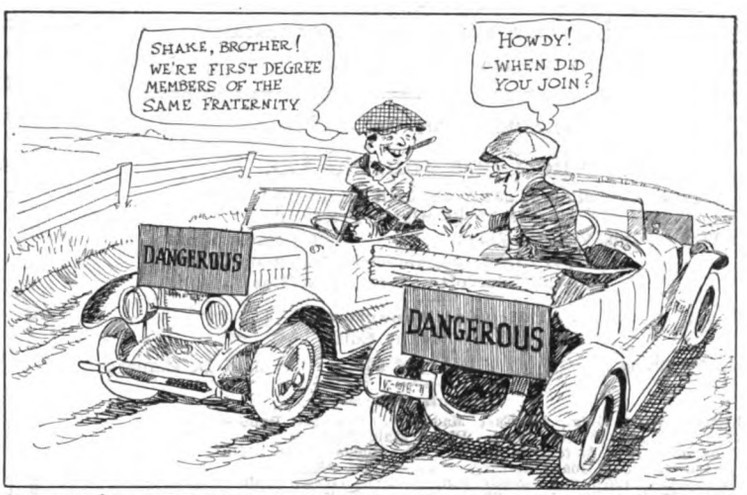
This page every week is devoted to discussions of topics of the trade by Motor World readers. Have you a suggestion to overcome a difficulty or improve some condition within the industry? Write to Motor World about it.

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Along the Automotive Newsway

By Leo Roche

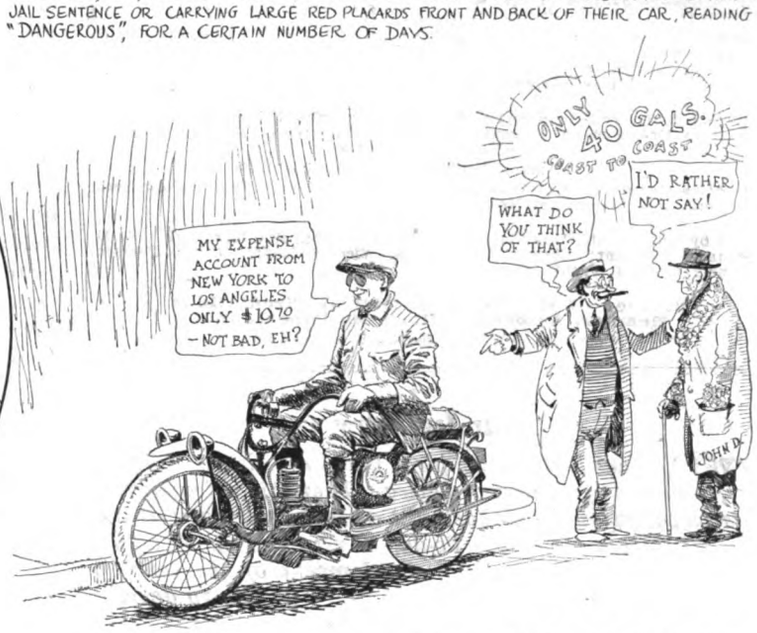




SAN DIEGO, CAL., HAS ADOPTED A PLAN TO CURB SPEED MOTORISTS. OFFENDERS HAVE OPTION OF JAIL SENTENCE OR CARRYING LARGE RED PLACARDS FRONT AND BACK OF THEIR CAR, READING "DANGEROUS", FOR A CERTAIN NUMBER OF DAYS.



THIS YEAR PASSES OUT AS THE GREATEST YEAR IN THE HISTORY OF THE AUTOMOTIVE INDUSTRY FOR CAR AND TRUCK PRODUCTION.



AVERAGING 84.2 MILES PER GAL. OF GAS AND 673.6 MILES PER GAL. OF OIL, CANNONBALL BAKER DRIVES NERACAR ACROSS CONTINENT ON 40 GALS. OF GASOLINE AND 5 GALS. OF OIL, ESTABLISHING REMARKABLE ECONOMY RECORD.



JIMMY MURPHY WINS TITLE AS YEAR'S CHAMPION DRIVER-WINNING THE 250 MILE RACE AT BEVERLEY HILLS SPEEDWAY-THE LAST RACE ON THE A.A.A. SCHEDULE.



E.V. RICKENBACKER RETURNS FROM EUROPE WHERE HE SPENT TWO MONTHS HONEYMOONING AND VISITING THE FOREIGN SHOWS.



RAILROADS ARE BECOMING MORE AND MORE INTERESTED IN STORE-DOOR DELIVERY BY MOTOR TRUCK.

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DEALERS, JOBBERS AND GARAGEMEN
Reg. U. S. Pat. Off.

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Our Industry

THEY called them empire builders—those railroad builders of pioneer America. They laid a foundation of transportation which has built an empire of agriculture, industry and commerce. To-day a new agency of transportation is fostering a new development of the country along lines beyond the ability of the railroads to develop it. The new power in transportation is our vast fleet of motor cars and trucks—nearly twelve million of them. They have made hamlets into villages, towns into cities; they have brought buyers to market, markets to the buyer; they have abolished the city man's imprisonment, the country man's isolation; they have annihilated time and distance in the movement of persons and commodities. A great industry is serving this new transportation, supplying the man power and the materials it requires. Building or selling a car or truck or an article of equipment, or performing a maintenance task is serving motor transportation, and serving motor transportation is serving the nation's progress.

The Winter Tractor Canvass

TRACTOR sales during the winter months are few and far between. A few orders may be secured for spring delivery but, on the whole, little actual tractor selling can be done during the winter months. The farmer can't use the tractor until spring and there is little reason why he should invest in one until then. Despite this condition, however, there is plenty for the dealer to do during the winter months.

Spring will bring a larger and more profitable business if the winter months have been devoted to missionary work. Winter canvasses will locate the farmers who are most likely to buy tractors in the spring. They will provide information as to the financial resources of the farmers in the territory. They will do much useful preliminary work that, in the rush of spring work, would be left undone.

Tractor dealers should plan now to canvass their territories intensively this winter. The canvass should get under way not long after the first of the year. Dealers who made canvasses last winter found it so profitable that they are doing it again this winter.

Working in Bad Weather

IT requires a lot of determination, a pair of leak-proof "dogs" and good, warm clothing to venture out of the salesroom on the many cold, wet, slushy, disagreeable days of winter. It's a lot easier and pleasanter to invent an excuse for remaining inside—expecting a prospect—a phone call to rush up and sell somebody a sedan—well, the old line, everybody knows it.

The extent of the demoralizing effect of bad weather on some sales forces, if it could be measured, would amount to many thousands of dollars of lost sales each year. Some dealers and sales managers have recognized this fact and insist that salesmen leave the salesroom on disagreeable days with the same promptness as on fair ones—but this does not solve the problem.

What can be done, and what undoubtedly should be done with sales forces that have developed tendencies to "hug the fireside" in winter, is to SELL them on the actual advantages of working in bad weather—and there are many.

The opportunities for an effective demonstration and sales talk are never better than when the salesman can fit that demonstration and visit into the plans of the prospect or his family by arranging to take one or another of them to the club for lunch or home for dinner, or down town on a shopping tour. Occasionally some salesmen "play a hunch" and call up a prospect on a wet, cold day and suggest that the prospect ride home from the office in a nice, warm dry car. There's no way of finding out how many of these "hunches" are successful, but it is a pretty good wager that the percentage is worth while.

The chances of a prompt audience, an interrupted interview, and thus the opportunity of getting concentrated attention, are usually much better on disagreeable days. The reason is obvious. Many other people besides automobile salesmen invent excuses for staying indoors on disagreeable days and the salesman that does venture out has the prospect pretty much to himself.

The chances of finding people in their homes evenings are vastly better on stormy nights, and often the visit of the salesman, which otherwise might be an interference with plans to visit the "movies" or drop in on neighbors, becomes a welcome and interesting diversion.

"Advantages of Working in Bad Weather" might be made the topic of a very interesting discussion at a sales

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meeting this month. It would undoubtedly serve to direct attention to a practice that is contributing to the winter "lull" in some sales organizations, and in some cases it will provide inspiration toward better use of much time that otherwise might be wasted this winter.

Motor Cars Keep Out!

A TRAFFIC COURT magistrate has suggested that eventually it may be necessary, because of street congestion, to bar "pleasure vehicles," as he calls them, from Manhattan Island, south of Columbus Circle. This would close the wholesale and retail, theater and financial districts of New York, the very heart of the city, to all but commercial vehicles, which might take in "business" cars as well as trucks.

Only a few days before the traffic judge made his comment the metropolitan police commissioner suggested as a possibility for widening the most congested streets to accommodate additional vehicle traffic that first-floor stores be shoved back, that is, their fronts cut off several feet, and space gained be used for arcaded sidewalks.

The two official pronouncements serve to turn a sharp light on the serious obstacle in the country's greatest city to expansion of the use of motor vehicles and so to growth of motor vehicle sales. It suggests that other large cities and smaller communities in a smaller way undoubtedly have traffic problems that are proving a stumbling block in the way of logical growth of motor transportation.

One cannot help but wonder what might be accomplished in New York, for instance, if a strong, progressive association of automotive merchants could take a hand in such a problem as traffic congestion, even employing an expert, or experts, to advise it, as such an association could well afford to do, and go to the governing officials with recommendations for its solution.

In most communities about all the automotive business men have contributed so far to improvement of traffic and other public problems is to say "Yes, yes," after somebody else has worked out a solution. There are some notable exceptions of course. There ought to be more of them.

Home Made Sales Manual

IN new York City there is a passenger-car salesman who used to be a service station executive. For two or three months he has led the sales staff. That's interesting. It suggests that perhaps the trade ought to look its service stations over a little more carefully for sales material. But there is something even more interesting about this man. He is making up a private sales manual.

This salesman says neither the manufacturer nor dealer in the car he sells has published anything thoroughly comprehensive to aid salesmen in closing retail orders. He says a salesman might carry most of the information he needs in a briefcase filled to fatness with catalogs, sales bulletins and numerous other odds and ends of "literature," but it's like looking for a rowboat in the middle of the Atlantic Ocean to find the right piece of printed matter when certain subjects come up in interviews with prospects.

So this salesman has bought a pocket-size book binder and is making up pages of his own, some original, some clipped from text and illustrated matter in the manufacturer's catalogs and bulletins. When he gets the job done he will have a sales manual, all classified and indexed, that for his purposes at least may be called complete.

Quite an idea, isn't it? Worth something, maybe, to an enterprising dealer or a manufacturer. We can visualize a book like that. Brief, to-the-point facts about the body arrangement, for instance, under "B," and a picture so that the salesman can show the prospect what he is talking about. Loose-leaf book, perhaps, so that it can be kept up to date. Salesman quits lugging around a briefcase. Has all the "dope" in the pocket-size book. An idea? Maybe, for somebody.

Things to Think About

AMONG dealers who make substantial profits in automotive equipment merchandising some pay their employees commissions and others don't. But we've never heard of a dealer allowing his employees accessory commissions who was considering giving up the accessory business. Some allow 2 per cent, some three and a few that we've heard of five. Not so much, out of an average gross discount of thirty-three and a third.

"Passenger cars are sold at list: why not trucks?", somebody in the trade asks. Suppose this fellow never heard of used cars?

Are you one of the "wise guys" selling automotive equipment for Christmas gifts? Sell it a little harder the next two weeks.

"You will never find a dirty rung at the top of the ladder," says John W. Codd in "The Gray Goose," Wills-St. Claire house organ. That puts it right. Some of the half-successful men in the automobile business have dirty salesrooms, dirty offices and dirty shops. The wholly successful fellows swept the dirt out long ago—if they ever had any.

Some distributors and jobbers have recently bought motorcycles with side cars for delivery and collection of light freight, such as pick-up parts orders and so on. The motorcycles can get through traffic faster than trucks, they say, and they can park in places too small for trucks or cars. Sounds reasonable. And if motorcycles are so useful for some men in the automotive trade probably they are just as handy elsewhere. Which suggests that automotive dealers might as well be selling some of them. Motorcycle profits are profits, aren't they?

Health authorities state, on the basis of statistics, that the average expectancy of life in the United States has been increased in the last 40 years from 40 to 55 years. The average child can expect to live to be 55. Much of the increase in expectancy has been brought about in the past few years by more intelligent medical and sanitary work and better living conditions. We feel pretty sure some of it can be attributed to the health-giving recreation provided by the motor car. Something else for the industry to be proud of.

The business that neglects the welfare of its employees cannot complain if its employees are careless about the welfare of the business.

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N. A. D. A. Forces Down Insurance Rates

COMPANIES REDUCE THEM 20 PER CENT

Are Still Higher, However, Than Those Paid by Association Members

ST. LOUIS, Dec. 11—After six months of the competition to which casualty insurance companies of the United States have been subjected by the Insurance Service Department of the National Automobile Dealers' Association, the insurance companies have revised the "Manual" rates applying to automobile dealers and garages to a point virtually 20 per cent lower than the existing rates at the time the N. A. D. A. began its struggle for lower rates for the industry.

The rates are still 25 to 30 per cent higher than those available for members of the national association, through their organization.

To show just what has been done in actual figures by the revision of the manual, the rates applying in the cities of New York, St. Louis and Chicago are compared by C. A. Vane, general manager of the N. A. D. A., in a statement commenting upon the association's victory for the principle for which it contended.

Standing of Rates

In St. Louis and Chicago on a public liability policy of $5,000 to $10,000 limits and property damage of $1,000, the rates for automobile dealers were:

	P. L.
For first $10,000 payroll.....	$2.50 per $100
Next $15,000 payroll.....	1.90 per 100
	P. D.
For first $10,000 payroll.....	.95 per $100
Next $10,000 payroll.....	.70 per 100

By this rate a dealer whose payroll was $25,000 a year would be paying $735 for public liability insurance of $5,000 to $10,000 limits with $1,000 property damage. This makes an average rate of $2.94 per $100 of payroll. Since the revision the casualty companies have abolished the division of first $10,000 and next $15,000, and have authorized a flat charge of $2.55 a hundred.

The New York rates have been reduced from an average of $4.40 per $100 of payroll to $4 per $100 of payroll on the basis of a payroll of $25,000 a year. These distinctions and revisions have been made effective throughout the entire United States in about the same degree of reduction.

Vane says:

The automobile industry has been the most ignorantly written insurance business in existence in commercial America to-day and there is a great deal of work still to be done before the business is properly taken care of.

For example one of the grossest injustices to the dealers is in the charges made by the carriers against a dealer's clerical help. A clerk for anyone else is written at about 10 per cent of the rate that is charged to a shop mechanic, but in the automobile dealer's business rates for clerks are just as high as for mechanics.

HENSHAW DISTRIBUTES FREE WOOD TO POOR

BOSTON, Dec. 8—On account of the acute coal shortage situation, arrangements are being made by the Henshaw Motor Co., Dodge Brothers distributors in Boston, with the co-operation of the Boston & Maine Railroad, to have seven carloads of railroad ties, aggregating 1200, hauled in close to Boston Tuesday morning.

Plans are being made to furnish sufficient motor trucks to haul them, distributing the ties gratis among charitable organizations of different denominations.

SURVEY SHOWS LOSS IN USED CAR VALUES

ST. LOUIS, Dec. 11—The National Automobile Dealers Association is now making a survey of the used car situation in Pennsylvania. Of 3100 dealers addressed, complete replies have been received from 252, who reported 2445 used cars on hand Dec. 1, which were acquired at a cost of $1,014,322.

The present actual market value of these cars, the dealers estimate, to be $844,648, or a flat loss of $169,674. It is figured that by the time there is added to this figure the cost of conditioning the cars for resale, the selling cost and the legitimate items of overhead expense, another $160,000 loss will be suffered.

Forty-two dealers reported the actual value of the cars the same as the acquisition cost, 45 reported the acquisition lower than the present actual market value, but 165 dealers reported the acquisition cost higher than the present actual market value.

Nash and Velie Output

CHICAGO, Dec. 9—Nash Motors at Kenosha, Wis., is now running on a schedule of about 170 fours and sixes per day. Velie Motors at Moline is operating on a daily schedule of about 30 cars, production being somewhat restricted because of the scarcity of closed bodies.

GORDON LEE LEAVES GOVERNMENT SERVICE

Becomes Identified with Yellow Coach Manufacturing Co. in Chicago

CHICAGO, Dec. 11—Gordon Lee, has resigned as chief of the Automotive Division of the Bureau of Foreign and Domestic Commerce, to become director of foreign sales for the Yellow Coach Manufacturing Co. of this city. His resignation takes effect Dec. 15.

Lee has been head of the Automotive Division since its inception under the Hoover regimé two years ago. Installed simultaneously with some ten or twelve other commodity divisions, the division has grown constantly in efficiency and scope under Lee's administration. It is now one of the most active and important of the commodity divisions.

Returning to Industry

Lee is making a return to active work in the automotive industry through his new connection. Before becoming chief of the division, he traveled extensively in foreign countries as a representative of Gaston, Williams & Wigmore. His active merchandising work in the domestic field includes several years' work with Northway Motors in the State of New York, where he gained considerable reputation as a missionary for the Fordson tractor.

Lee is the third important executive from the industry to go to the John Hertz interests during recent months, J. A. Ritchie and George A. Green having been brought to Chicago from the Fifth Avenue Coach Co. of New York some weeks ago, as executives in the corporation which will build and operate taxicabs and motor buses on an extensive scale.

A successor to Lee has not yet been selected.

FIELDS WILL DIRECT SALES FOR CHALMERS

DETROIT, Dec. 12—J. E. Fields has been named director of sales for Chalmers cars. He has resigned as sales manager of Liberty Motor Car Co., which company he joined after a period of service as sales executive at Hupp.

Fields' earliest connection with the industry was as a Chalmers distributor at Fargo, N. D., taking his contract at the time Hugh Chalmers took over the former Thomas-Detroit. He is now assuming the sales management of the company which he first joined as distributor.

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Ohio Meeting Favors Repeal of War Taxes

OTHER LEGISLATIVE MEASURES DISCUSSED

Charles Rattermann Chosen President—Shover Is Re-elected Manager

TOLEDO, Dec. 8—Three hundred and fifty delegates from all parts of Ohio attending the sixth annual convention of the Ohio Automotive Trades Association went on record as favoring the repeal of excise war taxes on automotive products. They also indorsed legislation penalizing the defrauding of battery dealers through the retention of rented batteries and indorsed the general legislative program of the association calling for the equalization of taxes, and making traffic laws uniform and the strengthening of the anti-theft law.

The entire plan of the convention sought to show the complete harmony prevailing throughout the industry. The objects covered in the discussions concerned truck service and sales, garage operation, batteries and electric stations, tire merchandising, passenger car sales and service, shop records and accounting and the handling of used cars.

Bright Future, Says Peake

"The automotive industry to-day has just as bright a future as it ever had," declared E. E. Peake of Kansas City, "and the fundamental reason why the much talked about saturation point will not be reached for some time to come, if ever, is that the automobile is ever increasing its field of usefulness."

Harvey Wilson of New York told of the manufacture of tires and the problems of merchandising, and urged all automotive men to "give the other man the benefit of the doubt."

Speaking on "The Dealer and 1923" George M. Graham, vice-president of the Chandler Motor Car Co., declared that after covering 41 States and visiting hundreds of automotive dealers, he found them in a more prosperous condition than many other merchants and individuals in other lines of trade.

Speaking of conditions, he said:

Business in 1922 went forward in a big way despite price-cutting and many other ordinary discouragements. The time will not come for ten years at least when the market will have enough cars produced to satisfy it. During the last year $3,500,000,000 of automotive products were produced and workmen were paid more than $350,000,000.

That means that we are in a stable business.

The automobile to-day is a form of real estate insurance. It has made suburban and farm property worth more than it was in the pre-automobile days. As the suburban property increases in value so does the market for automobiles.

N. A. C. C. AT DINNER TO HEAR WILL ROGERS

NEW YORK, Dec. 9—Will Rogers is going into the automobile business for one night. He will be one of the two speakers at the annual dinner of the National Automobile Chamber of Commerce, to be held in the Hotel Commodore Jan. 9.

This expert lariat thrower and humorist will talk on the subject, "What I Think About Automobiles."

Graham outlined several plans of disposing of used cars.

Trustees elected for the ensuing year were James Henderson, Youngstown; T. R. Dahl, Cleveland; J. R. Burgamy, Cincinnati; C. A. Dunham, Cleveland; F. K. Boggs, Dayton, and F. E. McClure, Akron.

Charles Rattermann of the Rattermann Motor Sales & Service Co., Cincinnati, was elected president for the coming year; Charles E. Doan, Toledo, first vice-president, and O. L. DeWeese, Lima, second vice-president.

The new president called attention to the big work before the association, especially in dispelling the "legislative clouds hanging over the industry."

E. J. Shover was re-elected secretary-manager.

Delegates were entertained at the Champion Spark Plug Co. Friday noon and at the Willys-Overland plant in the afternoon. John M. Willys addressed the gathering.

PELLETIER PROMOTES RICKENBACKER SALES

DETROIT, Dec. 11—E. LeRoy Pelletier has become advertising manager in charge of sales promotion of the Rickenbacker Motor Co. Pelletier will relieve E. V. Rickenbacker of much detail in connection with sales promotion, which he has directed from the beginning of the organization, and will enable Rickenbacker to devote more of his time to the engineering, manufacturing and general administration of the business.

In turn, Rickenbacker will be more closely association with President and General Manager B. F. Everitt, assisting in the production of cars in the rapidly expanding organization. Rickenbacker and Pelletier now are visiting dealers in the Northwest.

Ford's Glass Plant at Rouge

DETROIT, Dec. 12—The glass manufacturing plant of the Ford Motor Co. will be located at River Rouge.

"WE LIVE IN MOTOR AGE," SAYS HARDING

But He Declares That Trucks Should Pay Bigger Share of Highway Burden

WASHINGTON, Dec. 11—Recognition of the important part the motor vehicle plays in the life of the nation was given by President Harding in his address to Congress last week, when he said:

"Manifestly, we have need to begin on plans to coordinate all transportation facilities. We should more effectively connect up our rail lines with our carriers by sea. We ought to reap some benefit from the hundreds of millions expended on inland waterways, proving our capacity to utilize as well as expend. We ought to turn the motor trucks into a railway feeder and distributor instead of a destroying competitor.

"It would be folly to ignore that we iive in a motor age. The motor car reflects our standard of living and gages the speed of our present-day life.

Gives Motor Car Recognition

"With full recognition of motor car transportation, we must turn it to the most practical use. It cannot supersede the railway lines, no matter how generously we afford it highways out of the public treasury. If freight traffic by motor were charged with its proper and proportionate share of highway construction, we should find much of it wasteful and more costly than like service by rail. Yet we have paralleled the railways, a most natural line of construction, and thereby taken away from the agency of expected service much of its profitable traffic, for which the taxpayers have been providing the highways, whose cost of maintenance is not yet realized.

"The Federal Government has a right to inquire into the wisdom of this policy, bacause the National Treasury is contributing largely to this highway construction. Costly highways ought to be made to serve as feeders rather than competitors of the railroads, and the motor truck should become a coordinate factor in our great distributing system."

No Stutz-Studebaker Merger

NEW YORK, Dec. 11—A rumor, published by a New York daily newspaper, that a merger of Studebaker and Stutz was in contemplation, is denied positively by both President A. R. Erskine of the Studebaker Corp. and President W. N. Thompson of the Stutz Motor Car Corp. of America.

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HANDLEY REORGANIZED UNDER CHANGED NAME

"Knight" Is Dropped and "Motors" Substituted—No Change in Presidency

KALAMAZOO, MICH., Dec. 11 — Handley Motors, Inc., has been organized and has taken over all the assets, including cash on hand, inventories, receivables and plant of the Handley-Knight Co.

The incorporators of the new company are: James I. Handley, W. E. Upjohn, Charles A. Blaney, C. S. Campbell, W. H. Conklin, R. J. Fitness and C. V. Kean, Jr.

Directors named for the time being are Handley, Blaney, Conklin, Fitness and Kean. Handley is president and treasurer, and Blaney, vice-president and secretary temporarily. This is announced as a tentative organization only and in order to get the new corporation into operative form. A permanent board of directors and officers will be regularly elected later on.

Future plans of Handley Motors, Inc., provide for the manufacture of the same Handley-Knight de luxe chassis, with a 6-cylinder engine, instead of the 4-cylinder heretofore used, and a smaller 6-cylinder car now being developed. The development of the new smaller car is pretty well along, and it will be ready to show, in connection with the larger car, at the national automobile shows, in New York and Chicago.

It is the opinion of Handley that the new company, not being committed to any of the old high priced material contracts, will be in position to take advantage of present market levels right from the start and, therefore, expects to be able to market the large car at about $1,000 less than the former price The smaller new six is expected to sell in the $1,250 price field.

LAW'S HAND HEAVIER ON RECKLESS DRIVERS

NEW YORK, Dec. 11—Evidence is at hand to show that law enforcement officials throughout the country are making determined efforts to reduce the number of automobile accidents by compelling motorists to drive carefully.

A judge in Detroit made the lesson sink home by forcing drivers who had caused accidents to visit one of the hospitals and look at children who had been maimed by automobiles.

Mayor Shank of Indianapolis has ordered that hereafter all motorists arrested for violating the speed ordinances shall be taken to jail in patrol wagons and each compelled to give a $5,000 bond.

Los Angeles is compelling respect for the law by sending motorists to jail for 10 days. One of the most prominent of those to suffer such imprisonment is Ralph De Palma, who is serving a 10-day sentence for speeding. The judge permitted De Palma to drive in the Los Angeles race before going to jail.

Republic Truck Condition

ALMA, MICH., Dec. 13—According to the Security Trust Co. of this city, receiver for the Republic Motor Truck Co., that concern showed assets of $6,289,930 and liabilities of $5,181,862 on Sept. 28.

Lorraine in Bankruptcy

DETROIT, Dec. 12—Lorraine Motors Co. has filed a voluntary petition in bankruptcy showing assets of $91,038 against debts of $82,322. The debts are practically all unsecured claims with about $5,000 due on taxes.

PAIGE HAS SCHEDULE FOR 65,000 IN 1923

Of These 50,000 Will Be Jewetts —Program Is 100 Per Cent Over This Year

DETROIT, Dec. 12 — Paige-Detroit Motor Car Co. and Jewett Motors has scheduled 50,000 Jewetts and 15,000 Paiges as its production in 1923, about 40 per cent of which are expected to be closed cars. This new total will be about 100 per cent more than 1922 production.

Production this year, it is declared, will double the best previous year the company has had.

To provide for increased manufacturing the former plant of the Hinkley Motor Co. has been taken over and will be devoted exclusively to Paige assembly. Formerly both Paige and Jewett models were assembled in plant No. 1. This building in the future will be devoted to Jewett only. Under the new plan the company will specialize two entirely separate groups of employees on the two models.

With the addition of the Hinkley building, the company will have seven plants in the southern section of Detroit. The two main plants, in addition to those above, are for the manufacture of the Jewett engines and include the paint and trim buildings.

AUBURN ANNOUNCES DETAILS OF NEW CAR

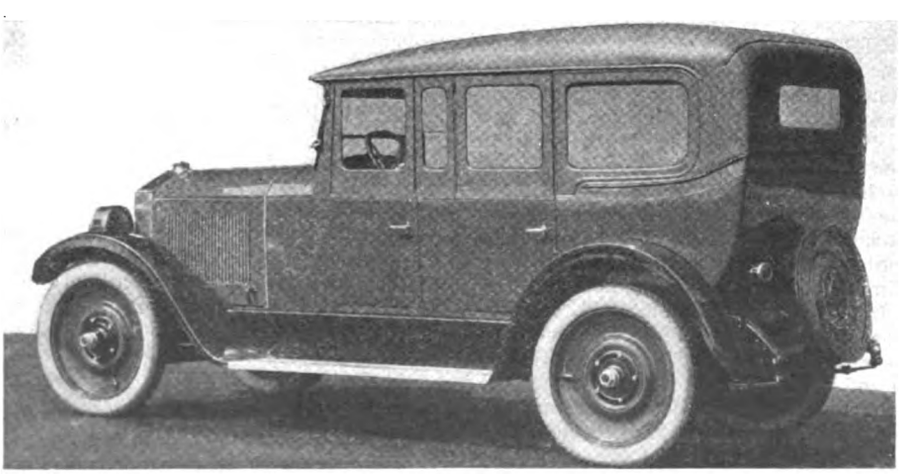
AUBURN, IND., Dec. 8—More complete details of the new Auburn six have been announced by the Auburn Automobile Co. The Continental 6-Y engine will be used, and the clutch will be Borg & Beck. The gearset will be a Warner three-speed type. Remy starting, lighting and ignition will be regular equipment. The side members of the frame will be 6 in. channels of heavy gage metal. There will be four cross members heavily gusseted with tubular members at each end of the frame.

The new car will be produced in two body styles, a five-passenger phaeton and a five-passenger two-door sedan type which will be known as a brougham. The phaeton will have a permanent top as optional equipment. The brougham will have metal body and panels, a soft top, twin front seats and 32 in. doors.

Duplex to Increase Capital

DETROIT, Dec. 11—Stockholders of the Duplex Truck Co. will vote at the annual meeting, Dec. 12, on a proposal to enlarge the board of directors and also to increase the capitalization from 100,000 to 125,000 shares with a par value of $10, if the changes are agreed to. The company intimates that it will extend its sales and manufacturing fields and that changes in managements will be made.

Moon Model 6-40 Tourlux $1445



This is a new Moon phaeton with California top. Both the top and side structure are covered with artificial leather and the beadings where used conform to the curve of the body. The rear window is made quite large and the upper sashes open with the doors. The space between the front and rear doors is glass filled to eliminate the blind spots

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REO ASSETS GAINED; LIABILITIES FELL OFF

Net Profits for Year Ended Aug. 31 Were $3,140,529, President Olds Says

DETROIT, Dec. 13—Total assets of the Reo Motor Car Co. are $16,238,864 and current liabilities are $2,783,025, according to the financial statement as of Aug. 31. The assets have grown $4,000,000 over 1921 and liabilities have decreased. Net profits for the fiscal year were $3,140,529, President R. E. Olds says. In his statement to stockholders, Olds states:

Amounts due the company on notes and open accounts show a substantial reduction over the previous year. This is gratifying in view of our increasing volume of business and tends to show the gradual recovery which is taking place in the business world.

Inventories of raw materials and finished products at the plant and in stock at branches are priced on a conservative basis. These show a slight increase over the last annual report. Extensions to buildings and plant equipment have been made as required without the issue of bonds or preferred stock.

New types of open and closed cars have been added and these have had an unprecedented reception which augurs well for the future plans of the company. The Reo selling organization is continuously increasing its list of distributors and dealers and expanding its territorial lines. In entering upon our nineteenth year there is every indication of a successful and increased business.

Current Assets and Liabilities

The current assets of the company show $5,886,880 cash, bills receivable $2,335,560, and inventories of $7,174,603 as principal items. In the current liabilities, the principal items are accounts payable of $1,734,708 and reserve for taxes of $915,590. During the year in addition to cash dividends, $6,937,250 was transferred from surplus account to permanent investment in the form of a 100 per cent stock dividend. The present surplus of $5,719,913 as compared to $9,785,666 last year. The present book value of the common stock is $14.12.

In connection with the annual report it is noted that the directorate of Reo, comprised exclusively of its officers, has not changed in its 18 years of organization. These are R. E. Olds, president; R. H. Scott, vice-president and general manager; H. T. Thomas, vice-president and chief engineer; D. E. Bates, secretary and treasurer; R. C. Rueschaw, sales manager; George E. Smith, purchasing manager, and Harry C. Teel, factory superintendent.

Wills' Inventory Being Taken

DETROIT, Dec. 9—Work of appraising the plant and properties of the C. H. Wills & Co. will be started next week and will be completed, if possible, by Dec. 20. Manufacturing operations at the plant have been discontinued for the present, except the work of completing cars in process of manufacture. It is the intention of the receiver to begin major operations again at the first of the year.

Cars now on hand and in process of construction will be ample to meet sales requirements for the present, the receiver says. It is hoped to bring the receivership to a speedy termination, and a sale will be held soon after the first of the year. In the meantime the business will be operated on a sales basis, and all orders from dealers will be filled without delay.

DISTRIBUTORS SHOWN NEW RUGGLES TRUCK

DETROIT, Dec. 11—Ruggles Motor Truck Co. showed at its distributor convention a new ¾-ton model on which it soon will be in production. The price has not been definitely set, but it is announced that it will be low, and that the model is designed to meet the requirements of light delivery business. A total of 1420 of the model was ordered.

With the new truck, the company will have three models in production, the others being the 1- and 1¼-ton and the 2- and 2½-ton. On the first two models, the company manufactured 906 in its Saginaw plant during the year past, and 306 at its Canadian plant.

JORDAN IS ASSURED CAPACITY TO AUGUST

Total of 4350 Cars Ordered at Distributor Convention in Cleveland

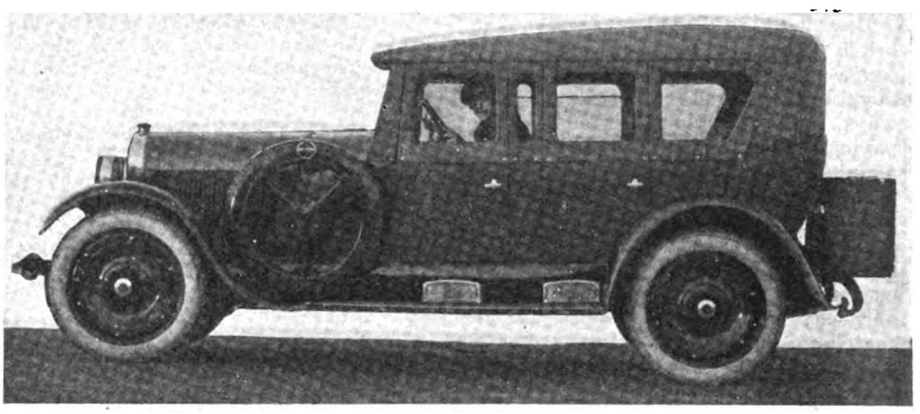
CLEVELAND, Dec. 7—Four hundred distributors of the Jordan Motor Car Co., in convention at the Winton Hotel, placed orders for 4350 Jordan cars at a total valuation of $10,800,000 for delivery during December, January, February and March.

Every section of the United States was represented, and from every distributor came reports of greater business with strong emphasis on the increased demand for closed cars.

Jordan will build approximately 9000 cars in 1922. The demand for closed cars has brought the requirements of dealers far beyond the plant capacity.

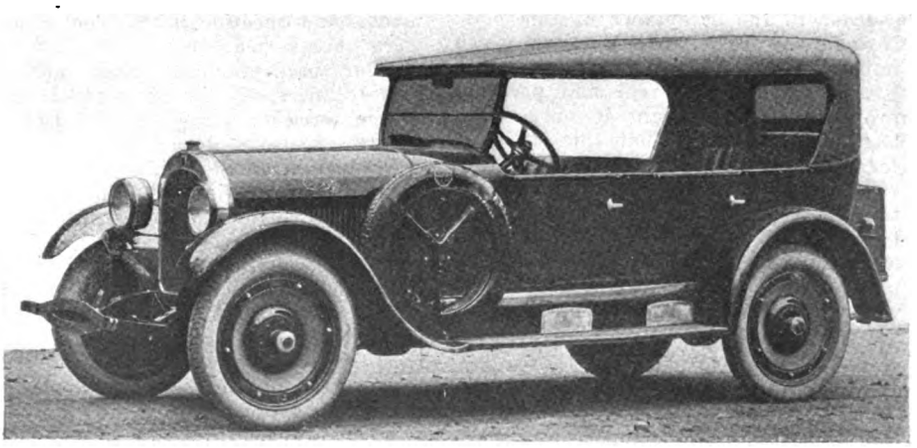
This means that Jordan production will run for the next four months at the rate of not less than 1000 cars a month, it was said, and means further that with this production maintained to April 1, with the normal spring demand coming after the first of April, the factory will be operated at capacity through to July.

Westcott Car Newly Fitted with Winter Inclosure, $1890



This is the type of permanent tops now being fitted to the Westcott. The two windows on either side can be raised or lowered like the windows in a closed car

Westcott B-44 Special Phaeton, $1690



This is a sport type car fitted with disk wheels, bumper, two spare tires carried on the runningboards, permanent top and a two case touring trunk as standard equipment

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NEW JERSEY LAUNCHES ROAD FINANCING PLAN

All Taxpayers Will Build Highways and Motorists Will Maintain Them

NEWARK, N. J., Dec. 11—That the "New Jersey Plan" is likely to become basic in highway financing in a majority of States was brought out at the dinner given at the Robert Treat Hotel by the Good Roads Association of New Jersey in celebration of the endorsement at the last general election of the $40,000,000 good roads bond issue, designed to finance the completion of the State highway system within the next five years.

This claim for national recognition of the importance of the plan was accentuated by the presence of Alfred Reeves, general manager of the National Automobile Chamber of Commerce, as the principal speaker of the evening. Reeves made it plain to his audience that the rest of the country is greatly interested in what promises to be a model law for use in other States.

Reeves Approves Plan

"The plan is beyond question the soundest and most suitable method of raising the money necessary to build and maintain modern improved highways that I know off," declared Reeves.

Describing the "New Jersey Plan" briefly, it may be said that it calls on all taxpayers to make the capital investment to build and reconstruct the highways, and after that the motorists, by paying special registration fees, will maintain them.

New Jersey is the first State to attempt anything of the sort, it being the common practice in other States which have issued bonds to pay for road improvements to make the motorists not only pay for the maintenance but also contribute largely to building and rebuilding them. Therefore, under the new law, the $40,000,000 necessary to complete New Jersey's 730-mile State road system will come from general taxation. After this has been done, the motorists' fees will maintain the highways.

Worked Under Old System

Prior to the acceptance of this plan, New Jersey worked under a system which imposed a one mill tax on each dollar of State valuations of real and personal property. This brought in only about $3,000,000 a year. That this was not feasible is shown by the fact that in 1922 alone it cost $2,250,000 to maintain the roads, let alone build any. It is figured that under the new plan this maintenance can be handled at an expense of only $500,000, and, further, the whole system will be completed within five years.

Continuing his remarks on the New Jersey Plan, Reeves said:

This policy of yours makes possible the logical and legitimate development to which motor vehicle transportation is entitled. You have very wisely divided your highway financing activities into their two broad general phases—highway construction and highway maintenance.

Then, on the theory that highway improvement is of supreme importance to society as a whole, you levy general taxation upon all classes of property to provide the money necessary to make the capital investment in the construction and reconstruction of modern improved roads and bridges; after the highways have been built, on the theory that the motor vehicle not only receives a particular and peculiar benefit from them, but also is responsible for the wear and tear and ultimate destruction of their surfaces, you place the cost of maintenance upon motor vehicle owners.

On the other hand, the policy which aims to impose upon motor-vehicle use not only the cost of maintaining improved highways but also that of constructing and reconstructing them has a tendency to stifle and discourage the use of the most efficient means of transportation that man ever has known.

TOWN FOR NEW PLANT GIVEN DETROIT NAME

WINCHESTER, VA., Dec. 11—Mystery continues to envelop the principals in the reported deal to construct a $10,000,000 automobile plant at Ridgeway, nine miles from here.

A contract has been let for laying out the town site, consisting of 2500 acres, which will be the home of the workmen in the big plant. About the only development that has been given to the public is that the name of the town is to be changed from Ridgeway to Detroit, W. Va.

Denial is made that the whole affair is a scheme to sell land and Luttrell declares that those interested in the deal have nothing to offer for sale in the way of stock, bonds or lots.

DURANT OF MICHIGAN CHANGES ITS POLICY

DETROIT, Dec. 12—Field representatives of the Durant and Star car, products of the Lansing plant of Durant Motor Co. of Michigan, were notified of changes of distribution policy of the two models at a meeting here. The changes were occasioned principally by the greater production of Star and the largely increased dealer representation in the territory served by the Lansing plant.

Production on Stars has now been increased to approximately 175 daily and will reach 300 soon after the first of the year. A schedule of 90,000 for 1923 has been set, and this will be supplemented by 96,000 to be built at the Flint plant now under construction. Shipments to the Pacific Coast have been discontinued with the completion of the Oakland plant.

Deliveries of closed bodies, which have handicapped production up to this time, now have reached proportions required by sales and within two weeks the company expects to be on an even basis.

STUDEBAKER STOCK DIVIDEND ORDERED

Directors Act—Business for Three Quarters of Year Reached $108,488,756

NEW YORK, Dec. 12—A special meeting of directors of the Studebaker Corp. ordered a stock dividend of 25 per cent to common stockholders, payable on Dec. 29 to holders of record as of Dec. 16. No action by stockholders is necessary, as the corporation has authorized common capital of $75,000,000, of which only $60,000,000 is outstanding.

The directors said: "The earnings of the corporation and its prospects are such that the management believes the present rate of 10 per cent dividends on the common stock will be continued on the new capitalization."

The directors also voted to transfer $15,000,000 of the company's accumulated earnings which have been permanently invested in plants, equipment, inventories, etc., from surplus to capital account to provide for the continually expanding business of the corporation. Certificates for the 150,000 shares of new common stock created by the distribution will be ready Dec. 29.

This is the second stock dividend paid by Studebaker. The first one of 33⅓ per cent was paid May 5, 1920, when the capital was increased from $45,000,000 to $60,000,000 by the transfer of $15,000,000 from surplus to capital.

Reporting on the business for the first nine months of 1922, President A. R. Erskine states that net sales reached $108,488,756 against $80,593,998 a year ago, and that net profits totaled $15,640,374 compared with $9,644,326 in the same period last year. After provision for common and preferred dividends, there was carried to surplus $10,631,999 against $5,979,826 in 1921. Profit and loss surplus on Sept. 30 last aggregated approximately $24,861,743, as compared with $14,229,744 on Dec. 31, 1921.

KENTUCKY LOAD LAW REGULATES TIRE USE

LOUISVILLE, KY., Dec. 11—The load limit law, enacted by the 1922 General Assembly, goes into effect Dec. 15 and continues until April 1, limiting vehicles with steel tires less than three inches wide to 5000 pounds, and 6500 pounds if the tires are three to four inches wide, 6800 pounds if the tires are four to five inches wide and 7000 pounds if the tires are over five inches wide. For rubber tires less than three inches wide, the limit is 5500 pounds, up to four inches, 6500 pounds; up to five inches, 7500 pounds, and five inches or more, 10,000 pounds.

On brick, concrete, rock asphalt or surface-treated macadam, bituminous concrete, penetration asphalt and penetration tar roads, the load may be increased 50 per cent.

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NASH PREDICTS RISE IN PRICES OF CARS

Says Cost of Materials May Force It—Sees Business Good in 1923

MILWAUKEE, Dec. 8—The opinion that motor car prices probably will witness an increase before next spring was voiced by Charles W. Nash, president of the Nash Motors Co. and the LaFayette Motors Corp., in an address before the annual sales conference of Nash and LaFayette distributors and dealers in the Wisconsin and Upper Michigan territory in Milwaukee yesterday.

Nash said that frequently in recent weeks he has been asked by dealers and others what he thought of the outlook with reference to prices. In reply, he said, he has been able to say only that, so far as his companies are concerned, they are unable to guarantee dealers against a price increase between now and spring.

Raw materials and other elements entering into the manufacture of motor vehicles appear, from present indications, to warrant an increase in prices, Nash said. Whether or not this course will be found necessary he said he was not prepared to say positively.

Conditions Have Improved

The automotive industries are due for the greatest leap forward in all the history of the business during the first six months of 1923, Nash declared. Conditions in the agricultural communities have improved so much, he said, that already a bigger and broader market has opened which doubtless will be responsive to broad development after the winter season is over. This is business of a better character than city business, for the city buyer as a rule is merely making a replacement, while the farmer generally is a new customer.

While counting largely for the increased sales next year over the remarkable volume of 1922, Nash said that urban business is bound to be good, for a great many people are still holding off buying cars because of insecurity of positions or for any number of other reasons, and talk of the point of saturation being reached is not substantially based.

HAYNES NEW LISTS SHOW LOWER PRICES

KOKOMO, IND., Dec. 11—A new price list, effective as of Dec. 6, has been announced by the Haynes Automobile Co. which shows reductions of $100 on the 1923 Model phaeton and sport phaeton and of from $180 to $255 on the 77 models. The revised 1923 list is as follows:

Model 77—Standard models, 7-passenger phaeton, $2,395; Blue Ribbon speedster, 2-passenger, $2,395; 5-passenger brougham, $3,095; 7-passenger sedan, $3,395; 7-passenger suburban, $3,395.

Model 77—Sport types, 7-passenger phaeton, $2,550; 4-passenger tourister, $2,550; 5-passenger brougham, $3,250.

Model 55—Standard models, 5-passenger phaeton, $1,595; 5-passenger sedan, $2,595.

Model 55—Sport types, 5-passenger phaeton, $1,850; 2-passenger roadster, $1,895; 5-passenger sedan, $2,695; 5-passenger brougham, $2,395.

Goodrich Tubes Increased

AKRON, Dec. 7—The B. F. Goodrich Rubber Co. announces a 15 per cent increase in the price of its Silvertown tubes; 10 per cent, small size gray tubes, and 5 per cent in the price of its large size gray tubes. Tire prices remain unchanged.

Fisk Lists Higher

NEW YORK, Dec. 11—Indicative of the expected general increase in tire prices, the Fisk Rubber Co. to-day announced an advance of from 10 to 12 per cent on its entire line of casings, effective to-morrow.

SERVICE HELP URGED AT S. A. E. MEETING

SPRINGFIELD, MASS., Dec. 12—At a meeting of the New England section of the Society of Automotive Engineers, M. B. Speer, service manager for the Westinghouse Electric & Manufacturing Co., appealed to the engineers to exert an influence for the more efficient conduct of service stations. This can be done in part, he said, by improved equipment employed in outfitting such station and the rewinding of armatures, was cited as one of the things in which improvement was needed in many cases.

The call is for accurate accounting methods and honest service, he added, and he advocated the adoption of a flat rate for a given job as tending to obtain justice for the customer. He advised that the engineers work through the dealers and maintenance concerns, as well as the manufacturers, for the furtherance of better business in service.

Jarrard Goes to Lansing

NEW YORK, Dec. 11—T. Earl Jarrard, assistant sales manager to M. B. Leahy, general sales manager of the Durant Motor Co., is leaving his Long Island City post to become sales manager of the Durant Motor Co. of Michigan, with headquarters at Lansing. J. W. Hawk, whom he succeeds at Lansing, will assume Jarrard's former position at Long Island City headquarters.

Hydro Stockholders Discuss Plans

POTTSTOWN, PA., Dec. 11—Representing 40,000 of the 52,000 shares, more than 200 stockholders of the Hydro United Tire Co., which is in the hands of receivers, met here to discuss plans to save the company. Two plans were submitted to obtain funds to meet all the expenses of the company, but no definite action was taken.

LISTS OF KALAMAZOO $155 TO $300 HIGHER

Advance in Cost of Material Assigned as Reason for Increased Prices

KALAMAZOO, MICH., Dec. 8—An increase in prices on four truck models is announced by H. A. Crawford, president of the Kalamazoo Motors Corp., builder of the "Kalamazoo" truck. These advances, which are effective Jan. 1, 1923, range from $155 to $300.

The revised list of prices is as follows:

	Old Price	New Price
1½—2-ton	$1,800	$2,100
3-ton	3,145	3,350
4-ton	3,845	4,000
5-ton	4,345	4,500

In addition, this concern makes a 1-ton speed truck and tractor-trailer units in four, eight and 15-ton sizes and an 18-passenger coach.

"Materials have advanced," said Crawford. "To maintain the Kalamazoo quality, we are forced to raise our prices about 5 per cent on the various heavy models. That is not in relative proportion to the increase in the parts we use."

An interesting order now going through the plant is 12 truck-trailer units for the Noble Hoop Co. of Fort Wayne, Ind. Each unit consists of a 3-ton truck and a 5-ton trailer, both being under perfect control by an automatic air brake system, Westinghouse type. The truck has a heavy duty hoist and windlass, while the standard Wisconsin 4¼ by 6 engine is regular equipment. This develops 50 hp. at 1600 r.p.m. The truck has a wheelbase of 186 inches.

The order for the Noble company is finished in a rich, brilliant red, with gilt lettering.

HUDSON AND ESSEX AGAIN CUT PRICES

DETROIT, Dec. 11—For the third time this year Hudson and Essex prices have been reduced, the latest cut coming to-day when the company announced a new list, cropping $200 off the Hudson sedan and $100 off the coach and two phaetons. Only one Essex reduction was made, $100 being taken off the coach.

Hudson started the year with the seven-passenger Hudson listing at $1,745, July 1 this was cut to $1,695, and on Sept. 22 to $1,575. Now it is $1,475. The Essex coach listed at $1,345, $1,295 and $1,245 on these dates, and now is $1,145.

The revised list as of Dec. 11 is as follows:

	Old Price	New Price
HUDSON		
4-pass. Phaeton	$1,525	$1,425
7-pass Phaeton	1,575	1,475
Coach	1,625	1.525
Sedan	2,295	2,095
ESSEX		
Coach	$1,245	$1,145

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SOUTH AFRICA ACTS ON GASOLINE PRICES

Felt There That High Fuel Cost Is Retarding Use of Motor Transport

JOHANNESBURG, SOUTH AFRICA, Oct. 20 (*by mail*)—The chief daily newspapers here, the *Rand Daily Mail* and the *Sunday Times*, are conducting a campaign against the high prices of gasoline and oil, and are receiving considerable support from automobile dealers.

The oil companies up to the present have maintained a dignified silence, with the exception of one or two informal interviews at which it was stated that the price of gasoline could not very well be reduced, as the business did not warrant it.

The oil dealers throughout South Africa are very much concerned about the present price of fuel and consider that it is keeping back the use of motor transport. Tires have been brought down to practically pre-war prices, and the operation of a car or motor truck would be almost as economical as in England were gasoline and oil prices to be lowered.

Dollar Gasoline Quoted

At present the motorist pays about $1 a gallon in South Africa, a figure that will make the American manufacturer realize why the proportion of cars to the white population is only about one in fifty. Endeavors are being made here to get the government to appoint a commission to inquire into the possibilities of the production of alcohol fuel on a large scale.

At present there are two or three private concerns manufacturing alcohol fuels, and these fuels are being marketed at a price not very much below that of gasoline. One factory announces its intention of putting a fuel on the market at about 75 cents a gallon retail. If this can be done, and ample supplies maintained, then it will undoubtedly be largely used. But it is felt that some form of state-aided production is necessary in order to develop a large alcohol fuel industry in South Africa.

D. H. Saker & Co., agent for Durant, Reo, Renault and Talbot in South Africa, announces that the first models of Durant are likely to arrive in Cape Town about January or February.

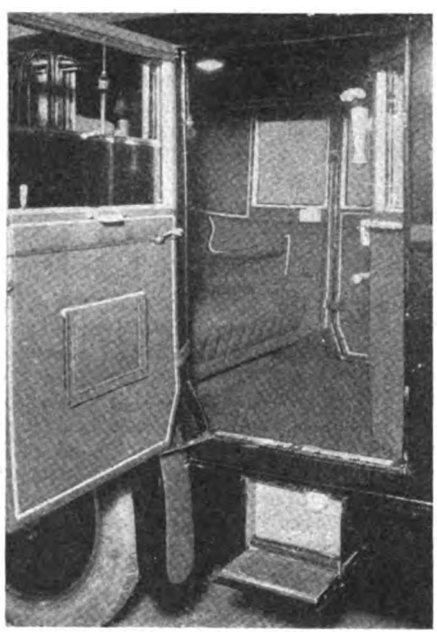
Bus Chassis on Way

Further White bus chassis are now on their way to Johannesburg for the inter-town services that are to be operated by a company recently formed. The first route will be between Johannesburg, the Union's largest and chief town, and Pretoria, the capital, 36 miles away. The train track to Pretoria is 45 miles, and an hour and a quarter is taken for the trip, including two stops. The buses will be operated on an hour and a half schedule, and show an advantage because they take the passengers into the center of each city. It is anticipated that bus services along the Reef—connecting up all the gold mining towns and suburbs around Johannesburg—will follow the initiation of the Johannesburg-Pretoria one.

A large number of Reo speed-wagons with passenger bus bodies are now running in the larger towns in South Africa, although heavier type vehicles have recently been purchased. All the body-building is being done locally, and a regular industry is developing.

M. EDWARD.

A Salon Feature



This is the door of the Isotta-Fraschini. The step opens and the lamp lights when the door is opened

CALIFORNIA BUSINESS ON STEADY UP-GRADE

OAKLAND, CAL., Dec. 9—The automobile business in California is in better condition than it has been for several months and trade throughout the State is improving steadily, according to Robert W. Martland, secretary-manager of the California Automobile Trade Association, who has returned from a tour of the State in the interests of the association.

Martland says:

California is enjoying better business health, automotively speaking, right now than for several months, and everything everywhere in the automobile business in this state is on the upgrade and going strong. The Los Angeles automobile show has had a great stimulating effect on trade there, and closed car display weeks in Oakland and San Francisco helped business and made the demand more active throughout this end of the state. The demand for closed cars is one of the outstanding features of the year; more have been sold this year than ever before, and more will be sold next year than this.

BUYERS ORDER CARS AS CHRISTMAS GIFTS

Dealers in Chicago Sell Open Cars By Making Use of Winter Enclosures

CHICAGO, Dec. 9—Although retail sales of automobiles have declined steadily in Chicago and Cook County for the last three months, the rate of decline has been so gradual that business is still maintained at a level which dealers generally consider satisfactory for this season of the year. Public interest in automobiles is high and dealers whose sales have shrunk considerably have no lack of prospective buyers, many of whom are waiting until after the first of the year.

A good many buyers have placed orders for Christmas delivery. This is especially true in the higher price field with closed cars predominating in this business. There are dealers who are unable to get enough closed cars to fill their orders. The new sport models continue in high favor despite the winter.

Distributor Patents Design

Some enterprising dealers are creating a profitable market for new and used open cars by equipping them with winter enclosures. One Chicago distributor of a popular line of cars has patented his own design of winter enclosure, the sides of which are constructed with rattle-proof metal frames and a maximum of glass, with well-fitted doors and windows that open easily for ventilation. This equipment may be installed with the ordinary soft collapsible top or with a special permanent soft top. It has met with great favor, and the company maintains its own shop in which it manufactures between 40 and 50 of these outfits each week.

There are indications that January business will open well. Some dealers report a considerable number of orders placed for January delivery.

The present trend of buying is fairly well indicated by figures furnished by the Central Automobile Financing Association which keeps a record of all time-payment sales for which official documents are recorded. These sales are estimated to represent between 65 and 75 per cent of all retail sales in Chicago and Cook County.

2240 Sold in Week

For the four weeks ending Dec. 2 the number of such sales was 2240, or an average of 558 a week. For the four weeks ending Nov. 4 the number of 2691, or an average of 672 a week. For the four weeks ending Oct. 7 the number was 3060, or an average of 765 a week. This shows the tapering off in demand, although the decline in these figures probably was somewhat greater than the actual decline in sales because of the fact that since the $50 Ford reduction in October a greater proportion of Ford sales have been for cash.

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DUNLOP TO OPERATE BUFFALO PLANT NOW

Factory Was Completed Two Years Ago but Has Never Been in Production

NEW YORK, Dec. 11—Reorganization of the Dunlop Tire & Rubber Corp. of America has been completed, following a month's meeting in New York of the directors of the English company. The plant at Buffalo, with a capacity of 13,000 tires a day, will be put into operation at once, giving employment to from 8000 to 10,000 men. This factory, which was completed two years ago, never has been in operation, activities having been suspended after its completion because of financial conditions.

The English directors are financing the new deal by selling an issue of $15,896,000 first mortgage 7 per cent bonds to a syndicate of New York bankers, and this sum will be spent for expansion of factories and sales agencies in the United States.

Following the completion of the refinancing plans, Sir Eric Geddes, brother of the British ambassador at Washington, was made chairman of the board, with Frederick W. Allen of Lee, Higginson & Co. representing the banking interests on the board. Other directors are: Pierre du Pont, J. J. Storrow, Sir J. George Beharrell, Robert K. Pomeroy, Louis Bergen and Charles A. Proctor. Directors of the English company are Frederic C. Walcott and J. Westren, general manager.

PACKARD CONFERENCE HELD IN SOUTHEAST

ATLANTA, Dec. 11—Eighteen Packard distributors from the southeastern States have held a district sales convention here, the first meeting of its kind the Packard company has yet held in the southeastern field.

R. E. Chamberlain, general sales manager of the Packard Motor Car Co., conducted the conference, which was devoted largely to a discussion of plans for the coming year in this territory. Other Packard factory men present were H. N. Davock, technical service manager, and Charles D. Ten Eyck, district manager of the factory. J. H. Sommers, general manager of Packard Enterprises of Georgia, Inc., acted as host to the visiting distributors.

Northwestern Packard Dealers Meet

MINNEAPOLIS, Dec. 11—Northwestern Packard dealers at a general meeting in the Hotel Saint Paul were visited by the following factory men: H. N. Davock, technical service department manager; J. W. Loranger, district representative, and R. E. Chamberlain, general sales manager. Among the dealers present were C. P. Joy, St. Paul; C. G. Embleton, Chicago; R. B. Mann, St. Louis; W. C. Nissen, Aberdeen, S. D.; L. Mansfield, Fort Dodge, Iowa; R. W. Holmes, Winnipeg; W. H. Hathorn, Mason City, Iowa; Knapp Brown, Sioux Falls, S. D.; R. B. Loubek, Bismarck, N. D.; C. S. Richardson, Omaha; C. D. Brandies, Hastings, Neb., and R. G. Wright, Des Moines.

PACKARD INCREASES NUMBER OF DEALERS

DETROIT, Dec. 11—Packard Motor Car Co. has increased its dealer organization 220 per cent in the United States and Canada during the year, giving the company representation in practically every important city. There also has been an increase of 48 per cent in distributors. Part of the increase, it is declared, is due to the discontinuance of branches by both the company and some distributors.

As a result of the reorganization, R. E. Chamberlain, general sales manager, says a number of major changes in distributorships have been made where it was deemed that adequate facilities were not offered. Such changes were made in Buffalo, Pittsburgh, Washington, Baltimore, Toledo and Omaha.

Whitehair Joins G. M. Truck

DETROIT, Dec. 12—Harry S. Whitehair has joined the national sales division of the General Motors Truck Co., making the third member of the sales force in this division. Whitehair will have general charge of all territory outside of New York and Chicago, where the company already has headquarters in the national division. His joining the G M C organization is the result of the executive's belief that large units of industry are back in the truck market again.

ROAD FINANCE PLAN MEETS WITH DISSENT

State Officials Would Have Industry Build Highways and Maintain Them

KANSAS CITY, Dec. 11—The National Association of State Highway Officials, in meeting here, passed a resolution dissenting from the proposal that motor vehicle revenues be limited to maintenance requirements. It advocates instead that motor vehicle taxes be used to pay a part of construction cost.

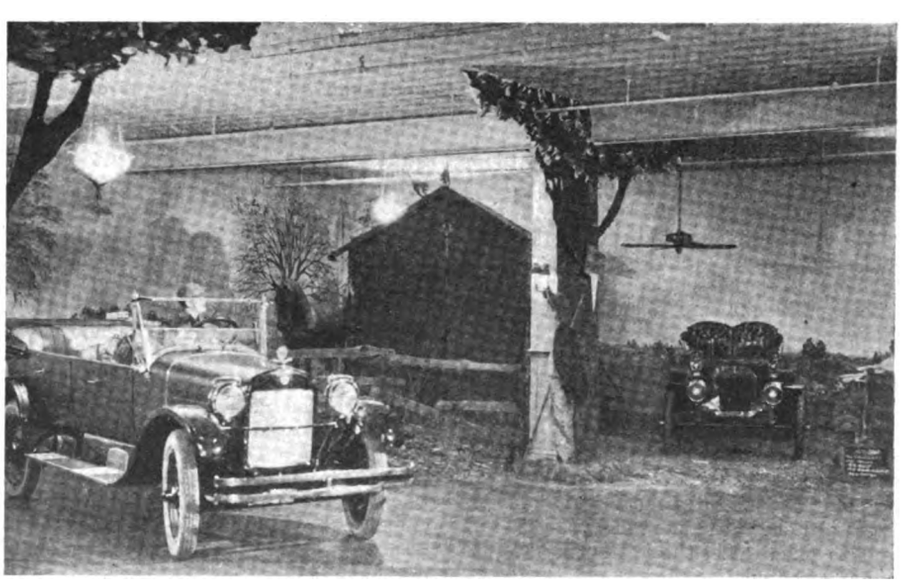
The resolution suggests that one-third of the total cost of Federal, State and county road programs be met from motor vehicle taxes and favors a gasoline tax of not less than 2 cents a gallon.

Public Against More Taxes

This action seems to be a result of the general sentiment throughout the country against the addition of general taxes of any kind, and the demand of the public for economy. It appears that the highway officials are desirous of carrying out their road programs as fully as possible and that in raising money for such purpose they are seeking the lines of least resistance.

The automotive industry was represented at the meeting by A. J. Brosseau, president, Mack Trucks, Inc.; R. D. Chapin, president, Hudson Motor Car Co., and Pyke Johnson, secretary of the N. A. C. C. Highways Committee. They attended the meeting of the motor truck regulation committee, held during the session, and for one afternoon discussed the general problems of highway finance and motor vehicle regulation.

A Salesroom Display That Features Dependability



The dependability of the car is deftly suggested to the spectator by this display used recently by the Reo branch, in Lansing. A painted "drop" supplied the background against which an early Reo model and a new car were shown in contrast. A few fence posts and moss, stones, etc., were used to cover the floor in the background near the "drop"

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2000 ATTEND A. E. A. MEETING IN CHICAGO

Best Previous Gathering Was That in Brooklyn with 1700 Present

CHICAGO, Dec. 7—The record of the Automotive Equipment Association merchandising meetings took a step upward last night when 2000 men and women attended a meeting in Medinah Temple. The largest previous gathering was that in Brooklyn at which 1700 were present.

Ray W. Sherman, merchandising director of the A. E. A. was the speaker of the evening and members of the merchandising committee were in the audience. Sherman's story was well received and the two films "Ask 'Em to Buy" and "Shop Profits" were shown. The latter film was the Ambu Institute version, with 1700 feet of pictures devoted to electrical equipment and to service operations as taught in the Ambu school.

The audience was a cosmopolitan one, ranging from the members of the merchandising committee, jobbers, car and accessory dealers to salesmen and shop employees. The crowd was handled by 140 jobbers salesmen who served as ushers. Clyde Jennings, editor of Motor Age, presided.

These firms promoted the meeting: The Automotive Supply Co., Chicago Auto Equipment Co., Chicago Automobile Supply House, Beckley-Ralston Co., Electric Appliance Co., Motor Car Supply Co., E. D. Kimball & Co., and the American Bureau of Engineering, Inc.

CRANKSHAFT AND ROD TESTS ON ALIGNMENT

(*Continued from page* 25)

The two bearing holes in the connecting rod must be parallel. To test this, it is usual to have a connecting rod aligning jig which may be either of the type that uses two arbors, one to swing and the other to test, or it may be of the type which tests with the piston in place, thereby also checking the correctness of the hole in the piston. Both of these types are shown in Fig. 4. It is usual to have a forked bending bar handy to the jig so that the rod can be bent till it comes true. Where a jig is not available, the test can be made with arbors, V-blocks and a surface plate as shown in Fig. 5.

The piston can be tested with a micrometer of sufficient range to take the size. The variation allowable is considerably more than in the case of the shaft. An allowance of one to two thousandths is permissible up to 3 in. in diameter and slightly more in the larger sizes, although the nearer the piston is kept to exact size, the better the results to be expected.

The cylinder can be checked with a pair of inside micrometers or with a dial gage mounted on a two point support as shown in Fig. 6. This, however, only gives a roundness test or a taper test and does not indicate that the bore of the cylinder is exactly straight. An instrument built on the principle shown in Fig. 7 will give the straightness test.

The only other additional tests that can be made to insure accuracy of the working parts are the test to determine whether the bearings are at right angles to the cylinder walls and the gear distance test. The right angles test can be made with a surface gage or square and the gear distance test can best be made with the gears in position.

The careful checking of these various points and the mechanical work necessary in correcting any faults found will go far toward turning out satisfactory jobs that will give good service to the car owner and be the means of bringing additional work into the shop.

NEW YORK EXPECTING MILLION REGISTRATION

ALBANY, N. Y., Dec. 11—Estimates made by the State Tax Commission, which controls automobile registration in the State, predict that New York will be the first of the commonwealths to tag more than 1,000,000 motor vehicles. According to these estimates, it is expected there will be registration plates issued to 851,199 passenger cars in 1923, 193,000 motor trucks, 38,500 buses, 3295 trailers and 27,950 motorcycles, a total of 1,113,944 motor vehicles, including motorcycles. New York City alone will have 251,000 passenger cars, 72,000 trucks, 16,000 buses and 125 trailers.

In 1923 New York will collect its registration fees according to weight instead of price, horsepower and age. Cars weighing 3500 pounds or less will pay 50 cents for each 100 pounds; cars over 3500, 75 cents per 100 pounds. The minimum fee is $10 for six, eight or twelve cylinder cars and $8 for any other car.

STATE CANNOT GET TAX FROM GASOLINE

WASHINGTON, Dec. 12—Motorists in the State of Arkansas cannot be forced to pay a gasoline tax, pending the final adjudication of the constitutionality of the question as to whether or not a State can levy a tax of one cent a gallon on gasoline and kerosene.

The United States Supreme Court has granted an injunction on the application of the Pierce Oil Corp. to continue in force a temporary injunction secured in the Federal courts against the enforcement by the State of a State tax of one cent a gallon on gasoline consumed in motor vehicles.

The constitutionality of the question is now before the United States Supreme Court and pending the court's decision it was held that the temporary injunction in Arkansas must stand.

PREDICTS NEW YORK WILL LIMIT CAR USE

Judge in Metropolis Sees This Action Necessary to Meet Traffic Problem

NEW YORK, Dec. 11—The traffic situation continues to alarm the authorities, and Police Commissioner Enright's radical suggestion to control pedestrian traffic on sidewalks, put lights on his policemen, remove elevated railroads and widen Fifth Avenue and Broadway by removing the sidewalks, has been followed by something even more revolutionary by Judge Frederick B. House of the Traffic Court, who predicts the passing of a law limiting the number of passenger cars and taxicabs that may operate in the streets of the metropolis.

From the bench he declared that his court since the first of the year had heard 49,000 cases arising out of vehicular traffic and collected $500,000 in fines. He declared that if the yearly percentage of cars increased at the rate of the last two years, traffic soon will come to a standstill for want of space to move in.

Judge House says:

> Our cross streets cannot be widened and as a result our avenues are being overworked. I am certain some of the avenues (the north and south arteries) will have to be made one-way streets clear through to the Bronx. If automobiles in the future continue to increase as fast as they have in the past, I feel that some sort of a curtailment of passenger cars and taxis will be necessary. In the event the legislature will not pass such a measure, the police power may be exercised.

One of the steps New York is taking to ease the traffic situation is to appropriate the money necessary to change corner curbs from square turns to circular to permit vehicles to swing corners without slowing the rest of the traffic.

MORE CHANGES MADE BY TRADE IN BOSTON

BOSTON, Dec. 12—Boston's motor row continues to chalk up moves and changes. H. Ross Maddocks, who has the retail distribution for Stewart trucks, has taken on the Columbia for Eastern New England. It has been handled by M. R. Bomay until recently.

A. B. Mann, who formed the Mann Motors Co., has joined the sales department of the Paige-Detroit Co. of New England.

The Holland System, Inc., distributor of the Hanson car and the Clydesdale truck, has leased its building to the Langham Motors Co., and the latter company took possession on Dec. 1.

The Brown Motors Co., distributor of the Gray car for eastern Massachusetts, has leased a building on Commonwealth Avenue that was to have been the home of Dunlop tires, and which has been empty since its erection.

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CHANGES IN THE TRADE

Clyde Walker, Kalamazoo, Mich., has taken the agency for the Moon car.

Floyd Clymer, Denver, has been awarded the Dort contract for Colorado.

Fleming Motor Co. has been awarded the Nash agency in Sioux City, Iowa.

Fairfield Motor Co. of Fairfield, Iowa, has been succeeded by the **Brown Motor Co.**

Murphy-French Auto Co. has taken over the Studebaker agency in Sioux City, Iowa.

Merril E. Stevens of Sioux City, Iowa, has become sales manager of **J. V. Thorndike Co.**

Schall-Crouch Auto Co., Baltimore, has been named distributor for Moon cars in Maryland.

Coolbaugh-Macklin Motor Co. has been appointed Haynes distributor for the Philadelphia territory.

Miley Bros., Reo dealer in Charlton, Iowa, has opened a branch office in Ottumwa with **B. B. Mergen** as manager.

T. N. T. Sales Corp. has moved its executive offices from 1947 Broadway, New York, to 571 Broad Street, Newark, N. J.

Preston Motors Co. of Birmington has opened a sales agency in Huntsville, Ala., for the sale of the Premocar.

S. P. Davis and his son, **S. P. Davis, Jr.,** will distribute the Durant and Star lines in Arkansas under the name of the **Davis Motor Co.**

William D. Garrison & Son, Kalamazoo, Mich., are successors to **R. L. Bixler,** as agent for the Nash in southwestern Michigan.

H. F. Lummis will become associated with his son, **Merle Lummis,** head of the **Lummis Sales Co.,** Quincy, Ill., distributor for the Gray.

L. H. Damman Motor Co., Davenport, Iowa, has secured the local agency for the Gray car. The company also handles the Mitchell.

The Universal Car Co. of Centerville, Iowa, has taken over the business of the **Plano Garage** at Plano. **H. R. Over** will be the manager.

Faulhaber Motor Co. has secured the contract to distribute the Cleveland in Arkansas and will handle the line along with the Wills Sainte Claire.

R. J. Hamil has been added to the organization of the **Wilson-Nash Co.,** Baltimore, and will fill an executive position. He was formerly a distributor in that city.

Saskatchewan Motor Co., Regina, Sask., has assumed the wholesale and retail distribution of the Durant and Star cars for the south half of Saskatchewan.

W. J. Roberts, who has been identified with the Pierce-Arrow organization for many years, has been appointed distributor for the Pierce-Arrow cars in the Cleveland territory.

Elcar Motor Sales Co., Philadelphia, has organized to handle the Elcar in Pennsylvania, Delaware and southern New Jersey. **R. Ramsay** is president and **Frank Fisher,** vice-president.

A. W. Helbush, associated with the **Chanslor Lyon Co.** of San Francisco for the last ten years, is now connected with the **Jas. S. Remick Co.** of Sacramento in the capacity of sales manager.

W. A. Muiry Co. of Providence, R. I., formerly Lincoln distributor for Rhode Island and the Attleboros, has been appointed distributor for this same territory for the Paige and Jewett line.

White Co. has occupied its new service station for trucks at Archer Avenue, Wallace Street and Twenty-fourth Place, Chicago, which has 55,000 sq. ft. of floor space, nearly all on one floor.

Tennant Bros., conducting an automobile financing business with headquarters on Chicago's automobile row, have opened a branch office at 4222 Woodward Avenue, Detroit, in charge of **J. W. R. Tennant.**

Star Auto Co. has been organized at Erwin, Tenn., by **C. T. Bickley** and **T. J. Quisenberry,** both of that city, and has established a distributing agency in that section of Tennessee handling the Studebaker, Durant and Star.

Harry P. Branstetter, Kissel distributor in Chicago, has opened a new retail sales room at 2538 South Michigan Avenue. The wholesale, used car and service departments will be continued at Wabash Avenue and Twenty-sixth Street.

Van Metal Wheel Co., San Francisco, has been organized to handle dealers' sales of the Van hollow spoke malleable and aluminum wheels in california. The new company is controlled by interests operating the Lambert tire agency in that city.

Hugh Sharp, for ten years associated with the **Harley-Davidson Motor Co.,** Milwaukee, with important duties in the promotion division of the sales department, is now associated with the **Northwestern Motor Car Co.,** Milwaukee, Ford and Lincoln dealer.

Sanger Automobile Co. and the **George H. Williams Co.,** handling the distribution of the Franklin car in Milwaukee, are now operating as the **Sanger-Williams Co.** The **Lewis Motor Co.** has been appointed the Franklin dealer for Fort Smith and adjacent territory.

R. D. Brown has been appointed general sales manager for the Painter-Dunn Co., Pittsburgh, distributor of Pierce-Arrow cars and trucks. Heretofore, **C. A. Painter, Jr.,** has acted as sales manager for automobiles and **T. F. Dunn** has had charge of the sale of trucks.

Dort Motor Car Co. announces the following new dealers: **I. E. Bamberger,** Lebanon, Pa.; **S. J. Webster,** Muskogee, Okla.; **T. H. Douglas,** Bakersfield, Cal.; **Braun-Stecker-Stevens, Inc.,** Los Angeles; **Merrill Garage & Vulcanizing Co.,** Merrill, Wis., and **Jess D. Akin,** Farmington, Minn.

Fred Woelihaf, head of the **Woelihaf Motor Co.,** Burlington, Iowa, Durant distributor in Des Moines, Henry and Louisa counties, Iowa, and Henderson county, Ill., has signed a contract to handle $275,000 cars next year. Local dealers are to be appointed in various towns at once.

Lange & Tscharner Motor Car Co., Dubuque, Iowa, has been named factory distributor for the Durant and Star in five counties. **C. W. Joseph** has been appointed sales manager and is arranging territory. **L. L. Bauers,** 10 years with the Dubuque Overland Co., becomes shop foreman and service man.

C. H. Langford, Ford dealer at Conyers, Ga., for many years, has purchased an interest in the **C. C. Baggs Auto Co.,** Atlanta Ford dealers, and the name of the company under the change becomes the **Baggs-Langford Motor Co.** The new company handles the Ford and Lincoln in the Atlanta territory.

Mason Tire & Rubber Co. has selected Des Moines, Iowa, as a division point of distribution. **Joe Dine,** formerly general manager of the Madison Tire & Rubber Co. of Buffalo, has been appointed division manager and **C. J. Marx,** formerly branch manager for Mason at Atlanta, has been transferred to the Des Moines branch.

J. E. Gibbons, formerly in charge of the wholesale department of the **Apperson Motors** of Pittsburgh, has been made assistant manager of the Apperson factory branch in Pittsburgh. **Nick Strider, Jr.,** who was transferred some time ago to the Cleveland territory, is taking charge of both the Pittsburgh and Cleveland branches, spending three days a week in each city.

Lon Credelle, an Atlanta accessory dealer for several years and one of the best known automobile men in the southeastern field, has expanded the scope of his business and entered the wholesale field as well as covering Georgia territory for a number of well known accessory lines. The change becomes effective on Jan. 1, 1923. Credelle has served as president of the Atlanta Automobile Association and of the local accessory association.

Winton Co., following a policy established early in the year, has disposed of its Chicago factory branch, and has appointed the **Allison-Rood Co.,** former Lincoln distributor, as its sales agency in the Chicago territory. The Allison-Rood salesrooms are at 2518 South Michigan Avenue, next door to the former Winton branch. **H. M. Allison,** head of the new Winton dealer firm, had the Packard agency for some time before taking on the Lincoln franchise.

Dickerson & Mitchell, Yonkers, N. Y., handling the Hupmobile, has taken on the sale of the Peerless. **M. F. Zuber,** formerly service manager of the **Pilot Motor Car Co. of New York** and the **Hupmobile Co. of Newark, N. J.,** has taken charge of the rebuilt car department of the **Peerless Motor Car Co.,** New York factory branch. **George M. Brock,** for years used car manager of the **New York Locomobile Co.,** has taken over the used car department of the New York Peerless branch.

Mar-Del Mobile Co., Baltimore, and the **Baltimore Cadillac Co.,** have been merged and will be known as the **Cadillac Co. of Baltimore.** The officers will be **George Miller,** president; **J. A. Muehleisen,** first vice-president; **F. S. Bilven,** second vice-president; **Paul Jones,** secretary, and **Earl Williams,** treasurer and general manager. The Mar-Del headquarters will be used for the combined business. For the time being the service department for Cadillac cars will be continued at 1007 North Eutaw Street.

C. S. McKee, for the last ten years connected with the marketing of Willys-Overland cars, has become identified with the **Clemens Automobile Co.,** Des Moines, as retail manager. McKee has been associated with the industry since 1908 and has served as sales manager for the Willys-Overland factory branches at Omaha and Indianapolis. In the latter city he worked with **Verne Orr,** who is now manager of the Clemens company. **H. C. Carr,** formerly sales manager, has become associated with the **B. F. Goodrich Co.**

N. B. Sprong has become general manager of the **Northwest Haynes Co.,** Minneapolis, distributing organization in the Northwest. He joined the organization in April and has suceeded **J. N. Knutson,** who, with **A. C. Porter,** has retired except in an advisory capacity. **S. J. Logan** is manager of service. The company has distributed Haynes cars for nine years. **R. A. Calhoun** is to be vice-president and **W. H. Brigham,** manager of the wholesale department. **Harry Lane Morris** has arrived in Minneapolis from the Haynes factory as newly appointed district representative. He will have headquarters with the Northwest Haynes Co.

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ASSOCIATION ACTIVITIES

To Celebrate Widening of Avenue

CHICAGO, Dec. 8 — Chicago automobile dealers located on Michigan avenue are preparing to celebrate the opening of the widened avenue, work on which has been practically completed, by decorating their fronts and sales rooms for the week of Dec. 16 to 23, and with a parade and evening program on Dec. 19.

The widening adds 14 feet to the avenue which is one of Chicago's most heavily traveled automobile boulevards. The widened portion extends from Twelfth street to Thirty-third street, through the whole of "automobile row." The improvement was accomplished by setting the curb back seven feet on each side without disturbing the building line and without unduly narrowing the sidewalks. It greatly facilitates traffic and adds to the convenience of persons having business with the various automobile and accessory stores along the street.

The automotive merchants on the "row" will have a banquet for members of their firms and their employees at the Lexington Hotel at 6.30 p. m. Dec. 19 and later in the evening will stage a mardi gras celebration throughout the length of the row. The smooth pavement will be roped off for dancing and the public will be invited to come in costume and in holiday mood for confetti, whistles, ticklers and all that goes with a carnival.

The occasion will be utilized to the full advantage, according to members of the Chicago Automobile Trade Association, to attract public interest to the wonderful automotive stores lining the street and it is confidently expected that a considerable stimulation of sales will result.

Greenville Show Dates

GREENVILLE, S. C., Dec. 11—The Greenville automobile show will be held in Textile Hall March 28, 29, 30 and 31, according to announcement made at the last meeting of the Automotive Bureau of the Chamber of Commerce.

The show committee is headed by Browning Goldsmith and Charles Upchurch. H. B. Spring, president of the Chamber of Commerce, urged the automobile dealers to take steps to make Greenville the automobile distributing point of South Carolina, instead of buying their cars from Charlotte, Columbia and Atlanta.

Co-operates in Traffic Handling

PHILADELPHIA, Dec. 12—Members of the Philadelphia Automobile Trade Association heard a talk on traffic regulation by Captain Harry B. Schultz, in charge of the traffic squad of the city police force. Schultz urged that all drivers familiarize themselves with the new semaphore signal system. He criticized the methods of some drivers, explaining what they should do under given circumstances. After his talk, Schultz answered questions in an open forum.

Louis Block president of the association, said the association stood ready to help in a co-operative movement between drivers and police to promote carefulness and that the association plans to issue cards of instruction to all purchasers on the operation of their cars in traffic.

Ludlum Speaks in Philadelphia

PHILADELPHIA, Dec. 13 — David S. Ludlum, president of the Autocar Co., Ardmore, Pa., addressed 65 members of the Automotive Service Association of Philadelphia, present at the monthly meeting of the association, on the value of service. J. B. Dickson, president of the association, announced that provision has been made for the appointment of a legislative committee to take up with the local Chamber of Commerce the question of better traffic regulation by the city and State authorities.

Chicago Lists Car Sales

CHICAGO, Dec. 10—The Chicago Automobile Trade Association has inaugurated the publication of a monthly bulletin listing all models of cars sold in Chicago, with the f.o.b. factory prices and the prices delivered in Chicago with war tax and freight charges paid.

PERSONNEL CHANGED BY HENDERSON TIRE

COLUMBUS, Dec. 12—A number of changes have been made in the department heads of the Henderson Tire & Rubber Co., Inc. F. P. Harrington has been made general sales manager. Prior to the change he was identified with the Dayton Rubber Manufacturing Co., Dayton, as assistant sales manager, and had also been connected with the sales department of the Miller Rubber Co. for about ten years.

Roger H. McKinstry, for a number of years associated with the Miller Rubber Co., has been made special sales representative in western Ohio, Indiana and Michigan.

J. H. Redfern, formerly branch manager of the Dayton Rubber Manufacturing Co. at Denver, has been made special representative covering North and South Dakota, Wyoming, Idaho, Montana, Colorado, Utah, Arizona and New Mexico.

Harry J. Crawford has been named special Pacific Coast representative, covering California, Washington, Oregon and Nevada.

The New Car and Truck Description Index

Givnig the date and page number on which they appeared

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Calendar of Trade Events

Conventions

Sioux Falls.....Jan. 15
First Annual Meeting. Automobile Trades Association of South Dakota.

Chicago .....Jan. 29-31
Annual Meeting, Automotive Electric Service Association, Congress Hotel.

Quincy, Ill.....March 19
Annual Meeting of the Illinois Automotive Trades Association.

Shows

Erie, Pa.....Jan. 1-6
Annual Automobile Show, under the auspices of the Automotive Association of Erie, C. R. Cummins, manager.

New York.....Jan. 6-13
Annual Automobile Show held under auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, auspices of the Automobile Body Builders Association.

Oakland, Cal.....Jan. 13-20
Fifth Annual Automobile Show, Civic Auditorium, under the auspices of the Alameda County Automobile Trade Association, Robert W. Martland, Manager.

Buffalo .....Jan. 13-20
Twenty-first Annual Automobile Show, 174th Regiment Armory, under the auspices of the Buffalo Automobile Dealers Association, Carl Proctor, Executive Secretary.

Philadelphia.....Jan. 13-20
Twenty-second Annual Automobile Show, Commercial Museum Building, under the auspices of the Philadelphia Automobile Trade Association, Louis C. Block, chairman.

Scranton, Pa.....Jan. 15-20
Annual Automobile Show, under the auspices of the Scranton Motor Trades Association, Hugh B. Anderson, manager.

Hudson, N. Y.....Jan. 16-20
Hudson Automobile Show, State Armory, under the auspices of Company M, J. M. Callahan, Manager.

Detroit .....Jan. 20-27
Twenty-second Annual Automobile Show, Inclusive of Passenger Cars, Trucks and Accessories, Municipal Garage Building, under the auspices of the Detroit Automobile Dealers' Association, H. H. Shuart, manager.

Baltimore .....Jan. 20-27
Annual Automobile Show, Fifth Regiment Armory, under the auspices of the Baltimore Automobile Trade Association, John E. Raine, Secretary.

Milwaukee.....Jan. 20-27
Fifteenth Annual Automobile Show, Auditorium, under the auspices of the Milwaukee Automotive Dealers Association, Bart J. Ruddle, Manager.

Cleveland.....Jan. 20-27
Annual Automobile Show, New Public Auditorium, under the Auspices of the Cleveland Automobile Manufacturers and Dealers Association, Herbert Buckman, Manager.

Montreal.....Jan. 20-27
National Motor Show of Eastern Canada, Almy's Building, under the auspices of the Montreal Automobile Trade Association, Limited, Adelstan Levesque, manager.

Scranton, Pa.....Jan. 22-25
Commercial Car Show, under the auspices of the Scranton Motor Trades Association, Hugh B. Anderson, manager.

Chicago.....Jan. 27-Feb. 3
Annual Automobile Show Under Auspices of National Automobile Chamber of Commerce, Coliseum.

Chicago .....Jan. 27-Feb. 4
Annual Automobile Salon, Drake Hotel.

Ann Arbor, Mich.....Jan. 29-Feb. 2

Wilkes-Barre.....Jan. 29-Feb. 3
Fourteenth Annual Automobile Show, Armory, under the auspices of the Automobile Dealers' Association of Wilkes-Barre, Norman Johnstone, secretary.

Minneapolis .....Feb. 3-10
Annual Automobile Show under Auspices of Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Portland, Ore.....Feb. 3-10
Annual Automobile Show, under the auspices of the Portland Automobile Dealers Association.

Troy, N. Y.....Feb. 3-10
Ninth Annual Automobile Show, State Armory, under the auspices of the Troy Used Car Sales Corp., Frank M. Baucus, manager.

Winnipeg, Man.....Feb. 5-10
Third Annual Automotive Equipment Show with Radio Exhibits in Connection, under the auspices of the Western Canada Automotive Equipment Association, W. L. Williams, secretary.

Charlotte, N. C.....Feb. 5-10
Annual Automobile Show, Made-in-Carolinas Exposition Building, under the auspices of the Charlotte Automotive Trade Association.

Lansing, Mich.....Feb. 5-10

Toledo.....Feb. 5-10
Annual Automobile Show, Terminal Auditorium, under the auspices of the Toledo Auto Shows Co., H. V. Buelow, Manager.

Waterbury, Conn.....Feb. 5-12
Third Annual Show at the New State Armory, under the auspices of the Waterbury Automotive Dealers Association. Passenger Cars and Accessories. M. A. Doolittle, Chairman of the Show Committee.

Cincinnati.....Feb. 7-14
Automobile Show, under the auspices of the Cincinnati Automobile Dealers Association, Harry T. Gardner, manager.

Kansas City, Mo.....Feb. 10-17
Annual Automobile Show, under the auspices of the Kansas City Motor Car Dealers Association, George A. Bond, Secretary.

Kalamazoo and Flint, Mich.....Feb. 12-17

St. Louis.....Feb. 12-17
Annual Automobile Show, Universal Building, under the auspices of the St. Louis Automobile Dealers Association, Robert E. Lee, manager.

Atlanta.....Feb. 17-24
Annual Southern Automobile Show, Atlanta Auditorium, under the auspices of the Atlanta Automobile Association, Virgil W. Shepard, manager.

San Francisco.....Feb. 17-24
Seventh Annual Pacific Automobile Show, under the auspices of the San Francisco Motor Car Dealers Association, Exposition Auditorium, George A. Wahlgreen, Manager.

Grand Rapids and Mt. Clemens, Mich. Feb. 19-24

Louisville, Ky.....Feb. 19-24
Fifteenth Annual Automobile Show, under the auspices of the Louisville Automobile Dealers Association, George T. Holmes, secretary.

Trenton, N. J.....Feb. 21-24
Annual Automobile Show of Passenger Cars, Trucks and Accessories, Armory, under the auspices of the Trenton Automobile Trade Association, Frederick Petry, Jr., Manager.

Albany, N. Y.....Feb. 24-March 3
Thirteenth Annual Albany Automobile Show, State Armory, under the auspices of the Albany Automobile Dealers Association, J. B. Wood, manager.

Brooklyn, N. Y.....Feb. 24-Mar. 3
Annual Automobile Show under auspices of the Brooklyn Motor Vehicle Dealers Association, 23rd Regiment Armory.

Des Moines.....Feb. 25-March 5
Fourteenth Annual Automobile Show, Coliseum, Passenger Cars and Accessories only, under the auspices of the Des Moines Automobile Dealers Association, Dean Schooler and C. G. Van Vliet, managers.

Omaha.....Feb. 26-March 3
Seventeenth Annual Show of Passenger Cars, Trucks and Accessories, Municipal Auditorium, under the auspices of the Omaha Automobile Trade Association, A. B. Waugh, Manager.

Muskegon, Mich.....Feb. 26-March 3

Syracuse.....Feb. 26-Mar. 5
Annual Automobile Show under auspices of the Syracuse Automobile Dealers Association.

Springfield, Mass.....Feb. 26-March 3
Annual Automobile Show under the auspices of the Springfield Automotive Dealers Association.

Bay City, Mich.....March 5-10

Indianapolis.....March 5-10
Spring Automobile Show, under the auspices of the Indianapolis Automobile Trade Association, John B. Orman, manager.

Newark, N. J.....Mar. 10-17
Annual Automobile Show under the auspices of the New Jersey Automobile Exhibition Co., Claude E. Holgate, manager.

Washington, D. C.....March 10-17
Third Annual Spring Show of Passenger Cars and Accessories, Convention Hall, under the auspices of the Washington Automotive Trade Association, Rudolph Jose, Chairman of Show Committee.

Boston.....March 10-17
Annual Automobile Show, Mechanics Building, under the auspices of the Boston Automobile Dealers Association and the Boston Commercial Motor Vehicle Association, Chester I. Campbell, manager.

Port Huron, Mich.....March 12-17

Battle Creek, Mich.....March 19-24

Greenville, S. C.....March 28-31
Annual Automobile Show, Textile Hall, Browning Goldsmith, chairman of Show Committee.

Alpena, Mich..... .....April 2-7

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May Discontinue Jackson

DAYTON, OHIO, Dec. 9—The Jackson car, formerly manufactured in Jackson, Mich., will be discontinued, according to the plans of Associated Motor Industries, Inc. It is planned to replace the Jackson line with a smaller National. It has not yet been determined whether the small National car will be made in Jackson, or whether the factory there will be used as a body plant.

Gasoline Consumption Declined

WASHINGTON, Dec. 12—Statistics compiled by the Bureau of Mines show that consumption of gasoline fell off 12.98 per cent during September.

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Acason	¾-1	$1650a	3⅜x5	34x5n	34x5n	W
Acason RB	1½	1950	3¾x5¼	36x3½	36x6	W
Acason H	2½	2750	4⅜x5⅜	36x4k	36x8k	W
Acason L	3½	3450	4⅜x5¾	36x5k	36x10k	W
Acason M	5	4350	5 x6¼	36x6	40x12	W
Ace	1½-1¾	2400	3⅜x5	34x3½	34x6	W
Ace	2	2850	4⅛x5¼	36x4	36x7	W
Ace	2½-3	3400	4⅛x5¼	36x4	36x8	
Acme	1	....	3¾x5	35x5n	35x5n	W
Acme	1½	....	3¾x5	34x3½	34x5	W
Acme	2	....	3¾x5	34x3½	34x5	W
Acme	3	....	4⅛x5¼	36x4	36x7	W
Acme	3	....	4½x5½	36x4	36x7k	W
Acme	4½	....	4½x5½	36x5	40x10	W
Acme	6¼	....	4¾x6	36x6.	40x12	W
American	2½	3350	4 x6	36x4k	36x4dk	W
American	4	4275	4½x6	36x5k	36x5dk	W
American	5	4500	4½x6	36x5	36x12	W
Armleder	1	....	3¾x5½	34x3½k	34x6k	W
Armleder	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder 40-B	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder 40-C	1½	....	4⅛x5¼	34x3½k	34x6k	W
Armleder HW-B	2½	....	4¼x5½	36x4k	36x7k	W
Armleder HW-C	2½	....	4⅛x5¼	36x4k	36x7k	W
Armleder KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder KW-C	3½	....	4½x5½	36x5k	36x5dk	W
*Atlas	1	1495	3¾x5½	34x4½n	34x4½n	W
*Atlas	1½-2	1950	3¾x5½	36x6n	36x6n	W
Atterbury 20R	1½	2475	3⅜x5	34x3½	34x5	W
Atterbury 22C	2½	3375	4¼x5¼	36x4	36x4d	W
Atterbury 22C	2½	3475	4¼x5¼	36x4	36x4d	W
Atterbury 22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury 22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury 8E	5	4975	4¾x6	36x5	40x6d	W
Atterbury 8E	5	5125	4¾x6	36x5	40x6	W
Autocar 21UF	1½-2	1950	4¼x4½	34x4k	34x6	D
Autocar 21UG	1½-2	2050	4¼x4½	34x4k	34x6	D
Autocar 27H	2-3	2950	4 x5½	34x5	36x7	D
Autocar 27K	2-3	3075	4 x5½	34x5	36x7k	D
Autocar 26T	4-6	3950	4¼x5½	34x6	36x12	D
Autocar 26-B	4-6	4100	4¼x5½	34x6	36x12	D
Available H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available H2	2	2775	4 x5	36x3½k	36x6k	W
Available H2½	2½	3160	4 x5	36x4k	36x8k	W
Available H3½	3½	4175	4½x5½	36x5	40x5d	W
Available H5	5	5375	5 x6	36x6	40x12	W
*Avery	1	....	3 x4s	34x5n	34x5n	I
Beck A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	I
Beck B-30	1½	1350	3¾x5	34x5	36x6	
Beck C-40	2	1550	3¾x5	36x6	36x6	
Beck D-50	2½	1950	4⅛x5¼	38x7	40x8	
Bell M (Iowa)	1	1495	3⅜x5⅛	35x5	35x5n	W
Bell E (Iowa)	1½	2100	3¾x5¼	34x3½	34x5	I
Bell O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Bessemer G	1	1450	3½x5	35x5n	35x5n	I
Bessemer H-2	1½	1990	3¾x5	36x3½	36x5	D
Bessemer J-2	2½	2895	4⅛x5¼	36x4	36x4d	D
Bessemer K-2	4	3695	4½x5½	36x5	36x10	I
Bethlehem KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem GN	2	1795	4 x5¼	34x4	34x6k	D
Bethlehem GN	3	2495	4 x6¼	36x4k	36x8k	D
Bridgeport A	1½	....	3¾x5⅛	34x3½	34x6	W
Bridgeport B	2½	....	4½x5½	36x4	36x4d	W
Bridgeport C	3½	....	4½x6	36x5	36x10	W
Brinton C	2	2500	3¾x5	34x4	34x5	W
Brinton D	3	2975	4⅛x5¼	36x4	36x7	W
Brockway E	1	....	4 x5	33x5n	33x5n	B
Brockway S-5	1½	....	4 x5	36x4	36x6	W
Brockway SK	1½	....	4⅛x5¼	36x4	36x6	W
Brockway KR	2½	....	4½x5½	36x4	36x8	W
Brockway K-5	2½	....	4⅛x5¼	36x4	36x8	W
Brockway RT	3½	....	4¾x6	36x5	36x10	W
Brockway R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway T-4	5	....	4¾x6	36x6	40x6d	W
*Buick	½	915b	3⅜x4¾	31x4n	31x4n	B
Case	2	....	4¼x5¾	36x6	38x7	I
*Chevrolet	¼	510b	3½x4	30x3½n	30x3½n	B
*Chevrolet G	¾	650	3½x4	31x4n	31x4½n	B
*Chevrolet T	1	1095	3½x5¼	33x4n	35x5n	W
Chicago C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago C3½	3½	....	4½x5½	36x5	36x10	W
Chicago D5	5	....	4½x5½	36x6	40x12	W
Clydesdale 10	¾-1½	1485	3¾x5	34x5n	34x5n	B
Clydesdale 10A	¾-1½	1535	3¾x5	34x5n	34x5n	B
Clydesdale 18	¾-1½	1890	3¾x5	34x5	34x5	W
Clydesdale 20	1-1½	2385	3¾x5	34x5	34x5k	W
Clydesdale 42	1½-2	2475	3¾x5	36x3½	36x6	W
Clydesdale 65X	2½-3	3250	4¼x5¼	36x4	36x8	W
Clydesdale 65EX	2½-3	3450	4½x5½	36x4	36x8	W
Clydesdale 90	3½-4½	4100	4½x5½	36x5	36x10	W
Clydesdale 120	5-6	4500	4¾x6	36x6	40x12	W
Commerce 9	¾-1½	1150	3¾x5	32x4½n	32x4½n	B
Commerce T	¾-1½	1450	3¾x5	34x4½n	34x4½n	B
Commerce 10	¾-1½	2500	3¾x5	33x5n	33x5n	B
Commerce 12	1½	1695	3¾x5	34x3½	34x4	I
Commerce 12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce 16	2	1995	3¾x5	34x4	34x6	I
Commerce 16	2	2150	3¾x5	35x5n	36x6n	I
Commerce 18	2½	2150	4⅛x5¼	36x4	36x7	I
Commerce 18	2½	2495	4⅛x5¼	36x4	36x7	W
Commerce 25	2½	2425	4¼x5¼	36x4	36x7	W
Commerce 25	2½	2770	4½x5¼	36x6	40x8n	W
Cook 51	2½	3600	4 x5⅛	36x6n	40x8n	W
*Corbitt	¼-1	1250	3½x5	33x5n	33x5n	
Corbitt E-22	1	1480	3¾x5	34x3½	34x4	W
Corbitt D-22	1½	2200	3¾x5	34x3½	34x5	W
Corbitt C-22	2	2600	4½x5¼	36x3½	36x7	W
Corbitt B-22	2½	3000	4½x5¼	36x4	36x7	W
Corbitt R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt A-22	3½-4	3800	4½x5½	36x5	36x10	W
Corbitt AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder B	1½	2000	3⅜x5	34x3½	34x5	W
Day-Elder D	2	2400	4½x5¼	36x4	36x7	W
Day-Elder C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn E	1	1600	3⅜x5½	35x5n	35x5n	W
Dearborn FX	1½	2300	3¾x5½	34x4	34x5	W
Dearborn F	1½	2180	3¾x5⅛	34x4	34x5	W
Dearborn 48	2	2590	3¾x5⅛	34x4½n	34x7	W
Defiance G	1	1525	3¾x5	35x5n	35x5n	B
Defiance D	1½	1845	3¾x5	35x5n	36x6n	I
Defiance E	2	2075	3¾x5	35x5n	38x7n	I
Denby 31	1¼	1485	3¾x5	35x5n	35x5n	B
Denby 33	1½	2145	3¾x5	35x5n	38x7n	I
Denby 35	2½-3	2795	4½x5¼	36x4	36x7	I
Denby 27	4	3895	4½x5½	36x5	36x5d	I
Denby 210	5	4295	4½x5½	36x6	40x6d	I
Dependable A	¾-1	1650	3⅝x5⅛	34x5n	36x6n	W
Dependable C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable D	2½	2650	4 x5½	34x5	36x6	W
Dependable E	3	2950	4¼x5¼	36x4	36x7	W
Diamond T O-3	1-1¼	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T U	2-2½	2650	4 x5¼	36x4	36x7	W
Diamond T K	3½	3750	4½x5½	36x5	36x5d	W
Diamond T EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T S	5	4500	4¾x6	36x6	40x6d	W
*Dort	½	685a	3½x5	31x4n	34x4n	P
Double Drive B	3	4000	4¼x5½	36x6	36x6	W
Duplex A	2	2775	4 x5¼	35x5n	38x7n	W
Duplex E	3½	3500	4½x5½	36x8	36x8	I
Duty 22	2	1590	3½x5	34x3½	34x5	I
Eagle 101	1½	1875	3⅝x5⅛	34x5	34x5	I
Eagle 100-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D. B	3	4200	4¾x5½	36x6	36x6	B
Fageol 1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol 2½	2½	3900	4⅜x5¾	34x4	36x7	W
Fageol 3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol 5	5	5700	4½x6¼	36x6	40x6d	W
Fargo R	2	1700	3¾x5	36x4	36x6	I
*Federal	1½	1375	3¾x5	—x5n	—5n	
Federal SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal TE	1½	2175	4½x5¼	36x3½	36x5	W
Federal UE	2-2½	2425	4⅛x5¼	36x4	36x7	W
Federal WE	3½-4	3150	4⅛x5½	36x5	36x5d	W
Federal X2	5-6	4500	4¾x6	36x6	40x6d	W
*Ferd TT	1	380	3¾x4	30x3½n	32x4½n	W
Front Drive C	1½	2800	3¾x5½	36x6	36x6	
G.M.C. K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C. K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C. K-41T	5†	2450	4 x5½	36x4	36x8	W
G.M.C. K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C. K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C. K-71T	10†	3700	4½x6	36x5	40x12	W
G.M.C. K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C. K-101T	15†	4050	4½x6	36x5	40x14	W
G.M.C. K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W.	1½	1850	3¾x5½	35x5	35x5	I
*Garford	1 5	1590	3⅝x5⅛	34x5n	34x5n	W
Garford 25-B	1½	1900	3¾x5½	36x3½	36x5	W
Garford 70-H	2½	2750	4¼x5½	36x4	36x8	W
Garford 77-D	4	3750	4½x6	36x5	36x5d	W
Garford 68-D	5	4500	5 x6½	36x6	40x5d	W
Garford 150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary F	1-1½	1775	3¾x5	36x3½	36x5	W
Gary I	2	2450	4 x5½	36x3½	36x6	W
Gary J	2½	2850	4¼x5½	36x4	36x8	W
Gary K	3½	3790	4½x6	36x5	40x6d	W
Gary M	5	4450	5 x6½	36x6	40x6d	W
Gersix M	1½	3100	4 x5½	36x4	36x7	W
Gersix K	2½	3500	4½x5½	36x4	36x8	W
Gersix	3½	4500	4½x6	36x5	40x12	W
Getfredson 20	1	2075	3¾x5½	34x5	34x5	W
Getfredson 31	1½-2	3000	4 x5½	36x6	38x7n	W
Getfredson A	2½	3375	4 x5¼	36x4	36x7	W
Getfredson B	3½-4	4475	4½x5½	36x5	36x10	W
Getfredson 100	5-6	5500	5 x6½	36x6	40x14	W
Graham Bros.	1	1265	3⅞x4½	33x4½n	34x5n	B
Graham Bros.	1½	1325	3⅞x4½	33x4½n	36x6n	B
‡Gramm-Pion. 1G	1	1245	3½x5	33x5n	33x5n	B
‡Gramm-Pion. 1	1½-2	1750a	3¾x5	36x3½k	36x5k	I
‡Gramm-Pion. 6	1½-2	2250a	3¾x5	36x3½k	36x5	W
‡Gramm-Pion. 2	2-2½	2475a	4½x5¼	36x4k	36x7k	W
‡Gramm-Pion. 3	3	3300a	4½x5½	36x5k	36x5dk	W
‡Gramm-Pion. 75	3½	4225a	4½x5½	36x6n	42x9n	W
‡Gramm-Pion. 4	4	3850a	4½x5½	36x5	36x5dk	W
‡Gramm-Pion. 5G	5-6	4450a	4¾x6	36x6	40x6dk	W
Hall 1	1½	3100	3⅜x5	34x5n	38x7n	W
Hall 2	2½	3275	4½x5¼	36x4	36x6	W
Hall 3	3½	4100	4½x5½	36x5	36x5d	W
Hall S	5	5100	4½x5½	36x5	40x6d	W
Hall 7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey W OA	2	2650	4¼x5½	34x4	34x7	W
Harvey WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye O	1	1375	3⅝x5⅛	34x5n	34x5n	
Hawkeye K	1½	1645	3¾x5½	34x3½k	34x5k	I
Hawkeye M	2	2145	4¼x5	36x4k	36x6k	I
Hawkeye N	3½	3700	4½x6¾	36x5k	36x10k	I
Hendrickson O	1½	2200	3⅝x5½	36x4n	36x5n	W
Hendrickson N	2½	2690	4¼x5¾	36x4k	36x7k	W
Hendrickson M	3½	3000	4¼x5	36x5k	36x5dk	W
Hendrickson K	5	4000	5 x6¼	36x6	40x6	W
Huffman B	1½-2	1795	3¾x5	34x3½	34x6	W
Huffman C	1½-2	1695	3¾x5½	36x3½	36x6	I
Huffman D	2-3	2895	4¼x5½	36x4	36x7	
Hurlburt A-A	1-1½	1950	3¾x5	34x5n	34x5n	W
Hurlburt B-B	2-2½	2800	4¼x5¼	36x4	36x4d	W
Hurlburt C-C	3-3½	3475	4¼x5½	36x5	36x5d	W
Hurlburt D-D	4-4½	4150	4½x6	36x5	36x6d	W
Hurlburt E-E	6-6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa) B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa) G	1½	2040	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.) H	2½	2940	4½x5¼	36x4	36x7	I
*Indiana 10	1	....	3¾x5¼	34x5n	34x5n	B
Indiana 12	1½-2	....	3¾x5¼	34x3½k	34x5k	W
Indiana 20	2	....	4¼x5½	36x4k	36x7k	W
Indiana 25	2½-3	....	4½x5½	36x4k	36x8k	W
Indiana 35	3½-4	....	4⅝x5½	36x5k	36x5dk	W
Indiana 51	5-7	....	5 x6¼	36x5k	40x6dk	W
*International S	1	1250	3½x5	32x4½n	32x4½n	I
International 21	1	1550	3½x5¼	36x3½k	36x3½	I
International 31	1½	1650	3½x5¼	36x3½k	36x5k	I
International 52	2½	3500	4¼x5	36x6n	36x6dn	I
International 61	3	2400	4¼x5	36x4k	36x7k	I
International 62	3	2600	4¼x5	36x4	36x7	I
International 101	5	3600	4¼x5	36x5	40x12k	I
International 102	5	3800	4¼x5	36x5	36x12,	I
Jackson 4WD	3½	3850	4½x5½	36x7	36x7	B
K-Z 1	1	1750	3½x5	34x3½	34x5	W
K-Z 1½	1½	2075	3¾x5	36x4	36x6	W
K-Z 2½	2½	2550	4⅛x5¼	36x4	36x8	W
K-Z 3½	3½	3350	4½x5½	36x5	40x10	W
K-Z 5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo G-1	1½	1800	3¾x5	34x4	34x5	W
Kalamazoo LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo NH	3	3145	4 x6	36x5	36x10	W
Kalamazoo HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo SK	4	3845	4¼x6	36x5	36x12	W
Kalamazoo OK	5	4350	4½x6	36x6	40x6d	W
²Kelly-S. K-31	1½	2700	3¾x5¼	36x3½	36x6	C
²Kelly-S. K-34	1½	2700	3¾x5¼	36x3½	36x6	W
²Kelly-S. K-38	2½	2900	3¾x5¼	36x4	36x4d	W
²Kelly-S. K-35	2½	2900	3¾x5¼	36x4	36x4d	C
²Kelly-S. K-40	3½	3900	4½x6½	36x5	40x5d	C
²Kelly-S. K-41	3½	3900	4½x6½	36x5	36x10	I
²Kelly-S. K-42	3½	3900	4½x6½	36x5	40x5d	W
²Kelly-S. K-50	5	4400	4½x6½	36x6	40x6d	C
²Kelly-S. K-60	6	4600	4½x6½	36x6	40x7d	C
²Kelly-S. K-61	5-7	4800	4½x6½	36x6	36x7d	I
Kimball AB	2	3675	4 x6	36x4	36x7	W
Kimball AC	2½	3975	4¼x6	36x4	36x8	W
Kimball AK	3	4500	4½x6	36x4	36x10	W
Kimball AE	4	5000	4¾x6	36x5	40x12	W
Kimball AF	5	5500	5 x6	36x6	40x7d	W
*Kissel Express	1	1585	3½x5½	34x5n	34x5n	W
Kissel Utility	1½	1975	3½x5½	36x3½	36x6	W
Kissel Freighter	2½	2875	4½x5½	36x4	36x8	W
Kissel H.D.	4	3675	4¼x5½	36x5	36x12	W
Kleiber AA	1	2200	4½x5¼	34x3½k	34x5k	W
Kleiber A	1½	3100	4½x5¼	36x3½k	36x6k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.

r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. truc.—tractor. †Capacity with semi-trailer.

1—Gramm Pioneer. 2—Kelly-Springfield.

Passenger car specifications on pages 51 and 52

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5¼	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....D	1½	2150	3½x5	34x3½	34x5	W
Koehler.....M	2½	3175	4 x5½	36x4	36x7	W
Koehler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Koehler.....F	3½	4470	4½x5½	36x5	36x10	W
Koehler,MT.Trac	5	3275	4 x5½	36x4	36x7	W
Krebs.....23	¾	1360	3¾x5	34x4½	34x4½	B
Krebs.....24	1	1675	3¾x5	34x5	34x5	W
Krebs.....45	1½	2275	4½x5¼	36x4	36x7	W
Krebs.....75	2½	2550	4½x5½	36x4	36x8	W
Krebs.....110	3½	3175	4½x5½	36x5	40x10	W
Krebs.....140	5	....	4¾x6	36x6	40x6d	W
Larrabee.....X-2	1	1925	3¼x4½	34x5n	34x5n	B
Larrabee.....U	1½	2400	3¾x5	34x3½	34x5	W
Larrabee.....J	1½–2½	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½–3	3100	4½x5¼	36x4	36x7	W
Larrabee.....K-5	2½–3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½–5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5–7	4800	4¾x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5¼	36x4	36x6	W
Maccar.....H-A	2	....	4½x5¼	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5–6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack....AB D.R.	1½	3450	4 x5	36x4k	36x3½dk	D
Mack...AB•Chain	1½	3000	4 x5	36x4k	36x3½dk	D
Mack...AB Chain	2	3300	4¼x5	36x4k	36x4dk	C
Mack....AB D.R.	2	3750	4¼x5	36x4k	36x4dk	D
Mack....AB D.R.	2½	3850	4¼x5	36x4k	36x4dk	D
Mack...AB Chain	2½	3400	4¼x5	36x4k	36x4dk	C
Mack...AC Chain	3½	4950	5 x6	36x5k	40x5dk	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3400	4¼x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Mapleleaf.....**	1½	3000	3¾x5¼	34x5n	36x6n	W
Mapleleaf...AA**	2	3600	4 x5¼	36x4	36x7	W
Mapleleaf...BB**	3	4050	4¼x5½	36x4	36x4d	W
Mapleleaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Mapleleaf...DD**	5	5625	4½x5½	36x6	40x6d	W
Mason.....	1	1200	4 x5	34x5n	34x5n	B
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x6	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4¼x5½	34x4	36x8	W
Master.....DD	2½	3190	4¼x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x8	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4¼x5½	34x4	36x7	D
*Maxwell.....	1½	932	3⅝x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1–1¼	2000	3¾x5	34x3½	36x5	W
Menominee....H	1½	2475	4 x5	36x3½	36x5	W
Menominee....D	2–2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4¾x6	36x6	40x12	W
Moline.....10	1½	1985	3½x5	34x5n	36x6n	I
3Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5¼	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½–5	4600	4¾x6	36x6	40x6	W
Nash.....2018	1–1½	1595	3¾x5¼	34x4	34x5	I
Nash.....3018	2–2½	2150	3¾x5¼	34x4k	34x7k	I
Nash.....Quad.	2–2½	2750	4¼x5½	36x6	36x5k	I
Nash. 3018, LWB	2–2½	2200	3¾x5¾	34x4k	34x7k	I
Nash. Quad. LWB	2–2½	2800	4¼x5½	36x6	36x6	I
Nash.....5018	2½	2250	3¾x5¼	34x4k	34x7k	I
4Nelson.....G2	1½	....	4½x5¼	36x3½	36x6	W
4Nelson.....G3	2½	....	4½x5¼	36x4	36x7	W
4Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
4Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5¼	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4¼x5¼	36x4k	36x7k	W
Noble.....A21	1¼	1750	3⅝x5⅛	34x5	34x5	W
Noble.....B31	1½–2	2395	3¾x5¼	36x4	36x7	W
Noble.....D51	2½–3	2795	4¼x5½	36x4	36x8	W
Noble.....E71	3½–5	3495	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3¾x5¼	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4¼x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4½x5¼	34x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W
Norwalk.....25E	1	1595	3½x5	34x3½	34x4	W
Norwalk.....35E	1½	1925	3½x5	34x3½	34x3½d	W
Norwalk,35E.Spec	1½	2285	3¾x5¼	34x3½	34x5	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	36x3½	36x5	W
Ogden.....E	2½	....	4½x5¼	36x4	36x8	W
Old Hickory...W	1	$1775	3¾x5	36x3½k	36x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4¼x6	34x4	36x4d	W
Old Reliable....C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6¼	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3½x5¼	35x5n	35x5n	I
Olympic.....A	2½	3200	4¼x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	2½	3200	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	2485	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	2585	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3485	4 x5½	38x7n	38x7n	B
Oshkosh.....BB	2½	3585	4 x5⅛	38x7n	38x7n	B
*Overland.....4	½	425	3⅝x4	30x3½n	30x3½n	B
Packard.....EC	2–3	3100	4⅜x5½	36x4	36x7	W
Packard.....EX	2–2½	3100	4⅜x5½	36x6n	40x8n	W
Packard.....ED	3½x4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5–7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige.....54-20	2½	2420	4¼x5½	34x4	34x8	W
Paige.....51-18	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot....Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot....Lincoln	2	2050	4 x5¼	34x4	34x6	W
Patriot....LS-800	2	2175	4 x5¼			
Patriot..Washgt'n	3	2900	4½x5½	36x5	36x7	W
Pierce-Arrow....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher.....	1½–2	3000	3⅝x5	36x4	36x6	
Pittsburgher.....	3	3800	4½x5¼	36x5k	36x7	W
Power.....F	2	3150	4 x5¼	36x5	36x7	W
Power.....C	3½	....	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4½x5¼	34x4	34x6	W
Rainier.....R-20	2½–3	....	4½x5¼	34x4	34x7	W
Rainier.....R-15	3½–5	....	4½x5½	36x5	36x5d	W
Rainier.....R-25	3½–5	....	4½x5¼	36x5	36x5d	W
Rainier.....R-17	5–6	....	4¾x6	36x6	40x6d	W
Rainier.....R-27	6	....	4¾x6	36x6	40x6d	W
Ranger..TK-20-2	1½	1450	3¾x5	36x6n	38x7n	W
*Reo.....F	¾–1¼	1185	4½x4½	34x4½n	34x4½n	B
Reliance.....10A	1½	2400	4 x5⅛	36x3½	36x5	I
Reliance.....20B	2½	3100	4¼x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3¾x5	34x3	34x4	I
Republic....11X	1½	1795	3¾x5	34x4	34x6	I
Republic.....19	2½	2195	4½x5¼	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rowe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rowe.....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rowe.....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rowe.....G.P.W.	3	5250	3¼x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4¼x6	36x5	36x6d	W
Rowe.....F.W.	5	4850	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Samson.....15	¾	....	4–3½x4	32x4n	32x4n	B
Samson.....25	1¼	....	4–3½x5½	35x5n	35x5n	B
Sanford....W-15	1½–2	2150b	3¾x5	36x3½k	36x5k	
Sanford.....25	2½–3½	....	4½x5¼	36x4	36x4d	W
Sanford.....35	3½–5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5–7		4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ton	3	3800	4¼x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5¼	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....30	1½–2½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½–2½	3350	4½x5¼	34x5n	38x7n	W
Selden.....50	2½–3½	3250	4½x5¼	36x4	36x7	W
Selden.....51	2½–3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½–5	$3750	4½x5½	36x5	36x10	W
Selden.....90	5–7	4950	4¾x6	36x6	40x12	W
Seneca.....M	½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3½x4½	32x4½n	32x4½n	B
*Service.....25	1¼	....	3¾x5⅛	34x5n	34x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4¼x5½	35x5n	38x7n	W
Service.....52	3	....	4¼x5½	36x4	36x8	W
Service.....72	3½	....	4¼x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	1450	3¾x5	34x5n	36x6n	W
Signal.....H	1½	1950	4½x5¼	34x4	36x6	W
Signal.....J	2½	2375	4½x5¼	34x4	36x8	W
Signal.....M	3½	3175	4½x5½	36x5	40x5d	W
Signal.....R	5	3900	4¾x6	36x6	40x6d	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½–3	2400	4½x5¼	36x4k	36x8	W
Standard.....66	3½–5	3150	4½x5½	36x5	36x12	W
Standard....5-K	5–7	4400	4¾x6	36x6	40x14	W
*Star.....	½	610b	3½x4½	30x3½n	30x3½n	
Sterling.....1½	1½	2885	4 x5¼	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5¾	36x4k	36x6k	W
Sterling.....2½	2½	3290	4¾x5¼	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6¼	36x5k	40x5dk	W
Sterling....5-W	5	4950	5 x6¼	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6¼	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6¼	36x6	40x7d	C
*Stewart...Utility	¼–1¼	1245	3⅝x5⅛	34x4½n	34x4½n	I
Stewart.....15	1¼–1½	1445	3⅝x5⅛	35x5n	35x5n	I
Stewart.....9	1½–2	1790	3¾x5	34x3½	34x6	I
Stewart.....7-X	2½–3	2390	4¼x5½	34x4	34x8	I
Stewart....10-X	3½–4	3190	4½x6	36x5	36x10	I
*Stewart.....	1¼	1245	4–3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1095	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3¾x5¼	34x5n	34x5n	W
Stoughton.....B	1½	2150	3¾x5½	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5⅛	36x4	36x7	W
Stoughton.....F	3	3150	4¼x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4¼x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Thomart.....	1¼	1795	4 x5¼	34x5	34x5	C
Tiffin.....GW	1½	2100	4½x5¼	36x3½	36x5	W
Tiffin.....MW	2½	2700	4½x5¼	36x4	36x3½d	W
Tiffin.....PW	3½	3600a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4½x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4½x5¼	35x5n	38x7n	W
Tower.....H	2½	2475	4½x5¼	36x4	36x7	W
Tower.....G	3½	3475	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595a	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595a	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3¾x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5½	34x3½k	34x5k	I
Transport.....35	2	1885a	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4½x5¼	36x4k	36x8k	I
Transport.....60	3½	2585	4¼x5½	36x4k	36x8k	I
Transport.....75	5	3185	4½x6	36x5k	36x12k	I
Traylor.....B	1½	2390	3¾x5½	34x3½	34x5	W
Traylor.....C	2–2½	2850	4 x5½	36x4	36x7	W
Traylor.....D	3–3½	3300	4¼x5½	36x4	36x8k	W
Traylor.....F	5–6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3¼x5	34x4½n	34x4½n	I
Triangle.....A	1½–2	1985	3¾x5¼	34x3½k	34x6k	I
Triangle.....C	2–2½	2285	3¾x5¼	36x4k	36x7k	I
Triangle.....B	2½–3	2585	4 x5¾	36x4k	36x7k	I
Twin City...B.W.	2	2400	4 x5½	36x6	40x8	I
Twin City...A.W.	3½	3500	4¼x6	36x5	40x5d	W
5Twin City.....B	3½	....	5½x6	36x6	36x6	I
5Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4¼x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4¼x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4¼x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4¼x5½	36x4	36x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
United.....A	1½	2445	3¾x5¼	36x3½k	34x5k	W
United.....B	2½	3150	4¼x5½	36x4k	36x7k	W
United.....C	3½	3975	4¼x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States..U	1¼	1800	3⅝x5⅛	34x5n	34x5n	B
UnitedStates.NW	1½–2	2375	3¾x5	36x5	36x3½	W
United States...N	1½–2	2175	3¾x5	36x3½k	36x5k	I
United States...R	3	3300	4 x5¼	36x4	36x4d	W
United States...S	4	4075	4½x5½	36x5	36x5d	W
United States...T	5–7	4975	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Velie.....53	2½	2185	4 x5⅛	36x4k	36x7k	I
Veteran.....M***	1½	2699	3¾x5¼	35x5n	35x5n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Veteran.....P**	2	$3699	4¼x5½	36x4	36x7	W
Veteran.....R**	3	4200	4¼x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....50	½-¾	995	4 x5	32x4n	32x4n	B
Walker-JohnsenA	2	2500	3¾x5	34x3½	34x6	W
Walker-JohnsenB	3	3000	4¼x5½	36x4	36x8	W
Walter.....M	2½	3850	4½x5¾	36x4	36x8	D
Walter.....S	5	4850	4½x6¼	36x6	40x6d	W
*Watson.....C	1	1465a	3⅝x5⅛	35x5n	35x5n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2450	4¼x5¼	36x3½k	36x5k	W
Western....L1½	1½	2450	3¾x5	36x3½k	36x5k	W
Western....W2½	2½	3250	4½x5¼	36x4	36x7	W
Western....L2½	2½	2450	4¼x6	36x4	36x7	W
Western....W3½	3½	4000	4½x6	36x5	40x5d	W
*White.....15	¾	2400	3¾x5½	34x5n	34x5n	B
White.....20	2	3250	3¾x5½	36x4k	36x7k	D
White.....40	3½	$4200	3¾x5¾	36x5	40x5d	D
White.....45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick....E	1	1225	3¾x5	34x5n	34x5n	W
White Hick....H	1½	1375	3¾x5	36x3½	36x5	W
White Hick....K	2½	1675	4½x5¼	36x4	36x5	W
Wichita.....K	1	1875	3¾x5¼	36x3½	36x4k	W
Wichita.....M	2	2400	3¾x5¼	36x3½k	36x6k	W
Wichita.....RX	3	3200	4⅜x5¾	36x4k	36x8k	W
Wichita.....O	4	$3500	4½x6¼	36x5k	36x5k	W
Wilcox.....AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4¼x5	36x4k	36x3½dk	W
Wilcox.....E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox.....F	5	4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¾x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4½x5¼	36x4	36x7	W
Wilson.....G	3½	3685	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin.....A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin.....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin.....C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin.....D	3½	3000	4¾x5¾	36x6n	40x8	W
Wisconsin.....E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin.....F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will.....N	1½	2450	3¾x5	36x3½k	36x6k	W
Witt-Will.....P	2½	2900	4½x5¼	36x4k	36x8k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.

r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders; Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P.	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm...	15-25	1185	4	Midw.	4-4½x5¼	Gas.	3
Allis-Chalm...	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm..	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork...2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork.....C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T,...	15-30	1900	4	Clim.	4-5 x6½	G,K,D	4
Aultman-T,...	22-45	2800	4	Own	4-5½x8	G,K,D	6
Aultman-T,...	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Automot.. B-3	12-24	1250	4	Herc.	4-4 x5⅛	Gas.	2-3
Avery,SR.Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4¾x6	G,K,D	2-3
Avery.....	....	....	*	Own	4-4x5½	G,K,D	3-4
Avery.....	12-25	....	4	Own	2-6½x7	G,K,D	2-3
Avery.....	14-28	....	4	Own	4-4½x7	G,K,D	3-4
Avery.....	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7¾x8	G,K,D	8-10
Bates Mule.H	15-25	....	4	Midw.	4-4½x5¼	Gas.	3
Bates Mule..F	18-25	....	*2	Midw.	4-4½x5¼	Gas.	3
‡BatesMule.G	25-35	....	*2	Midw.	4-4½x6	Gas.	..
Bear.....	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman Jr..	¾-1½	180	2	B&S	1-2½x2½	Gas.	..
¶Beeman...G	2-4	240	4	Own	1-3½x4½	Gas.	..
Best.....	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best.....	60	....	*2	Own	4-6½x8½	G,K,D	8-9
¶Bolens.....	....	....	4	B&S	1-2½x2½	G.	..
Boring.....	5-10	395	4	LeR.	4-3½x4½	G.	..
Boring...1921	....	1850	3	Wauk	4-4¾x5¾	GorK	2
**Bryan.....	15-30	....	4	Own	2-4 x5	K.	3
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	2-3
Case.....	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case.....	22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case.....	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T35	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar..5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur.....	5-21½	345	2	N Way	2-4½x4½	GorK	1
Cletrac.....F	9-16	595	*2	Own	4-3¼x4½	G,K,D	2
Cletrac.....W	12-20	1345	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Do-It-All,Baby	1	237	..	Own	1-2¾x2¾	Gas.	1
Do-It-All....A	3-6	495	..	Own	1-4½x5	Gas.	1
Do-It-All, Jack	6	395	..	Own	1-3¾x3⅛	Gas.	1
Do-It-All....6	12	495	2	Own	2-3⅜x3⅛	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	GorK	4-5
E-B.....AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol.....D	9-18	1175	4	Lyc.	4-3½x5	Gas.	2
Farm Horse B	18-30	1885	4	Clim	4-5 x6½	G,K	4
Fitch 4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	395	4	Own	4-4 x5	G,K	2
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt...A	18-36	$2150	4	Wauk.	4-4¾x6¾	GorK	4
Gray.....	20-36	1975	3	Wauk.	4-4½x6¼	Gas.	4
Gray.....	22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. WesternSt	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr..20	20	865	4	Own	2-5¼x6½	K,D.	2
Hart-Parr..30	30	1045	4	Own	2-6½x7	K,D.	3
‡Hart-Parr....	....	1395	4	Own	6½x7	K,D.	..
Heider.....D	9-16	628	4	Wauk.	4-4¼x5¾	G,K	2
Heider.....C	12-20	725	4	Wauk.	4-4½x6¾	G,K.	3
Heider...Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light. 4	12-25	985	4	Wauk.	4-4½x5¾	GorK	3
Huber Super 4	15-30	1885	4	Midw.	4-4½x6	Gas.	3
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International..	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5¼x8	G,K,D	4
¶Kinkade....	1½-3	190	1	Own	1-3 x3	Gas.	..
La Crosse....	12-24	985	2	Own	2-6 x7	G,K	3
Lauson.....5	12-25	1295	4	Midw.	4-4½x5¼	Gas.	3
Lauson.....21	15-30	1675	4	Beav.	4-4¾x6	GorK	3-4
‡Lauson Road	15-30	2000	4	Beav.	4-4¾x6	K	..
Leader.....B	12-18	685	4	Own	2-6 x6¼	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K.	3-4
‡Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Little Giant. B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant. A	26-35	3300	4	Own	4-5½x6	K	6
Lombard.1922	85-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2⅝x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	GorK	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	GorK	3-4
Minne. Med.D	22-44	2650	4	Own	4-6 x7	GorK	5-6
MinneHeavyD	35-70	3850	4	Own	4-7¼x9	GorK	8-9
Mohawk .1922	8-16	650	2	Light	4-3½x4½	KorG	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch...	9-18	....	2	Own	4-3½x5	Gas.	2-3
‡Monarch....	20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Motor Macult.	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	375	4	Own	2-3¾x4	Gas.	1
Nichols-Shep.	20-42	2650	4	Own	2-8 x10	GorK	3-6
Nichols-Shep.	25-50	3000	4	Own	2-9 x12	GorK	4-8
Nichols-Shep.	35-70	3650	4	Own	2-10½x14	GorK	8-12
Nilson Senior	20-40	1975	5	Wauk.	4-5 x6¼	G,K	4
OilPull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar...K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Pioneer.....G	18-36	....	4	Own	4-5½x6	G,K,D	4
Pioneer.....C	40-75	....	4	Own	4-7 x8	Gas.	10
Russell.....	12-24	1500	4	Own	4-4¼x5¾	GorK	2-3
Russell.....	15-30	2200	4	Own	4-5x6½	GorK	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	GorK	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	GorK	8-10
Samson....M	....	445	4	Own	4-4 x5½	G,K	2
Toro Cultivator	6	750	3	LeR.	4-3½x4½	Gas.	2
ToroTractor'22	6-10	495	3	LeR.	4-3½x4½	Gas.	2
Townsend.....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend.....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend.....	25-50	2500	2	Own	4-8½x10	Ker.	4-8
TractionMotor	40-50	....	4	....	8-3¼x5	Gas.	4-5
Traylor....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar...10	25-40	3750	*2	Wauk.	4-5 x6¼	GorK	4
TwinCity.....	12-20	1200	4	Own	4-4¼x6	H,K	3
Twin City.....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City.....	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle SamC20	12-20	1295	4	Weid.	4-4 x5½	G	2-3
Uncle SamB19	20-30	1985	4	Beav.	4-4¾x6	GorK	3-4
Uncle SamD21	20-30	1895	4	Beav.	4-4¾x6	GorK	3-4
Utilitor....501	2½-4	295	4	Own	1-3½x4½	G	1
Utilitor...501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	....	4	Own	4-4¼x5¾	G,K	3
Waterloo....N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore21-22	12-25	1185	4	Wauk.	4-4 x5¾	G,K	3
Whitney....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin..E	16-30	1850	4	Clim.	4-5 x6½	GorK	3
Wisconsin...F	20-40	2050	4	Wauk.	4-5 x6¼	GorK	4
Wisconsin...H	22-40	2550	4	Clim.	4-5½x7	GorK	4-6
Yuba....12-20	12-20	2400	*2	Wauk.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4½x6	G,K,D	..
Yuba....20-35	20-35	3900	*2	Wisc.	4-5¼x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5¼x7	G,K,D	..
‡Yuba.....	25-40	4750	*2	Yuba	4-5¼x7	D	..

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont.—Continental. Dom.—Domas. Evin.—Evinrude. Here.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor. ¶Garden Tractor. **Steam Tractor

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (N.A.C.C.)	NAME AND MODEL	Carburetor	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle Type and Make	†Gear Ratios
.....	$4500c	$4500	.....	.....	$6500	136	33x5	Cont.	6-3 5/8x5 1/4	31.54	Ambassador.....R	Strom...	West.....	Bosch.....	m-d B-L....	B-L.....	f Norwalk..	F Tim..	4.45
$1995c	1785	1850	$1885e	.....	2485	127	33x4 1/2	H-S...	6-3 1/2x5	29.40	American.....D-66	Strom...	G-D.....	A-K.....	s-p B&B...	B & B..	m Hartford..	F Salis..	4.50
.....	1650	.....	.....	.....	.....	127	33x4	Own..	2-	.....	American.....Steamer	None...	L-N.....	L-N.....	None.....	None...	.....	Own..	1.75
.....	1195	.....	.....	$1450c	.....	114	32x4	Cont.	6-3 1/8x4 1/4	23.44	Anderson...Aluminum 6	.....	West.....	West.....	s-p B&B...	.....	.....	Salis..	.....
{1495 {1785p	1495	1595	{1595c {1945c	1905c	1995d	120	33x4	Cont.	6-3 3/8x4 1/2	27.34	Anderson.....Series 40	Rayfield.	Remy.....	Remy.....	s-p B&B...	Durston.	f Snead....	3/4F Salis..	4.50
.....	2620	2645	.....	3625	3695	130	34x4 1/2	Own..	8-3 1/4x5	33.80	Appersen.....8-21-S	Johnson.	Bijur.....	Remy.....	m-d Own....	Own....	m Sterling...	1/2F Own..	4.25
1575	1475	1545n	{1895n {1995n	2275	2345	121	32x4	Cont.	6-3 3/8x4 1/2	27.34	Auburn.....6-51	Strom...	Remy.....	Remy.....	s-p B&B...	G-L.....	m Universal..	F Salis..	4.75
.....	1395	.....	.....	.....	1850d	118	32x4	Cont.	6-3 1/8x4 1/4	23.44	Barley.....	.....	Delco ..	Delco.....	s-p B&B....	Fuller...	f M&E.....	Col.....	.....
1800	1800	.....	.....	2400	2500	121	32x4	Cont.	6-3 1/4x4 1/2	25.35	Bay State.....	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Spicer....	3/4F Col...	4.67
2950	2950c	.....	.....	3950	3950	121	32x4	Buda.	4-3 3/4x5 1/8	22.50	Biddle.....B1 & B5	Zenith..	G-D.....	Simms.....	s-p Warner.	Warner..	m Spicer....	1/2F Std...	4.50
5000	5000	.....	.....	.....	7000	125	32x4 1/2	Own..	4-4 x5 1/2	25.60	Brewster.....91	Zenith..	USL.....	Bosch.....	c Own....	Own....	F Own.....	F Own..	3.92
865	885	725g	.....	1175	{1395 {1325	109	31x4	Own..	4-3 3/8x4 3/4	18.23	Buick..1923-34-5-6-7-38	Marvel..	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	3/4F Own..	4.66
1175	1195	975g	.....	1935	1985	118	33x4	Own..	6-3 3/8x4 1/2	27.34	Buick....1923-41-4-5-47	Marvel..	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	3/4F Own..	4.60
.....	.....	1435	{1625a {1675c	1895	2195	124	34x4 1/2	Own..	6-3 3/8x4 1/2	27.34	Buick.1923 48-9-50-4-55	Marvel..	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	3/4F Own..	4.90
2885	2885	2885	.....	{3675 {3750d	{3950 {4300	132	33x5	Own..	8-3 1/8x5 1/8	31.25	Cadillac.....61	Own....	Delco.....	Delco.....	m-d Own....	Own....	m Spicer....	F Tim...	4.50
1750	1790	.....	.....	2480	2575	122	32x4 1/2	Cont.	6-3 3/8x4 1/2	27.34	Case.....X	Rayfield.	Delco.....	Delco.....	m-d Own....	Own....	f Snead....	3/4F Col...	5.25
.....	1990	2250	1950	2480	2975	129	34x4 1/2	Cont.	6-3 5/8x5 1/4	31.54	Case.....W	Rayfield.	Delco.....	Delco.....	m-d Own....	Own....	f Arvac....	3/4F Col...	4.45
1185	1185	.....	.....	1595	{2295 {1585	117	32x4	Own..	6-3 1/4x4 1/2	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own....	m Hardy....	1/2F Adams	5.13
.....	.....	1345	.....	.....	1585	122	32x4	Own..	6-3 1/4x4 1/2	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own....	m Hardy....	1/2F Adams	5.13
1495	1495c	1645	1595a	1995c	{2295d {2375f	123	33x4	Own..	6-3 1/2x5	29.40	Chandler.....Six	Rayfield.	Bosch.....	Bosch.....	s-p B&B....	Own....	f Own.....	F Own..	4.45
510	525	425g	.....	{840c {680k	860	102	30x3 1/2	Own..	4-3 1/4x4	21.53	Chevrolet.....Superior	Zenith. Holley.	A-L.....	Remy..... A-L.....	c Own....	Own....	m Own.....	1/2F Own..	3.66
1085	995	.....	1260	1295d	1495	112	32x4	Own..	6-3 1/8x4 1/2	22.50	Cleveland.....41	Strom...	Bosch.....	Bosch.....	s-p Own....	Own....	m Mech.....	3/4F Own..	4.45
2685	.....	2685	2685c	3285b	{3285c {3685f	127 1/4	33x5	Nort..	8-3 1/2x4 1/2	39.20	Cole.....890	Johnson	Delco.....	Delco.....	c North...	North...	m Spicer....	F Col...	4.46
1475	1475	.....	1475c	1925c	1995d	115	32x4	Cont.	6-3 3/8x4 1/2	27.34	Columbia.....Elite	Strom...	A-L.....	A-K.....	s-p B&B....	Durston.	m Spicer....	3/4F Tim...	.....
995	985	.....	.....	.....	1395d	115	31x4	Cont.	6-3 1/8x4 1/4	23.44	Columbia.....Light Six	Strom...	A-L.....	A-L.....	s-p B&B....	Durston.	m Spicer....	3/4F Tim...	.....
1395	1395	.....	{1495b {1495c	2065b	2165d	116	32x4	Falls.	6-3 1/8x4 1/4	23.44	Courier.....	Till.....	Bijur.....	A-K.....	s-p B&B....	Muncie..	f Norwalk.	3/4F Col...	5.00
3000	3000	3000	.....	.....	4500	122 1/2	32x4	Cont.	6-3 5/8x5 1/4	31.54	Crawford.....22-6-60	Strom...	West.....	Bosch.....	m-d B-L....	B-L.....	Spicer....	1/2F Tim...	.....
.....	.....	.....	3500	.....	.....	135	33x5	Cont.	6-3 5/8x5 1/4	31.54	Crawford-Dagmar...6-60	Zenith..	West.....	Bosch.....	m-d B-L....	B-L.....	Spicer....	1/2F Tim...	.....
.....	.....	.....	.....	.....	.....	142	33x5	Own..	8-3 3/4x5	45.00	Cunningham.....V	Strom...	Delco.....	Delco.....	m-d Own....	Own....	f Snead....	F Tim...	4.23
4350b	4350c	4350	.....	5250	6000	132	33x5	Own..	8-3 1/2x5 1/4	39.20	Daniels.....D-19	Zenith..	Delco.....	Delco.....	m-d Own....	Own....	m Spicer....	F Tim...	4.50
.....	1195	.....	1495	1795	1795	114	31x4	Cont.	6-3 1/8x4 1/4	23.44	Davis.....71	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Peters....	1/2F Tim...	5.10
1595	1595	.....	1695	2095	.....	120	32x4	Cont.	6-3 3/8x4 1/2	27.34	Davis.....61-67	Strom...	Delco.....	Delco.....	s-p B&B....	Warner..	m Peters....	3/4F Tim...	5.15
1175	1175	1295c	1245	1545	1595	112	32x4	H-S..	4-3 1/2x5	19.60	Dixie Flyer.....H-S-70	Strom...	Dyneto...	Eisemann..	s-p B&B....	G-L.....	f Hardy....	F Peru..	4.75
850	880	.....	.....	980u	1195d	114	32x4	Own..	4-3 1/8x4 1/2	24.03	Dodge Brothers.....	Stewart.	N.E.....	N.E.....	m-d Own....	Own....	m Own.....	1/2F Own..	4.16
3350g	3950e	3950	.....	4985c	5750f	132	33x5	Own..	6-4 x5	38.40	Derris.....6-60	Strom...	West.....	Bosch.....	m-d Own....	Warner..	m Spicer....	F Tim...	4.23
865	865	.....	{1015a {1015d	{1240 {1020k	{1370 {1070k	108	31x4	D-Ly.	4-3 1/2x5	19.60	Dort.....19-14	Carter..	Bosch.....	Conn.....	m-d Detlaff..	Own....	m Mech.....	3/4F Flint..	4.66
990	990	.....	.....	1145 {1365	{1195 {1495	115	31x4	Falls..	6-3 1/8x4 1/4	23.44	Dort.....25-20	Carter..	Bosch.....	Bosch.....	m-d Detlaff..	Own....	Mech.....	3/4F Flint..	4.66
1275	1275	.....	.....	1650	1975	104	30x3 1/2	Own..	4-2 5/8x4 1/2	11.03	Driggs.....	Zenith..	Bosch.....	Bosch.....	s-p Hoos...	Mech....	m Spicer....	3/4F Own..	4.75
6500	6500	6750	.....	7800	7800	134	33x5	Own..	8-2 7/8x5	26.45	Duesenberg...Straight 8	Strom...	Deloo.....	Deloo.....	s-p Own....	Own....	f Own.....	1/2F Own..	4.81
3000	3200	.....	.....	3800	4000	124	32x4 1/2	Own..	4-3 1/4x5 1/8	24.81	Du Pont.....A	Y&T.....	West.....	Eisemann..	m-d B-L....	B-L.....	m Spicer....	Col....	4.50
890	890	.....	.....	1365	1365	109	31x4	Cont.	4-3 3/8x4 1/4	24.03	Durant.....A-22	Till.....	A-L.....	A-L.....	s-p Own....	Own....	m,f Spicer...	3/4F Adams	4.30
1600	1650	.....	.....	2250	2400	123 1/2	32x4 1/2	Anst.	6-3 1/4x4 1/2	25.35	Durant.....B-22	Rayfield.	A-L.....	A-L.....	s-p Ansted..	Warner..	m,f Spicer...	1/2F Tim...	5.15
1485	1095	950g	.....	1395c	1795	112	32x4	Own..	4-3 1/8x5 1/4	18.91	Earl.....60	Scoe....	A-L.....	Conn.....	s-p B&B....	Own....	f Own.....	1/2F Own..	3.66
1095	1095	.....	1095	1345	.....	118	33x4	Lyc..	4-3 1/8x5	19.60	Elcar.....K-4	Strom...	Deloo.....	Deloo.....	s-p B&B....	Muncie..	m Peters....	3/4F Salis..	4.50
1395	1395	.....	1395	1975	2065	118	33x4	Cont.	6-3 3/8x4 1/2	27.34	Elcar.....8-R	Strom...	Deloo.....	Deloo.....	m-d Warner..	Warner..	m Spicer....	3/4F Salis..	4.50
1125c	1125	.....	1165	1695	1615	118	33x4	Falls.	6-3 1/8x4 1/4	23.44	Elgin.....K-1	Strom...	West.....	Wagner....	s-p B&B....	Mech....	m Mech.....	3/4F Col...	4.66
.....	1045	.....	.....	1145k	{1895 {1245k	108 1/2	32x4	Own..	4-3 3/8x5	18.23	Essex.....	Own....	Bosch.....	Bosch.....	m-d Own....	Own....	m Spicer....	1/2F Own..	4.66
269r	298s	235g	.....	530	{595 {725	100	30x3 1/2	Own..	4-3 1/4x4	22.50	Ford.....T	Own....	Own.....	Own.....	m-d Own....	Own....	m Own.....	1/2F Own..	3.63
3900	3900	.....	.....	4900	4900	132	32x4 1/2	Own..	6-3 3/4x5	27.34	Fox.....7F	Zenith..	West.....	Bosch.....	m-d B-L....	B-L.....	Spicer....	1/2F Tim...	4.45
1900	1950	1750g	.....	2750	2850	115	32x4	Own..	6-3 1/4x4	25.35	Franklin.....10	Own....	N.E.....	A-K.....	s-p B&B....	Own....	m Spicer....	1/2F Own..	4.73
965	965	.....	.....	1115k	1365d	112	32x4	Lyc..	4-3 1/2x5	21.76	Gardner.....T-R & G	Carter..	West.....	West.....	s-p B&B....	Mech....	m Mech.....	3/4F Flint..	4.80
1385	1385	.....	.....	1895	1945	116	32x4	Own..	6-3 1/2x4 1/2	23.44	Grant.....	Strom...	Bijur.....	A-K.....	s-p B&B....	Durston.	m Spicer....	3/4F Col...	4.66
490	490	.....	.....	.....	760	100	30x3 1/2	Own..	4-3 3/8x4	21.03	Gray.....	Scoe....	West.....	West.....	m-d Own....	Detroit..	m Mech.....	1/2F Tim...	3.90
2475	2475c	.....	8250	.....	3475	120	32x4 1/2	Weid..	4-3 3/4 x5 1/2	22.50	H.C.S.....Series 4	Strom...	Deloo.....	Deloo.....	m-d B-L....	B-L.....	m Spicer....	F Own..	.....
.....	.....	2650	.....	3450	3450	125	32x4 1/2	Own..	4-4 1/2x4 1/2	27.23	Handley-Knight.....	Till.....	A-L.....	A-L.....	m-d Warner..	Warner..	m Spicer....	1/2F Tim...	4.90
.....	995	.....	.....	.....	.....	114	31x4	Cont.	6-3 1/8x4 1/4	25.35	Hansen.....30	Marvel..	Deloo.....	Deloo.....	s-p B&B....	Detroit..	.....	3/4F Tim...	.....
1595	1595	1795	.....	2475c	2585	121	32x4	Cont.	6-3 3/8x4 1/2	27.34	Hansen.....60	Marvel..	Deloo.....	Deloo.....	s-p B&B....	Detroit..	.....	3/4F Tim...	.....
.....	1345	1345c	.....	1950	1950	115	32x4	H-S..	4-3 1/2x5	19.60	Hatfield.....A-42	Zenith..	Dyneto...	Conn.....	s-p B&B....	G-L.....	m Spicer....	3/4F Col...	4.66
2395	{2395c {2700p	2875	2700f	{3350d {3475p	3675	132	33x5	Own..	6-3 1/2x5 1/8	29.40	Haynes.....75	Strom...	L-N.....	King.....	s-o Warner	Own....	m Universal..	3/4F Own..	4.60
1545	1695	.....	{1895a {1950d	{2035b {2135p	{2595d {2695p	121	32x4 1/2	Own..	6-3 1/2x5	29.40	Haynes.....55	Rayfield.	L-N.....	King.....	s-p Warner	Own....	m Universal..	1/2F Own..	4.11
.....	2500c	2500	.....	3300c	3600f	126	34x4 1/2	Own..	6-3 1/2x4 1/4	29.40	Holmes.....Series 4	Strom...	Dyneto...	Eisemann..	m-d B-L....	B-L.....	m Spicer....	1/2F Tim...	4.90
.....	1525c	1575	.....	2570c	1615k {2295	126	34x4 1/2	Own..	6-3 1/2x5	29.40	Hudson.....Super 6	Own....	Bosch.....	Busch.....	m-d Own....	Own....	m Spicer....	1/2F Own..	4.45
1395	1395	.....	.....	.....	2295	120	32x4	Cont.	6-3 3/8x4 1/2	27 34	Huffman.....	Strom...	Dyneto...	Conn.....	s-p B&B....	Covert..	.....	F Salis..	.....
{1150 {1025g	1150	.....	1250a	{1635 {1335k	1785	112	32x4	Own..	4-3 1/4x5 1/2	16.90	Hupmobile.....Series R	Strom...	West.....	A-K.....	m-d Own....	Own....	m Universal..	3/4F Own..	4.87
.....	1485	1685c	.....	2985	2985	121	32x4 1/2	Cont.	6-3 1/4x4 1/2	25.35	Jackson.....638	Strom...	A-L.....	Remy.....	s-p B&B....	Covert..	f Snead....	3/4F Salis..	4.75
995b	995	.....	1095a	1445c	1465d	112	31x4	Own..	6-3 1/4x5	25.35	Jewett.....Six	Strom...	Remy.....	A-K.....	m-d Long....	Warner..	m Mech.....	1/2F Tim...	4.45
1895	1795	.....	.....	2785	2485	120	32x4	Own..	6-3 1/8x4 3/4	26.38	Jordan.....MX	Strom...	Deloo.....	Deloo.....	s-p Detroit..	Detroit..	m Spicer....	1/2F Tim...	4.42
.....	.....	.....	2150c	.....	.....	124	32x4	Own..	6 3/8x4 3/4	26.38	Jordan.....H	Strom...	Deloo.....	Deloo.....	s-p Detroit..	Detroit..	m Universal..	1/2F Tim...	4.42
.....	985	.....	.....	1450	1111	122	32x3 1/2	Gray..	4-3 1/2x5	19.60	Kelsey.....4	Scoe....	Bosch.....	Bosch.....	f-d Own....	f-d Own.	.....	Own..	4.50
.....	985	.....	.....	1450	111	32x3 1/2	Gray..	4-3 1/2x5	19.60	Kelsey.....4	Scoe ..	Bosch....	Bosch....	s-p B&B....	Detroit..	Snead....	1/2F Std...	4.75	
.....	1525	.....	.....	2175	118	32x4	Walk'r	6-3 1/8x4 1/2	23.44	Kelsey.....6	Strom...	Bijur.....	Bosch.....	f-d Own....	f-d Own.	.....	Own..	.....	
5000	5000	5250	.....	5000	6000	130	32x4 1/2	Own..	8-3 x5 1/4	28.80	Kenworthy.....8-90	.....	.....	.....	.....	.....	.....	.....	.....
1495	1495	.....	1495c	2200	2400	120	32x4 1/2	Own..	8-3 x5	28.80	King.....K	Ball&B.	West.....	A-K.....	s-p Detroit..	Own....	f Hardy....	F Col...	4.08
.....	.....	.....	.....	1995	2550f	124	32x4 1/2	Own..	8-3 x5	28 80	King.....K	Ball&B..	West.....	A-K.....	s-p Detroit..	Own....	f Hardy....	F Col...	4 08
.....	1885	2385	2385c	2975c	3075	124	32x4 1/2	Own..	6-3 3/8x5 1/2	26.38	Kissel.....45	Strom...	Remy.....	Remy.....	m-d Warner	Warner..	m Spicer....	F Own..	3 92
1690	1690	1690	1890	2750	2890	121	33x4	Cont.	6-3 3/4x4 1/2	27.34	Kline Kar.....6-55-K	Rayfield.	Wagner..	Conn.....	s-p B&B....	G-L.....	f Snead....	1/2F Std.	4.75

MISCELLANEOUS

a—2 Passenger, d—5 Passenger,
b—3 Passenger, e—6 Passenger,
c—4 Passenger, f—7 Passenger,
g—Chassis Price,
h—All Metal Type,
k—Soft Top Type,
n—Tire Size 32x4½,
p—Sport.
r—Price without starter and demountable rims. Price, complete, $364
s—Price without starter and demountable rims. Price, complete, $393.
†Standard Phaetons.

ENGINE

Anst—Ansted
Cont—Continental
D.-Ly—Dort Lycoming
H-S—Herschell-Spillman
Lyc—Lycoming
Nort—Northway
Walk'r—Walker
Weid—Weidely

CARBURETOR

Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg
Y & T—Yale & Towne

CLUTCH

f-d—Friction drive
c—Cone
m-d—Multiple disc
s-p—Single plate
B & B—Borg & Beck
B-L—Brown-Lipe
North—Northway

STARTING, LIGHTING IGNITION

A-L—Auto Lite
G-D—Gray & Davis
L-N—Leece Neville
N. E.—North East
West—Westinghouse

GEARSET

f-d—Friction Drive
B-L—Brown-Lipe
G-L—Grant-Lees
Mech—Mechanics
North—Northway

UNIVERSAL

f—fabric
m—metal
M &E—Merchant & Evans
Mech—Mechanics

REAR AXLE

F—Floating
½F—Semi-Floating
¾F—Three-Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
Tim—Timken

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (N.A.C.C.)	NAME AND MODEL	Carbureter	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle: Type and Make	†Gear Ratios
$3985	$4090c	$4090	.....	$5500	$5500	132	33x5	Own..	8-3 1/4x5 1/4	33.80	LaFayette	Johnson	Delco	Delco	m-d Own	Own	m Own	F Own	4.58
5500	5500	5500	.....	5500	5500	134	32x4 1/2	Own..	6-3 3/4x5 1/4	33.75	Leach.....999	Rayfield	Delco	Delco	m-d	Own	m,f	Tim	
1695	(1695	(1795	$2045d	2345c	(2545d	123	32x4 1/2	Anst..	6-3 1/4x4 1/2	25.35	Lexington.....23	Rayfield	G-D	Conn	m-d Ansted	Warner	f Snead	3/4F Own	5.10
	(1995	(2095			(2145d														
1575	1395	.....	1575	(2085	2245	117	32x4	Own..	6-3 1/8x5	23.44	Liberty.....10-D	Strom	Wagner	Wagner	s-p B&B	Detroit	m Spicer	1/2F Tim	4.80
				(1695k															
3800	3800c	3800	.....	4400d	4700d	136	33x5	Own..	8-3 3/8x5	36.45	Lincoln	Strom	Delco	Delco	m-d Own	Own	m Spicer	F Tim	4.58
6890g	7600c	7600	.....	10500	(11000	142	35x5	Own..	6-4 1/2x5 1/2	48.60	Locomobile.....Series 8	Ball&B	West	Delco	m-d Own	Own	m Own	F Own	3.50
3385	3185c	3185	.....	3985	4385	136	32x4 1/2	Own..	6-3 3/4x5 1/8	33.75	Marmon.....34	Strom	Delco	Delco	m-d Own	Own	m Spicer	3/4F Own	3.75
885	885	.....	.....	(985	1335	109	31x4	Own..	4-3 5/8x4 1/2	21.03	Maxwell	Stewart	A-L	Simms	c Own	Own	.....	3/4F Own	4.56
				(1235															
6300	6300c	6300	.....	7500	7500	140	33x5	Own..	6-4 1/2x6	48.60	McFarlan.....1922	Rayfield	West	Splitdorf	s-p B&B	B-L	m Peters	F Tim	3.50
3950	3950c	3950c	.....	4850	5250	132	32x4 1/2	Own..	4-3 3/4x6 3/4	22.50	Mercer.....Series 5	Ball&B	West	Eisemann	m-d Own	Own	m Spicer	F Own	3.57
.....	3750	3750	.....	5000	5000	132	32x4 1/2	Own..	6-3 3/4x5	33.75	Mercer.....6	Strom	.....	Eisemann	.....	.....	.....	3/4F	3.77
1895	1895	.....	.....	.....	.....	119	32x4	Cont..	6-3 1/4x4 1/2	25.35	Merit.....	Strom	Delco	Delco	s-p B&B	Muncie	f Snead	F Col	4.60
1190b	1590	.....	1850c	2050c	2275d	120	32x4	Own..	6-3 1/2x5	29.40	Mitchell.....F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4.42
.....	.....	1690	.....	.....	.....	127	32x4 1/2	Own..	6-3 1/2x5	29.40	Mitchell.....F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4.42
950	950	.....	.....	.....	.....	115	32x4 1/2	Own..	4-3 1/4x4 1/2	16.90	Monroe.....1922-S-9	Zenith	A-L	Conn	m-d Own	Mech	m Universal	3/4F Own	5.20
1295	1195	p1445d	1885c	1585c	1695	115	31x4	Cont..	6-3 1/4x4 1/2	23.44	Moon.....6-40	Strom	Delco	Delco	s-p B&B	Warner	m Spicer	1/2F Tim	4.80
1785	1785	1785	1885	2785	(2785f	128	33x4 1/2	Cont..	6-3 3/8x4 1/2	27.34	Moon.....6-58	Strom	Delco	Delco	B&B	B-L	m Spicer	1/2F Tim	5.09
					(2485c														
1210	1240	.....	1395c	.....	2040d	121	33x4	Own..	6-3 1/4x5	25.35	Nash.....691-96-97	Marvel	Delco	Delco	s-p B&B	Own	m Own	1/2F Own	4.50
.....	.....	1390	1615	1890c	2190f	127	34x4 1/2	Own..	6-3 1/4x5	25.35	Nash.....692-94-95	Marvel	Delco	Delco	s-p B&B	Own	m Own	1/2F Own	4.50
915	935	.....	.....	(1385b	(1545d	112	33x4	Own..	4-3 3/8x5	18.23	Nash Four.....41-4	Schebler	Delco	Delco	s-p B&B	Own	m Own	1/2F Own	4.88
				(1195k	(1275k														
2175b	2475c	(2375	.....	(3250c	3825f	130	32x4 1/2	Own..	6-3 1/2x5 1/4	29.40	National.....BB	Rayfield	West	Delco	s-p B&B	B-L	m Arvac	F Col	4.08
		(3150		(3725c															
2500	2500c	2600c	.....	.....	3500d	128	32x4 1/2	Cont..	6-3 1/4x4 1/2	25.35	Noma.....3C	Claudel	Delco	Delco	s-p B&B	Detroit	m Spicer	1/2F Tim	4.45
2500	2500	.....	.....	.....	5500	128	33x5	Bea..	6-3 1/2x5 1/4	29.40	Noma.....1D	Zenith	Delco	Delco	s-p B&B	Detroit	f Spicer	1/2F Tim	4.45
.....	1035	.....	.....	.....	.....	116	32x3 1/2	Lyc..	4-3 1/2x5	19.60	Norwalk.....430-KS	Zenith	Dyneto	Delco	s-p B&B	G-L	m Universal	3/4F Col	5.00
975	995	795g	1165c	(1445d	1545	115	32x4	Own..	6-2 11/16x4 3/4	18.99	Oakland.....6-44	Marvel	Remy	Remy	c Own	Muncie	m Mech	F Own	4.33
				(1185a															
3750c	3750	3850	3750c	4500c	4800f	134	33x5	Cont..	6-3 5/8x5 1/4	31.51	Ogren.....6 T D Luxe	Rayfield	Bosch	Bosch	m-d B-L	B-L	m	F Col	4.00
955	975	1350d	1075	1475	1595	115	32x4	Own..	4-3 1/8x5 1/4	21.86	Oldsmobile.....43 A	Zenith	A-L	Remy	s-p B&B	Warner	m Own	3/4F Own	4.33
1735c	1850c	1735	.....	.....	.....	122	33x4 1/2	Own..	8-2 7/8x4 3/4	26.45	Oldsmobile.....46	Ball&B	Delco	Delco	c Own	Warner	m Own	3/4F Own	4.53
1625g	1375	.....	1675	1875	2025	115	32x4	Own..	8-2 7/8x4 1/2	26.45	Oldsmobile.....47	Johnson	Delco	Delco	s-p B&B	Warner	m Spicer	3/4F Own	5.10
525	525	.....	425g	795	875	100	30x3 1/2	Own..	4-3 3/8x4	18.23	Overland.....4	Till	A-L	Conn	s-p B&B	Own	m Own	1/2F Own	4.50
2185	2185	2250g	.....	3175	3275	126	33x4 1/2	Own..	6-3 3/8x5	27.34	Packard.....Single-Six	Own	A-K	Delco	m-d Own	Own	f Spicer	1/2F Own	4.30
.....	2350g	2685	.....	.....	3525	133	33x4 1/2	Own..	6-3 3/8x5	27.34	Packard.....Single-Six	Own	A-K	Delco	m-d Own	Own	f Spicer	1/2F Own	4.66
3850	3850	3850	.....	5240	5400	136	35x5	Own..	12-3x 5	43.20	Packard.....Twin-Six	Own	Bijur	Delco	m-d Own	Own	m Spicer	1/2F Tim	4.26
1165	1465	1290g	.....	1995	2245	119	32x4	Own..	6-3 1/4x5	25.35	Paige.....6-44	Strom	Remy	A-K	s-p Long	Own	m Universal	3/4F Salis	4.75
2195b	.....	2195	2245	3100	3155	131	33x4 1/2	Cont..	6-3 3/4x5	33.75	Paige.....6-66	Rayfield	Remy	A-K	s-p Long	Warner	m Mech	3/4F Tim	4.60
.....	1390	1425	.....	2395	2395	120	32x4 1/2	Cont..	6-3 3/8x4 1/2	27.34	Paterson.....22-6-52	Strom	Delco	Delco	s-p B&B	Durston	m Hartford	1/2F Std	4.50
3300	2990c	2990	.....	(3300a	(3990d	128	33x5	Own..	8-3 1/4x5	33.80	Peerless.....23	Ball&B	Delco	Delco	m-d Own	Own	M Spicer	3/4F Tim	4.90
				(3400c	(4093f														
5250	5250c	5250	.....	6800	(6900	138	33x5	Own..	6-4 x5 1/2	38.40	Pierce-Arrow.....	Own	Delco	Delco	m-d Own	Own	m Spicer	1/2F Own	3.93
					(700														
2050	2000	2050	.....	2950	3000	126	32x4 1/2	H-S..	6-3 1/4x5	25.35	Pilot.....6-50	Till	Bijur	Conn	s-p B&B	Muncie	m Hartford	3/4F Col	4.33
3150	3100c	3250	.....	4300	5100	126 3/4	32x4 1/2	Own..	6-3 3/8x5 1/2	27.34	Premier.....6-D	Johnson	Delco	Delco	s-p B&B	Own	m Spicer	3/4F	4.58
1095	1095	.....	.....	1750	1825	117	32x4	Falls..	6-3 1/8x4 1/4	23.44	Premocar.....6-40-A	Strom	Wagner	Wagner	s-p B&B	Mech	m Spicer	3/4F	4.66
.....	1665	.....	.....	2385	2475	116	32x4	Own..	4-3 3/4x5	22.50	R & V Knight.....R	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	F Salis	4.75
2475	2175c	2475	.....	3015	3105	127	32x4 1/2	Own..	6-3 1/2x4 1/2	29.40	R & V Knight.....J	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	1/2F Tim	4.90
1595	1645	1485	1745	(2355c	(2435f	120	33x4	Own..	6-3 7/8x5	24.34	Reo.....T6 & U6	Rayfield	N.E	N.E	m-d Own	Own	m,f Own	1/2F Own	4.70
				(1835	(1885														
3200	3200	3200	.....	.....	4000	131	32x4 1/2	Dues..	4-4 1/4x6	28.90	ReVere.....C	Strom	West	Bosch	m-d B-L	B-L	m Spicer	3/4F Std	4.00
.....	1485	.....	.....	1885	1985	117	32x4	Own..	6-3 1/4x4 3/4	23.44	Rickenbacker.....A	Strom	Simms	A-K	c Own	Own	m Universal	3/4F Own	.....
2685	2485c	2635	.....	3585	3585	128	32x4 1/2	Cont..	6-3 1/2x5 1/4	29.40	Roamer.....6-54-E	Strom	Bijur	Bosch	s-p G-L	G-L	f Snead	1/2F Tim	4.88
3785	3485	3650c	3650c	.....	4650c	128	32x4 1/2	Dues..	4-4 1/4x6	28.90	Roamer.....4-75-E	Strom	Bijur	Splitdorf	m-d B-L	B-L	f Snead	1/2F Tim	3.77
10900	10900	10950	.....	.....	(13150	143 1/2	35x5	Own..	6-4 1/2x4 3/4	48.60	Rolls-Royce.....	Own	Bijur	Bijur	c Own	Own	m Own	F Own	3.25
					(12900														
1195	1195	.....	.....	1795	1795	112	32x4	Own..	4-3 1/2x5	19.60	Saxon.....125	Strom	Wagner	Wagner	s-p Detlaff	Covert	m Peters	3/4F	4.75
1645	1645	.....	.....	2645	2645	118	33x4	Cont..	6-3 1/4x4 1/2	25.35	Sayers Six.....DP	Strom	Delco	Delco	s-p B&B	G-L	m Arvac	1/2F Std	4.75
875	875	.....	.....	.....	.....	108	30x3 1/2	Lyc..	4-3 1/2x5	19.60	Seneca.....L-2 & O-2	Zenith	A-L	A-L	s-p B&B	G-L	m Universal	F	4.75
1095	1095	.....	.....	.....	.....	112	31x4	Lyc..	4-3 1/2x5	19.60	Seneca.....50 & 51	Zenith	A-L	A-L	s-p B&B	G-L	Detroit	F	4.50
980	980	.....	.....	1685	1685	114	32x4	Supr..	4-3 3/8x5	18.23	Sperling.....A	Zenith	Bijur	Splitdorf	s-p B&B	Warner	m Hartford	3/4F Peru	.....
2150	.....	2395	2395	2750	3200	127	34x4 1/2	Own..	8-3 1/4x5	33.80	Standard.....98	Zenith	West	Splitdorf	s-p B&B	G-L	m Arvac	1/2F Tim	4.45
2750	2750	2750	2425g	3950c	3985f	130	32x4 1/2	Own..	2-4 x5	.....	Stanley.....740	None	Bijur	None	None	None	None	1/2F Own	1.50
1765	1765	.....	.....	2750	.....	118	33x4	Cont..	6-3 1/4x4 1/2	25.35	Stanwood Six.....	Strom	West	A-K	s-p B&B	G-L	m Peters	1/2F Std	4.50
319r	318s	285g	.....	580	615	102	30x3 1/2	Cont..	4-3 1/8x4 1/4	15.63	Star.....	Till	A-L	A-L	s-p	.....	Spicer	Tim	4.87
2250	2250	2450	.....	3150	3450	125	34x4 1/2	Own..	4-3 3/4x5 5/8	22.50	Stearns-Knight....SKL4	Rayfield	West	A-K	m-d Own	Own	f Climax	1/2F Own	4.50
2700	2700	2850	.....	3500	3700	130	34x4 1/2	Own..	6-3 3/8x5	27.34	Stearns-Knight.....6	Rayfield	West	A-K	m-d Own	Own	f Climax	1/2F Own	4.50
1575	1565c	1625c	.....	2450	2550	122	33x4 1/2	Own..	6-3 1/4x4 1/2	25.35	Stephens.....90	Till	A-L	A-L	s-p B&B	Mech	m Mech	1/2F Tim	4.90
7250	6900c	6800	(6900c	8600	8900c	138	35x5	Own..	6-4 7/16x5 1/2	47.27	Stevens-Duryea.....E	Strom	West	Berling	m-d Own	Own	m Own	F Own	3.94
			(5600g																
975	975	785g	.....	1225	1550	112	32x4	Own..	6-3 1/8x4 1/2	23.44	Studebaker...Light Six	Strom	Wagner	Wagner	s-p Own	Own	f Thermoid	1/2F Own	4.55
(1250	1275	1275c	1000g	1875	2050	119	32x4	Own..	6-3 1/2x5	29.40	Studebaker..Special Six	Strom	Wagner	Wagner	s-p Own	Own	m Spicer	1/2F Own	4.00
(1275c				(2375															
1300g	1650	.....	1785	(2275	2475	126	33x4 1/2	Own..	6-3 7/8x5	36.01	Studebaker.....Big Six	Ball&B	Wagner	Wagner	s-p Own	Own	m Spicer	1/2F Own	3.70
2450	(2790c	(2640c	2670a	3490	4450	130	32x4 1/2	Own..	4-4 3/8x6	30.63	Stutz.....KLDH	Strom	Remy	Delco	m-d Warner	Own	m Hartford	1/2F Own	3.50
	(3165c	(3015																	
2025	2125	2175c	.....	2650c	2785	118	32x4	Own..	4-3 3/4x5 1/2	18.23	Templar.....A-445	Strom	Bijur	Simms	s-p B&B	Detroit	f Snead	1/2F Us	4.40
1175	1175	.....	.....	.....	.....	117	33x4	H-S..	4-3 1/2x5	19.60	Tulsa.....E-1-2-3	Zenith	Dyneto	Conn	s-p B&B	Muncie	m	F Salis	4.50
1275	1275	.....	1305	1795	1795	115	32x4	Own..	6-3 1/8x4 1/2	23.44	Velie.....58	Strom	West	A-K	s-p Dooley	Durston	m Thiemer	3/4F Own	4.66
.....	1785	.....	.....	.....	2285	120	32x4	Cont..	6-3 1/4x4 1/2	25.35	Washington.....6	.....	Bijur	Remy	s-p B&B	Warner	Arvac	3/4F Col	4.67
.....	1900f	1890	.....	.....	2890	125	32x4 1/2	Cont..	6-3 1/2x5 1/4	29.40	Westcott.....D-48	Rayfield	Delco	Delco	s-p B&B	B-L	m Peters	1/2F Tim	4.45
.....	1690	.....	1890	.....	2690	120	32x4	Cont..	6-3 1/4x4 1/2	25.35	Westcott.....B-44	Rayfield	Delco	Delco	s-p B&B	Warner	m Peters	1/2F Col	4.33
2475	2475	.....	.....	3275	3475	121	32x4 1/2	Own..	8-3 1/4x4	33.80	Wills Sainte Claire..A-68	Zenith	Delco	Delco	m-d Own	Own	m Mech	3/4F Own	4.45
1235	1235	1375	.....	1795	1950	118	32x4	Own..	4-3 5/8x4 1/2	21.03	Willys-Knight.....20	Till	A-L	A-L	m-d Own	Own	f Own	3/4F Own	4.44
.....	.....	1435	.....	.....	2195f	124	32x4 1/2	Own..	4-3 5/8x4 1/2	21.03	Willys-Knight.....27	Till	A-L	A-L	m-d Own	Own	f Own	3/4F Own	5.12
3400	.....	3400	3600	4000	4550	132	33x5	Own	6-3 3/4x5 1/4	33.75	Winton.....40	Rayfield	Delco	Delco	m-d Warner	Warner	f Climax	3/4F Tim	4.66

MISCELLANEOUS
a—2 Passenger, d—5 Passenger
b—3 Passenger, e—6 Passenger,
c—4 Passenger, f—7 Passenger
g—Chassis Price.
h—All Metal Type,
k—Soft Top Type.
n—Tire Size 32x4½.
p—Sport.
r—Price without starter and demountable rims. Price, complete, $414.
s—Price without starter and demountable rims. Price, complete, $443.
†Standard Phaetons.

ENGINE
Anst—Ansted
Bea—Beaver
Cont—Continental
Dues—Duesenberg
H-S—Herschell-Spillman
Lyc—Lycoming
Supr—Supreme

CARBURETOR
Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg

STARTING, LIGHTING IGNITION
A-L—Auto Lite
G-D—Gray & Davis
L-N—Leece Neville
N E—North East
West—Westinghouse

CLUTCH
c—Cone
f-d—Friction drive
m-d—Multiple disc
s-p—Single plate
B & B—Borg & Beck
B-L—Brown-Lipe

GEARSET
f-d—Friction Drive
B-L—Brown-Lipe
G-L—Grant-Lees
Mech—Mechanics

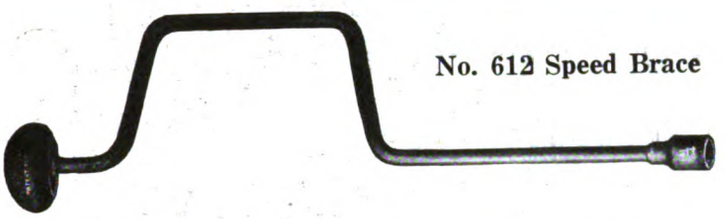
UNIVERSAL
f—fabric
m—metal
M&E—Merchant & Evans
Mech—Mechanics

REAR AXLE
F—Floating
½ Floating—Semi Floating
¾ F—Three-Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
Tim—Timken

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ALL STEEL WRENCHES AND TOOLS



No. 612 Speed Brace

Speed Brace Socket Wrenches

No wrench can handle that out-of-the-way nut or bolt like a Speed Brace Socket Wrench. And the Mossberg line contains a complete assortment of these efficient wrenches in all sizes and shapes for all kinds of work.

These are supplied the dealer, together with sales boards—Silent Salesmen—in assortments that correspond with the demand. All live ones. Mossberg all-steel construction, finished in burnished nickel. Rugged, practical wrenches, made for hard work. Popular among your customers.

No. 2400 Salesman

This well balanced display board assortment contains 70 Speed Braces in quantities ranging from four to nine of each wrench. Each number is made of ½ inch steel bar, is 19¼ inches in length, and is finished in burnished nickel. The board itself is made of chestnut with nickeled steel hook. Size, 20 inches by 60 inches. Free with complete assortment.

"L" Salesman

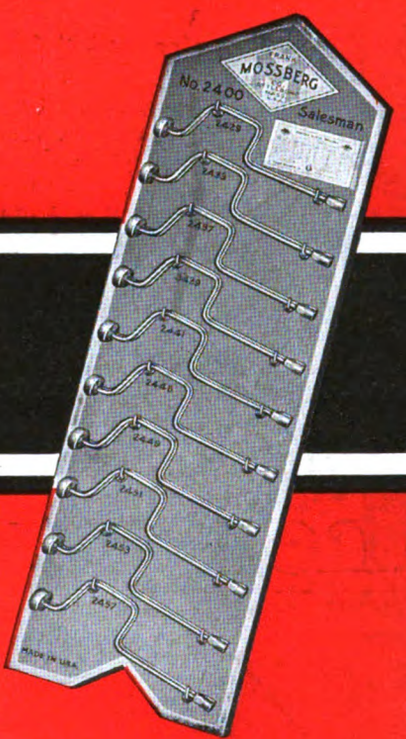
Assortment contains 140 Solid Socket Wrenches—47 6-inch "T" Wrenches—57 12-inch "T" Wrenches, and 36 10-inch Offset Wrenches. All fast sellers. Constructed of ½ inch steel bar, finished in burnished nickel. Board 20 inches by 60 inches—same high quality as "2400" board. Furnished free with complete assortment.

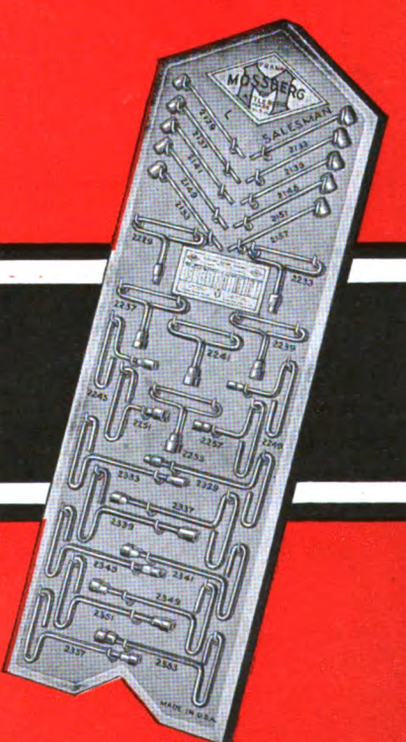
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WRENCHSMITHS FOR 20 YEARS
ATTLEBORO, MASSACHUSETTS

Branch Offices

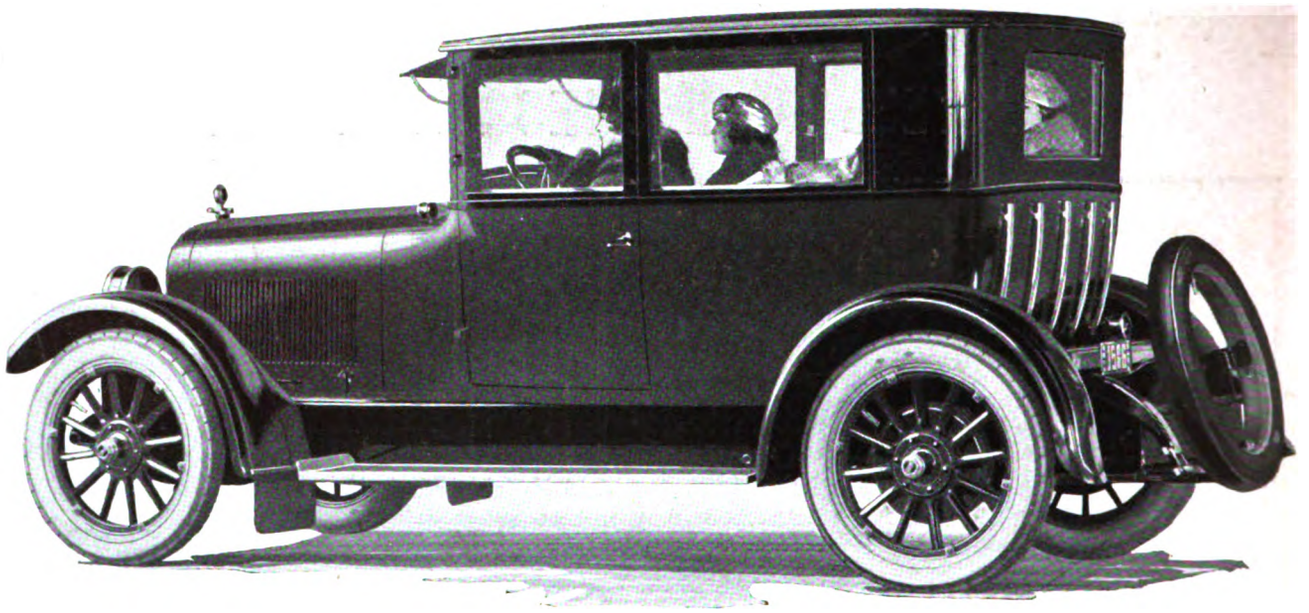
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SAN FRANCISCO, CAL.....626 Underwood Building
LOS ANGELES, CAL.....503 Equitable Building
SEATTLE, WASH.....214 Maritime Building
DALLAS, TEXAS.....1129 No. Beckley Avenue
MONTREAL, QUE.....332 Bleury Street
FOREIGN SALES OFFICE.....461-475 Eighth Avenue, New York City





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One of Chandler's 1923 Surprises



The New CHUMMY SEDAN

THIS photograph of the beautiful new Chummy Sedan constitutes a little advance notice on 1923 Chandler plans.

It is typical of a line of cars destined to be much discussed within a few days.

The two door Chummy Sedan is more than a new car. It is really a new *kind* of car, low in price, but lacking nothing in finish, upholstery and appointments.

The time is past when the public will buy any car, closed or open, merely because it is cheap.

1923 will see a demand for a closed car that combines low cost with richness and permanency. It must have a metal body of permanent construction.

The Chummy Sedan anticipates this need. Its great advance is typical of the entire Chandler line as it will be seen at the 1923 Shows.

Whether you are a prospect looking for a new car or a dealer seeking a new account, it will be wise to defer decision until you have studied Chandler 1923 developments.

See Chandler at the Shows:

NEW YORK
January 6 to 13

CHICAGO
Jan. 27 to Feb. 3

THE CHANDLER MOTOR CAR COMPANY CLEVELAND
Export Dept. 1819 Broadway, New York City
Cable Address "CHANMOTOR"

CHANDLER SIX

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MOTOR WORLD

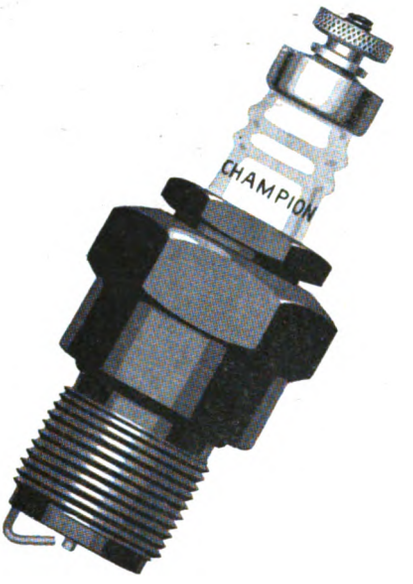
for

DEALERS, JOBBERS AND GARAGEMEN

Volume LXXIII
Number 12

PUBLISHED WEEKLY AT
NEW YORK, DECEMBER 30, 1922

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Three dollars a year



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That dependable Champion Spark Plugs are better spark plugs—due to the highly improved Double-Ribbed Core—is of great importance to every dealer. It means that you can sell Champions with every assurance of satisfying the customer. This, in turn, means quicker turnover and greater profits.

You can greatly increase your spark plug business by urging car owners to buy Champions by the set to assure better engine performance and an actual saving in gas and oil.

Champion Spark Plug Company, Toledo, Ohio

Champion Spark Plug Company of Canada, Limited, Windsor, Ontario

There is a Dependable Champion Correctly Designed and Finely Made for Every Engine

CHAMPION

Dependable for Every Engine



***Champion X** is the one spark plug recognized as the standard for Ford cars, trucks and tractors. Millions are in daily use. They are a sure profit maker for you.*

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¼ inch PORTABLE ELECTRIC DRILL

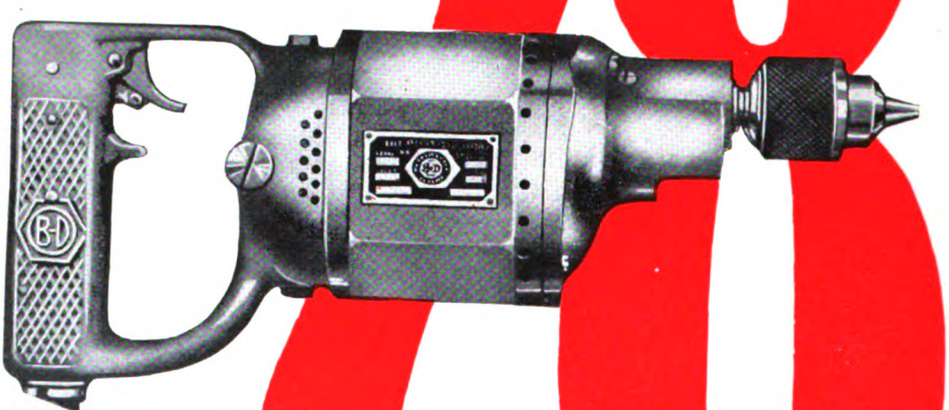
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This is the standard Black & Decker Quarter-Inch Drill, exactly the same as has previously been sold for $39 00 except that it has been improved by the addition of a geared-nut chuck instead of a hand operated chuck.

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NEW YORK	PHILADELPHIA	CHICAGO
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"The Well-Equipped Shop Gets the Business"

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DEALERS, JOBBERS AND GARAGEMEN
Reg. U. S. Pat. Off.
239 West 39th St., New York City Phone PENnsylvania 0080
PUBLISHED EVERY WEDNESDAY BY
The Class Journal Co.

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DIXON'S 677

For Transmission and Differential Gears. When once used it makes a customer for life. It makes the gears shift easily in summer and winter, run silently and deliver full engine power, which means fuel economy and better hill climbing.

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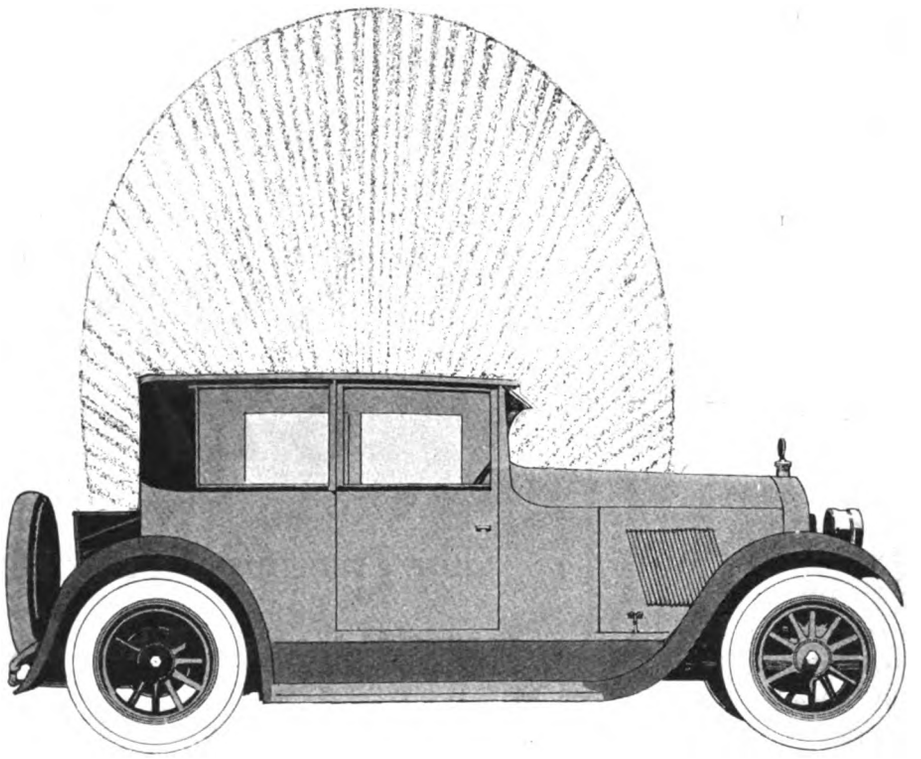
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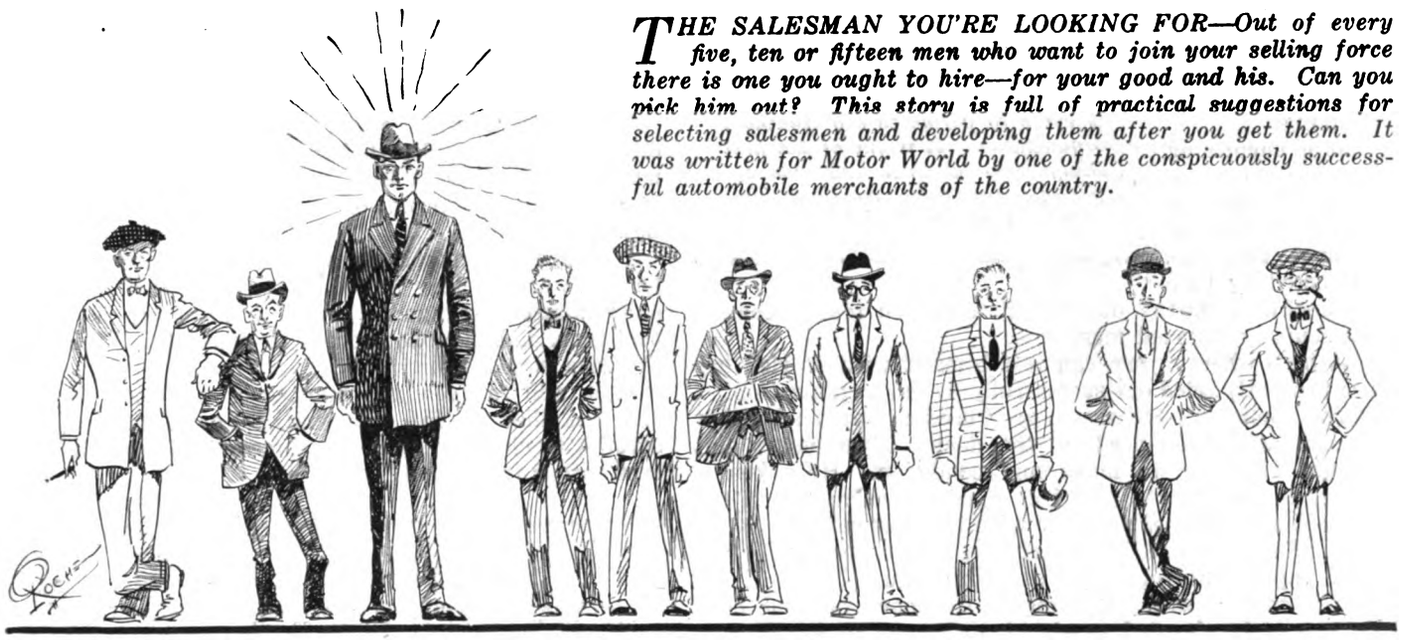
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MOTOR WORLD for DEALERS, JOBBERS AND GARAGEMEN

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THE SALESMAN YOU'RE LOOKING FOR—Out of every five, ten or fifteen men who want to join your selling force there is one you ought to hire—for your good and his. Can you pick him out? This story is full of practical suggestions for selecting salesmen and developing them after you get them. It was written for Motor World by one of the conspicuously successful automobile merchants of the country.

Building a Retail Sales Staff

How Dealers Can Select, Train and Control Men for Motor Car Merchandising

By C. S. Henshaw

President, Henshaw Motor Co., Dodge Brothers Dealer, Boston

A MAJORITY of the leading retail automobile dealers contend that men suitable for their business are scarce, especially in the sales division, and they are right. It seems strange and one wonders why successful salesmen are not available for the automobile industry when good men can usually get splendid positions.

One reason is that selling is fascinating to really successful men regardless of the nature of their work and they can seldom see any advantage in changing positions, particularly if they are associated with a progressive organization handling a good product.

One way to get men is to advertise for them. In a large city a carefully worded advertisement inserted in all local papers of large circulation calling for high-grade salesmen would probably bring upward of 200 replies.

Another source may be found within the dealer organization, among accountants, stock clerks, service men, and others who wish they had the chances some of their fellow employees have and who do not realize that opportunity is knocking at their door every day.

Most of these have overlooked the advantage of a broad acquaintance with customers and the great good will

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building value of keeping constantly in touch with them, either by personal contact, letter writing, or even through telephone calls. The employer can generally see two or three employees stand out head and shoulders above the others, in activity and results, and these if worthy should always be encouraged by advancement.

It is neither ethical nor a good rule ever to hire a person away from a competitor, but observation of salesmen handling other lines often reveals the suave clerk behind the grocery counter, or the typewriter representative who has ability and may be in a receptive mood to listen to a change.

It is surprising to note the number of people who would like to change and are attracted by the automobile industry but cannot afford to take a chance, particularly married men.

FROM 1905 to 1910 the industry was considered a game.

1911 to 1920, a business.

1921 on, it is a science.

This is the thought of C. S. Henshaw, head of the Henshaw Motor Co., of Boston, and author of the salesmanship story beginning on the preceding page. This thought it made to permeate the Henshaw organization. It is one of the first things new salesmen and even applicants for sales positions hear about. Just about right, isn't it?

A plan whereby one can test himself without risk has been recently tried out successfully by our organization.

The applicant purchases a good used car, at a price that he can afford, financed by the dealer if necessary but bought right as to make and condition. He takes it home, perhaps learns to drive, grind the valves, clean the carbon, and becomes familiar with its construction.

In the meantime he inserts an advertisement in the local papers offering it for sale at a figure that will net him a small profit. Evenings, afternoons off and holidays may be devoted to showing the car to prospective purchasers or friends.

In this way, and without giving up his position, he learns motor car construction and gains confidence in selling. After having sold three vehicles in any 30-day period, the dealer may allow him a 4 per cent commission on future purchases, and by watching for good buys the applicant can frequently add 6 per cent to the price, thereby making 10 per cent on each deal, and have the pleasure of owning and operating a car as well.

Should he market 10 cars in any 60-day period while working under these conditions, a permanent remunerative position in the automobile business is assured.

Wise Policy to Interview All Applicants

It is a good plan to grant all applicants for sales positions an interview, because notwithstanding there may be no vacancies, a new position can usually be created for a 100 per cent go-getter and producer.

It is not wise for a dealer to assume the responsibility of taking a man out of a sure permanent position, particularly if he is married, for an uncertainty. A good man who feels confident of his sales ability should have no difficulty in marketing one used car a week averaging $600 in price. If he does that success is practically assured and guesswork eliminated. If he fails we may or may not engage him. Each case must be judged on its merits.

The requirements are—

1—Good education.
2—Pleasing personality.
3—Ability to work hard.
4—Truthful and reliable.
5—To have initiative and tact.

Even if no salary is paid at all a man without a good foundation might prove an expensive proposition, because he would come in contact with prospective purchasers, and through his lack of ability give a wrong or incomplete story, so that a prospect would be lost whom another good man might save.

In judging a man's record one should have something tangible to go by. If life insurance has been sold, how many persons did the applicant insure during the previous year? What was the average amount of the policies? If real estate, what was the volume in dollars and cents during the calendar year? If groceries, what number of new customers did he secure? How many salesmen were in his district representing the same line? How did his selling record stand in comparison with others?

Surprising as it may seem, records of this sort are seldom kept by really high grade men, although the answer to these questions are the applicant's bread and butter and the employer's guide.

Look Up the Applicant's Record

The big majority of applicants for sales positions either do not consider their previous sales record of sufficient importance to keep a permanent record of it, or else they are not proud of it, and therefore pass it over lightly.

If the applicant's story appeals to us, and we believe he has a satisfactory record, we tell him that he can consider himself engaged, providing his story is 100 per cent true, and then we proceed to check it up through his previous employers.

It is well to know the number of positions the applicant has filled for five years back. Some boastfully name several, thinking it gives the impression of much experience rather than one of instability.

SALESMEN

PERMANENT positions in our passenger car sales division for men between 28 and 45, accustomed to plugging, with personality, determination and confidence in their ability to successfully interview business heads; compensation on any basis, salary and commission or otherwise; earning $5000 upwards; chance for advancement to higher positions; write only, giving brief details, education, age and standing by comparison among sales forces you have been associated with; communications held confidential. Address C. S. HENSHAW, president, Henshaw Motor Co., Dodge Brothers Cars, 989 Commonwealth av., Boston 34, Mass.

This is the way the Henshaw Motor Co. advertises for salesmen. There is nothing "blind" about the ad. The applicant knows just what he is going into and the ad gives him more than a general idea how to go at it. Ads like this often produce as many as 200 applications, out of which the employment of two men is a fair percentage. This story tells how Henshaw finds the men he wants and makes them part of his organization.

Often the applicant will submit several testimonial letters as evidence of his ability, not realizing their small value. Employers know in advance that as a rule the letters would not be shown unless satisfactory.

In looking up a prospective employee never ask about the good things. Those will be mentioned anyway, but invite some word regarding the "outs."

Letters received from newspaper applicants may be passed upon by several executives in the dealer organization. Each one classifies the letters as to the apparent merits of the applicant by marking them "A," "B" or "C," based on the qualifications as the executive judges them. A letter should average two "B's" or better to come up for further consideration. A liberal estimate of those who will qualify out of the total applicants would be from 12½ to 25 per cent.

Many of those who reply will be discarded because they

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do not answer all of the questions, others will have shifted positions too often, or have never had a successful record. Some will have held positions that only carry the well wishes of the employer. Then there is the chronic "job hunter"—trusting to luck that his letter will be accepted regardless of qualifications.

When it comes to interviewing applicants, in order to guide each interview into standard channels the executives use a chart containing questions pertinent to the man's qualification. There is nothing novel in the general idea of this chart excepting the final summing up of the man's rating in each executive's opinion, on a percentage basis.

Charting the Applicant

This has advantages without being involved. Every business and every employer stresses different qualifications as being the most desirable. For instance, one man may consider courtesy more desirable than appearance, so would chart courtesy as 15 per cent and personal appearance 10 per cent.

To merit either of these ratings the applicant would have to be perfect in both. Since perfection is hard to obtain, a good appearing and exceptionally courteous man might be rated at appearance 8 per cent, courtesy 12 per cent, which, with other ratings on desired qualifications, would indicate the portion of 100 per cent that the executive had sized him up at.

Any man who passes 75 per cent or better is considered worth while going into details with.

This charting process reduces the original applicants whose letters have warranted a first interview to possibly five or 10 men.

These are re-interviewed by the same and other executives, who tighten up on their estimates, and the final charting usually leaves but one or two out of possibly 200 who are worthy of being employed.

A company using such a system becomes very difficult to be associated with, but once men have joined it, the executives will spend unlimited time and money to vindicate their judgment in their choice of men.

Selling automobiles or allied lines is largely an outdoor life. Salesmen meet the better class of people who have both time and money, therefore are usually in a receptive mood to talk automobiles, while they will not always listen to a book agent, real estate man or insurance solicitor.

The remuneration is liberal, frequently on a salary and commission or bonus basis, a man's earnings depending almost entirely upon the effort he puts into his work.

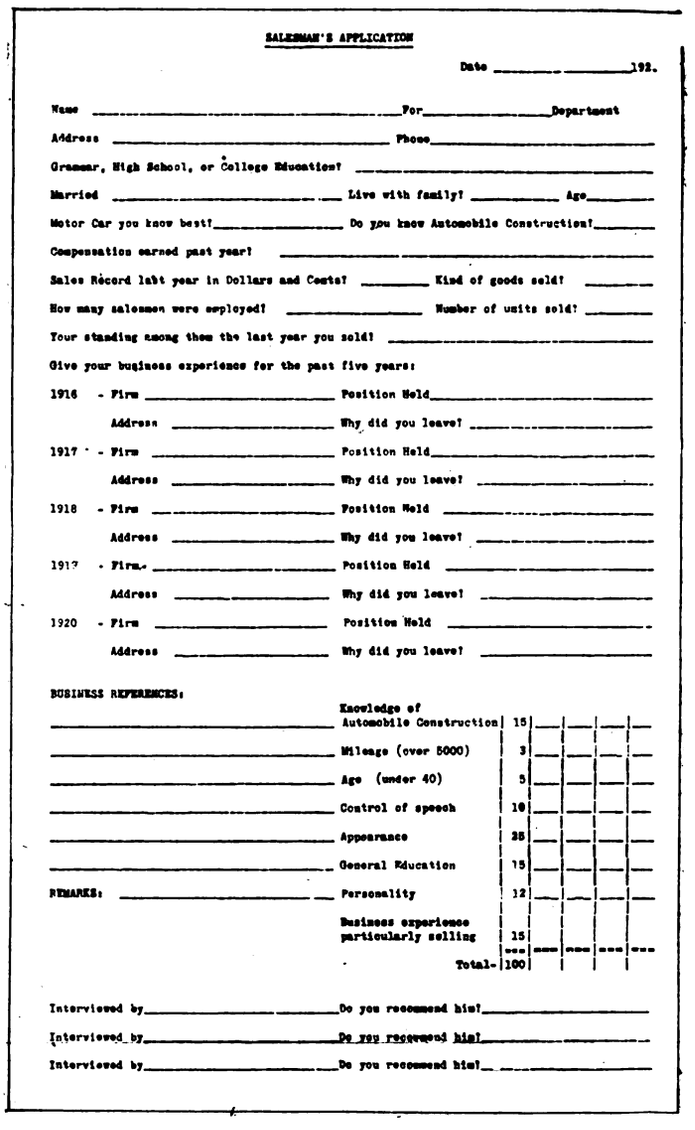
The difference between an order taker and a salesman is the difference between booking $50,000 worth of business and $100,000 worth a year. *There is no salesmanship involved in getting the name on the order until the customer has said "No!" Then the real salesman starts to sell.* A certain number of sales can be made without much effort, but it takes initiative to close the last $50,000 worth, and the man who succeeds is usually rewarded by greater earnings not only because he sells more but because the more he sells the higher his commission goes if he works on a sliding scale.

Some Thoughts on Selling

There are many positions higher up all within reach of men on the firing line, such as sales director, branch or general manager, a dealership, or even a position on the manufacturer's executive staff.

Positions are generally permanent, and it is an exceptional man with sales ability who is not able to maintain a motor car, put money in the bank every Saturday night and buy his own home.

Employees should never be asked to work on a basis that requires "pull," "politics" or the necessity of waiting



SALESMAN'S APPLICATION

Date _____ 192.

Name _____ For _____ Department

Address _____ Phone _____

Grammar, High School, or College Education? _____

Married _____ Live with family? _____ Age _____

Motor Car you know best? _____ Do you know Automobile Construction? _____

Compensation earned past year? _____

Sales Record last year in Dollars and Cents? _____ Kind of goods sold? _____

How many salesmen were employed? _____ Number of units sold? _____

Your standing among them the last year you sold? _____

Give your business experience for the past five years:

1916 - Firm _____ Position Held _____

Address _____ Why did you leave? _____

1917 - Firm _____ Position Held _____

Address _____ Why did you leave? _____

1918 - Firm _____ Position Held _____

Address _____ Why did you leave? _____

1919 - Firm _____ Position Held _____

Address _____ Why did you leave? _____

1920 - Firm _____ Position Held _____

Address _____ Why did you leave? _____

BUSINESS REFERENCES:

_____

_____

_____

_____

_____

REMARKS: _____

Knowledge of Automobile Construction	15					
Mileage (over 5000)	3					
Age (under 40)	5					
Control of speech	10					
Appearance	25					
General Education	15					
Personality	12					
Business experience particularly selling	15					
Total-	100					

Interviewed by _____ Do you recommend him? _____

Interviewed by _____ Do you recommend him? _____

Interviewed by _____ Do you recommend him? _____

This is the salesman's application blank used in the Henshaw organization. Note the detailed information which is obtained from the applicant. At the foot of the blank are spaces where three or more executives who may interview a single applicant rate him as to his qualifications and their judgment as to his availability for a selling position. This system prevents the costly "hiring and firing" that follows too much guesswork and too much attention to hunches in taking on men.

for "dead men's shoes" in order to forge ahead. Give everybody a chance.

It takes only a comparatively short time before commensurate returns are obtained if the applicant is carefully chosen, but it may be weeks or months before he can answer all questions pertaining to the business intelligently. His reports should be carefully and frequently analyzed. He should be advised with, instructed, and encouraged daily. Few realize that there are close to 4000 parts of an automobile, and that one can talk continuously for two hours about a car without repeating. A progressive man can truthfully say he learns something new every day, regardless of how long he is in the business.

A series of 50 or more vital subjects pertaining to construction and policy should be put in the hands of each new salesman, and learned by heart before he is allowed to start on the firing line.

The larger organizations would do well to issue a book of Sales Rules as a constant reminder and guide.

Hardly a week goes by but what someone applies for

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a "job," because they have always wanted to get into the "game." A hint to that type that they are in a business establishment, and not an amusement resort, usually brings an apology and an explanation that they did not think of it in that light.

Some Hints to Salesmen

Favorite positions of the "don't think" type of salesman are to have one foot on the running board of a car, to lean on the door, to stand on the showroom floor with hands in his trousers' pockets, jingling keys and money, to idly read the newspaper, puffing a cigarette, pipe or cigar, while the golden minutes fly by. Those who are anxious to forge ahead accept corrective suggestions.

Top notch salesmen are frequently high strung, like thoroughbred race horses. They strain in harness waiting to be released and on the go. In action they are nervous and must be more or less catered to. They need to be repeatedly told not to worry and convinced that nothing is worth worrying about.

This industry has grown so rapidly and to such large proportions that the comparatively few good men are quickly absorbed and outnumbered 25 to 1 by the mediocre class.

Such a scarcity works a tremendous hardship upon the dealer organizations of the country, and the keen competition arising from the tremendous output of the manufacturers which must be distributed creates a demand for the highest type of men which far exceeds the supply. Consequently, the dealer who uses the utmost caution in the selection of his sales staff saves many dollars in non-productive and expensive labor turnover.

Henshaw's "Things That Salesmen Ought to Know"

Motor World is able to give below what Henshaw calls "Fifty or more subjects on which the salesman must be thoroughly versed before starting out on the firing line." Look them over. Do your salesmen know all of them? If they don't, can you start a series of sales meetings and study hours to provide your men with this or other sales ammunition vital to the merchandising of your car or truck?

Paper Work

Use of Retail Order Blank (New Car).
Use of Retail Order Blank (Resale Car).
Use of Re-sale Agreement in connection with sale of prospect's used car.
Use of Credit Reference Memorandum.
Use of Rental Purchase Plan.
Use of Outside Purchase Invoice—in purchasing prospect's car outright.
Use of Accessory order blanks.

Demonstrations

Why they should be short.
Why bring prospects to store.
Why make specific appointments.
Why not to cater to speed or stunt fiends.
Why be sure demonstrating car is in proper condition.

Good Will

Car properly sold is first step toward good will.
Personal interest after delivery.
Owner as a source of prospects.
Have owners tell any car troubles to you rather than neighbor.
Never promise things unless you can go through with them.
Cultivate after delivery interest.
Never deviate from company's or manufacturer's policy.

Price

Strictly one price.
Tires or accessories never given gratis or at a discount.
How delivered price, which includes tax and transportation, is determined.
Price cutting reflected in used car deals.

Guarantee and How Warranty Applies

Sell dealer's reliability.
Avoid use of the word "guarantee."
Do not guarantee oil, tire or gas mileage.
Standard warranty N. A. C. C. what it means.
Tires, accessories, etc.
Make all transactions clean cut.

Accessories

Use word "necessaries" rather than "accessories."
Additional profit to salesman.
Prevent owner from buying unsatisfactory articles elsewhere.
All devices tested by our experimental department before recommended.

A Few Don'ts

Don't guess.
Don't talk about other makes of cars.
Don't argue with prospect.
Don't ridicule condition of used car.
Don't slop around; step lively.
Don't lean on desk or drape yourself over car.
Don't get familiar with employees in prospect's office; this refers particularly to stenographers.
Don't forget that the prospect is always right.
Don't be too familiar with fellow workers in front of prospect.
Don't confuse the purchase of the prospect's used car with the sale of the new vehicle. They are two separate transactions.
Don't bluff—prospect may know.

Closing

Ask them to buy.
Three or four calls should be sufficient.
Ask for order every time you call.
Show enthusiasm—it's contagious!
Be concise!
Put a punch into every statement!
Examine yourself if orders do not come.

Complaints

Stop trying to sell and get details.
Report to proper executive—follow it through to a finish.
Bring in a complete and intelligent story and do not take either side until you hear both.

Psychology

Stand beside desk where prospect is sitting if possible.
Telephone executive frequently in presence of prospect, particularly regarding delivery dates.
Get prospect in affirmative mood.
Assume that he is going to purchase the car.
Remember there is a woman in the case 60 per cent of the time—sell her first.
Find out why he won't buy.
Is your competitor a new piano, a fur coat, piece of real estate or another car?
Find his weakness.
Make yourself agreeable and not self-important.

Mechanism

Find part of car prospect is interested in and sell him on that alone.
Unlimited opportunities for sales arguments in connection with chassis.

Chassis Instruction
Road Lessons

Thoughts on Selling

THERE are salesmanship thoughts in abundance in the story by C. S. Henshaw concluded on this page. There will be more such thoughts, also in abundance, in the Before Shows Number of Motor World, to appear next week.

The thoughts on selling in the Before Shows Number will be devoted to show-time selling. Make a note to watch for them.

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Don't Be Afraid to

Ask 'Em to Deposit

When Prospect Hasn't Nerve to Pay and Salesman Hasn't Nerve to Ask There's No Sale, Says Quaker City Dealer



CHARLES W. HALLAR

CHARLES W. HALLAR, who is president of the Chevrolet Dealers' Association of Philadelphia and head of the Quaker City Chevrolet Sales Corp., says his biggest battle in the automotive business was overcoming the shyness of salesmen in requesting prospects to "come across" with initial money on the transaction after making a sale. He has a slogan as effective in its particular line as that of the familiar one of the A. E. A., "Ask 'Em to Buy." Hallar's is "Ask 'Em to Deposit." His salesmen are doing it regularly now.

"Usually," says Hallar, "the prospect has the money, but hasn't the nerve to make a decision more or less binding, especially where he has been hesitating and vacillating for some time between several makes of cars. There's nothing that helps him decide like the expert salesman's confident and convincing, 'now let's have your deposit on this car.' *Where the prospect hasn't the nerve to put down his money and the salesman hasn't the nerve to ask him to do so, there is no sale.* I have found that the average customer feels a mighty relief in making a final decision as to the car he will buy and nine times out of ten will not repudiate a deposit. The good salesman helps to bring about this relieved state of mind and gets the deposit."

Hallar tells a story illustrating this point. He was on the floor, one day, and overheard one of his salesmen trying hard to close a deal with a prospect who was holding him off. The salesman was entering into the excellence of construction of the car and what he said in technical terms sounded like a manufacturer's literature.

The bored expression on the face of the prospect showed that the salesman was getting farther away from the sale, the more he explained. Just then another prospect entered. There being no other employees on the floor, the salesman excused himself for a moment from the first prospect and, turning his attention to the second, probably started to talk technicalities all over again. But Hallar didn't wait to listen. He strode over to the first prospect and made a customer out of him. This is how he did it.

"What do you know about the technical side of this car?" asked Hallar.

"Not a blamed thing," shot back the prospect.

"You want to know what it will do for you and how it will operate and if it is suited to your needs, don't you?"

"That's the only thing I care about."

"All right," said Hallar. "I'll tell you in a few words."

And he did.

"Now," said Hallar, "you say you like this car and it's the one you should have. Give me a deposit on it and it's yours."

"How much do you want?"

"All the money in your pocket."

"Oh, I couldn't give you that," replied the prospect.

Valuable tip, this; evidently our friend has so much money he carries a roll about with him that would choke a hippo, thought Hallar, shuddering when he considered how near the salesman was to letting him get away unsold.

"Give me $500, then," said Hallar.

Snap-pop! Off came the rubber band from the roll and the five hundred smackers eased into the till. Sold!

That's Hallar's system—and he keeps it well lubricated.

None of Hallar's salesmen has talked technicalities to a prospect from that day to this, unless he sees the prospect is a "bug" along that line. He now has sixteen top-notch salesmen, distributed between two buildings—one on Chestnut Street and the other on North Broad Street. He has "prayer meeting," as they all call it, every Monday morning, when he hears their experiences with prospects and customers and states his views in reviewing theirs. At first the men were somewhat bashful about confiding all their troubles, but Hallar encouraged it and this has made for solidarity in the organization. He hears at "prayer meeting" about such "kicks" as customers have made and about what sales resistance has to be overcome in landing "John Doe's" signature on the speckled line. Each salesman carries a vest pocket notebook in which he jots down all the data to be brought up in "experience meeting." This habit has helped to clear up many hazy points and has proved decidedly worth while.

Hallar believes thoroughly in keeping in touch with each salesman and with the situation. This contact begins as soon as Hallar arrives in the morning. Every salesman hears the query: "How many orders have you in your pocket this morning?" If he has none—"Well, what's the matter?" He doesn't waste time scolding the men, but as soon as he has learned conditions, he tells each man who has fallen short some constructive thing to do at once to better the situation.

Same thing with the salesmanager. That official has a list of used cars, among other things, and it is his duty to see that a blue pencil line is drawn through the items on that list as soon as possible. Hallar must have results all the time. If he does, everybody profits. All the salesmen are on straight commission and a drawing account is a thing unknown in the system.

But he has monthly prize contests to stimulate the men to healthy rivalry in sales—and the prizes are substantial, too. He offers three. Those who have the biggest sales records by Christmas Eve will get, respectively, this year, a suit of clothes valued at $50, a hat worth $10 and a pair of shoes costing $10.

One thing he is never tired of telling "the boys," is this:

"The harder you dig, the better your sales record."

Only one man out of his entire sales force "fell down" in October sales.

At first he had different staffs for the new and used cars, but abandoned the plan and now the same salesmen are used for both divisions with better results for this house. The average turnover in used cars has been approximately forty a month. The salesman gets 5 per cent on every used car he sells and seven and a half per cent on every lone new car. If, however, he sells two new cars in a week, he gets 10 per cent on each of them. He never fails to emphasize service to the customer.

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THE Manual of Used Car Co-operation has aroused wide interest among dealers and trade association secretaries throughout the country. It presents the machinery of dealer co-operation to establish definite values for used cars. It may be of assistance to groups of dealers aroused by the stories beginning on this page to seek co-operative means of cutting down used car losses. The Manual may be obtained for $2, the cost of compilation and publication, from the National Association of Automobile Show and Association Managers, 239 West 39th Street, New York.

Putting the Used Car Business on a Merchandising Basis

How a Dealers' Co-operative Plan Succeeded—How an Individual Dealer Can Prevent Losses

THE close of 1922 approaches with the used car question still raising its inquiring head in our midst. Dealers, many of them, are going to carry costly used car stocks over the winter. They are going to enter another spring of trading when winter is over. Are they going to enter it with any greater assurance of making rather than losing money on used car dealing than they entered the spring of 1922?

Motor World believes it is appropriate to present, as the year nears its close, the thoughts of two practical men in used car merchandising. What they have to say may help crystallize the thoughts of men in the trade going into the new year with determination to improve conditions surrounding the used car branches of their business.

On this and the following pages are presented the thoughts of L. B. Sanders, secretary of the Boston Used Car Statistical Bureau, and B. B. Burns, president of the Illinois Automotive Trade Association and used car dealer of Decatur.

Sanders tells simply how the Boston plan, which already has been copied in such large cities as Philadelphia, Newark, N. J., Baltimore and Syracuse, brought about a $400,000 reduction in dealers' used car losses in ten months of this year, and how it accomplished even more than this in education of the trade itself to used car values and the fatal danger of ignoring them.

Burns sets forth plain, common sense fundamentals of handling the used car as an article of merchandise.

Motor World suggests that its readers study the thoughts of Sanders and Burns.

Ten Months of Used Car Co-operation in Boston

By L. B. Sanders
Secretary, Boston Used Car Statistical Bureau.

IN the late fall of 1921 conditions concerning used cars offered in trade, in volume and at what seemed to be unreasonable prices, assumed alarming proportions. A committee of the foremost dealers in Boston gave the matter serious and intensive thought, with the result that several conferences were held.

A questionnaire was sent to all dealers in Boston asking what their experience had been with used cars for the preceding 10 months. A tabulation of results showed a loss to these dealers of upward of $700,000, and as a result a permanent used car committee was appointed. This committee studied actual facts and conditions in the businesses of a number of the members of the dealers' association.

Various suggestions and plans were offered, with the final result that the Boston Used Car Statistical Bureau was organized and an outline of procedure was offered by the committee and was finally adopted. This outline briefly was as follows:



L. B. SANDERS

Based upon the experience of several of the largest and most successful dealers, a fixed percentage of depreciation was named for various makes of cars by years and models. These percentages were adopted for maximum allowances on cars taken in trade. It was arranged that weekly reports should be made by dealers to the bureau, showing allowances and selling prices, together with costs of repairs. The original purpose of these reports was to keep a check on allowances. The bureau, however, soon resolved itself into an educational organization. The weekly sales reports were tabulated, segregating different makes, yearly models and various types under one head. With the volume of sales reported from some 70 dealers, true values of various makes and models were being established. These values then were taken into consideration in revising depreciation figures originally stated by the individual dealers and in establishing a sound market report.

In following up sales reports there was revealed an astounding lack of confidence of one dealer in another. The committee also was startled at the lack of information some dealers had pertaining to their own businesses. There was an unwarranted amount of jealousy and a complete lack of co-operation among dealers' organizations and particularly among proprietors of various concerns. The buying public was taking advantage of the situation. Having determined the conditions the committee set out to correct them, as time went on with most gratifying results.

From the weekly sales reports bulletins were made up showing volume allowances. These were reduced to average allowances which could be used by dealers for purposes of comparison. Aver-

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age repairs per car, year and model were determined for similar comparative purposes. These were again reduced to percentages for the benefit of the dealer.

In the operation of the co-operative plan dealers who never knew one another were put in touch over the telephone. General dealer meetings were called and business conditions discussed openly and frankly, with the result that a spirit of confidence and co-operation with one another was created, with most beneficial results. Sales managers and salesmen were handled in a similar manner and to the same good end.

The tabulations and educational work of the bureau continued. Our dealers began to realize there was a true value for a used car. They began to recognize the used car end of their business, not as an evil, but as a part of it and to be handled as intelligently as any other department. Many dealers to-day are eager to discuss their problems with their fellow dealers with a spirit of true confidence and co-operation never before enjoyed.

Boston Saves $400,000

As a result of this work, this co-operation, this education, the Boston dealers as a whole have saved themselves slightly under $400,000 in the 10 months since Feb. 1, the period the bureau has been in operation.

The dealers as a whole have a better standing financially and otherwise they are being recognized as merchants of the largest manufacturing industry in the world. Not only are they helping themselves. They are in turn helping the public to buy used cars at their true value. The value of this bureau to the public, the dealer and the manufacturer is beyond estimation because its results are accumulative.

In particular, our dealers have learned true values on used cars. They have realized there is a danger point beyond which they must not go. They must not buy a car purely upon competitive bidding or jealousy. They must merchandise used cars the same as they merchandise new cars.

Buying and Selling Used Cars as Merchandise

By B. B. Burns
President, Illinois Automotive Trade Association.

THE time is rapidly approaching, if it is not here already, when the automobile dealer is going to be compelled to conserve all of the commissions received on the sale of new cars. It makes no difference how many new cars a dealer sells, if he gives free service and makes poor deals in his trades, resulting in no profit, his volume of sales has been of no benefit. Two of these things can be easily eliminated; that is, free service and long trades.

It has been said by some people that there is no used car problem; that new car dealers should leave used cars alone. Well, here is your prospect, and he is the owner of a used car. He is not equipped to sell that car. You are the man that can equip yourself as the average dealer, to go out and sell this car and sell it as it should be sold. You cannot expect these owners to combine in an association to sell their used cars in order to buy new ones, so after you go through it all, we get back to the same problem. It is the new car dealer's problem to dispose of the used car.

How is the new car dealer going to dispose of these used cars profitably? He will have three principal things to contend with: first, procuring these used cars at the right prices; second, conditioning them as they should be conditioned before they are offered for sale; third, the proper method of selling them.

Procuring Used Cars

I will attempt to take up each one of these subjects separately. The first is procuring used cars. The average dealer who has not the advantage of an association plan is the one to whom I would suggest the following: First, that you have an association and get as many dealers as possible to agree at least to a maximum price that these cars should be taken in at. This could be arranged either by joint appraisal or by use of the Chicago Blue Book or by round-table conferences, or in any manner you think best suited to your community. Arrange for an every week meeting to try to educate the dealers of your town what used cars should be taken in at and the evils of taking them in at more than what they are worth.



B. B. BURNS

If a dealer has to go it alone, as most dealers do, he has to learn the proper price to take used cars in at and only take in those that he can procure at a proper price. He will miss some sales. A dealer will miss some sales occasionally because he doesn't want to take the paper that is offered to him. He should feel just as willing to let the other fellow have the car if the trade-in is too long. The principal thing in procuring your used cars, in my opinion, and the thing that has been overlooked by a lot of the dealers is that they do not sell the new car. You know in many cases the first thing that happens when a man drives up with a used car. He says: "I am figuring a little bit on buying a new car and I am somewhat interested in yours. I have a car here that I will have to trade in, however. What will you allow me for it?" And the dealer says: "Well, we will look at your car and see what we will allow for it." Now the prospect has never seen the new car and the whole discussion is on the used car.

Just the other day a friend of mine had a car that he wanted to trade in, and this fellow is a good, average dealer and the only thing he did was to try out the used car, and they tried to agree on a price. The man never saw the new car at all. I think the dealer should first sell his new car, whether he is able to deliver it or not, that makes no difference, but sell it and make it the car of the prospect's choice. If the long trade-in man gets it, the purchaser who has procured it on account of getting a long trade-in will tell all his friends and neighbors and acquaintances. "Yes, I am driving this car, but it is not the car that I wanted. The car I wanted I could not get. That fellow wouldn't give me enough for my car."

The thing to do with the prospect is to sell your new car, the service and the reputation behind it. The dealer of the future is going to be a man who will handle a good car for the class of customers that he seeks to sell, and he will make that car just as satisfactory to the buyer as it is possible for a car to be. He is going to give him transportation plus such comfort and style as this man wants, and he is going to give that to that man in a way that he is going to be pleased with it, and he must sell his man when he is selling his new car. I think that is one of the important things for the dealer to keep in mind.

Often in the sale of new cars long promises are made. The man who is selling the new car says, "You can drive this car a year, and you won't have much depreciation. You can drive this car a year and anybody will give you so much money for it." Now I think a man is courting trouble when he makes a promise of that kind, and I believe it is to the best interest of any man who intends to stay in the business to keep away from those promises. I do not believe that there is ever an instance where it is to the interest of any dealer to procure a used car at more than its actual value.

Not Necessary to Over-Allow

That has to be learned, what the actual value is, but you can get pretty close to it. I don't believe it is necessary to over-allow to introduce a new car in a community. The dealer cannot last if he takes in used cars at more than what they are worth. If a man is overloaded and overstocked on his new cars, I believe that any other method is better for him to get rid of them than to make long trades.

Now we will say that he has got his used car at a price that is right. He should recondition it. Gentlemen, I think there are two conditions there. A car is either junk and should be junked, or

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else it is worth reconditioning and should be reconditioned. I do not believe it is good policy or good business to sell the car "as is" to a user. It is all right to sell them to used car dealers who may do as they please with them. You can sell them in any condition you want to, to them, but the car you sell to your users should be put in good, serviceable condition, because if you are going to make a success of your new car business and used car business in connection therewith, which is going to be as much a part of your new car business as any other thing, this used car must go out and it must be as represented. You say, how much must you recondition it? On the better grade of cars I should say it is possible to recondition them until a lot of them can be made to give the same service as a brand new car.

On some of the cheaper models, on some of the cars that have the lower list, it may not be advisable to recondition them so far as new tires are concerned; maybe so far as new fenders are concerned; maybe so far as seat covers or new upholstering are concerned, but it does pay to make sure that the car will give good, serviceable mechanical satisfaction. There are people who want to buy transportation regardless of looks or appearance just as cheap as they can get it and they can buy it in some of these cheaper cars, if you will put them in good mechanical condition.

Reconditioning Used Cars

There is one thing about conditioning cars that is a bugbear to the average dealer, I find, and I have had a lot of experience myself. I spent money before I did some of my own repairing, and I found that it is difficult in a lot of places to get away from the tinkering on cars, instead of getting to the actual reconditioning of them. When you tinker with a car it runs well for a little while, but you can't depend on it.

There is another thing about the reconditioning that I would like to call to your attention. If you have a reasonably good car of a high priced type, it oftentimes is money well spent to doll that car up. Put on side windshields, put on aluminum steps, put on Moto-Meters and your sunshades and things of that kind, and then you have a car that is similar in appearance to some of the late models and it will assist very materially in selling the car, because there is no man who objects, when he is buying a used car, when he sees the difference of appearance it makes in that car, to pay additional for these accessories, and the profit you make on those helps to take care of your overhead.

There is still another thing that I believe can be worked out with the average dealer in preparing his used cars for market. I believe it pays to make sport bodies, which can be done economically now. You can make a nice sport roadster out of some of these cars that look a little out of date when you take them in, or a nice four-passenger speedster, and that will assist materially in the sale of them.

The larger type, heavier cars are hardest to re-sell. The public is looking for economy. Some of them have a lot of service and transportation left in them, but it is hard to find a customer for them. Of course, there are taxicab drivers and liverymen who will take some of them. There is also a field for some of these cars to be converted into many-passenger buses. You have to make your market by advertising and by proper education, and I think you can make a market for cars of that type in that way.

Advertising the Used Car

After your car is conditioned, the important thing again is the selling of it. It seems to me that the selling of used cars has been the most abused of any feature of the automobile business.

One of the things that is necessary in selling your new cars, as you realize, is advertising. Millions are spent every year on advertising of new cars. There is a lot of money spent on advertising the used cars, but most of it is set in fine type. You have a used car for sale, not saying much about it, and if you do say anything about it, the principal thing is why you want to sell it, but you don't say why it is a good buy. That is the case, as I have noticed in times innumerable.

Now it seems to me if the used car business is going to be half of your business, the morale of used cars should be raised.

I believe there should be a consistent effort on the part of all dealers to educate the public that a used car has good value. It has good service and satisfaction if it goes through the proper reconstruction and you get it from the right place. The fact that a car changes ownership is not sufficient reason why it should be heavily depreciated in value. If a car is run a week and you attempt to sell that car, and it might be driven by the most careful driver, the public expects to buy it at a big discount, and I think that can be eliminated to a large extent, and I believe it should. Salesmen drive them for months and sell them for new, but if an owner drives a car for a week and then sells the car, you have to sell it at a big discount.

The morale should be raised and the people educated that all used cars will not give trouble.

What About Display?

Some dealers in selling used cars say, "We are overstocked. We are housecleaning. We need the money. Bargains in used cars." That is a thing we should get away from. I don't think there is hardly ever an occasion when it is to the interest of the dealer to advertise that he is forced to sell used cars.

Then there is display. The used car is half your business, and maybe it is going to be the most important half. Why shouldn't you give that car the same display and the same attention as you do your new cars, and why shouldn't you give the man who comes in to look at a used car just as much consideration as the man who comes in to look at a new car? I have oftentimes heard a prospect say, "I am looking around to buy a car," and the salesman say, "Here are our models." "No, I can't go that high. I want a used car." Then they call in some shop man and take him back and show him a used car and expect to sell him that used car. That is not right; it is not fair; it is not profitable, and it won't succeed.

There is one feature that most of all the new car men will fight shy of, and it is the average dealer I am speaking of, and that is the guaranteeing of used cars. He hasn't any confidence in them himself. In the first place, I believe he must get confidence in those used cars himself before he can sell them successfully, and if he gets confidence in them, if his shop is all right, and if the cars get the conditioning they should have, I believe it is to his best interests to put a guarantee on those used cars, because if a car is thoroughly gone over, it is safe to guarantee that used car. But you will have to have a good salesman sell it. Don't let your shop man try to sell it. He is not educated in selling. He thinks that the best way to sell the car is to tell the man what he wants to hear and make him long promises. He says, "Yes, everything is guaranteed on it," and he sells the car. Have a successful salesman sell these used cars understandingly. He can sell them so the guarantee won't do you any harm. He can sell a used car so that the car will give the buyer absolute satisfaction and make him a permanent customer of yours, and possibly in the future he may be able to buy one of your new cars, but at all times, he will be a booster for you.

Good Sales Plan Brings Profits

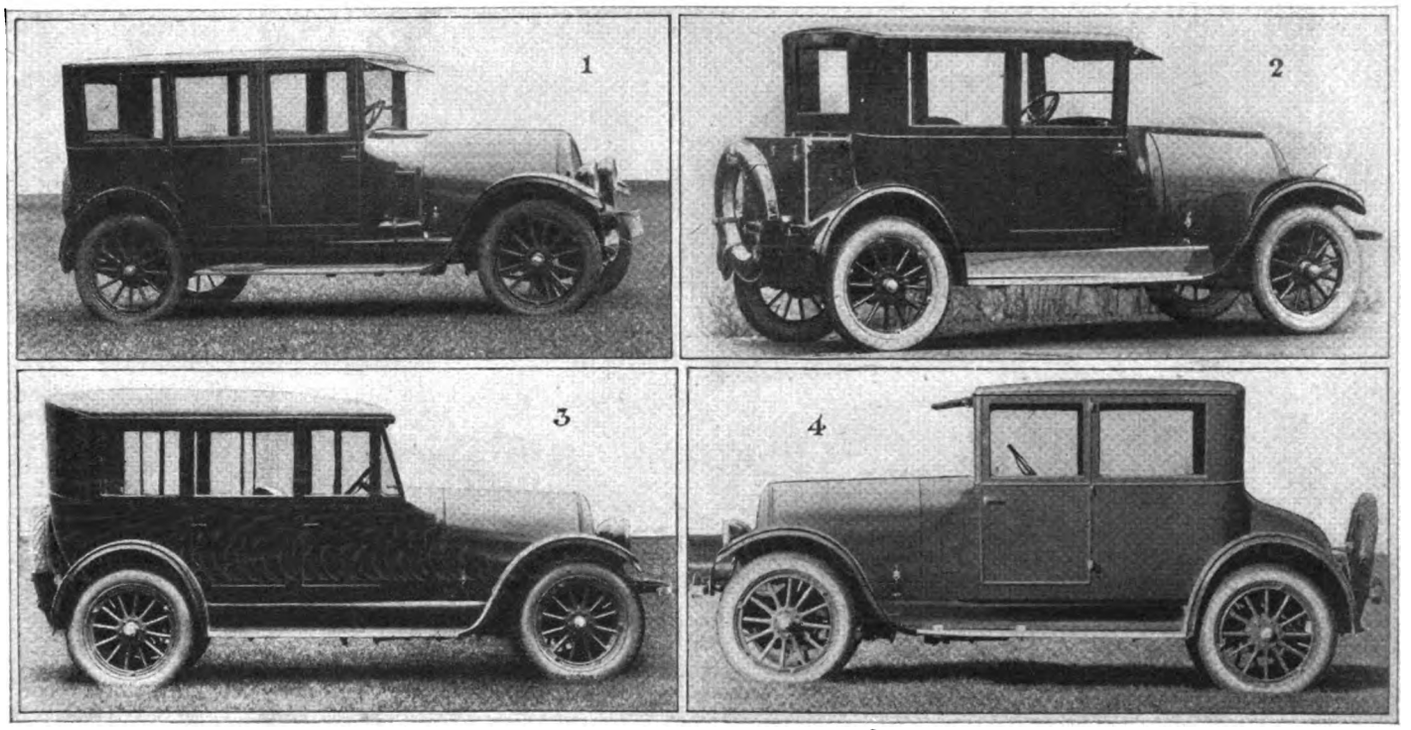
The used car field offers an opportunity that I believe has been overlooked by the average dealer, in the high priced cars especially. The used cars that the average dealer has in his place of business make it possible for him to approach not just 10 per cent more customers, or 20 per cent more customers, or 30 per cent more customers, but possibly 150 or 200 or 300 per cent more customers, and that, after all, is the thing that you want. You want to add to your family of customers; you want to add just as many as you can, and this used car proposition offers you an opportunity to add those customers to your list.

I believe that a dealer should accept only what new cars he can handle. I don't believe a dealer is justified in allowing a manufacturer to overstock him on cars, and I don't believe the manufacturer is profiting by shoving on to the dealer any more cars than he can handle. I believe that any manufacturer who attempts to do that is making a mistake, and if I were a dealer I would refuse to accept more cars than I could merchandise as they should be merchandised. I believe that any dealer who will accept only as many new cars as he can handle and accept only used cars that he can get at the right price and sell them to give service, will find that the used car menace is not a menace after all, but is an asset to his business.

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Seven New Bodies for Franklin Chassis

Four Door Sedan with Straight Windshield a New Addition to Line —Bodies Are Longer, Lower and Have More Room



Four of the New Franklin Bodies on the Series 10 Chassis

1—The four-door sedan which is the latest addition to the line. 2—The brougham is finished in royal blue. 3—The demi-sedan is lower and wider and looks larger than before. 4—The coupe is longer, wider and the rear hamper changed

THE Franklin line for 1923 will consist of the Series 10 chassis which was brought out this fall fitted with a choice of seven new bodies. These new designs have lower top lines, increased length and are wider above the body rail. These changes in construction have made it possible to provide roomier bodies. The lines of the higher hood are carried back from the almost vertical grille to the flare of the cowl where they blend smoothly into the body lines. The level of the hood line and the body rail presents an unbroken and continuous sweep from tip to tip, an effect which accentuates the increased length of the car.

The driving compartment is more roomy due to the compactness of the engine and the additional length of the new bodies. More space is obtained in the tonneau also. The position of the seats is lower and at a more restful angle. The steering post is inclined a little more to suit the lowered seats.

Of the seven new body models, six will be closed, the only open model being the phaeton. The newest type is the sedan with four doors and a straight type windshield. The rear compartment is quite roomy and the space for luggage is ample. A gain in room in the front seat has been obtained by building it straight across and making it lower, wider and set at an angle which allows ease of driving and comfort for the passenger.

The exterior of the brougham is finished in Royal Blue. It carries five passengers and has two tilting seats in front and a low rear seat. Entrance and exit is made on either side through the wide doors and plenty of leg room is provided for both driver and passenger. A baggage trunk is attached to the rear and set off by nickeled trunk guards. The tire carrier is in back of the trunk.

The coupe has been improved by lowering and widening the body and changing the shape of the rear hamper. The increased length of the body has provided more leg room but the same intimacy is preserved in the seating arrangement.

The demi-sedan is smoother in line and more convenient than before. The roof is lower and wider and on the road the car looks larger from every angle. The glass side panels have been increased in area and the change of windshield design gives clear diagonal vision.

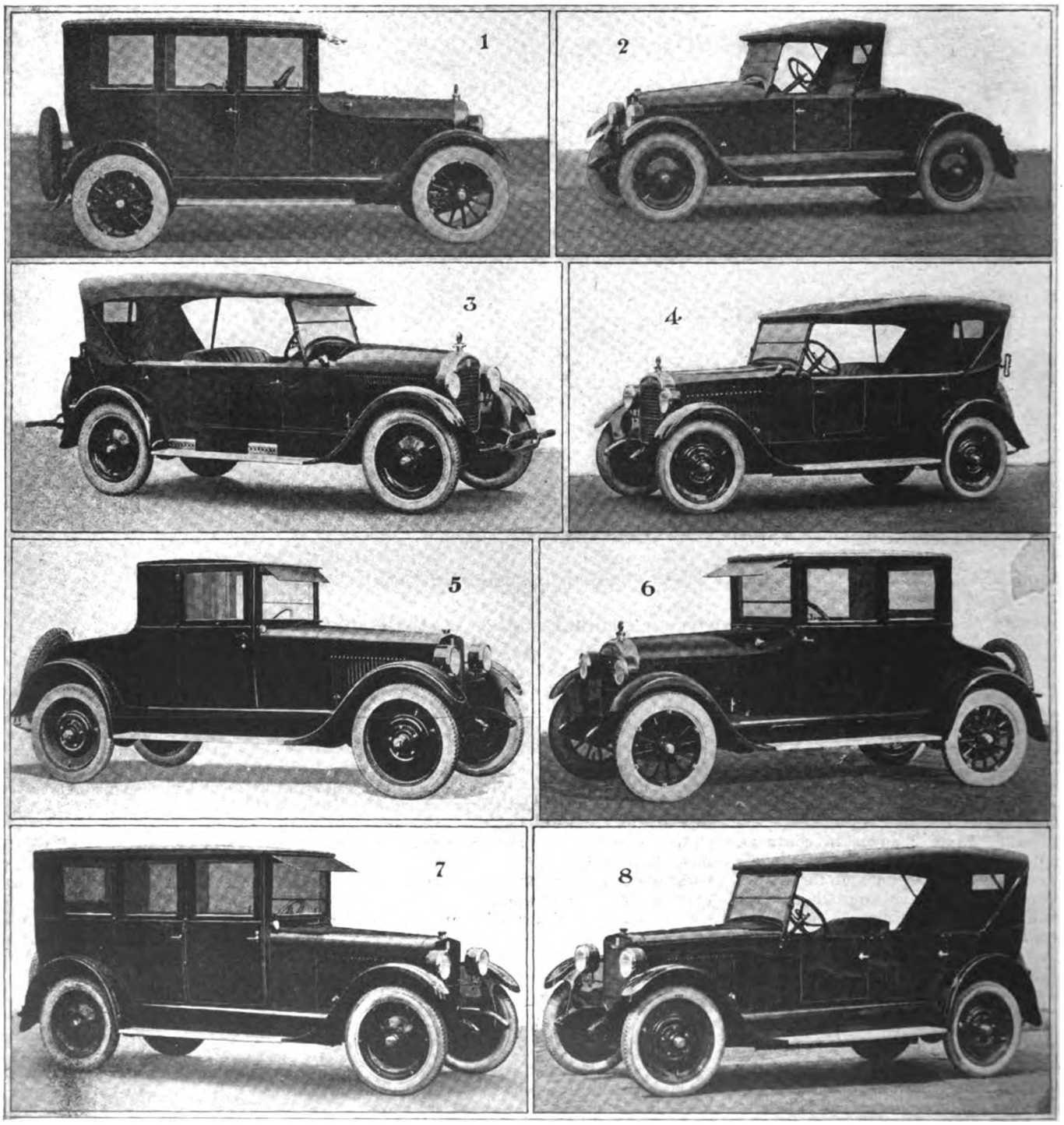
The changes in the phaeton are in the construction of the top which affords rear seat passengers an open view. The front seat is wider and there is more room both in the front and rear compartments. The low top and the merging of the body rail with the horizontal top line of the hood give the phaeton a more rakish appearance. Through an outward flare to the upper half of the windshield the oblique vision of the driver is much improved and easier driving under storm conditions is possible. The windshield is of the lap over type with rain gutters at the sides, very narrow corner pillars and an improved rubber strip which makes it weather tight.

The touring-limousine has a sliding glass partition which makes it convertible from a chauffeur-driven to an owner-driven car. The weight is little more than 2900 lb.

The arrangement of the new instrument board is quite simple. The lighting and ignition controls, battery indicator and spark advance and speedometer and clock are grouped in three rectangular panels. The mountings and fittings are all Roman in character, being edged with polished Duralumin and inlaid with black pyralin enamel.

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Columbia Light Six and Elite Models for 1923



THREE new body types, a two-passenger coupe, a special sport phaeton and a sport roadster are included in the light six line and the phaeton and sedan on the same chassis have been refined. The Elite models remain as before with minor refinements. In the above illustration, 1 is the Elite sedan, $1,995. 2—Light six sport roadster, $995. 3—Special sport phaeton, $1,395. 4—Light six phaeton, $1,095. 5—Light six two-passenger coupe, $1,235. 6—Elite coupe, $1,925. 7—Light six sedan, $1,395. 8—Light six phaeton, $985. In the light six line the phaeton has been made slightly larger and the sedan is set lower in the chassis. A cowl ventilator and parking lamp have been added. The coupe is finished in blue with black hood and fenders. The sport roadster is of the racy type finished in red. It has a sloping rear deck with flush spare tires. The Columbia chassis specifications remain unchanged

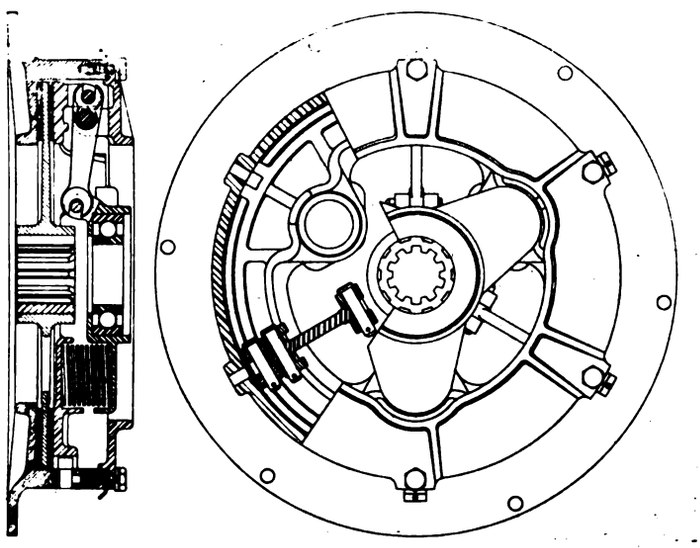
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Rickenbacker Series B Cars for 1923

Rickenbacker 1923 Models Have Changes in Both Body and Chassis—Disk Clutch Now Used

A NUMBER of detailed changes have been made in the new Series B Rickenbacker cars which are just coming off the assembly line at the factory. A few changes were also made on the Series A cars in the latter part of the run. The Series B cars will be shown at New York and Chicago with all these changes.

Probably the most important change made in the car this season is the adoption of an entirely new clutch. This is a disk unit which is designed along conventional lines except that the pressure plate forms one abutment for the springs and a movable part forms the second abutment. The movable part is connected to the pressure plate by linkages which provide a 4 to 1 leverage between the springs and the pressure plate. Inasmuch as the initial pressure is also present and the springs act on the pressure plate at the same time, a pressure of five times the actual spring tension is available. In other words, with three 110-lb. springs as now used a pressure on the friction rings of 1650 lb. is secured.



The new type disk clutch used on all series B Rickenbacker cars

Rings Interchangeable

The friction rings are interchangeable with the conventional disk clutch. A second feature is that the pressure plate is positively disengaged from the friction rings instead of being allowed to float. The driven plate has straight arms and therefore has the advantage of lightness. The revolving weight, therefore, is kept at a minimum.

The only change in the powerplant is in connection with the carbureter, which has been equipped with a new type, hot-air stove and an air cleaner as standard equipment. A claim of an increase in from 2 to 5 per cent on the dynamometer in actual horsepower is made for the new construction. The air cleaner, which will now be fitted as standard equipment, is an air velocity type designed to remove the particles of foreign matter from the air taken through the carbureter into the engine. This is the second make of American car to adopt a cleaner as standard equipment.

Bosch electrical equipment is used on the new car. The automatic advance feature is incorporated in the distributor head and is so constructed that the weights employed are heavy enough to break loose a gummed bearing in case of heavy oil.

Changes in the Rickenbacker Cars

New type disk clutch
New type carbureter hot air stove
Carbureter air cleaner
Bosch electrical equipment
Brake anti-rattlers
Differential type brake equalizers
Wiring changes to conform to Class A specifications
Aluminum toe boards
Heaters in closed cars
Permanent tops on phaetons
Nickeled radiators on phaetons

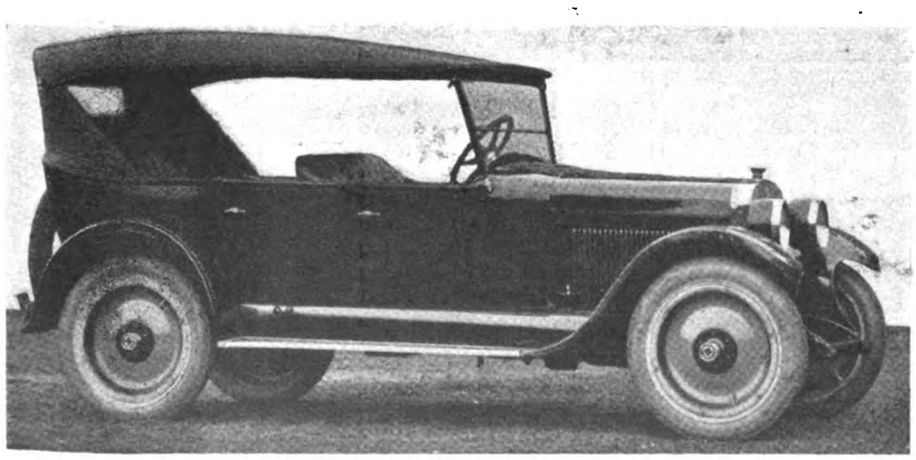
Chassis Changes

A number of detail improvements have been made through the chassis and body, the rear axle, for instance, having been equipped with brake anti-rattlers. Flat springs have been added to the top and bottom of the brake bands with supporting members riveted to the brake dust cover as an anti-rattle feature. These also hold the bands free in the drum, helping to eliminate brake drag, particularly when the bands have been damaged by a blow. A differential type of brake equalizer with small differential wheels in place of the usual balanced lever has been added.

In the body construction, trim and equipment, a number of improvements are incorporated in the Series B cars. The phaetons are now equipped with permanent tops which are lighter and stronger. Although the tops cannot be lowered, the viewpoint of the Rickenbacker company on this is that since 99 per cent of the drivers never use the drop feature, there is not much use in using it.

Changes in the wiring have been made

(*Continued on page* 21)



The new Series B Rickenbacker phaetons have permanent top and nickeled radiators. Minor changes are made in the chassis

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New Courier Car Will Have One Standard Chassis

Nine Standard Bodies Fitted—Exclusive Courier Features Used on Standard Units

A SINGLE standard chassis will be turned out by the Courier Motors Co., Sandusky, Ohio, this to be fitted with nine different body styles. The company is now in moderate production and has been shipping cars to its dealers for some little time. The chassis is assembled from standard units in the Sandusky shops and the bodies are built there, too. Incorporated in the design of some of the standard units are features of exclusive Courier design.

The 116-in. wheelbase chassis incorporates a Falls model T-8000, six-cylinder valve-in-head engine which is a stock product, with the exception of the fitting of a dry sump oiling system for which some exceptional oil economy claims are made. A bore and stroke of 3⅛ by 4¼ in. give a displacement of 195.6 cu. in. and a horsepower formula rating of 23.44. The engine is claimed to develop 46 hp. on the block at 2600 r.p.m. The five-passenger car weighs 2825 lb., ready for the road, giving approximately 62½ lb. of car weight for each horsepower. With a standard rear axle ratio of 5 to 1 and an optional ratio of 4.6 to 1, a speed range of from 2 to well over 60 miles per hour is developed. This is with a 32 by 4-in. tire.

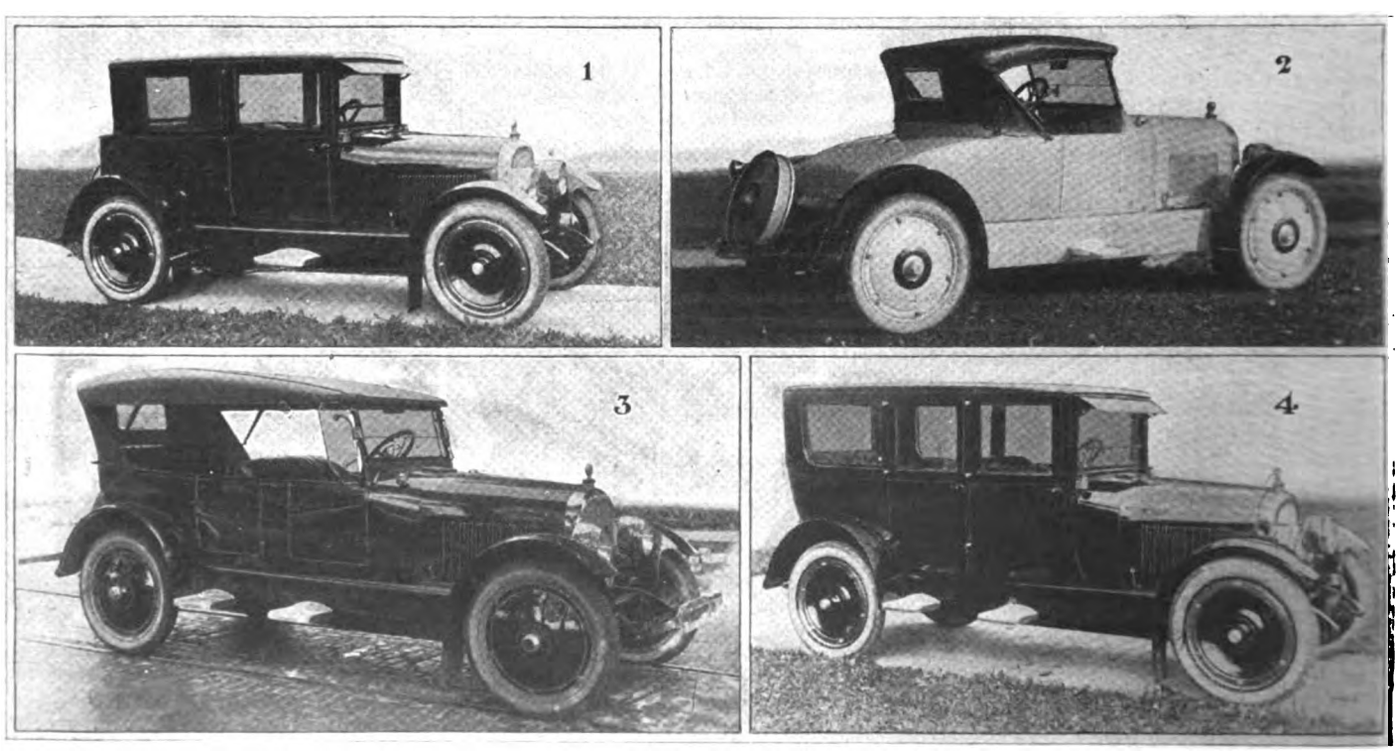
Courier Specifications

Bodies and Prices—
5 *Pass. Phaeton,* $1,395.
3 *Pass. Roadster,* $1,295.
3 *Pass. Sport Roadster,* $1,395.
3 *Pass. Coupe,* $1,965.
5 *Pass. De Luxe Sedan,* $2,165.
4 *Pass. Sport,* $1,495.
5 *Pass. Sport Phaeton,* $1.475.
5 *Pass. Two Door Sedan,* $1,995.
Special Sedan, $1,850.
Engine—Falls 6 Cylinder, 3⅛ x 4¼
Ignition—Atwater-Kent.
Starting and Lighting—Westinghouse.
Clutch—Borg & Beck.
Gearset—Muncie.
Chassis Lubrication—Kellogg.

One of the noteworthy features of the engine is the complete oil circulating system through the overhead rocker arms and through the drilled push rods back to the cam faces, giving a very complete lubricating system for the overhead valve action. This has been retained in connection with the dry sump lubrication. This lubricating system, which is familiar in airplane practice, is so arranged that the oil, instead of being carried in the engine base, is stored in a separate tank mounted on the frame and cooled by the forward motion of the car. The air is deflected by the front fenders against the oil tank. From this point, the oil is pumped to the bearing surface and returns to the crankcase from which it is pumped back to the tank where it is screened, cooled and again circulated through the engine. The installation has been made on the Falls engine by installing a double oil pump in place of the single pump and by mounting the oil tank as described with the necessary oil leads.

The pressure relief valve, which is carried in an accessible position on the engine, is so arranged that the pressure is taken after the oil has passed through

Four of the Nine Courier Bodies for 1923



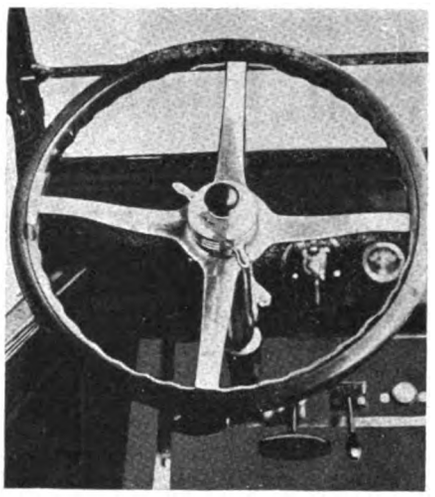
1—*The five-passenger two-door sedan,* $1,995. 2—*The three-passenger sport roadster,* $1,395. 3—*The five-passenger sport phaeton,* $1,475. 4—*The De Luxe Sedan,* $2,165

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the engine instead of before. The pressure is held at a fairly constant point of 30 lb. to the sq. in. To secure the high pressure which could be set to run up as high as 75 lb., a very close fitting gear pump is employed. The pump drive is the same as on the Falls engine, the additional pump simply being super-imposed on the original pump.

Another deviation from the standard Falls engine is the employment of cast covers for the top and for the valve action. On the standard engines, stampings are employed, but the castings have been substituted for greater rigidity, so as not to be distorted by unusual tightness on the retaining screws. Gasoline is supplied from a 12 gal. tank in the rear of the chassis through a Stewart vacuum system to a Stromberg carbureter. Ignition is by the Atwater-Kent system and the starting and lighting system is a Westinghouse. The battery is a USL 6-volt, 94 amp. type mounted in a steel cradle under the front floor boards.

The clutch is a 10 in. Borg & Beck single dry-plate type, delivering the drive through a Muncie three-speed gearset mounted in unit with the power plant. This gearset is mounted on annular ball bearings throughout. The drive is a Hotchkiss type through two 6½-in. flexible disk universal joints. The rear axle is a Columbia three-quarter floating type mounted on annular ball bearings. The front axle is a Peru, drop-forged, I-beam, with a 2¼ by 1½ in. I-beam section. The steering gear is a Lavine, irreversible worm and wheel type with an 18 in. hard rubber steering wheel designed particularly for this car. It is a thin grip type with the Lavine center control in which the spark and throttle levers are mounted on the steering wheel hub.



The steering wheel of the Courier has short spark and throttle levers and the horn button mounted on top

The pressed steel, channel section frame is 7 in. deep at the center, with 1½-in. flanges, and the stock is ⅛ in. in thickness. The cross members consist of three pressed steel channel units and two reinforcement tubes, the rear tube being 3 in. and the front 2 in. in diameter. These are mounted in sockets bolted to the frame, and as a measure of rigidity it may be mentioned that a rear corner of the frame can only be lifted a little over ½ in. before picking up the entire frame, this representing the distortion, due to the weight of the frame supported in this manner.

Semi-elliptic spring suspension is employed, the front having an alloy steel main leaf and high carbon steel used for the remaining leaves. The length of the front spring is 36⅜ in. and the width 1¾ in. The rear spring is chrome vanadium steel throughout, 53 in. in length and 2¼ in. in width. The wheels are artillery on all standard models with Stanweld rims. Forsythe disk wheels or wire wheels are standard on the sport model. The tires are 32 by 4 in. nonskid cord, front and rear.

The Kellogg automatic chassis lubrication system is installed, this being operated from a central tank located on the front of the dash, with a plunger so constructed that one push after the system has been filled will force lubricant to the various parts of the chassis under pressure. With the use of the flexible disk universals, the usual grease cups have practically been eliminated.

All of the body work is handled in the Courier plant, which is equipped with a complete wood-working and paneling department. The colors supplied are Baltic green, maroon, azure blue, moleskin and dark blue. The upholstery on the open cars is real leather with Spanish finish throughout. On the enclosed cars, imported fabrics are employed. The bodies are practically custom built, as with the limited production, the body manufacture is entirely by hand work.

A feature of the policy of the Courier concern is to give each car a thorough road tuning before shipment. From 3 to 5 hours are spent on each car by the inspectors before they are passed and an endeavor is being made for uniformity as regards carbureter and ignition setting, as well as providing a very thorough rattle inspection. The standard equipment includes spare rim, tool kit, jack, tire repair kit, starting crank, rim wrench, switch keys, curtain rods, windshield wiper and spot light on the sport models.

Gramm-Pioneer Trucks Have Minor Chassis Changes

A NUMBER of changes have been made in several of the Gramm-Pioneer truck models, which, while of a minor nature, incorporate up-to-date features.

The Model 10 speed truck which has for the past three years been powered with a 3½ x 5 in. engine will now be fitted with the new Lycoming 3¾ x 5 in. engine. This engine has a five-bearing crankshaft, full force feed oiling to all bearings through drilled crankshaft by means of a gear driven oil pump, removable head, hot spot manifold, high sight oil gage, etc. To prevent damage to parts due to the universal tendency to overloading, the rear axle has been increased in size in such parts as the bevel gear, pinion, differential, carrier and bearings and an additional annular bearing has been located at the lower or bevel end of the pinion to assist in taking care of service strains.

The Model 65, 1½-2 ton worm drive model which was formerly powered with a Continental Red Seal Model N engine is now fitted with the new Model J-4 engine of the same make and size but with all the latest improvements of drilled crankshaft, gear driven oil pump, force feed oiling and hot spot manifold. While this model will continue to be built with the North East generator and distributor ignition from an Exide heavy duty truck type battery, it will also be furnished with Eisemann high tension magneto ignition in connection with electric lights and horn as an extra. The emergency brake which formerly operated on the rear brake drums is now of the ventilated shoe type and operates on the front end of the propeller shaft. This gives double the braking surface on the rear wheel drums for the service brakes.

Model 20, 2-2½ ton worm drive will have a Continental Red Seal K-4 instead of the C-2. This is the same size but has a number of improvements. The North East system will be continued on this model also, but an option of Eisemann magneto with electric lights and horn is to be had at an extra price. The emergency brake will also be changed from the rear wheels to the propeller shaft. The frame dimensions have been increased to 6 x 2½ x ¼ to take care of the increased demand for the chassis with dump bodies. The front end will also be fitted with an integral type channel bumper.

Rickenbacker Series B Cars for 1923

(*Continued from page* 19)

so as to secure the Class A rating as regards fire hazards from the Underwriters' Laboratory. An approved transmission lock has also been built into the transmission pedestal which will also reduce the insurance rates. All nuts, bolts, screws and other parts which have previously been touched up after assembly, are now rust-proofed, giving them a finish which does not require touching up and consequently daubing of other parts. The toe-boards on all of the models have been changed to aluminum for appearance and to protect the front compartment from heat coming from below as an asbestos installation has been incorporated in the toe-board. All the molding used on the phaetons is of cold drawn metal stamped to shape and enameled, giving a mahogany finish. Rear view mirrors have been added to all the cars as regular equipment and all of the closed models are now fitted with Perfection heaters as standard equipment. The radiator shell on the phaeton has been changed to nickel plate for the sake of appearance.

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New International Tractor Has Gear Drive

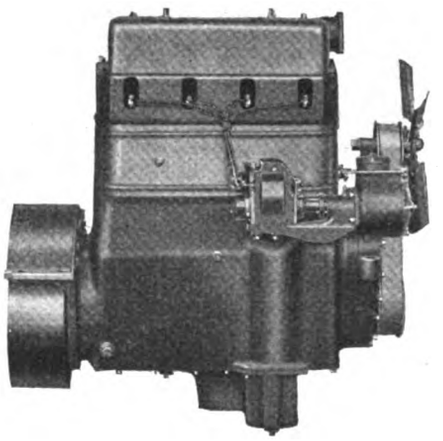
Rated at 15-30 Horsepower—All Working Parts Are Enclosed—Accessibility a Feature

A NEW tractor, to be known as the McCormick-Deering 15-30, is now being produced by the International Harvester Co. It is of the one-piece, cast frame type, and has a live rear axle and an automobile type front axle. The complete enclosure of all working parts and the accessibility of the various units are features of the construction.

The frame of the new tractor consists of one solid casting running from front axle to rear axle. There are no joints which might leak oil and no frame bolts or rivets to work loose. The frame forms a foundation for the engine, an inclosure for the clutch, a dust and oil tight housing for the entire working mechanism of the tractor and provides the necessary compartments so that all gears run in oil. The gearset, the clutch, the axle gears and belt pulley drive can be taken out easily without disturbing, except in a minor way, adjacent units. Furthermore, the various parts can be removed and dismantled with the minimum expenditure of time.

The wheelbase of the new tractor is 85 in. and the tread at the rear wheel 153 in. The length is 133 in., the width 65 in. and the height, 61 in. The turning radius is 15 ft. The gearset provides three speeds forward and one reverse. The normal pulley speed is 595 r.p.m.

The engine is a four-cylinder overhead valve type with 4½ in. bore and 6 in. stroke. Among the unusual features of the engine is a two-bearing crankshaft and a main casting carrying the removable cylinder sleeves. The crankshaft is supported in two large annular ball bearings. The connecting rods may be inspected by removing hand hole covers at the side of the case and are easily adjusted after removing the crankcase pan. The cylinder head is detachable. Lubrication is by splash, the oil being raised from the sump to the oil pan by a gear pump driven by a vertical shaft off the camshaft. Ignition is by a high tension magneto with impulse starter. A centrifugal throttling type governor is employed.

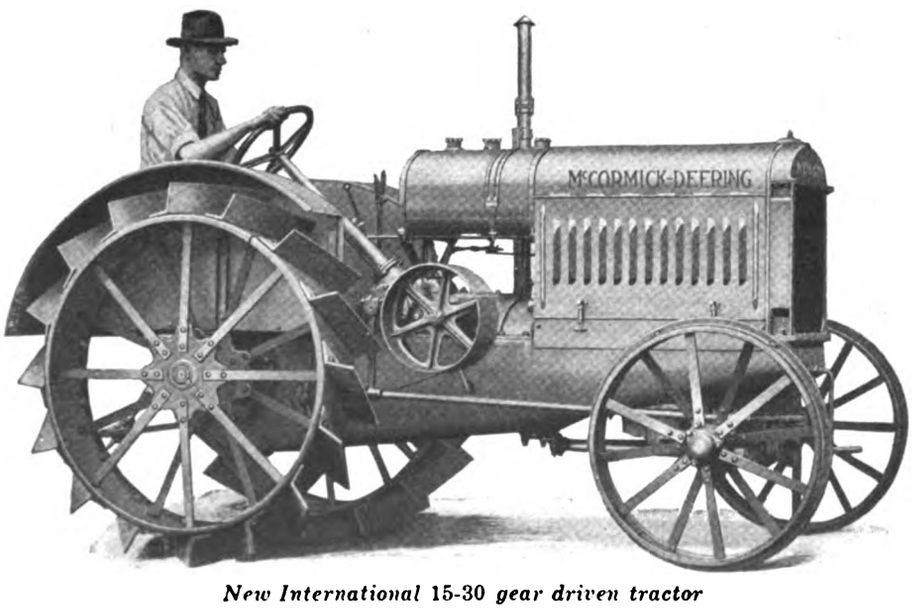


Right side of engine used in new International 15-30 *tractor*

The clutch is of the multiple dry disk type, driven by pins bolted to the flywheel flange. The belt pulley assembly is a separate unit and is driven by bevel gears from the upper shaft of the gearset.

Just aft of the change speed gear, mounted in the main frame casting and driven by a beveled pinion and ring gear from the lower shaft of the gearset, is the bull pinion shaft. This is a short heavy shaft and is mounted in roller bearings. The bull gear and differential are mounted in the main frame casting and tubular extension attached to it. The differential housing and rear axle are carried on roller bearings. All gears in the entire transmission are of steel, carbonized and hardened.

The tractor is designed to receive a special power take-off, driven from the engine through the transmission. This take-off terminates in the shaft carried in the upper half of the differential casing, and is made accessible by removing a small end cover. This is a special feature which can be readily attached and is expected to find many uses for driving parts of trailing machines of the same general character as those which are now frequently drawn by tractors, but which are, at the present time, generally operated through power taken from driving wheels in contact with the ground. Other accessories such as power winches can also be driven from this take-off. An adjustable drawbar is attached to the main frame and axle housing.



New International 15-30 *gear driven tractor*

Book Review

The Automobile Storage Battery—Its Care and Repair; published by the American Bureau of Engineering, 2632 Prairie Avenue, Chicago.

The fourth edition of this book is now ready for distribution. It has been enlarged, revised and improved. It is intended primarily for the use of persons engaged in the business of battery maintenance. It deals with farm lighting and radio batteries, as well as with the automobile type. There are 515 pages of text with 332 illustrations. In addition there is a pictorial section at the end of the book in which battery manufacture is illustrated.

The first chapter is of an introductory nature and deals with the development of the automobile electrical system. The second chapter explains the simple primary battery and discusses the construction and operation of the secondary or storage battery. The manufacture of the battery is described in the next chapter, and in the fourth chapter, the operation of the battery is explained from the chemical standpoint. Succeeding chapters discuss discharge, charge, and capacity, internal resistance, care of battery on car, troubles, shop equipment, general shop instructions, business methods, diagnosis, battery rebuilding, special instructions and farm lighting batteries.

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The Care of Radiators in Winter

Preparations and Solutions to Prevent Freezing—Running the Engine Warmer—How Freezing Damages the Parts

THERE are three ways of preventing radiators from freezing. One is to keep the car in a heated garage, the second is to drain the water out each time after using the car, and the third is to use a solution that will not freeze down to the lowest temperatures ordinarily reached. The first method is seldom practical and the second entails a great amount of unnecessary labor.

There are a number of chemical solutions which when mixed with the water reduce the freezing point sufficiently to prevent freezing. One of the most commonly used and easily secured materials is alcohol. There are two kinds of alcohol commercially obtainable, wood and denatured or grain. The wood alcohol makes a solution with a low freezing point with the addition of less alcohol than the denatured but it evaporates more rapidly and costs more. Table 1 gives proportions to use to reduce the freezing point.

By using glycerine with the alcohol, a safer solution is produced as the glycerine does not evaporate, and even should it freeze, it forms snow like crystals which have not the expansive force of plain water. The glycerine, however, attacks rubber and at the end of the season the hose would have to be replaced. Table 2 shows various proportions of glycerine, and Table 3, proportions of glycerine and denatured alcohol.

In addition to these alcohol and glycerine solutions, there are a great number of patented compounds and solutions on the market which are quite suitable for winter use in the radiator, most of them having a calcium chloride base. This material will have practically no effect on the cylinders or radiator, but should not be used in engines that have aluminum in contact with the cooling water. The great advantage is that the solution does not evaporate like alcohol, and once placed in the radiator, can be forgotten till spring. Some of these compounds contain alcohol and glycerine, and these would need occasional replenishing with alcohol to maintain the strength.

Should a radiator be frozen, the best way to thaw it is to bring the car into a garage heated just above the freezing point, say 40 to 50 deg. The application of boiling water or anything very hot is likely to spring the seams wider open than they are. In many cases light freeze ups cause no damage. The radiator generally freezes first when a car is left standing, and it is not unusual in very severe weather for a radiator to freeze up while the car is running. This can be prevented by using a radiator cover. The use of steam from a hose has been found practical in thawing radiators. If the freezing has gone into the cylinder block and is frozen very solid, it is likely that the water jackets will be cracked.

In repairing a frozen radiator it should always be boiled out with a strong soda solution before testing and soldering as there are many little cracks that are filled with rust or compounds that do not show up till the radiator is put on the car again. This boiling will clean this much all out and show up every leak, no matter how small.

Better Mechanics

Article No. 271

Readers are invited to ask this department for suggestions to work out mechanical difficulties. When asking for information, please state whether you maintain a permanent file of Motor World, as many inquiries are answered by reference to previous issues.

Table 1—Proportions of wood and denatured alcohol solutions.

Freezing Point	Denatured Alcohol Per Cent	Water Per Cent	Wood Alcohol Per Cent	Water Per Cent
Plus 10 deg...	28	72	17	83
0 deg...	40	60	24	76
—10 deg...	52	48	31	69
—20 deg...	63	37	38	62

Table 2—Proportions of glycerine and water.

Freezing Point	Glycerine Per Cent	Water Per Cent
Plus 28 deg.....	10	90
Plus 15 deg.....	30	70
Plus 5 deg.....	40	60
0 deg.....	48	52
—5 deg.....	54	46
—10 deg.....	58	42

Table 3—Proportions of glycerine, alcohol and water.

Freezing Point	Mixture Equal Parts Glycerine and Denatured Alcohol Per Cent	Water Per Cent
Plus 20 deg.....	15	85
Plus 15 deg.....	20	80
Plus 10 deg.....	24	76
Plus 5 deg.....	27	73
0 deg.....	29	71
—5 deg.....	30	70
—15 deg.....	32	68

New Westinghouse Manual

THE independent garage is an important factor in the maintenance of the electrical equipment on the automobile. There are large numbers of owners who are not conveniently located with respect to authorized electric service stations. When these owners have electrical trouble, they naturally turn to the man that they regularly patronize for maintenance work. If this man happens to be up on electrical work, they get good service.

The education of the independent garage man on the subject of maintenance of electrical equipment is consequently of major importance if owners are to get satisfaction from the electrical equipment on their cars. The garageman must know how to diagnose the trouble, how to fix it and where to get such replacement parts as are necessary. In an effort to supply the garageman with this sort of information, the Westinghouse Electric & Mfg. Co. has compiled the Westinghouse Automotive Electric Service Encyclopedia and Parts Data. Volume I is the Service Encyclopedia and Volume II is the Parts Data. The two volumes form just about the most useful compilation of service information that has come to our attention.

The volumes are in loose leaf form. Index tabs make it easier to use the books. The two volumes sell at $24. Volume I alone costs $12.50. For $2.50 yearly, the Westinghouse company supplies new pages carrying the latest information and data.

Volume I deals first with electrical fundamentals and with the various units that go to make up the electrical equipment on the motor car. Following this, there is a section devoted to the internal wiring diagrams of various types of equipment. The next section gives the wiring diagrams for Westinghouse equipped cars. Another section tells how to locate trouble. The following section gives detailed instructions for the construction of test equipment after which comes a section on test specifications. The last part of the book describes the Westinghouse equipment on various makes of cars more completely. This section is arranged alphabetically. Volume II gives the style number and price of every Westinghouse unit and each of its parts. It also tells how and where to order parts.

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City Dealer's Map Shows Garages and Rates

Here's How a New York Dealer Answers the Prospects Who Say, "I Can't Afford High Storage Rates"

IF you sell cars in a big city, you have heard these objections before: "Storage rates are so high that I can't afford to keep a car," or "There is no convenient place for me to keep my car."

Probably you have lost sales because you have been unable to provide satisfactory answers to these objections.

The city man lives in an apartment or perhaps in a private house on a small piece of property. It is impossible for him to have his own garage. If he owns a car, he must hire storage space for it. Furthermore, if he lives at any considerable distance from the garage, car ownership becomes less attractive because of the inconvenience of getting to and from the garage. The cost of storing the car is especially important to the prospective purchaser of a low-priced car.

Sometimes the rates are prohibitively high and sometimes there is no garage within convenient distance. And sometimes these objections are fancied or are faked by the prospect to get rid of the salesman.

A New York City dealer encountered these objections so frequently that it was decided to find out just how real they were. Two men were detailed to the work of making a census of garages and garage rates. It took over two months to complete the job. A list of garages secured from the Garage Owners' Association was used as the basis of the census.

At the completion of the census, a large map of the city was secured, and colored pins were stuck in it to indicate the location of garages in the city. A green pin indicates a garage where his car will be stored for $15 or less a month. A blue pin represents a garage offering owners storage at from $15 to $20. A red pin is for garages charging over $20 for storage.

The census showed that there were 136 garages that would store his car for a monthly rate of $15 or less. There were 58 garages in the $15-$20 class, and 120 in the over $20 class. A list has also been made classifying the garages in the three rate classes and giving the addresses and exact rates of each.

When a prospect offers high storage rates or inconvenience of garage location as a reason for not buying, the salesman can quickly determine whether his objections are real or imaginary. The garage census indicates the rates charged for storage by the garages in the prospect's vicinity, and the map visualizes the distance of these garages from the prospect's home.

In certain sections of the city there are no garages offering rates sufficiently low to appeal to the average small car owner. For example, that section of New York west of Central Park has no garages with rates as low as $20. This section is peopled largely by persons of wealth, however, to whom high garage rates would not constitute an objection. In other sections of the city most of the garages offer small car storage at $15 or less a month.

Pictures of Business on Service Car



Two large photographs flanking the bodies of the service patrol cars of Harold L. Arnold, Hudson and Essex dealer in Los Angeles, extending from the guard rails to the height of the top covering the drivers' seats, not only add tremendously to the attractiveness of the vehicles but prove a great advertisement for the firm. The photographs show the building housing the various departments of the Arnold organization

Good Parts Stock a Source of Profit

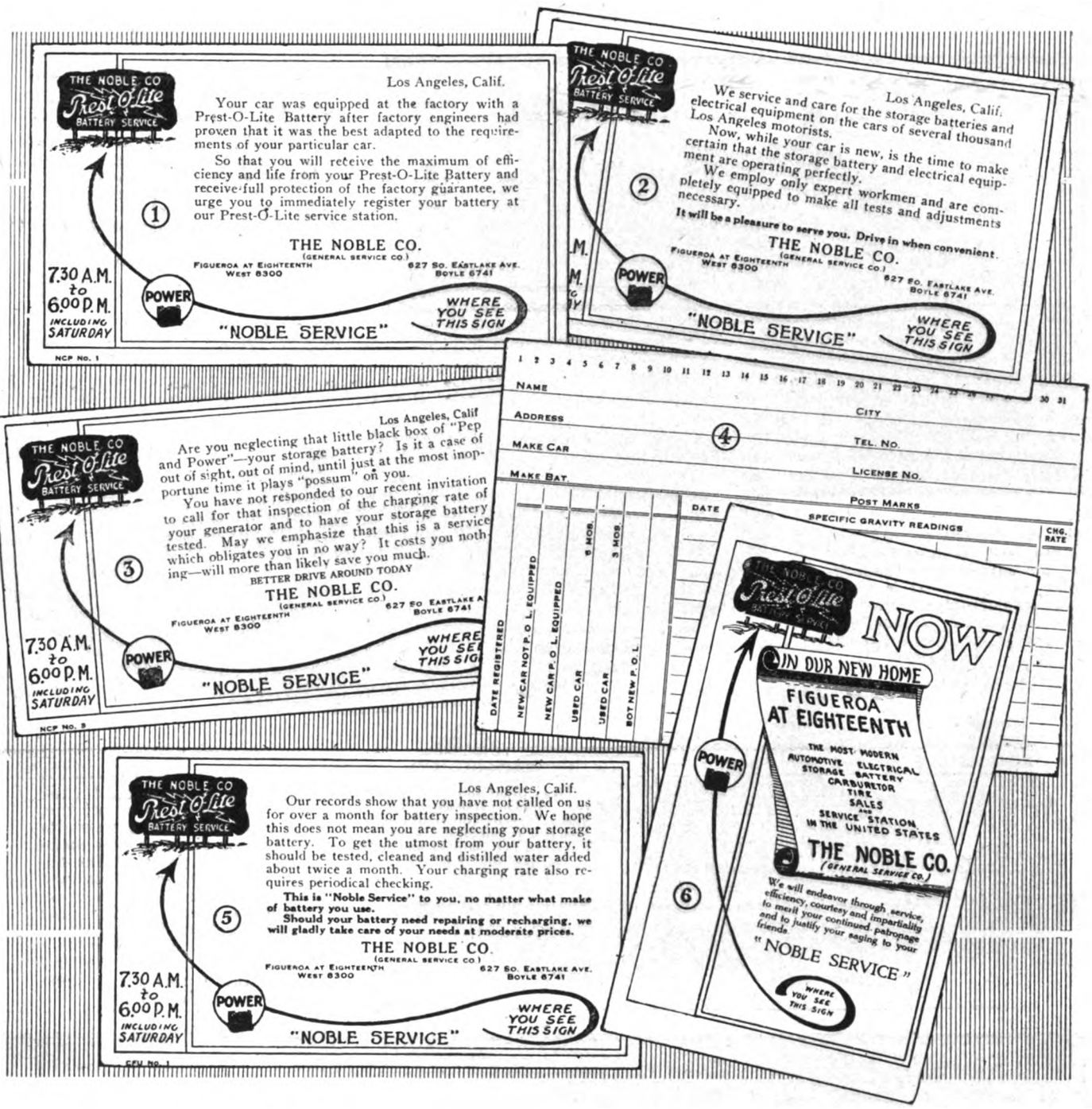
FRED V. CLUTE, Chevrolet dealer at Cohoes, N. Y., specializes on parts. Not only does he carry a large stock to supply the demand for replacement on the hundreds of Chevrolet cars used in and around Cohoes, the owners of which have learned through experience that they always can get what they want immediately at Clute's, but he has developed a nice demand as a distributor of Chevrolet parts in the surrounding towns. He did this by making it a matter of custom and policy always to carry parts on hand. In stocking now he always stocks a surplus over his own probable requirements in order that the dealers in nearby towns may be supplied. Like the Cohoes car owners, the dealers have discovered the advantage of ordering from a stock which is always complete and immediately available. They can get parts from Clute much quicker than they can get them from the Chevrolet factory. Clute's parts business amounts to more than $30,000 annually, and he says the profit he makes on it carries the entire overhead of his car business and shop.

Punctuality Important to Success of Car Laundry

"YES, our business is growing," said the proprietor of a successful middle western car laundry, "and the reason it is growing is that we keep our promises. When we say we'll have a car ready for a man at 2 o'clock we have it ready at that hour and not fifteen minutes later. I personally don't believe there's any one thing which makes such a big hit with motorists as this thing of keeping promises and we have been able to trace a lot of new business to the splendid reputation given us by former customers who have praised us to new people."

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Mail Follow-Up Gets Electric Service Work



THE Noble Co. of Los Angeles employs an intensive system of cultivating prospects and in following up old customers.

A list of new car purchasers is received each morning through co-operation with local car dealers and the names of those whose cars and trucks are Prest-O-Lite equipped are segregated. To these the Noble direct mail appeal is made in a series of post cards, some samples of which are shown above. The first card to be sent is marked "1." To those not equipped card "2" is sent.

The names and addresses of all owners to whom cards have been sent are typed on plain 4 x 6 slips, which are filed alphabetically. On the tenth and twenty-fifth of each month a clerk goes through the files and removes all slips and sends card "3" to those who did not respond to the first invitation.

If the prospect does not yield on receipt of the second card, the slip containing his name is destroyed. The Noble Company, while making a determined effort to obtain new customers direct, lays greatest stress in securing new prospects on satisfying old customers.

When a service record slip is received, the floor at the office revealing the name of a new customer, a card, "4," is made out with his name, address, make of car, make of battery, date of first specific gravity reading, charge rate, probable age of car, etc. The reverse side of the card provides for a record of specific gravity readings, dates, etc. Tabs of various colors, such as commonly used, are fastened to these cards in the files, and they come up at regular intervals. If a customer has not called at the service station during any month, card "3" is sent.

Various other forms and cards, such as "5" and "6," are used to draw the customers back to the establishment at regular intervals.

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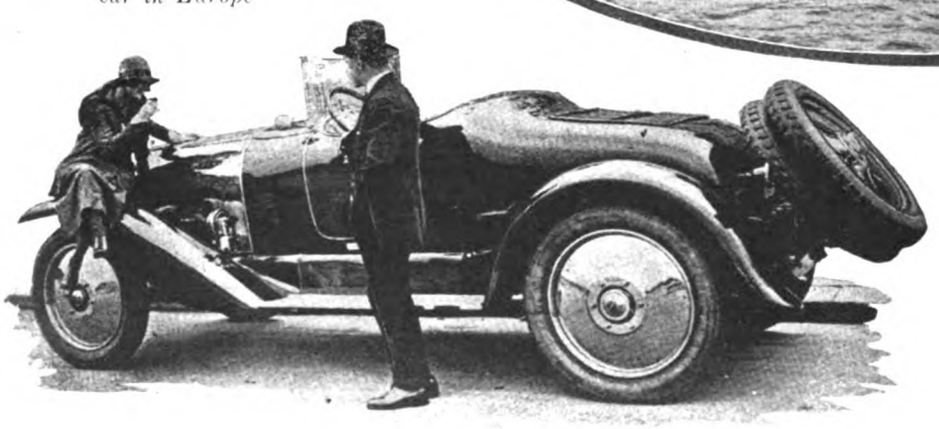
Motor World's Weekly Pictorial Review



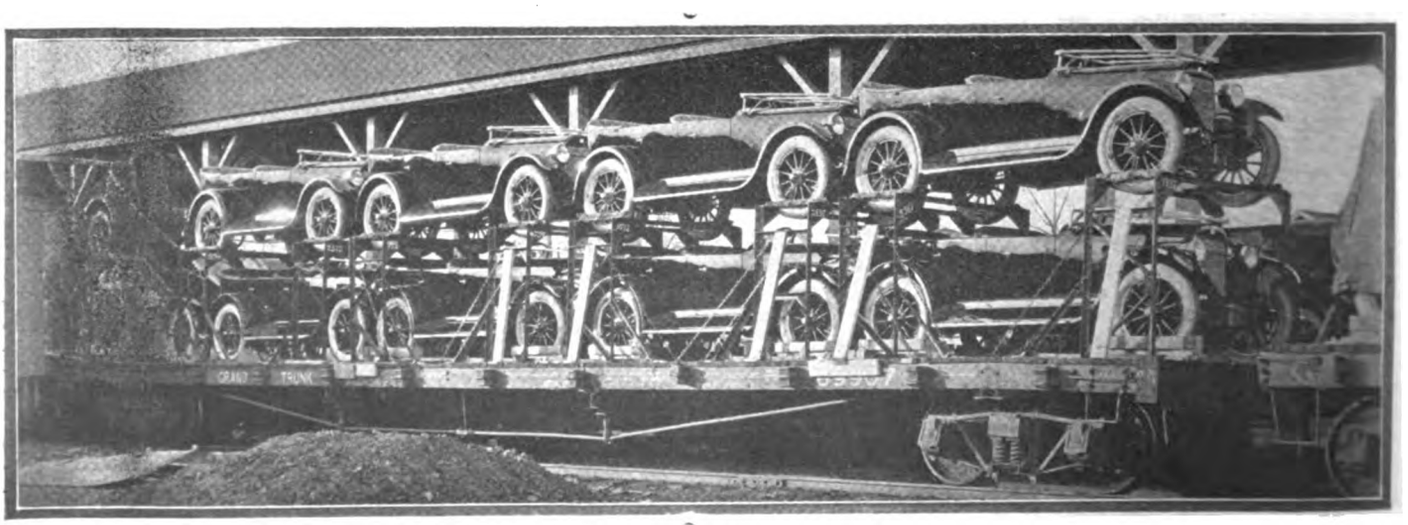
Automotive engineers were interested in the demonstration in New York the other day of an amphibious battle tank capable of traveling 30 miles an hour as a wheel tank and twelve as a caterpillar on land, and of propelling itself across rivers, lakes, etc. These pictures show the war machine when it ambled into the Hudson and swam across the river, climbing out in New York City. Its inventor is Walter Christie, who was known years ago as an automobile driver.



All metal parts on this car, given by a wealthy Parisian to the object of his admiration, are silver. It is creating considerable interest on the boulevards. It has been acclaimed the most luxurious car in Europe



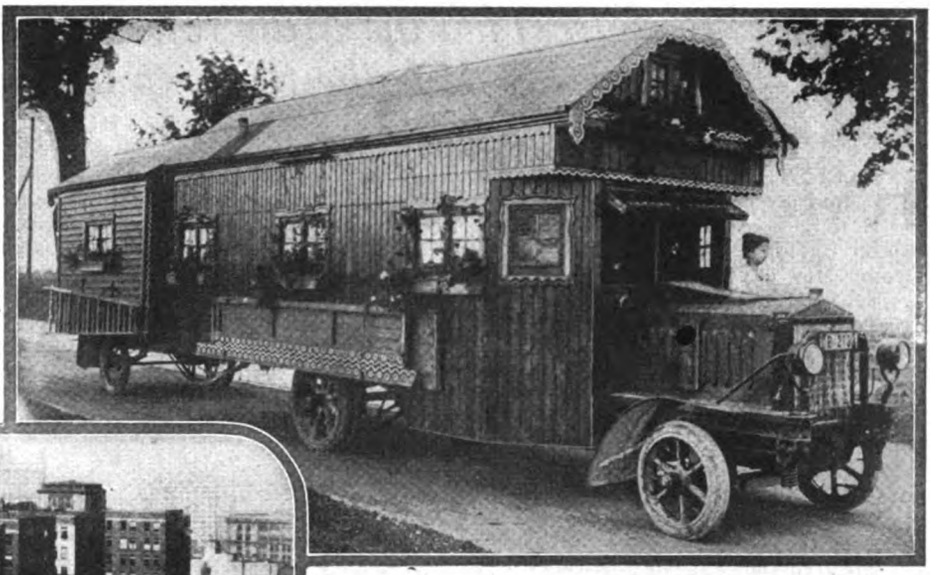
By means of a steel deck spiked tightly to a flat car, Buick has been enabled to ship two tiers, or nine automobiles per flat car. The automobiles are loaded and unloaded by means of a large wooden frame fitted to the main deck of the freight car and to which pulley and chains are adjusted for lifting and lowering the merchandise



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of New and Interesting Things Automotive

An Austrian nobleman, reduced to straitened circumstances, invested his little "all" in a traveling candy store. Being a motor car enthusiast, he had a motor van built after the model of the Tyrolese country houses—a real cottage on wheels



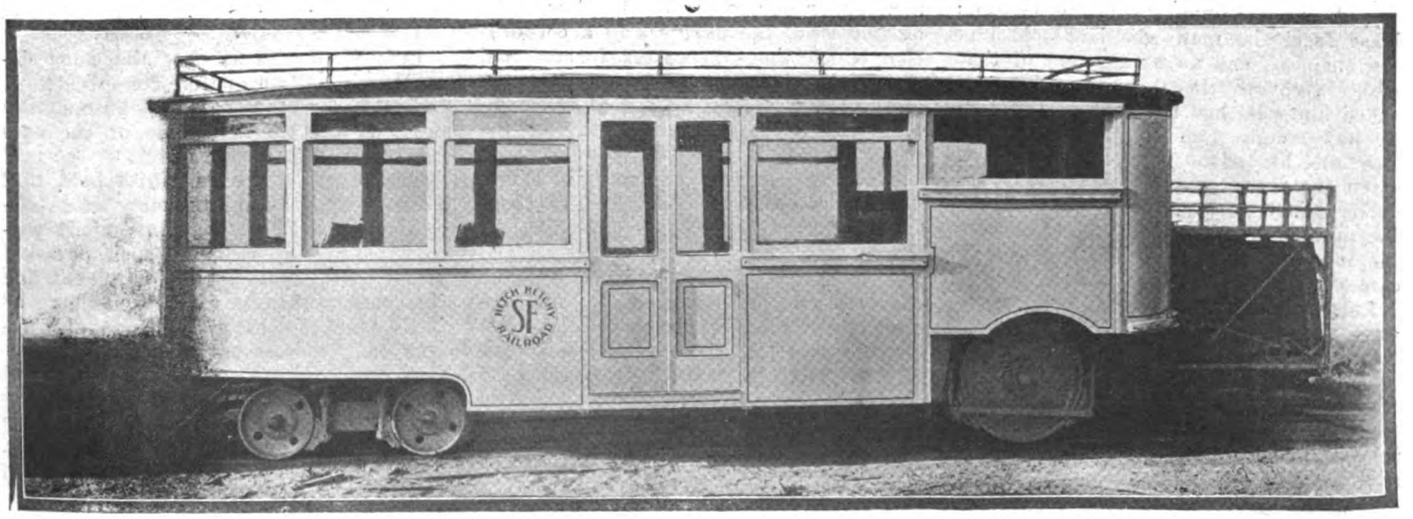
Conversion of the roofs of buildings in congested cities into automobile parking places is another indication of what folks will do to own motor cars. These cars were photographed on the roof of a building in Seattle, Wash., in the heart of the business district. A special ramp has been built



Here is Fred A. Schmidt of Milwaukee, champion automobile tire changer. He won the title recently at Milwaukee. Schmidt changed a 30 x 3½ clincher tire and inflated it with a hand pump in 3 minutes and 31 seconds



This gasoline driven rail car was recently delivered to the Hetch-Hetchy Railway at Groveland, Cal., by the A. Meister Sons Co. of Sacramento. Placing the motor behind the driving wheels permits low construction and protects passengers from noises, smoke and gasoline odors. It also ***provides more passenger space***



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An Important Phase of Buying a Garage

Be Sure That the Man Who Assigns the Lease Has the Right to Do So

RECENTLY a local garageman came into my office and said he wanted to get back a thousand dollars deposit on his lease which was to expire in a few days. Sounds like a simple proposition—does it not—yet it was not at all a simple matter, for before the garageman actually got back the thousand dollar deposit, which he was entitled to, he had hundreds of dollars of expense—and I had all kinds of difficulties to overcome.

When this garageman had bought his garage he had gone to a lawyer who saw to it that he received a simple bill of sale for the purchase price he paid—and an assignment of the thousand dollar security on the lease in exchange for a good thousand dollars cash which he paid to the man who sold him the business.

At this point the lawyer stopped. The garageman had the business and so far as the man who sold him the business was concerned he had a good right to the thousand dollars security.

When we made a demand on the man who held the security, however, that it be turned over to my client we began to run into trouble. "I am ready and willing to turn over the security to your client," said this man, "but you must first show me he is entitled to it. The lease has been assigned so many times that I want to be sure I pay it to the right party so that after I have paid it some one else will not come along and make me pay it all over again." "Fair enough," I replied, "you are entitled to what you ask, I will get the proof and submit it to you." I did not know what I was promising to do.

When I asked my man for his papers he handed me the bill of sale he had received, an assignment of the original lease from the man who had sold him the business, and an assignment of that man's right to the security. When I asked him who had assigned to the man he had bought from he could not answer and he had no papers to show how often the lease or the right in the security had been assigned from the time the deposit had been made, to the time the lease and the right to the security came to him.

I started to investigate and after much work I found out the following facts. Originally the owner of the property had given a five year lease to one A. A had started in the garage business and after a while had sold out to B, assigning the original lease to him. In turn B sold out to a man named Piel, and likewise assigned the original lease to Piel. After about a year Piel decided to sell out. Now, Piel was a shrewd business man, and thinking the matter over he decided not to assign the original lease to the man who was anxious to buy, but to give him a sub-lease and in addition to compel him to put up security for the faithful performance of the covenants of the lease and the prompt payment of the rent. The buyer agreed to do this and actually did put up a thousand dollars security with Piel, although Piel was not the owner of the property but only a lessee himself.

Practical Questions of

Business Law

are discussed every week on this page

By GEORGE F. KAISER
Attorney at Law

Readers are at liberty to write to the legal editor of Motor World for help in solving their business problems. Their inquiries will be answered through the mails.

The depositor of the thousand dollars finally decided to sell out and actually did sell out to a partnership consisting of three men, giving them a bill of sale and an assignment to his rights in the thousand dollars deposit.

Down to this point everything was in order. Then the trouble began. The next paper our search disclosed was bill of sale from the partners to a corporation which they thereafter formed and which was subsequently dissolved, two of the partners getting out of the business and the third partner taking the whole business.

The two retiring partners, however, did not assign their share in the thousand dollars to the third partner but simply gave him a general release and turned their stock over to him when they retired. This was the missing assignment client's lawyer should have discovered when he bought the business. To make matters worse it now appeared that client and the man who had sold him the business who was likewise the remaining of the three partners were on bad terms. In addition client said he did not trust him. This made it impossible to go to him and get the missing assignment.

Piel still refused to give up the thousand dollars until assured that we would hold him harmless from all claims that might be made against him. In desperation I got in touch with a surety company and finally at an expense of over a hundred dollars I eventually got Piel to accept a surety company bond indemnifying him against all claims that might ever be made against him on account of the missing assignment—and client got the thousand dollars security which he was undoubtedly entitled to but which he could not show a clear title to.

When the whole matter was over I asked client what he had paid the lawyer who had represented him when he bought the business. He told me he had paid him five dollars for drawing the bill of sale and five dollars for drawing the assignment, but that he was sorry he had not gone to some other lawyer, even if he had had to pay a hundred dollars, to have the matter properly taken care of.

The lesson to garagemen in this little story is simply to see that the man who assigns a lease, or a right to a rent deposit to you when you buy a garage, has the right to do so. The only way to be safe is to have him produce and turn over to you a complete set of papers—the original lease and every assignment—from the original lessee—right down to the man who is attempting to sell to you.

A little care and trouble and you will save a lot of trouble and expense later on.

Part of Market Value Required in Breach of Contract Case

In a recent Texas case the court decided that in an action for breach of contract for the sale of automobiles proof of the market value of the cars must be shown by the buyer.

The court in this case also held that a dealer in personal property in a particular place is a competent expert witness as to the value of such personal property in that particular place, and that such a witness giving testimony as to the market value of the personal property may derive part of his information from the price list prepared and furnished and used by the manufacturer of the automobiles in the ordinary course of its business. Security Motor Co. vs. Chestnut, 224 Southwestern Reporter, page 385.

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Repairshop Shortcuts

This Week We Have a Lady With Us

TAKE a look at shortcut No. 3479. Notice the "Mrs." And the little trick about washing the wire wheels this way is a good one. They are hard babies to handle with a hose and a sponge. Try this one on the next wire wheel job you have to wash. Unfortunately we cannot tell you much about Mrs. Cruise but we are willing to bet that she is a big help around the shop if she can think up stunts like this.

Brother, don't let the ladies get too strong a hold in this column. Come across with some good shortcuts. Those that are practical and those that have not been published before will be accepted at $1 each payable upon acceptance. Next year we want to make the material on this page better and more serviceable than ever, so let's start the new year right. Send 'em along.

No. 3475—Replacing Dodge Oil Pan and Float.—A loop of string is dropped over the float rod with a weight attached to the other end. When the rod is inserted through the hole in the block the string will keep it from dropping. This enables one man to do the job.—Herbert H. Holmes, Watervliet, N. Y.

No. 3476—Hook in Cut-Out Cable.—A hook is used to connect the wire cable of the muffler cut-out with the pedal so that the floorboards can be easily removed. The loop in the cable is wire wound and then soldered, the hook itself being made from a 10 penny nail.—William B. Wheatley, Brooklyn, N. Y.

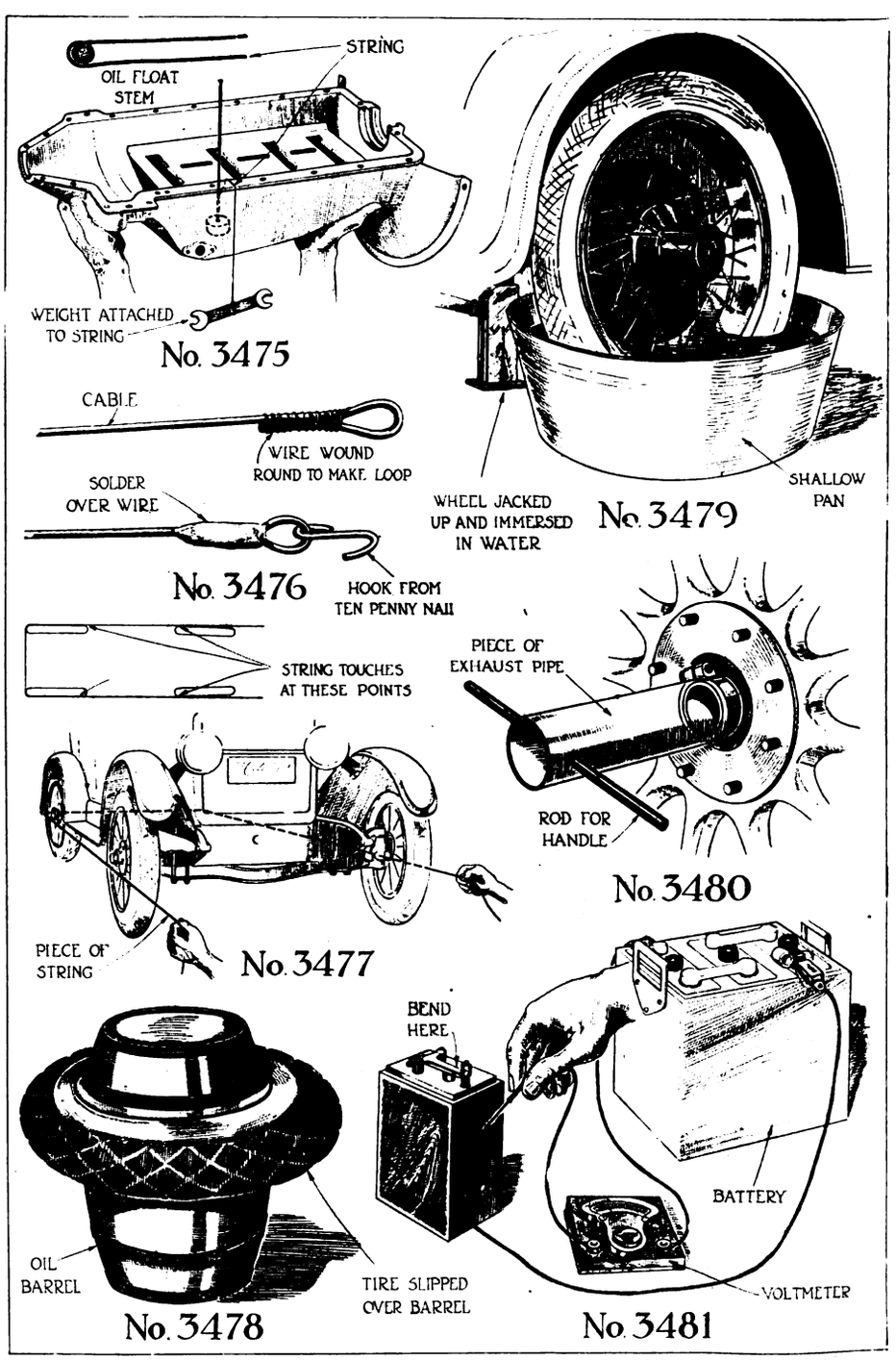
No. 3477—Testing Wheel Alignment With String.—Wheel alignment can be tested with a string stretched tightly around all four wheels at about the center. Measurements made from the string to the tire walls and the clearance can be checked up.—Herbert H. Holmes, Watervliet, N. Y.

No. 3478—Dismounting QD Truck Tires.—A QD truck tire is dismounted by throwing the rim over a barrel and prying the tire off downward, the barrel holding the rim in the meantime.—Hayes D. Pettit, Wilmington Motor Service Co., Wilmington, N. C.

No. 3479—Washing Wire Wheels.—Wire wheels are easily washed by jacking one end of the axle, slipping a pan under the wheel and filling with water. The wheel can be turned and a brush used to advantage.—Mrs. Arthur Cruise, Effingham, Kan.

No. 3480—Bearing Lock Ring Tool.—A tool to adjust the bearing lock ring is made from a piece of pipe of a diameter to fit outside the ring. A notch is cut to fit the lug and the other end fitted with a rod for a handle.—Herbert Holmes, Watervliet, N. Y.

No. 3481—Adjusting Ford Coil Points by Ammeter.—Ford coil points are adjusted by hooking up a 6-volt battery, the coil unit and a low reading ammeter in series. The points are set to open 1/32 in. and the bracket is bent so that the coil draws 1¼ amperes.—Reader.



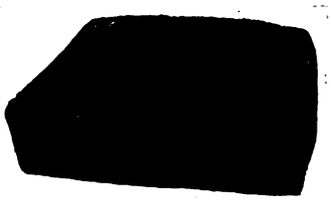
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Equipment to Sell

Profits for the Dealer in New Devices for the Car and Truck

Goodrich Pneumatic Seat for Fords

B. F. Goodrich Rubber Co., Akron, Ohio.



This is a pneumatic cushion for Fords, and is adjustable in that it can be filled with as little or as much air as the user desires. No pump is required. The pneumatic seat can be substituted for the cushions without any alterations. The seat is durably upholstered, and can be deflated and carried wherever desired. Model 1 for Ford roadster, front seat $7 each, two to complete seat. Model 2 for rear Ford seat $8 each, two sections to complete seat. Model 3 for Ford coupé, and rear of sedan $9 each, two to complete seat.

Jorgensen's Hood Silencers

Jorgensen Hood Silencer Co., Erie, Pa.

Price $1 for set of four.

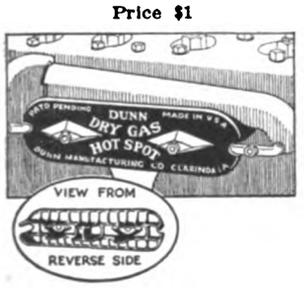


The hood silencer is a piece of rubber, with an indentation on one side which grips the hood latch. The other side has a vacuum cup which fits snugly to the hood and holds it tightly, eliminating rattle. Can be applied to Dodge, Peerless, Buick, Studebaker, Chandler, Chalmers and several other cars. Oldsmobile and Nash require special type, price $1.25 per set of four.

Dunn Hotspot for Ford Manifold

Dunn Mfg. Co., Clarinda, Iowa.

Price $1



This is a plate with corrugated inner surfaces. The upper half absorbs the heat from the exhaust manifold, and the lower half gives off its heat against the intake manifold. The device is installed by removing the nuts holding the two center manifold clamps, slipping the hot spot over the studs and replacing the nuts.

Alemite Spring Cover for Fords

Bassick Mfg. Co.,
2650 North Crawford Avenue, Chicago

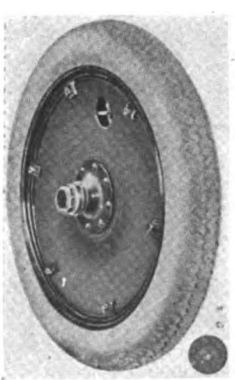
Price $8.50



These covers are flexible all-steel and proof against water, rust and road dirt. They hold sufficient lubricant to keep the springs functionipg properly for approximately six months before re-greasing is necessary. They are equipped with standard Alemite fittings so that they can be quickly and easily packed with lubricant by means of an Alemite compressor.

Curvdisc Laminated Hard Wood Wheel

Hopkins Manufacturing Company,
Hanover, Pa.



The wheels are made of hard plywood laminated with crossed grain under pressure and secured with waterproof cement. The front of the wheel is formed in a graceful curve and the back of the wheel is straight permitting easy attachment of hub flanges and brake drum and also preventing the accumulation of dirt. The air is introduced in the tube by simply releasing a small cap nut on the front of the disk. Exchanging tires in connection with the tube valve is easy and positive and takes care of any length of valve stem. All operations are from the front. The wheels are claimed to be non-conductors of heat and sound and will withstand shrinkage. Made in sizes to suit all passenger cars and constructed to meet S. A. E. standards. Interchangeable with any make of wooden spoke wheel, using the same hub. Five demountable rims are furnished with each set of disk wheels.

Cole Gasoline Gage for Fords

Stemco Engineering Co., Dayton, Ohio

Price $8

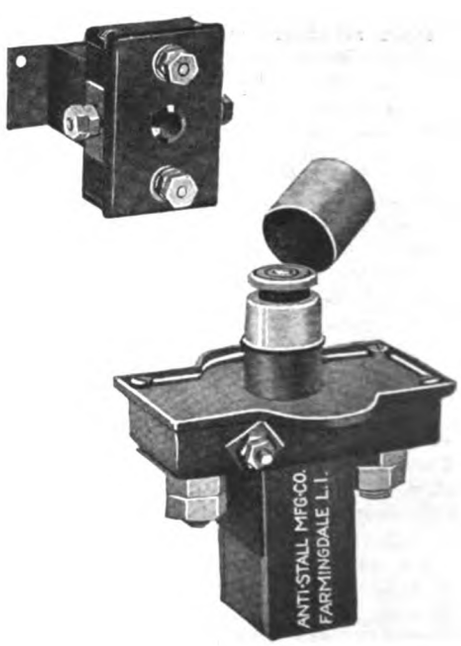
The gage is 4½ in. high and fits on the instrument board of the Ford. A small red indicator in sharp contrast to the white background shows the number of gallons of gasoline in the tank. Connection is made to the tank with simple fittings requiring no machine work.



The Anti-Stall

Anti-Stall Mfg. Co., Farmingdale, L. I.

Price $10



This is a switch by means of which the engine is started by simply turning on the ignition switch, thus automatically switching on the starting motor. As soon as the engine starts running the starter switch is automatically released by the generator. If the engine should stall as in traffic the starter switch is automatically thrown on again and will continue operating the engine in emergency for a sufficient length of time for the car to get out of a dangerous position. It is applicable to all cars with 6-volt system, and requires about 1½ hours to install.

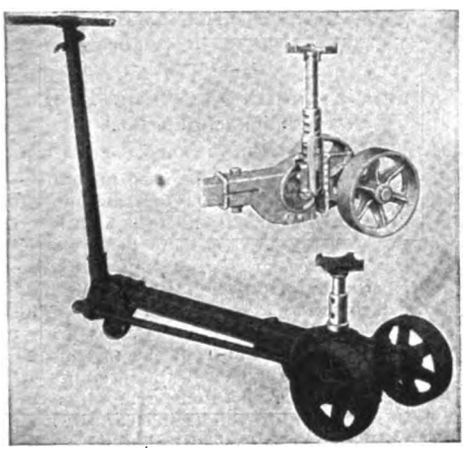
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Equipment for the Shop

New Machinery and Tools for Saving Labor and Time

Weaver Model B New Way Jack

Weaver Mfg. Co., Springfield, Ill.



In the new model B "New Way" jack, several of the features of the model "A" are retained, although the new model has several constructional differences. The sleeve support of the standard is a noteworthy feature of the jack, as it permits of an unusually high lift without any tendency toward binding of the standard. The range of the lift is 9½ in. with a minimum height at the lowest position of 8 in. Roller bearings are used throughout.

Alvord Service Tool Outfit for Overlands and Chevrolets

Alvord Reamer & Tool Co., Millersburg, Pa.

A complete line of service tools for the Chevrolet 490 and FB and Overland 4 cars. These tools have all been designed from authentic specifications obtained from the manufacturers, and include all necessary reamers, in straight or spiral flutes, with or without pilots. The line also includes a number of special tools designed for various operations on these cars.

Selfblo Alcohol Blow Torch

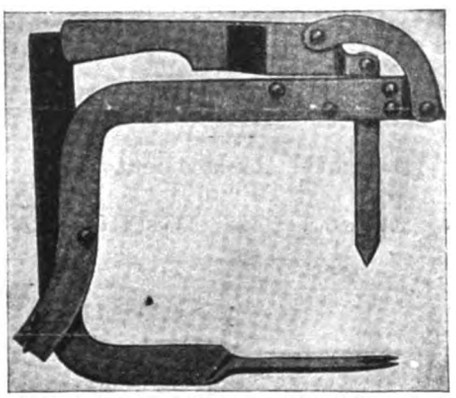


Hunt-Lasher Corp.,
66 William St., Lynn, Mass.
Price $2.

The torch is made of brass, heavily nickel plated and highly polished. Requires no pumping and no priming and gives a clean jet in 30 seconds after lighting. The pressure is self-generating.

Red Cap Valve Lifter

C. A. Roth Mfg. Co., Hastings, Neb.



A device that should facilitate the work of the maintenance man is the Red Cap Valve Lifter, which is designed so as to be suitable for different valve stem lengths. The lower arm which lifts this spring is adjustable and, when the forked lifter is in place, can be locked by turning a wing nut. The upper handle is then lifted, the spring is compressed and held in that position. This is accomplished by the toggle joint construction which enables the lever to go over center, so that the handle need not be held, and both hands are then available for the work to be done.

Three in One Battery Changing Tool

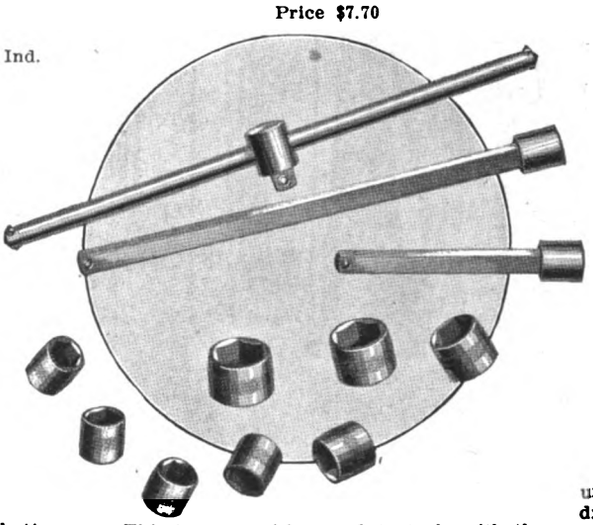
Zimmerman Mfg. Co.,
247 West Lincolnway, Valparaiso, Ind.
Price $2



The tool pulls badly corroded battery terminals without breaking the post or cover or injuring the battery. It has a wrench for loosening the bolt in the terminal clamp and a wrench for loosening the clamp on the battery hold down. The tool can be used for lifting connector bars with an extension which is furnished free of charge for a limited time.

Master Service Set, Snap-On Wrenches

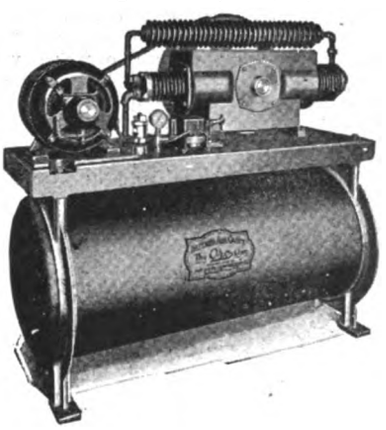
Motor Tool Specialty Co.,
14 East Jackson Blvd., Chicago.
Price $7.70



This is a set of heavy duty tools with the Snap-On interchangeable socket principle. The eight sockets are milled from bar steel and heat treated. The sliding tee handle and the 8 and 16-in. extension bars are of ⅝-in. special analysis steel. Any socket fits the handle. With the assortment 48 wrenches can be built, the sockets ranging in size from ¼ in. to 1½ in.

Oro Model B-35 Two Stage Compressor

The Au-to Compressor Co.,
Wilmington, Ohio.
Price Range from $561 to $674.



This is a two stage compressor outfit in a unit complete with electric motor with belt drive to the compressor and a 107-gal. tank. It is for air in large volumes at pressures, not over 150 lb. The standard speed is 350 r.p.m. with a displacement of 14 cu. ft. at the standard speed. The automatic switch starts the motor at 100 lb. and stops it at 150 lb. The floor space is 30 x 60 in. and the net weight is 1200 lb. Twenty-five feet of air hose and chuck are included in the equipment.

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Goodell-Pratt No. 680 Valve Spring Compressor

Goodell-Pratt Co., Greenfield, Mass.

Price $4



This is a garage tool in which the spring is rapidly moved and held under compression by a single throw of the lever. Adjustable to any length of throw and any depth of throat. It is made of forged steel.

Washburne Replacement Valve Plan

Washburne Co., 230 East Ohio Street, Chicago



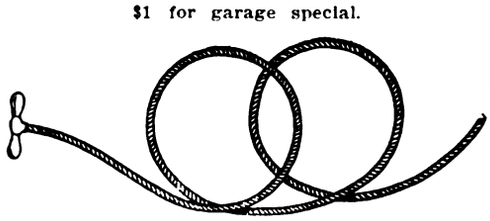
The replacement plan consists in reaming the valve guides 1/64th in. oversize instead of putting in new guides, thus saving time. The tool equipment for the system consists of a simple combination tool which enables the concentric reaming of valve seats and guides. The pilots, ranging in size from 5/16th to 49/64th, run from 65 cents to 85 cents. The reamers, ranging in size from 21/64th to 49/64th, range from $2.25 to $4.40. The cutter heads, ranging in size from 1½ in. to 4 in., are priced at from $3 to $8.80. The valves are made of nickel chromium steel with a gun metal finish on the head and a brilliant brown finish on the seat and stem. The tappet ends are tempered to a proper hardness to prevent mushrooming. The valves are coated with rust-proof grease, individually wrapped in wax paper and placed two in a carton, arranged so that it is impossible for one valve to come in contact with another. One-sixty-fourth oversize valves are furnished on all sizes. Prices range from 35 cents for the Ford to $4 for the National 40.

Bird Flexible Cleaner for Oil and Gasoline Line

Bird Mfg. Co., Marshalltown, Iowa.

Price 50 cents for Ford special;

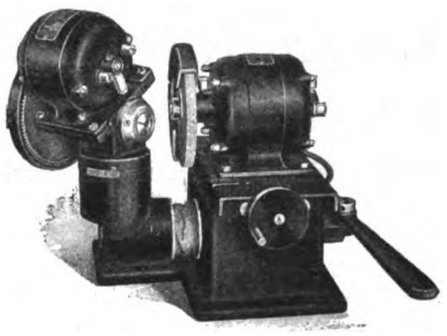
$1 for garage special.



The flexible cleaner is for removing sediment from oil and gasoline pipes without the necessity of removing the pipe, which as a rule is fastened to the engine, body or frame. The Ford special model is 30 in. long and is designed specially for cleaning the oil pipe on the Ford. The garage special is 10 ft. long and is for cleaning oil and gasoline lines on all makes of cars.

Fleming Valve Grinder

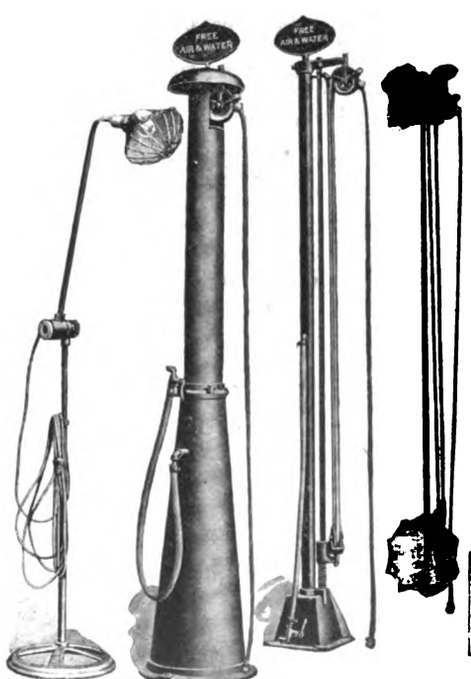
Fleming Machine Co., Springfield, Mass.



This is an electrically operated valve refacer. It holds the valve firmly and guides it in the same position followed in the engine block. It grinds the valve in the true running position of the engine. The device is also used to grind the reamers for reaming the seats and by its use both valve and reamer are ground to the same angle. The power plant consists of two individual motors, one driving the wheel and the other driving the work head. The wheel motor drives the wheel at 5300 surface ft. per minute. The grinding wheel is 6 in. in diameter, ⅜ in. width, chuck capacity ¾ in. round and shipping weight 100 lb.

Manley Air and Water Service Stations

Manley Mfg. Co., York, Pa.

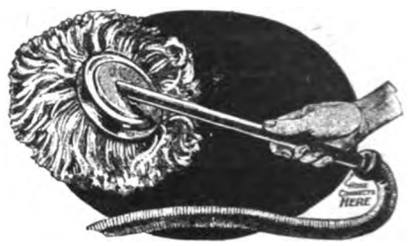


Three new air and water stations are now being manufactured. Two of them are of the outside type and one the inside type for air only. The stations contain no springs, no stuffing boxes, no swinging joints and are operated by gravity only. The DeLuxe outside type is listed at $48.50 and its appearance harmonizes with gas and oil stations. The outside curb type is listed at $36.50 and does not have an outside housing but in other respects is much the same as the DeLuxe model. The inside type for air only takes care of the air hose and prevents it from being dragged around the floor. The price is $19.50.

NuLife Fountain Washer

NuLife Auto-Aid Corp., Hartford, Conn.

Price $3.25



The washer has a nickel-plated handle 18 in. long and a 6-in. space of brass. The mop is 6 in. long and will not scratch polished surfaces. The device fits any standard hose.

Storm Cylinder Finishing Tool

Storm Manufacturing Co.,

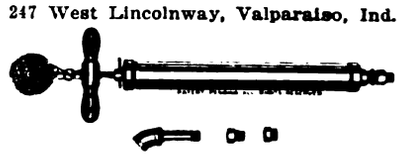
406 Sixth Avenue South, Minneapolis, Minn.

This tool is designed to be used in connection with the special driving mechanism furnished by the manufacturer, or with an ordinary drill press. The main body carries a heavy compression spring which is compressed to about 110 lbs. The spring is held between upper and lower steel disks. The lower steel disk acts against cams which force the stones outward. If the tool is off-center ever so slightly, all the pressure of the spring acts on one stone, and when the tool is rotated the cylinder block is drawn over until the work is centered.

Zimmerman Compression Tester

Zimmerman Mfg. Co.,

247 West Lincolnway, Valparaiso, Ind.

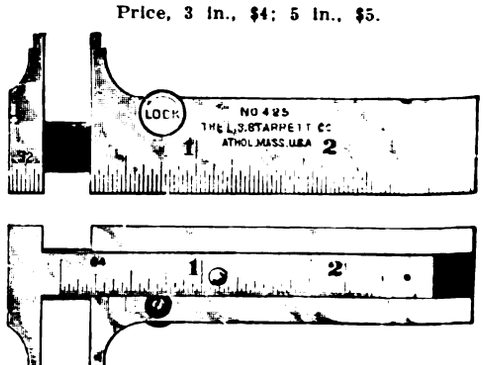


The compression tester consists of a pump and gage. The lower threaded portion of the pump is screwed into the spark plug hole and the pump operated until pressure is observed on the gage. The rapidity with which the pressure goes down, determines the compression of the cylinder. With the piston half way down rocking the pump back and forth will cause a rattle if the bearings are loose.

Starrett Pocket Slide Calipers

L. S. Starrett Co., Athol, Mass.

Price, 3 in., $4; 5 in., $5.



The calipers are graduated in 32nds and 64th. They are intended for inside and outside measurements and furnished in two sizes. The slide can be locked by the thumb of the same hand which holds the caliper and a separate reference point enables the inside measurements to be made direct on the scale.

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Believes Fewer and Better Dealers Needed

Omaha Dealer Writes Some Interesting Thoughts About the Automobile Business

EDITOR Motor World: I never miss reading your valuable magazine, as it always contains much of interest to us. At the present time, what interests us most is the discussion on dealers' discounts and contracts with the manufacturers.

We, as many others, know that there must be some great changes made along this line or there will be many dealers who will quit handling cars or go broke. We have the agency for two popular cars, one a high priced car and the other a medium priced car. We are in good territory and sell as many or more cars than the average dealer of our size. At one time we made good money selling cars, but in the past few years we have lost on the high priced car and made a little on the medium priced car—on the two together have broke about even.

We have the distribution of some well known products over a large territory and get into personal contact with a large number of dealers. We believe that we are safe in saying that over one-half of the automobile dealers in this territory handling cars are losing money. Some of them know it and many of them do not.

Now, what is the trouble? There is lots of trouble as follows: There are entirely too many people in all branches of the automobile business, from the dealer to the manufacturer, who know absolutely nothing about the business. There are too many manufacturers and too many dealers. It would be better for the industry and for the public if there were fewer and better of both. In most cases a car contract is no good to the dealer and in many cases we know it is a detriment. The man who does not have a contract gets just as good a deal and has no responsibility. Take the average car contract and show it to a banker and ask him what he thinks of it as an asset. Most of the contracts are one-sided—in the manufacturer's favor. Most of the agencies do not allow enough discount on cars and parts, and practically all car manufacturers have their parts listed too high. If the price and discount were more favorable, the dealer would carry more stock, which would be a benefit all round.

And there is the problem of used cars, which is getting worse all the time. That is what has taken our profit the past few years, as the cost in time spent selling the old cars has taken all the profit. There have been volumes written on the old car problem, but there has been very little done, outside of most dealers taking a loss.

In our opinion, the only way it will ever be solved is for the factories to pick real dealers to sell their cars—dealers who can tell the difference between an old car and a new one. When these dealers will put their salesmen on a small salary and a percentage of the net profits on the completed deal instead of the gross profits of the new car, then the salesmen will be more interested in selling the customer instead of his employer. This would help to get the old car cheaper, which should be had cheap enough so that it could be junked or put in good shape and sold at a larger margin of profit than a new car, as the old car is harder to sell and is on the floor longer and has more comeback.

But there is where the rub comes in. How are we going to bring it about to get these old cars cheap enough? Some distributors, some manufacturers with a new car and most all new agents will outbid an established and experienced dealer and the only thing the established and experienced dealer has to counteract the higher bid is his superior service.

Service—another abused part of the business. The customer is expecting more and better service all the time, which is natural, and he should have it, but it should not be at the entire expense of the dealer. The factories could eliminate a lot of the free service the customer expects if they would. They tell about their guarantees and make them strong to their customer. Most of them have in their dealer contracts that the dealer shall replace, free of charge, all parts that they furnish free, transportation to be paid by the customer.

The average dealer has a fine chance of getting paid for transportation and labor on parts replaced on a medium or high priced car that must be replaced in a short time after the car is sold, and the manufacturer knows it. The tire manufacturer tells the customer, "So and so is our dealer; he will look after your tires free of charge. He will see that you have the proper air in them, look after the cuts, align your wheels and make your replacements for a small charge." The speedometer guarantee promises much. The battery manufacturer tells them to take their battery to their agent twice a month and have it looked after, saying, "Our agents will be glad to do this free."

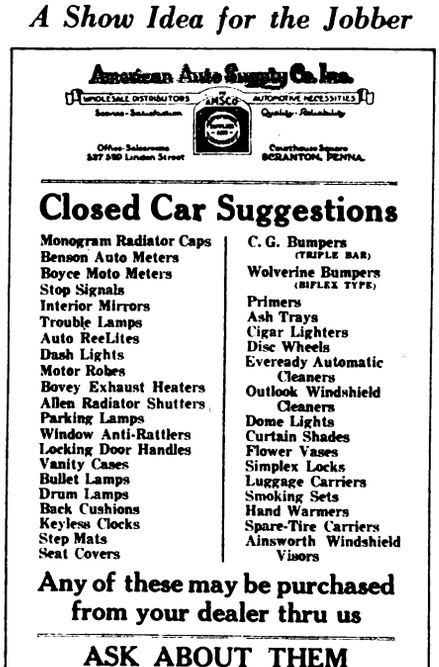
Why can't the manufacturers say, "Our agents will be glad to take care of you at a minimum charge," or something like that? The majority of these guarantees would not be worth much if it wasn't for the dealer. And I suppose many of the manufacturers would not have dealers if it were not for service and guarantees. We do not think all the trouble is with the manufacturers. The dealers are just as much to blame. There are a lot of mighty poor merchants among the automobile dealers, I believe, more than in any other line of business.

The sooner the manufacturers, dealers and customers get to a better understanding so as to improve these conditions, the better it will be for all.—Hulsebus Motor Co., Omaha, Neb., and Harlan, Iowa.

Write to Motor World About It

This page every week is devoted to discussions of topics of the trade by Motor World readers. Have you a suggestion to overcome a difficulty or improve some condition within the industry? Write to Motor World about it.

A Show Idea for the Jobber



This little circular, 4 x 7 in., was furnished to all exhibitors in the closed car show of the Scranton Motor Trades Association by the American Auto Supply Co., Inc., of that city. The dealers kept a pile on their tables with the literature on their various cars, and it has resulted in some nice equipment business for them and for the jobber.

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

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Our Industry—As Transportation

MOTOR cars last year carried 6,990,862,000 *persons* 70,820,000,000 *miles while the railroads were carrying* 1,034,315 *persons* 37,329,114,000 *miles. Motor cars carried six times as many persons as the railroads almost twice as many miles. On the freight side of the picture motor trucks carried* 1,430,000,000 *tons* 6,479,200,000 *ton-miles, while the railroads carried* 1,642,251,000 *tons* 306,-755,332,000 *ton-miles. Motor trucks actually moved almost as much freight as the railroads, but the railroad hauls were* 50 *times as long. This is the statistical picture, but it does not tell the story of the motor vehicle's service to mankind—in providing recreation and a broader outlook on life for millions of people, in wiping out the isolation of the farm, in taking hundreds of thousands of children to seats of better education, in carrying the doctor to the sick, in shortening the distance between home and work and so lengthening the leisure hours of millions of workmen. Pages would not completely paint the picture of automotive transportation, an essential, permanent part of modern civilization.*

A Merry Christmas

MOTOR WORLD extends the compliments of the season to its countrywide family of readers, with best wishes for a Merry Christmas and a Happy New Year.

Motor World believes the great majority of its readers may confidently look forward to realization of this wish. The year has had its ups and downs, with great joy and success for some men, great grief and loss for others. It has been a tremendous year for the automotive industry. It has laid the foundations for another tremendous year, particularly in the maintenance, replacement and re-equipment fields and in almost as great a degree in the new vehicle field. It has taught many lessons in the fundamentals of business success. Nineteen twenty-two will lead the wise man into a better 1923.

The President and Motor Vehicles

MEN in the industry have read with considerable surprise President Harding's comments in his recent message to Congress on motor vehicles and highways. The industry will agree with the President in his recognition of motor transportation as a permanent factor in the progress of the country and also in his recommendation that "We ought to turn the motor truck into a railway feeder and distributer instead of a destroying competitor." Motor truck men do not want to compete in the long haul business in which the railroad obviously is the more economical carrier. They want to develop and are developing the short haul transportation which the railroads themselves concede is not profitable to them and which in many cases they are not adequately serving. Motor truck men also would welcome still wider development of motor transportation as a feeder for long-distance railroad hauls, an ambition actively shared by some railroad men but selfishly opposed or ignored by others.

But the President will find the industry surprised and somewhat at a loss to understand his statement that "If freight traffic by motor were charged with its proper and proportionate share of highway construction, we should find much of it wasteful and more costly than like service by rail."

Why should motor vehicles pay the entire cost of building highways which are for the free use of everyone and which enhance by more than their cost the value of the real estate they pass? A comparison of the assessed valuations and the sale price of real estate on improved highways compared with that on unimproved roads will give some conception of what road building has meant to the United States. It is also well to bear in mind that the total tax bill of motorists last year approximated $341,000,000 compared with $276,500,000 for the railroads. This does not include corporation and other taxes paid by automotive manufacturers. Deducting an estimated $75,000,000 paid by motor vehicle users in personal property taxes, there was left $266,000,000 to apply on a total highway bill of $700,000,000 for that year.

The railroads have failed to keep pace with the growth of the country and transportation would have broken down completely had it not been for the aid given by motor vehicles. With business on a normal basis the carriers can't handle the freight offered them with the facilities at their command. Again, how could the railroads hope to carry the short haul passenger traffic they would be having to move to-day were it not for the automobiles in use?

It is unquestionably true that the motor vehicle has

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averted a complete collapse of transportation system in the United States but in some official quarters it seems to be given small credit and less thanks for this tremendous achievement.

Shows in the Fall

THE board of directors of the National Automobile Chamber of Commerce has discussed the possibility of changing the New York and Chicago show dates from January to October. This winter's shows will go forward as scheduled, but should the advocates of a change prevail, the shows of next winter will be advanced to fall of this year and continued after that as annual events.

Proponents of the fall show suggest it as the ideal exposition to present new models when they are new, as the great majority of changes in design are now made effective between August and November rather than at the beginning of the calendar year, as in the early days of the industry. They also say that shows in the fall would give a needed stimulus to late fall and winter business, giving selling sufficient momentum to carry it to the opening of the heavy buying season of early spring.

Men in all branches of the industry argued the subject pro and con in an extensive study of show dates in the columns of Motor World in the fall of 1919. There were advocates then of fall, mid-winter and spring shows, but the men in favor of shows as they are now held, to break the stagnation in sales and lack of public interest of mid-winter and give an early start to the spring buying season, were in the majority.

If the national shows are advanced to fall it is probable that most of the dealer shows would be put forward, too, so as to avoid public criticism for showing old models, which exists to some extent now among better informed people. Fall shows also would be more timely for showing closed models, rapidly coming to the fore as the preference of the public.

For the present, the industry has a show season right ahead of it and making it a success is the all-important job. A decision to change the show season or leave it where it is must wait. In the meantime there will be investigation and discussion which ought to enable manufacturers and dealers, when the winter is well spent, to decide wisely as to future shows.

A Great Merchant

WHEN John Wanamaker died one of the world's greatest merchants passed into the great beyond. He built his business on the triple foundation of honest merchandising, newspaper advertising and a square deal for his employees. He was a pioneer, if not the leader of all pioneers, in promotion of one of the cardinal principles of honest merchandising—one price.

Merchants in the automotive business or any other may well pause to consider the close relationship of the elements making up the triple foundation of the Wanamaker success. Advertising, in which Wanamaker so thoroughly believed that he invested his first $38 profits in it, brought people into contact with his merchandise. Honest merchandising—strict avoidance of misrepresentation, one price for everybody and courteous service to customers—brought people back the second, third and many other times until they became permanent patrons. A square deal for employees made the entire Wanamaker organization as anxious as its head, to the extent that such a thing is possible, to build the enterprise in strength and prosperity.

No wonder the world called John Wanamaker "the merchant prince." And for generations the world will be studying the princely principles that marked his merchandising.

Reckless Pedestrians

THERE is never any excuse for reckless driving. The man who drives without proper regard for the safety of others has no place on the public highways and every factor in the industry should support any measures that will eliminate or curb the driver with reckless tendencies.

On the other hand, however, the motorist is justified in expecting legal protection from the reckless pedestrian. In the popular mind, the motorist has few, if any rights. If a motorist is unfortunate enough to run into a pedestrian, he is blamed for reckless driving, although the real cause is frequently reckless walking on the part of the pedestrian.

It might be well for legislative bodies considering statutes governing the operation of motor vehicles to think also of placing on pedestrians restrictions that would penalize those who do not show a proper regard for their own safety. If it were a misdemeanor for a pedestrian to cross a street except at a crosswalk, or to dart out from behind a car parked at the curb wouldn't it help reduce the automobile accident rate?

Some cities and some States already have laws placing restrictions on the conduct of pedestrians using the public highways. Violation of these laws is a misdemeanor. Both pedestrians and motorists should be expected to use ordinary care in the use of the highways and both must realize their responsibilities.

Things to Think About

IF you sold a lot of automotive equipment for Christmas gifts, why not keep it up? It's a good habit.

A pointer for tire dealers: Sell merchandise, not discounts.

Suppose every salesman in the country made this resolution and tried his darndest to make good on it: "I'll start the new year with a car sale—the first week in the year."

Rummaging around in back rooms and dark corners of some dealer and garage buildings, we've been reminded that some men apparently have overlooked the first syllable of "showcase."

An experienced Ford dealer says 60 per cent of the repair work on the average car was necessitated by the owner's neglect. As a means of building resales on the basis of satisfied ownership, how hard do you try to get new owners interested in the instruction book—and keep old owners interested?

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INDIANA WILL INSIST THAT ROADS GET FEES

Association at Annual Convention Answers Proposed Legislative Program

INDIANAPOLIS, Dec. 15—All additional motor vehicle license fees, gasoline or other automotive taxes that the approaching legislature may order, should be devoted solely to Federal aid road construction in order that Indiana's Federal allotment balance of $6,000,000 may be taken up; no diversion of license fees or automotive taxes should be permitted to any but road purposes; full development of a State highway program should be demanded.

These were the answers of the second annual convention of the Indiana Automotive Trade Association to current propaganda and threatened legislation that proposes to increase the license fees, add a gasoline tax, divert part of these funds to other than State road work and abolish the State road tax in order to allow the State to devote more money to other work.

All Speakers Talk Legislation

The approaching session of the legislature gave the convention a legislative slant that few speakers overlooked, although practically everyone pointed out that the automotive industry and trade by its lack of organization and co-operation among its members laid itself open to just such attacks, and that the only answer was more co-operation, a higher trade and service standard.

Charles E. Watkins, director of welfare of the General Motor Corp.'s manufacturing plant at Muncie, Ind., in addressing the convention, stressed the need of better service ideals and better treatment of individual customers so that the public's opinion of the trade in general might be elevated to its proper height and more confidence placed in every dealer and service station.

S. H. Hadden, editor of *Municipal and County Engineering* of Indianapolis, gave the dealers facts and figures of the road situation in the State, showed the need of added funds for the State highway department and cited the increased service the owners would get when the State road matched surrounding States.

Tells of Work in West

L. E. Titus, Olympia, Wash., president of the Washington State Automotive Trades Association, gave a glowing account of the advances made in association work in the West, where the recent conference of western governors summoned the heads of State automotive trade bodies to confer with it when it considered new automotive legislation, gasoline taxes, State motor police, etc. It was all a part of thorough organization, Titus said, and of public service work done by the organized dealers of the entire West.

When legislative threats are made against the trade in his State, Titus declared, it does not get on the defensive. It attacks by submitting a better bill and by taking an advanced position on highway progress, proper control of automotive vehicles and fair dealing with all automotive users. He applauded the resolutions adopted by the convention calling for highway progress, and strongly advised more thorough organization of the State and county and district trade bodies so that when bills and attacks were aimed at the trade it could make an impression because of its size, its reputation for fair and square dealing and its aggressive tactics.

C. A. Vane, general manager of the National Automobile Dealers Association, sounded a warning to all dealers, asking them not to look for any national "used-car cure." There is none said Vane. The solution remains with the local dealer, the local situation and a proper merchandising attitude. Getting together with other dealers and understanding the other fellow's viewpoint will cure many evils.

Organizations Help Dealers

J. Cooper Props, president of the Indiana association, stated that observation in Indiana convinced him that where there are trade bodies that attempt to help for progress, the business affairs of most dealers were in better condition than in places where there were no associations.

J. Cooper Props, Muncie, was re-elected president; R. V. Law, Indianapolis, was re-elected treasurer. Director H. J. Cole of Terre Haute is the new vice-president. D. C. Barnette, Indianapolis, was re-elected secretary.

New directors are Walter Duckwall, Noblesville; J. C. Dorman, Gary; Frank Kelsey, Huntington; C. B. Haycer, Fort Wayne; D. A. Boswell, South Bend, and A. G. Goyert, Greensburg.

MAYO HEADS RAILWAY SYSTEM IN DETROIT

DETROIT, Dec. 14—William B. Mayo, chief engineer of the Ford Motor Co., has been placed at the head of the Street Railway Commission, which will manage the city trolley system, Henry Ford having told him to take as much time as the street railway may require.

One of the first things the commission will do will be to endeavor to relieve the street car congestion. Co-operation in this is promised by several of the big Detroit factories which have agreed to dismiss their workers in groups instead of all at one time.

Reo Declares Dividend

LANSING, Dec. 16—The Reo Motor Co. has declared an extra dividend of 1 per cent and the regular quarterly dividend of 1½ per cent both payable Jan. 2 to stock of record Dec. 15.

GIBBS IS ELECTED IN SOUTH CAROLINA

Carl H. Page Speaks at Convention on Relations Between Maker and Owner

SPARTANBURG, S. C., Dec. 15—The annual convention of the South Carolina Automotive Trades Association was a slimly attended meeting. The one business session was held in the auditorium of the Chamber of Commerce and the banquet in the Cleveland Hotel. H. Lee Harvey, the retiring president, presided.

Carl H. Page of Plainfield, N. J., president of the American Motor Car Corp. and the Bessemer Motor Truck Co., addressed the convention at length upon the relation of the manufacturer and the owner. He touched upon the value of used cars. Figures, he said, showed conclusively that an automobile dealer cannot handle used cars without buying at a certain per cent off, which amount should be determined according to the yearly depreciation of the automobile.

Gov.-elect Thos. G. McLeod wired regret at being unable to attend. He was to have been the principal speaker. Among those who spoke were Estes Brand, assistant general manager of the Carolina Motor Club, Inc., of Greensboro, N. C., who outlined plans of the club for the coming year's work; James E. Taylor of Charlotte, N. C., representing the Charlotte Automobile Trade Association and the North Carolina Automotive Trades Association, who spoke on the present needs of the tourist and the automobile dealer.

New Officers Elected

The following officers were elected for the ensuing year: Frank H. Gibbes, Columbia, president; Eugene Smith, Greenville, first vice-president, and J. S. Stevens, Charleston, second vice-president. The name of H. F. Ethridge, Columbia, was proposed as temporary secretary, but no definite action was taken. Directors were named as follows: Sam Atkinson, Greenville; W. P. Sloan, Anderson; J. J. Adams, Laurens; C. C. Boland of Sumter, and J. G. Anderson, Rock Hill.

NASH COMPLETES PLAN FOR STOCK DIVIDEND

KENOSHA, WIS., Dec. 15—Plans for greatly enlarged financing of the Nash Motors Co. by a stock dividend which would give four shares of new common stock and three shares of new 7 per cent preferred to stockholders for each share of common now held have been announced by Charles W. Nash, president of the company.

The stock now outstanding is 54,600 shares of common and $3,500,000 of preferred. The outstanding preferred stock is to be retired on Feb. 1, 1923, at $110 a share plus accrued quarterly dividends, and the plans provide for a new issue of $22,500,000 preferred stock.

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OUTPUT IN NOVEMBER AGGREGATED 232,000

Production for 11 *Months Exceeds All of Best Previous Year by* 139,000

NEW YORK, Dec. 13—Eleven months production of motor vehicles in 1922 is greater by 139,923 than the best year on record—1920, when 2,205,197 motor vehicles were built by American manufacturers. With another month to go it looks as if the estimated production for the year—2,500,000—will be easy of accomplishment.

November proved to be another record breaker, according to shipping returns received by the National Automobile Chamber of Commerce, 232,000 cars and trucks having been produced during the month and that a short month, with one holiday in it. This made the eighth consecutive month to pass 200,000. Indications are that December will be included in this group, for the industry is going at such a pace now that, despite the fact some factories are taking inventory this month, it is hardly likely that the December figures will be below 200,000. Granted that they will not be, it looks as if the annual production will be in the neighborhood of 2,550,000.

That the railroad situation is not getting any worse, and perhaps is improving is shown by the N. A. C. C. reports. Compared with October carload shipments in November were greater, while driveaways and boat shipments have fallen off. Unless big storms tie up the railroads, it is thought that shipping conditions will be further improved from now on.

November Proved Another Record Breaking Month; Year's Output of 2,550,000 *Now Appears to Be Almost an Assured Fact*

NEW YORK, Dec. 15—Shipping returns received by the National Automobile Chamber of Commerce place November production at 232,000 cars and trucks, a surprising total, considering the time of the year. This is the eighth consecutive month that production has topped 200,000. Total output for the eleven months of the year is estimated at 2,346,120.

Following is a table showing production and shipping figures:

	Output	Carloads			Driveaways			Boat		
	1922	1920	1921	1922	1920	1921	1922	1920	1921	1922
January	91,109	20,057	6,485	15,357	29,283	3,185	7,479	....	93	143
February	122,366	25,505	9,986	19,636	43,719	7,507	10,173	....	99	180
March	172,720	29,236	16,287	27,753	57,273	9,939	16,917	....	75	560
April	219,558	17,147	20,187	31,334	64,634	14,197	22,381	....	1,619	2,960
May	256,219	21,977	18,608	33,416	74,286	15,193	28,827	....	2,381	7,406
June	289,011	22,516	20,269	34,230	60,746	18,834	33,857	8,350	3,947	7,737
July	245,414	23,082	19,514	29,116	52,342	15,533	28,100	8,702	3,726	7,030
August	273,425	23,386	20,758	32,814	34,060	15,218	36,754	7,095	3,595	10,096
September	205,784	20,804	19,002	25,950	24,431	13,840	30,055	5,469	2,959	8,002
October	238,514	17,209	17,808	26,980	14,127	12,971	33,320	2,519	2,226	7,040
November	232,000	13,253	14,264	27,232	9,497	10,528	27,376	659	1,402	5,070

Factory shipments for the other month of 1920 and 1921 follow:

	Carloads		Driveaways		Boat	
	1920	1921	1920	1921	1920	1921
December	11,802	12,100	6,469	7,500	89	134

VER LINDEN IS READY TO BUILD NEW CAR

DETROIT, Dec. 15—Edward Ver Linden, former president of Olds Motor Works and for a time president of the Durant Motor Co. of Michigan, is prepared to re-enter the manufacturing field with a light six assembled car, priced below $1,000. The car has been fully developed, and production on it will be started soon after the first of the year if Ver Linden is successful in buying out the business of a company now established.

In his plan to re-enter the business, Ver Linden is known to have important financial connections. It is his intention to buy out a going company rather than undertake to build up an entire new dealer organization.

Paige Stock Dividend

DETROIT, Dec. 16—Declaration of a common stock dividend of 100 per cent by the Paige-Detroit Motor Car Co. will bring the total capitalization of that company to approximately $6,800,000, made up of $4,000,000 common and $2,800,000 preferred, all of which is outstanding. The stock dividend is payable on Dec. 29 and a cash dividend of 3 per cent will be paid on common stock Jan. 2.

GRAY PLANS TO SHOW NEW FOUR-DOOR SEDAN

DETROIT, Dec. 15—Gray Motor Corp. will show a new four-door sedan at the New York and Chicago national shows for the first time anywhere. In addition the national shows will see for the first time the complete Gray line of roadster, phaeton, coupe and coach. The price of the coach has been increased from $760 to $785. The coupe, which is now being shipped, is $715.

L. R. Martell, formerly production manager, has been made commercial manager, working in the sales department with D. Henry Bonner, sales manager. The advertising and service departments have also been brought under the direction of the sales department. Shipments to Canada for distribution through the sales organization of the Gray-Dort company are now going forward in considerable quantity.

The following new distributors have been added by Gray: R. E. Jordan, Dallas; Montana-Haynes Motor Sales Co., Butte; M. L. Graham Co., Salt Lake City; Taylor A. Faulder, Sydney, Ohio, and C. J. McKinney Co., Laredo, Tex.

J. Ross Jennings Assists Webster

CHICAGO, Dec. 20—J. Ross Jennings, for a number of years with the Weinstock-Nicols Co. of San Francisco and Los Angeles and prior to that with Chanslor & Lyon, has been appointed assistant to Commissioner William M. Webster of the Automotive Equipment Association. He will also serve as secretary of committees of the associations.

FORD NOVEMBER SALES IN U. S. WERE 106,352

DETROIT, Dec. 16—Retail sales of Ford cars and trucks in November totaled 106,352, all of this business being in the United States and representing the largest November in the history of the company. Retail business in November, 1921, approximated 55,000 to 60,000.

In connection with the volume of business at the present season, Ford officials declare that it is unprecedented and that, in spite of the capacity operation of the plant, it is impossible to meet current demands. Dealers have less than half the stock on hand that they had this time last year, despite the high schedules of the plant all year, the total production now reaching beyond the 1,300,000 mark.

Although it is planned to increase the production greatly after the first of the year, officials declare it will be impossible to meet the ordinary spring buying.

MIDWEST PRODUCING NEW ENGINE FOR CAR

INDIANAPOLIS, Dec. 15—The Midwest Engine Co. is now in production on a new six-cylinder passenger car engine which will supplement the two fours which have been made for some time. It has a number of new features including oil pressure proportionate to load rather than speed, chain drive camshaft and wave line connecting rod. The main bearings are finished inside and outside, and fit ground surfaces in the crankcase, therefore needing no scraping or line reaming for replacement. The bore is 3⅜ in. and stroke 5 in.

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TO USE ZONE PLANTS IN BODY PRODUCTION

New Company Formed Takes Over Massachusetts Factory —Others Planned

NEW YORK, Dec. 15—The Springfield Body Corp. has been formed to include three or four large body-building plants which will build custom bodies on a big scale for manufacturers and dealers. It is estimated that the group will have a capacity of 15,000 bodies annually. The corporation has issued 100,000 shares of capital stock, which, it is said, have been sold.

The first plant to be taken over is that of the Smith Springfield Body Corp. of Springfield, Mass., which has property valued at $750,000 and quick assets of $200,000. Its capacity is said to be 1000 bodies a year. Prominent in the formation of the new concern are two of the Smith Springfield officials, President C. S. Dame and General Sales Manager A. H. Wolf.

According to present plans, the corporation will purchase at least two and possibly three more plants. One of these, located in the New York district, will have a yearly output of 2500 custom bodies and will supply the New York and Philadelphia districts as well as meet export requirements, while Springfield will care for New England. Another factory, probably one in the Detroit district, will serve the mid-west. A plant in the Indianapolis section also is under consideration.

It is figured that there will be a considerable saving in freight car space and shipping costs to the automobile manufacturer as a result of such distribution of custom body factories, all operating under one head and producing similar jobs. Car makers can ship chassis to the distributing centers and the bodies will be mounted there or at the body plants. Then, too, it is pointed out, there will be a considerable saving due to centralized designing, buying, selling and financing, which will tend to spread the vogue of custom built bodies.

MENGEL STARTS WORK ON NEW BODY PLANT

LOUISVILLE, KY., Dec. 18—Ground has been broken for the first factory unit of the Mengel Body Co.'s plant. This unit will cost approximately $350,000 complete. It is expected to be ready for occupancy by June 1. Actual construction will be nearly completed about April 1, when the installation of machinery will begin.

The body company, in association with the Mengel Co. of which it is a subsidiary, has a $20,000,000 five-year contract with Durant Motors, Inc., to supply bodies for Durant automobiles. Construction of these bodies already has been undertaken on a gradually increasing scale in the plant of the parent company here.

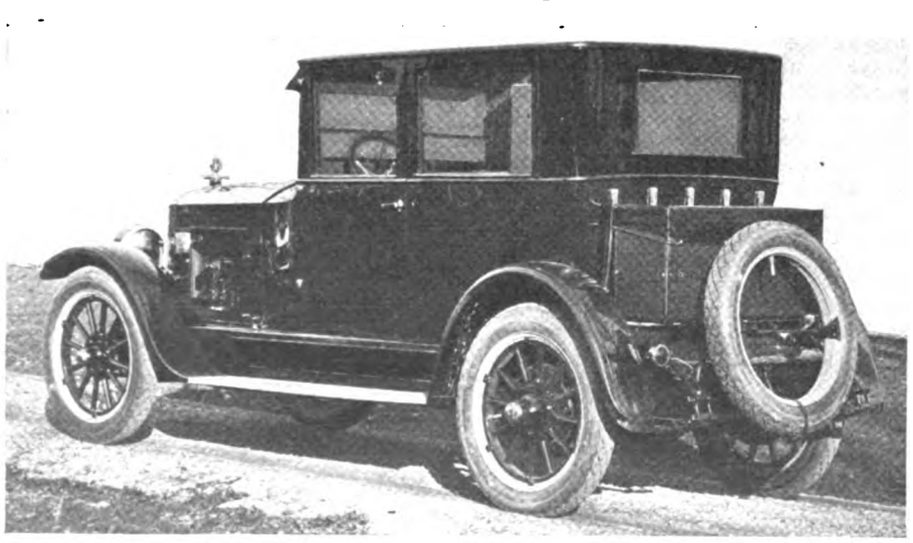
Present plans of the company call for the manufacture of 30,000 bodies the first year, giving employment to 500 men. These bodies will be for light trucks, park and station wagons and regular chassis, particularly for delivery use.

No Higher Tax, Says Official

BOSTON, Dec. 14—Chairman Williams, newly appointed to the Public Works Department to succeed the late John N. Cole, has been confirmed by the Governor's Council. His first public utterance was:

"There will be no recommendation from this department for increased fees on motor vehicles."

Auburn Two-Door Brougham, $2065



The Auburn two-door brougham is now in production, being fitted to the standard Auburn chassis of 121 in. wheelbase. The trunk which is regularly fitted is 19 in. deep, 11 in. wide and 37 in. long. The general appearance is one of lowness and the windows and doors are quite large, there being 21 sq. ft. of glass. The rear seat is 44 in. wide. The standard colors are brilliant blue, maroon and gray with fenders and flashings of black

MAXWELL TAKES OVER CHALMERS INTERESTS

Now in Complete Ownership— Bigger Schedules Planned, Says President

DETROIT, Dec. 14—With the expiration Wednesday of the time in which objection might be filed to the sale of the Chalmers company to the Maxwell Motor Corp., the plant and property passed to the latter company and is now owned 100 per cent by it.

A statement by President William R. Wilson said that the Chalmers company will continue operations as in the past and the sale of Chalmers cars will be continued under that name. He said further that Chalmers will now have the full benefit of the organization that has made Maxwell successful and that it now has behind it the entire financial resources of the Maxwell interests.

According to Wilson the company is planning largely increased shipping schedules for 1923. In the case of both the Maxwell and the Chalmers the schedules for the new year have been only tentatively fixed and will not be whipped into definite form until just preceding the national shows. Both, however, will show large increases over the present year which has been one of the best in Maxwell history.

Schedules Have Been Low

Chalmers schedules have been low all year pending the reorganization. The Chalmers line will have the same attention that was given Maxwell in the development to its present successful status, Wilson said. Its manufacture will be continued in the Jefferson Avenue factory, which will continue to be the six-cylinder plant. Other manufacturing operations, however, may be centered there as the company's plans develop.

Sales of the Chalmers will be handled in conjunction with Maxwell by dealers in practically all cities except those where it is deemed necessary to maintain separate selling organizations. Two separate contract forms will be maintained and there will be sales directors for each line. Both will work under the direction of A. E. Barker, vice-president in charge of sales of Maxwell.

OLDS OFFERS PRIZES FOR BETTER WINDOWS

DETROIT, Dec. 15—Olds Motor Works has offered cash prizes of $50, $30 and $20 for the three best window displays by its dealers and distributors. The contest will close on Jan. 15 when a committee selected by the factory will pass upon photographs of all windows entered.

Window displays have not been attractive enough in the past, it is stated, and the contest is intended to bring about an improvement. Christmas displays in several localities last year produced such marked results upon sales that the company is seeking to nationalize the effort for better windows.

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PLANTS EXPERIENCING UNUSUAL DECEMBER

Car and Parts Manufacturers in Wisconsin Report Unprecedented Conditions

MILWAUKEE, Dec. 18—Astonishment expressed in various ways over the manner in which a large number of passenger car manufacturers are sustaining their output is paralleled by the wonderment with which trade factors in the motor and parts industries here regard the demand for their products which is keeping plants busy at a rate previously unheard of.

There never has been a year when at the middle of December new orders were being booked in such satisfactory volume, and shipping instructions were coming at such a relatively heavy rate as this year. The motor truck trade and makers of farm tractors and power farm operating equipment are contributing something to the interesting and gratifying situation, but passenger car builders remain by far the principal source of demand.

It had been expected that a decline in orders and delivery instructions would suffer a sharp reduction by Dec. 1, but all predictions have gone by the board. Local parts industries, however, look to see a decline this week, which may last until after Jan. 1, but it seems hardly possible that this will be in the nature of a recess or complete interruption. However, many of the industries will practice the usual custom of a temporary suspension between Dec. 20 or 23 and Jan. 2 to 10, so they themselves may make inventories and effect the other usual duties which come at the close of every calendar year.

Passenger car factories in Milwaukee and vicinity are sustaining fair schedules to clean up orders before the holidays and getting their show merchandise into shape. In at least one instance —Nash—production is going forward not much below the remarkably high rate averaged during the year. Mitchell, Case, Kissel and Ogren have reduced forces to a considerable extent, with every prospect for a full resumption early in the new year.

Truck factories in some instances have increased forces, but in the main they are proceeding with the recent averages, indicating that winter transportation difficulties of steam and electric lines are throwing an increasing burden on motor vehicles.

Freight Charges Reduced

NEW YORK, Dec. 18—The traffic department of the National Automobile Chamber of Commerce announces that freight charges on motor vehicles from Texas border points (El Paso, Laredo, Eagle Pass and Brownsville) to Mexico City have been reduced approximately 40 per cent. This results from action of the national railways of Mexico establishing a more favorable basis of rates on imports from the United States.

BUGGY EASY TO WASH SO FARMER BUYS ONE

TRAER, IOWA, Dec. 15—Because a buggy is easier to wash than an automobile, August Flatterich, a farmer, decided on the buggy. James P. Juhl, the salesman, reported it was the second buggy he sold to August in eight years. The cost was $100. The sale was heralded locally as a "revival" of the buggy trade.

UNIVERSITY OF ILLINOIS PLANS TRACTOR SCHOOL

URBANA, ILL., Dec. 13—Two one-week tractor schools will be conducted by the department of farm mechanics, college of agriculture at the University of Illinois this winter for the benefit of Illinois farmers. The first course opens Jan. 8 and the second Jan. 29. Registration will be limited to 35 students, and the 44-hour period will be divided equally between lectures and practical laboratory work.

Laboratory work will include practical handling of engine and tractors, magnetos, carburetors, engine timing, ignition, wiring, trouble work and adjustment; the lectures will cover the construction, theory, operation, adjustment and repair of engines and tractors. There are 25 models of gas engines and 16 representative tractor models in the laboratory beside varied models of parts.

WASHINGTON, D. C., BOY BEST ROAD ESSAYIST

WASHINGTON, Dec. 19—Karl G. Pearson, 17-year old student in Eastern High School, Washington, D. C., won the Harvey S. Firestone Four Years' University Scholarship offered in connection with the 1922 National Good Roads Essay Contest, according to announcement from the offices of the Highway Education Board. Pearson is a native of Lindsborg, Kan.

His essay, entitled "How Good Roads Are Developing My Community," was chosen as the best of approximately 250,000 papers submitted in a contest conducted with the co-operation of extension divisions of State universities and State departments of public instruction.

New Republic Head Not Named

DETROIT, Dec. 15—No action will be taken by the directors of the Republic Motor Truck Co. on the election of a new president to succeed Col. F. E. Smith, resigned, pending developments on the receivership under which the company is now operating. Only one or two of the former officers are still being retained by the receiver.

$7,348,421, PROFITS NETTED BY FIRESTONE

Sales for Year Ending October 31 Reported by Company as $64,507,301

AKRON, Dec. 18—With sales for the fiscal year ending October 31 of $64,507,301, the Firestone Tire & Rubber Co., in its annual statement issued to stockholders, reports net profits of $7,348,421, after making deductions for depreciation, interest, taxes and other charges.

After payment of preferred dividends and miscellaneous charges, the statement shows a net increase of $16 per share in the common stock equity of the company. The company during the year reduced its bank indebtedness from $21,680,000 by nearly $9,000,000, or down to $12,775,000.

The sales for the fiscal year represented an increase of 23 per cent in units sold over 1920, while the sales in terms of dollars were approximately $2,000,000 less than last year. Sales in 1921 were $66,372,938.

The decrease in sales revenues despite the fact that more units were sold is accounted for, according to President Harvey Firestone, by the fact that the company during the past year has faced the lowest prices experienced in the history of tire making, tire prices having been reduced nearly 40 per cent during the year as compared to 1921.

The ratio of current assets to current liabilities is considerably higher than it was a year ago. This year's statement shows current assets of $25,459,308 and current liabilities of $15,634,600. A year ago current assets were $30,604,048 and current liabilities were $24,438,042.

SEEK WAY TO BETTER LEGIBILITY OF LICENSE

WASHINGTON, Dec. 18—The Bureau of Standards of the Department of Commerce in co-operation with the Society of Illuminating Engineers is conducting tests in an effort to discover ways of making automobile license tags legible at sight. It is hoped, the Department of Commerce says, that as a result of these tests it will be possible to establish a practical standard of illumination for these tags, so that they will be readable at night as well as in the day at a reasonable distance.

The tests are made by mounting the tag at a known distance, turning on the light, and seeing if the observer can read the number correctly.

New Morse Chain Plant

DETROIT, Dec. 18—Morse Chain Co. has just completed its new factory in Detroit, where it will manufacture all sprockets and adjustments used in Morse front end drives and the new Morse silent chain bus transmission.

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LET TAXES MAINTAIN ROADS, SAYS N. A. C. C.

General Taxation Should Build Them—Directors Favor "New Jersey Plan"

NEW YORK, Dec. 15—Realizing that the 43 State legislatures which meet early in 1923 will consider the imposition of a tax on gasoline consumption, directors of the National Automobile Chamber of Commerce devoted most of their monthly meeting to a discussion of this subject.

After all the arguments had been taken up, the general sentiment of the directors was that they are not in opposition to taxation on motor vehicles, either through registration fees, gasoline taxes or both to an amount sufficient to cover the maintenance of roads, but not their construction. It further was felt that as all the public benefits by the highways, the construction cost should be paid by the public, which includes motor car owners as well as non-owners. All taxes on motor vehicles, the directors declared, should not only be used for maintenance but should be under centralized control. In a nutshell, the views of the N. A. C. C. directors follow along the same lines as the "New Jersey Plan," which declares that the public shall build the roads and the motor vehicles pay for the upkeep.

Reports on Business

The directors also received reports from 30 trade associations, which state that December business will be moderate, but that on the first of the year the market will be active again. November sales were reported to be 75 per cent better than for the same month last year and 25 per cent less than October, 1922.

The board also was told that Babson predicts 10 to 25 per cent increase in passenger car and truck business for 1923 as compared with 1922.

The show date question came up for a short discussion, following the suggestion that national shows held late in the fall might be of greater benefit to the industry, especially dealers, than the winter exhibitions. No action was taken, further consideration being laid over for a later meeting.

HIGHER PRICED CARS GAINED IN NEW YORK

NEW YORK, Dec. 14—Registration of new cars in the Metropolitan territory showed a decline in the low and medium priced models in November as compared with the previous month, but an increase in the number of higher priced types, according to the Automobile Sales Analysis compiled by Sherlock & Arnold.

Five cars lead the low and medium priced field with four others some distance behind and the rest falling below the 100 mark in point of sales during the month. There are now 10 cars which show sales in excess of 1000 during the eleven months of the year.

In the higher priced field, two lead in November with sales exceeding 100. Two makes have been sold in excess of 1000 during the 11 months, one showing a considerable advance over the others.

The 11 months of 1922, with a total of 62,957 low and medium priced cars and 7013 higher priced, show a considerable advance over the same period in 1921 when the totals respectively were 41,732 and 4359. November more than doubled the sales of the same month a year ago in higher priced lines and showed an increase of 2000 in low and medium priced car sales.

A recapitulation of sales follows:

	Medium and Low Price	High Price
January	2,014	283
February	2,230	273
March	6,352	632
April	8,428	862
May	8,467	961
June	8,203	865
July	7,816	678
August	5,921	516
September	4,592	511
October	4,518	665
November	4,416	767
Total	62,957	7,013

GOVERNMENT PROBES TEXAS CAR THEFTS

DALLAS, TEXAS, Dec. 18—Federal authorities are now taking a hand in probing thefts of automobiles in this section of the State, declaring that more than 500 automobiles stolen in north Texas during the past year have been driven across the border and sold.

The fixed prices across the Rio Grande range from $50 for a Ford to $250 for Cadillacs. Stolen cars disposed of at the first station are driven on by buyers to an interior station where higher prices are paid. At these stations the prices range from $75 for a good Ford to $300 for Cadillacs.

The number of thefts along the border is increasing at an alarming rate, officials declare. It is figured that more than 2000 cars were stolen in Texas during the past twelve months.

Becker with Distributor

ATLANTA, Dec. 14—C. H. Becker has resigned as sales manager of the Saxon Motor Car Corp., to become general manager of the J. W. Goldsmith, Jr., Grant Co., of Atlanta, Hudson and Essex distributor. Before going with the Saxon company Becker was identified with the Joseph C. Blount Co., Atlanta, for several years.

D. K. Roberts Resigns

ROCK HILL, S. C., Dec. 20—D. K. Roberts, director of sales and advertising for the Anderson Motor Co., has resigned. He has not announced his plans for the future.

N. A. C. C. ASKS VIEWS ON VALUE OF SHOWS

Three Questions in Competition Open to Owners and Members of Industry

NEW YORK, Dec. 18—Desiring to feel out the public pulse as to the value of national shows and also to sound the automotive industry along the same line, the show committee of the National Automobile Chamber of Commerce announces a competition open not only to motorists, but also to members of the industry.

The questions asked are:

"In what way are the national automobile shows of value to the public?"

"In what way are the national automobile shows of value to my company?"

"In what way are the national automobile shows of value to me?"

Conditions of Competition

The conditions governing the competition are as follows:

(1) Any competitor may answer one or all questions separately or may combine the answers in one article, but no one will be awarded two prizes. Articles must not exceed 1500 words if all three questions are answered; they must not exceed 1000 words if two questions are answered or 500 if only one question is answered.

(2) The construction or phraseology of the answers will not be a factor in the award—reasons will be the dominant points upon which awards will be based.

(3) No one connected with the offices of the National Automobile Chamber of Commerce of the show management may compete.

(4) Answers must be received not later than midnight, Wednesday, Jan. 3, 1923. Answers must be sent to S. A. Miles, manager of the National Automobile Show, 366 Madison Avenue, New York, and will be judged by a committee appointed by the president of the National Automobile Chamber of Commerce.

The answer adjudged best of all will win a $200 watch made by Tiffany & Co. The contestants whose answers are considered second and third best will each receive a $150 Tiffany watch as prizes.

Wide Scope in Contest

A consideration of the three questions will show the wide scope of the contest. Every individual interested in the motor car, either as an actual or prospective motorist, or as a manufacturer, dealer or salesman, must have ideas that may be turned into a constructive article in answering the first question.

The second question is primarily for the factory executive or employee and for all others engaged in the making, distributing or selling of motor cars. The third applies, of course, to the visitor to the show who owns or intends to own a car, and who appreciates the advantage of being able to compare at one time and in one building all the new models for each year.

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HOOVER SEES SAVING FROM ENGINE TESTS

Total Economy Will Be $100,000,000 *Through Less Consumption of Gasoline*

WASHINGTON, Dec. 16—A saving of approximately $100,000,000 a year to the automobile industry is predicted by Secretary Hoover of the Department of Commerce in his annual report, as a result of tests now being made by the Bureau of Standards.

This saving, the Secretary states, will be made in the annual gasoline bill of 10,500,000 motorists, being approximately $9 per automobile, and will be secured by increasing the efficiency of the internal-combustion engine.

A complete study of automobile engine performances, both in the Bureau of Standard's laboratory and in automobiles on the road, is now being carried out.

"The Bureau," the report says, "through this work, it is believed, can assist in lowering the gasoline consumption of automobiles 10 per cent for a given mileage, and it will represent a saving to the country of something like $100,000,000 per year.

PROFIT SMALL, SAYS STANDARD OIL HEAD

WASHINGTON, Dec. 15—The motorist who buys his gasoline from the Standard Oil Co.'s group pays less than one cent a gallon profit to the company, according to the testimony of President Walter C. Teagle before the sub-committee of the Senate Manufacturing Committee, investigating the gasoline situation.

When gasoline retails at 27 cents a gallon, the Standard Oil Co. of New Jersey, parent company, realizes a profit of about .9 cents a gallon, Teagle said, and out of every dollar the motorist pays for Standard Oil gasoline, the company retains but 3.56 cents.

SIGN FOR COLUMBIA'S HALF YEAR'S OUTPUT

DETROIT, Dec. 15—Distributors of the Columbia Motor Car Co. this week signed contracts for all of the first six months output in 1923, a total that will reach about 13,000. According to W. L. Daley, vice-president in charge of sales, 40 per cent of production in the first quarter will be closed models and 35 per cent in the second.

The company declares itself to be in strong financial condition at the closing of the year. The company declares itself now adequately represented in every important center. Fall sales in both the present wave of stock dividend declarations by big business corporations a business necessity.

"We are expanding steadily," said Ford. "We have a $30,000,000 program for improvements to be completed within a year. We won't declare any stock dividend, only the regular cash dividends, and we will spend our funds in the same way we have in the past, that is, in extensions and improvements."

No Ford Stock Dividend

BOSTON, Dec. 15—Henry Ford asserts the Ford Motor Co. will not declare a stock dividend this year. He added, however, that he believed the

FORD ONCE HANDLED BY JOHN WANAMAKER

NEW YORK, Dec. 14—The death of John Wanamaker marked the passing of a man whose vision was so broad that he foresaw the possibilities of the motor vehicle in the earliest days of the automobile industry.

More than 20 years ago, when Henry Ford was struggling for a foothold, Wanamaker reached out a helping hand and placed the Ford agency in his New York store, this being the first Eastern representation Ford ever had.

It also is said that the late merchant prince assisted Ford financially at a time when the world looked darkest. W. D. Gash conducted the Ford business for Wanamaker until about 1903, when the Ford company took over the representation.

Wanamaker also figured prominently in the Selden patent suit, being one of three brought into the litigation, the others being the Ford Motor Co. and the O. J. Gude Co. The suit against Wanamaker was filed Jan. 21, 1904, and later on the three suits were merged into one defense.

Hobson With Paul Rubber

SALISBURY, N. C., Dec. 15—C. H. Hobson, formerly secretary of the Gillette Rubber Co. and the New Jersey Car Spring & Rubber Co., has been appointed assistant to R. B. Tracy, sales manager and advertising manager of the Paul Rubber Co.

RAIL CARS CHANGING LOSSES TO PROFITS

Short Line Roads Now Organize to Acquire More Equipment Through Lease

WASHINGTON, Dec. 19—Operating losses have been converted into substantial profits through replacing steam passenger trains on short line railroads with motor cars. Announcement to this effect has been made by J. W. Cain, manager of purchases of the Consolidated Purchasing Agency of the American Short Line Railroad Association.

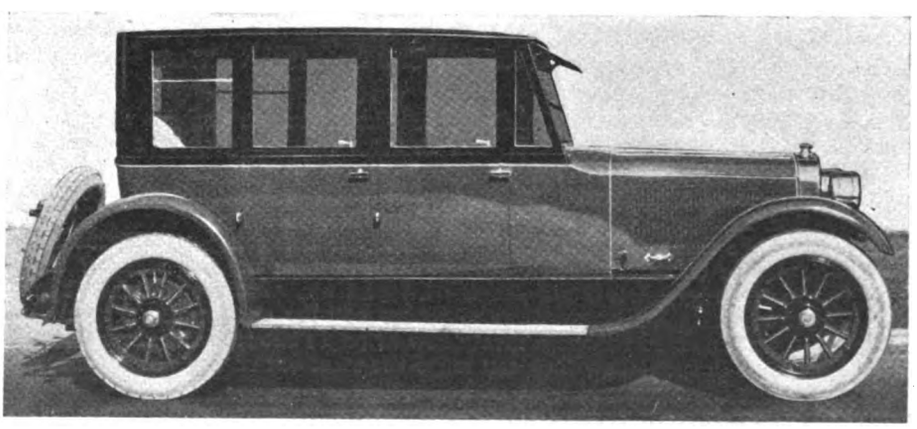
Through Cain's activities a finance corporation is now being organized under the direction of the association so that member lines and others may acquire motor car equipment under a lease purchase plan, making it possible for the equipment to pay for itself through the saving effected. Cain states that this corporation will be ready to operate by the first of the year.

It was after an investigation covering the greater part of a year, augmented by answers to questionnaires sent to all member lines throughout the United States and Canada, that the purchasing agency made recommendation and placed orders for more than $250,000 worth of gasoline railroad motor car equipment, representing some 20 cars. Cain declares that the cars are showing excellent results.

Mack Trucks Dividend

NEW YORK, Dec. 18—Mack Trucks, Inc., has declared an initial dividend of $1 on the common stock and the regular quarterly payments of 1¾ per cent on the first and second preferred stocks. The common dividend is payable Dec. 28 to stock of record Dec. 18, while the preferred disbursements are payable Jan. 2 to stock of record Dec. 20.

New Winton Six Sport Sedan, $4450



Winton has added a sport sedan to the line of bodies, this being made entirely in the Winton shops like the other models. The upholstery is tufted and large area glasses in the rear quarter windows make vision easy. The rear quarter windows are crank operated. All interior fittings are cast bronze, heavily silvered and the door handles are ebony with silver trim. The moulding is integral with the body wall, not fastened on afterward, eliminating noise due to weave. A trunk is carried in the rear with nickeled body buffer strips

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MAJORITY OF OWNERS FAVOR CLOSED CARS

Sixty Per Cent of Ballots in N. A. C. C. Test Show Preference for That Type

NEW YORK, Dec. 19—The closed car has won the election by a considerable margin, defeating its "open" rival by 20 per cent, according to the mail ballot sent out by the National Automobile Chamber of Commerce to 20,000 car owners in ten widely separated States, asking: "When you buy your next car, will it be open or closed?" Returns to date show that 60 per cent of those who replied will buy closed cars and 40 per cent open ones.

Analyzing the ballot, it is found that the reasons for closed car preference are closely related, protection from weather being foremost. General comfort, which indicates cleanliness and easy riding qualities, is another big factor. Economy on the basis of all-year use is a third factor. Appearance also plays an important part.

Side Curtains a Difficulty

Other owners specifically mentioned that the difficulty with side curtains had converted them to closed cars. A small per cent say the closed car is better for business purposes. A limited number state they are buying closed cars because of their women folk. The preponderance of the weather, comfort and appearance reasons also indicates that the feminine influence is much stronger than specifically stated.

The following table shows the frequency with which the various reasons were given in the total response of those who preferred closed cars: Weather protection, 44 per cent; general comfort, 34; economy through all-year use, 20; appearance, 7; no side curtains 4; business reasons, 3; women demand it, .8.

Advocates of the open car declare poor road conditions are an outstanding reason for continued open car demand. Price, including upkeep, is another factor, while lightness, which is related both to road conditions and upkeep, also is quoted. Safety was mentioned by many who expressed an objection to being enclosed in case of an accident and by those who feared broken glass. Another large element like the open models because it permits them to be in the open air. Business use is a factor, some finding the open car more convenient. Some farmers reported that the open car is more of a utility vehicle as it can be readily used for cartage and also can be driven over fields more readily.

Summed up, the "open" preferences are classified as follows: Poor roads, 23 per cent; price, including upkeep, 16; light weight, 15; safety, 14; more air, 13; business, 10; farm use, 5; touring use, 4; better resale value, .8.

Maine Dealers Win Contest

PORTLAND, ME., Dec. 18.—To celebrate the victory of the Portland retail salesmen of the Sills-Chevrolet Co. of New England, W. C. Sills, president of the company, gave a banquet here to the entire local organization. The banquet was the result of a contest lasting three months and participated in by Boston, Providence and Portland sales departments.

Closed Car Week in Springfield

SPRINGFIELD, MASS., Dec. 20—This week is being observed here as closed car week, with about 20 dealer concerns co-operating. The demand for closed cars in this district is very strong, so much so that they are being given the preference in the farming neighborhoods where until recently the open car had the call.

HIGHER GASOLINE TAX MAY CUT LICENSE FEE

At Least, Motorists in State of Washington Will Insist on Some Relief

SPOKANE, Dec. 19 — Washington motorists will demand a flat license fee of $10 on automobiles if the State Legislature insists on boosting the State gasoline tax from 1 cent to 2 cents a gallon, Frank W. Guilbert, president of the Eastern Washington Highway Association, with headquarters at Spokane, Wash., declares.

"Motorists are the most overtaxed people in the State," Guilbert says. "They are just as anxious as other people to enjoy tax reductions."

He also says:

Car owners are now paying license fees totaling $3,000,000 a year into the State treasury, and in addition they are paying a gasoline tax of $1,000,000 annually. Then on top of all that they pay $1,200,000 out in the general property tax of 1 mill collected by the State for highway building purposes.

The motorists are paying four-fifths of the highway construction and maintenance costs in Washington and they can't stand additional burdens.

The average license fees on cars is $15, Guilbert says.

"Automobile owners will offer the Legislature the alternative of leaving the gasoline tax at 1 cent or reducing license fees. A reduction in fees and a 1-cent increase in the gasoline tax would cost the State $1,000,000 a year," he prophesied.

Tube Company in Bankruptcy

IOWA CITY, IOWA, Dec. 15—The Mississippi Valley Rubber Co. has filed a voluntary petition in bankruptcy in the United States District Court in Davenport, with liabilities of $134,286. Its assets are listed at $112,263.

The Before Shows Number—Next Week

ONE of the pleasures that Motor World readers look forward to every year is the arrival of the Before Shows Number. It's an issue containing quite a bit of entertainment; profit-making suggestions, too.

The Before Shows Number of 1922 will be the final issue of the year, speeding off the presses Dec. 27.

We think a good many of our readers are going to call this Before Shows Number the best yet.

One thing that will catch your eye as soon as you take off the wrapper will be *Motor World's Portfolio of Show Time Display Suggestions.* Picture section? You've guessed it. Done in color, too. Offers some fine suggestions to "dress up" for show week, not only at the show but at the salesroom.

Then there will be a meaty row of pages showing the show committee, the dealer and the salesman —each in turn—how they can make the most out of the show time opportunity. Practical show time selling information, bright with illustrations.

Farther on readers will find a remarkable word and picture study of the 1923 car as the most salable car ever built. Full of practical pointers to help dealers and salesmen study the selling points of their cars.

Of course there will be complete advance information about the shows—New York, Chicago and around the country. A couple of picture reminiscences of old time shows, and old time cars, too.

You'll get some good out of the Before Shows Number—and enjoy it.

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GENERAL TIRE HOPES TO DOUBLE BUSINESS

Field Force Told of Plans at Sectional Meetings—New Sales Methods

AKRON, Dec. 18—So optimistic are officials of the General Tire & Rubber Co. of Akron regarding the future of the tire industry that they are notifying their salesmen, branch managers and field representatives throughout the country to prepare to double their 1922 tire business in 1923.

At sectional sales conferences conducted by the company, all salesmen are being given instructions in new salesmanship methods. These district conferences supplant one national conference at Akron. The first was held in Atlanta for salesmen in the southern territories; the second in Atlantic City for eastern representatives; the third in Akron for General salesmen from Ohio, Kentucky, Indiana, Michigan, West Virginia and western Pennsylvania, and the fourth in Chicago for middle western salesmen. Similar conferences will be held as far west as the Pacific Coast.

1922 Sales $8,000,000

Vice-president and General Manager William O'Neil at the Akron conference announced the company's sales for 1922 would approximate over $8,000,000, as compared to $6,500,000 in 1921—an increase not only in units sold but in volume of sales revenues to the extent of $1,500,000.

O'Neil also announced that the company estimated it had lost fully $1,000,000 worth of business this year through inability to produce enough tires to fill all orders received. General now is averaging 2500 tires daily. The company is rushing to completion three large factory additions in Akron and has machinery on the ground ready for immediate installation. It is expected that these new plants will be in operation shortly after Jan. 1, practically doubling the company's capacity for daily tire output.

"Go back home and prepare to double your record breaking 1922 business in 1923. The door is swinging open upon the greatest era of prosperity and expansion the tire industry has ever known," O'Neil is telling the salesmen at the district conferences.

O'Neil also claims the company's policy of selecting and restricting its dealers instead of permitting its tires to be sold promiscuously has more than vindicated itself.

Kelly Truck Receiver

SPRINGFIELD, OHIO, Dec. 17—Following the filing of an application by the Bankers Trust Co. of New York City against the Kelly-Springfield Motor Truck Co., Pearl A. Lewis, assistant to President Charles Willard Young, of New York City, was named as receiver. Lewis states that the receivership is not occasioned by any fault in the quality of the product, but by other reasons. He says the plant will continue the manufacture of motor trucks uninterrupted. He states that he looks for a bigger truck business in 1923.

RAIL ADS STRESS RIGORS OF WINTER

NEW YORK, Dec. 15—Advertising propaganda tending to discourage the use of the automobile in winter is being broadcast by the American Electric Railway Association, with which most of the trolley lines of the country are affiliated. This association has prepared a series of advertisements for use in daily papers which has been sent to its members, with advice that they be used.

In each of the dozen samples submitted great stress is pictorially laid on the rigors of winter motoring, including the troubles of starting, cold garages, cold hands and feet, etc., while on the other hand the comfort to be enjoyed in trolley riding is emphasized, not overlooking the money claimed to be saved by using trolleys instead of automobiles.

TWO MORE COMPANIES INCREASE TIRE PRICES

NEW YORK, Dec. 18—Up to to-day only two tire manufacturers had followed Kelly-Springfield in increasing prices. Fisk having announced a new schedule ranging from 10 to 12 per cent, while Howe has boosted prices 10 per cent. Rumors of other contemplated raises are heard and several other companies are expected to make announcements very shortly.

Howe Rubber Co., which has increased 10 per cent, reports operating to capacity and states it is from 30,000 to 40,000 casings, and as many tubes, behind on spring orders. It also claims that in 1922 it will do as much business in dollars as in 1921.

Seneca Makes Cut

FOSTORIA, OHIO, Dec. 18—Seneca Motor Car Co. announces that the list price on Models 50 and 51 (1923 models) has been reduced as follows:

Model	Old Price	New Price
50	$1,095	$985
51	1,095	985

Buick Not to Lower Prices

FLINT, MICH., Dec. 15—President H. H. Bassett of the Buick Motor Car Co. states that his company will not reduce prices. As a reason for not going below the present level he points to the high prices of leather and lumber and the expected increase in prices of steel in January. Buick produced 16,000 cars in November and orders for closed cars are still far ahead of output.

SELL TIRES ON MERITS, ADVICE GIVEN DEALERS

National Association Head Says This Would Establish Confidence

NEW YORK, Dec. 16—The New York Tire Dealers Association has more than 100 members and has brought about mutual confidence among them which has worked for the good of the business, according to the statement of George J. Burger, the president, at a banquet of the association this week. Burger has also recently been elected president of the National Tire Dealers Association.

Burger told his fellow dealers that if they would sell their merchandise on its merits they would not have to contend with the demands of the public for discounts from list prices. He said the public wants to buy good tires from reputable dealers and will do so if dealers will show by one-price merchandising methods that they are reputable merchants.

Burger urged manufacturers to avoid loading dealers with excessive tire stocks.

Manufacturers Speak

George F. Shugart, vice-president of the United States Tire Co., and F. W. Teele of the Brunswick were among the manufacturers to make brief addresses. Shugart said he believed there was a tendency toward a larger discount for dealers. If it was made he urged dealers to use the additional profit in the upbuilding of their business and not to give it away to the public in foolish competition. He said that deplorable conditions in the tire industry can be corrected only by co-operation. He predicted that 1923 would be the biggest production year in the tire business.

E. N. Broadwell, vice-president of the Fisk company, predicted that 40,000,000 tires would be made in 1923.

FORD WOULD DEVELOP MISSISSIPPI RIVER POWER

WASHINGTON, Dec. 15—Edsel B. Ford, president of the Ford Motor Co., through W. H. Mayo, has filed an application with the Federal Power Commission for a preliminary permit for one year to develop power rights of the Mississippi River dam No. 1 at Minnehaha Falls.

The proposal is to install in the power house, built in 1917 by the United States Government, hydraulic turbines with capacity sufficient to utilize all the power needed in the operation of a large manufacturing plant producing products of the Ford Motor Co., the latter to be located at a suitable point in either St. Paul or Minneapolis.

In addition, the application cites that the co-operation of the University of Minnesota has been invited to establish an experimental station for the study of hydro-electric sciences.

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ASSOCIATION ACTIVITIES

Has Anti-Accident Plan

PHILADELPHIA, Dec. 19—W. Howard Metcalf, retiring president of the Automobile Accessories Business Association and secretary of the Motor Truck Association of Philadelphia, who recently was elected to the state legislature from Delaware County, was the chief speaker at a meeting of the Lehigh Valley Automobile Trade Association, in Allentown, Pa.

A suggestion, made by Metcalf in his address on "Good Business Practice," that any person brought up for infringement of the traffic laws, instead of being fined by the magistrate, should have his driver's license card punched by the magistrate so impressed Mayor Rolph of Allentown that he will put the plan into practice.

His plan further provides that a list of such punched cards be furnished by the magistrates to the registrar of motor vehicles for the state, who should make a duplicate list, and in the event of a second offense, as shown by the driver's punched card, the offender should be fined heavily.

Should a first offender complain that he had lost his license, the magistrate would, on issuing a new card, punch it all the same, according to Metcalf's suggestion, and the fine for the second offense would then be made on the next occasion of the offender's being brought before the magistrate.

Mayor Rolph, in his opening address, had called the attention of the members to the great and increasing number of motor vehicle accidents in Allentown and nearby cities and urged the association to help the authorities promote safety on the streets. Metcalf, in his address, enlarged on the remarks of Mayor Rolph and urged that, as the automotive industry had its measure of responsibilities for traffic accidents, it feel it its duty to do all in its power to help the city reduce the number.

Quincy Exchange on Profit Basis

QUINCY, ILL., Dec. 20—The Quincy Automobile Exchange, established by the Quincy Automobile Trades Association, has sold 73 used cars in the last 60 days. The exchange, after two years, is now operating upon a profit basis. Morris Adler, member of the board of directors, told of the working of the exchange and explained its financial problems at current meeting of the trades association.

A. G. Thede, president of the Peoria Automobile Dealers and Accessories Association, spoke on "Generalities of the Motor Industry." He urged the checking of leaks by means of more rigid accounting and strict system of handling the business in every detail. Plea for organization to protect the interests of the trade and for a 100 per cent membership during the time of the Quincy show was voiced. Harold Hendricks of Carthage explained his success through the use of timely bulletins and utilization of cooperative spirit.

Ann Arbor Dealers Organize

DETROIT, Dec. 18—Dealers of Ann Arbor have formed the Ann Arbor Automobile Association with Benjamin Woodbury, president; Sewell Platt, vice-president; Robert Alber, secretary, and Ray Vogle, treasurer. The dealers will continue as members of the Washtenaw County Automobile Dealers Association and will also be affiliated with the Michigan Automotive Trade Association.

The formation of the Ann Arbor group makes twenty-five dealer associations in the state, most of whom are affiliated with the state association. The Ann Arbor show, which was originally intended as the Washtenaw County show, will now probably be an Ann Arbor show only, and the Ypsilanti dealers will hold an individual show in January. The only available show building in Ann Arbor was declared to be too small to accommodate all the dealers in the county association, resulting in the necessity for holding two shows.

New York Nominates Officers

NEW YORK, Dec. 15—One of the best attended meetings ever held by the Automotive Service Association of New York took place at the Automobile Club of America, more than 200 service men being in attendance. Charles A. Neville of the Hinkley Motors Co. gave an interesting talk on carburetion and the new film produced by the Department of Commerce and the Cadillac Motor Car Co. was shown. Nominations of officers for the year 1923 were announced, these being Edward J. Rabidoux for president; J. W. Lord, W. A. Evans, Charles Michaels and T. E. Sweigert, vice-presidents; L. T. Hanford, treasurer; Al Bargmann, secretary, and Dale P. Cartwright, Henry M. Holt, Harry L. Ferris, H. P. Cruse, J. Howard Pile and Ralph C. Rognon for directors.

Springfield Talks Service

SPRINGFIELD, MASS., Dec. 14 — The Automotive Service Association of Springfield held the largest meeting in its history at the Technical High School Auditorium, more than 100 dealers and service men attending. The features of the evening were the presentation of a number of reels of film, including the Paige-Detroit dealer film and the "Shop Profits" film of the A. E. A. J. Howard Pile, Technical Editor of Motor World, told of the progress made in service from the viewpoint of the factory, dealer and owner. Other speakers included former President Darnstat of the Service Association of Springfield, present officials and the principals of the Technical High School.

Fort Wayne Reorganizes

FORT WAYNE, IND., Dec. 15—A. L. Randall has been elected president of the Fort Wayne Automobile Trade Association at a reorganization meeting. Other officers elected are Roland Fitch, vice-president; William Wallace, treasurer; W. S. Becker, C. B. Hayner and W. C. Prange, directors.

It was decided at the meeting that the automobile show will be held during the latter part of January or the first of February if a suitable downtown showroom can be secured. A committee will be appointed in the near future to plan the details.

A big step in the reorganization of the association will be taken with the employing of an association secretary on a salary.

Brooklyn Service Men See Film

BROOKLYN, Dec. 15—The December meeting of the Automotive Service Association of Brooklyn was featured by the new Cadillac motion picture film which was prepared in co-operation with the Department of Commerce.

Representatives of the New York and Detroit offices of the United Motors Co. spoke on standard factory equipment as distinguished from pirate replacement parts. In the discussion that ensued dealers and service men felt that the greatest incentive to the use of pirate parts was the lack of uniformity of prices among different car manufacturers and assemblers.

Following the regular meeting the members were served with strawberries and cream provided by one of the members.

Illinois Association Revived

KEWANEE, ILL., Dec. 15—The Henry County Automotive Trade Association, which has been non-active for several months, has been revived. James Levy, president of the James Levy Motor Co., Buick distributor in Chicago, spoke on "Automobile Business and Automobile Business Ethics." The meeting was a jubilee of the completion of the northern county's hard road system. W. E. Soderberg, Galva, president of the association, was in charge of the meeting, and to insure its success he had appointed an "attendance" committee, which canvassed the county to invite dealers.

Houston Would License Drivers

HOUSTON, TEX., Dec. 19—The Houston Automotive Trades Association has started a move to reduce the number of automobile accidents, and to this end is urging the passage of an ordinance requiring the licensing of every person who drives an automobile. This would keep children from driving cars. The association wants every driver of an automobile or truck in Houston to stand an examination which would show that he is capable of using good judgment in emergencies.

New Syracuse Secretary

SYRACUSE, Dec. 15—C. H. Hayes has been made executive secretary of the Syracuse Automotive Dealers Association, succeeding Howard H. Smith, who recently resigned.

JOBBERS IN NEW YORK PLAN DEALER MEETING

NEW YORK, Dec. 18—Vaudeville, music and the showing of the "Ask 'Em to Buy" and "Shop Profits" films are part of a program for dealer, garage and repair men, Jan. 10, which is during New York show week. The event will be held at Carnegie Hall under the auspices of the Metropolitan jobber members of the Automotive Equipment Association.

The meeting, which is scheduled for 1:45 in the afternoon, will be free to all men in the retail field, and tickets may be obtained through the jobbers. Should the visitors to the New York show come from points beyond the Metropolitan district, they can get tickets from Robert L. Sim of the Whittemore Sim Co., 346 West 65th Street. Sim is chairman of the committee of management.

Charles E. Brenner Dies

PEORIA, ILL., Dec. 15 — Charles Emory Brenner, credit manager of the Avery Co., is dead from aneurism of the heart. He joined the Avery company in 1905 as assistant sales manager, was promoted to sales manager in 1909, and was a director of the Avery company from 1907 to 1914. He was made credit manager in January, 1921.

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CHANGES IN THE TRADE

Murphy-French Automobile Co., Sioux City, has taken over the Studebaker agency.

Ross Walton Co., Philadelphia, distributor of Oldfield tires, has removed to the Guaranty Industrial Building.

H. M. Springer, formerly of Spokane, has been transferred to Des Moines as manager of the B. F. Goodrich Co.

W. J. Brown Motor Co., Inc., Shreveport, La., has taken on the Hupmobile for that part of Louisiana and East Texas.

Goff-Caughman Auto Co., Columbia, S. C., has been appointed to handle the Velie in Richland and four adjacent counties.

Van Dusen Motor Sales Co., Inc., will hereafter be known as Bernhardt Motors, Inc. It will be located at 1241 Main Street, Buffalo.

Dornette Motor Car Co., has been appointed Davis distributor in Cincinnati. John Dornette, Jr. is president of the company.

Charles Warfield has been appointed Haynes district sales manager for the States of Utah, Wyoming, Colorado and the Kansas City territory.

Firestone Tire & Rubber Co., Philadelphia, has taken new quarters in the Guaranty Industrial Building, Chestnut and Twenty-fourth streets.

Merrill E. Stevens, former Nash dealer at Sioux City, has become sales manager for the **J. V. Thorndike Co.**, that city. **Fleming Motor Co.** now handles the Nash.

Firestone Tire & Rubber Co. has opened a branch in Springfield, Ill., from which both wholesale and retail business will be directed. **E. D. Olinger** is branch manager.

S. L. Kirby has been appointed district salesmanager for the Peerless Motor Car Co. in New Jersey. He has been assistant manager of the Buick Philadelphia branch.

Northampton Buick Co., under the direction of **E. J. Foley**, will attend to the selling and servicing of the Buick in Northampton, Mass., having opened in the new Gleason garage.

Chester R. Giddings, formerly of Providence, R. I., has taken the Dort and Liberty agencies for Hampden and Hampshire counties, Massachusetts, with headquarters in Springfield.

William T. Bush, for several years a sales executive of Studebaker and Packard, has resigned as director of sales of Gray Dort in Canada. His plans for the future have not been announced.

Dort Motor Car Co. has appointed the **Hudson Motor Car Co.** of Louisville, Ky., distributor covering most of the state of Kentucky. **J. L. Jennings Motor Co.** of Abilene, Tex., has been appointed to cover parts of Texas.

G. E. Bovis, formerly of Chicago, where he served as branch manager of the **McGraw Tire Co.**, has joined his brother, **John Bovis** at the **Bovis-Oldsmobile Co.**, Cincinnati, where he will have charge of the wholesale department.

Charles M. Fitch, for several years manager of the **Falls Motors Corp.**, Sheboygan Falls, Wis., has taken a position with the **Nordyke & Marmon Co.** of Indianapolis, in general charge of the body manufacturing plant it is building.

Crispin-Rich Co. of Syracuse are now the central New York distributor for Moon cars and are handling this line exclusively. **Schall-Crouch Auto Co.** of Baltimore will handle the Moon exclusively from now on as the Maryland distributor.

Steve M. Solomon, Jr., of Macon, Ga., has purchased the interests of his partner, **Kingman Moore**, in the **Kingman Moore-Steve M. Solomon, Jr., Co.**, Dodge Brothers distributor, and the business now is conducted under Solomon's name only.

William H. Taylor, formerly president of the **Overland Motor Co. of Chicago**, has succeeded **Frank T. Windle** as manager of the St. Louis Overland branch. Windle has been named as a sales supervisor, working under direction of the Toledo factory.

C. C. Davis has purchased interest of his partner, **W. W. Culver**, in the **Davis-Culver Motor Co.**, Galesburg, Ill., and will continue the business under the name **C. C. Davis Motor Co.** The firm is Studebaker distributor in two adjoining counties.

R. C. Sackett, vice-president and general manager of the E. S. Gahagan Co., Cincinnati Studebaker distributor, has resigned and left for Grand Rapids, Mich., to take over the distribution of the Studebaker line in that city and surrounding territory.

Oscar M. Brede has been promoted to the position of assistant sales manager of **Hinkley Motors, Inc.**, specializing in the replacement end of the business which the company is now developing. He will also retain general charge of the service department.

C. L. Hatfield, Decatur, Ill., has purchased the **Good Bros.** tire and battery station, the oldest exclusive automobile tire dealers in the state outside of Chicago. Hatfield will continue to handle the Federal and Mansfield tires and tubes and the Vesta batteries.

A. H. Vayo, Omaha, has been appointed distributor for the Barley Motor Car Co.'s complete line for Nebraska and counties in western Iowa. **Pittsburgh-Templar Co.** of Pittsburgh has been appointed to cover western Pennsylvania and eastern cities. **J. C. Freeman** is head of the concern.

Kaye E. Paulus, an employee of the Richardson-Phenix division of S. F. Bowser & Co. offices, Fort Wayne, Ind., for the past year, has been appointed district manager of the New England States for this division of the company. His headquarters will be in Boston.

Haynes Automobile Co. announces new distributors as follows: **Robin Brothers**, Montreal, Quebec; **Coolbaugh-Macklin Motor Co.**, Philadelphia; **Levand Automobile Co., Inc.**, Houston; **Roth Motor Co.**, Louisville; **Kent-Horn Co., Inc.**, Duluth, and **A. H. Vayo & Co.**, Omaha.

W. J. Kallis, connected with the automobile business in Atlanta almost since its inception and probably one of Georgia's best known dealers, has entered the real estate field at West Palm Beach, Fla. For years he was branch manager in Atlanta of the **Southern Nash Co.**

Buick Motor Co.'s Atlanta office announces the establishment recently of the following new Buick dealers in the Southeast: **McMinnville Buick Co.**, McMinnville, Tenn.; **Riddle Buick Co.**, Walterboro, S. C.; **Tazewell Buick Co.**, Tazewell, Tenn.; **J. O. Morgan**, Brunswick, Ga.

W. H. Chambers of Atlanta has been named vice-president of the **Lifsey-Chambers Co.**, Peerless distributor, the company being known as the **Lifsey-Hill-Smith Co.** prior to Chambers' affiliation. **Julian Lifsey** remains as secretary and treasurer, and **Dr. T. P. Hinman** is named president.

Clyde H. Pinney, formerly with the New York branch of the Vesta Storage Battery Co., has become associated with the **H. B. Shontz Co., Inc.**, of New York City and will have charge of the sales of the Lincoln shock absorbers, the distribution of which has just been taken over by the H. B. Shontz Co., for the Metropolitan district.

Garth Motor Co. of Birmingham, distributor for the Gray and Rickenbacker cars, has been given a portion of the Mississippi territory, in addition to its Alabama territory, for the distribution of the Gray car. This territory includes a portion of northeast Mississippi, in which the cities of Starkville, Columbus, West Point and Aberdeen are located.

C. H. Becker has resigned as sales manager of the Saxon Motor Car Co., Detroit, to become general manager of the **J. W. Goldsmith, Jr., Grant Co.** of Atlanta, Hudson and Essex distributor, to succeed **Samuel C. Porter**, who resigned to assume the presidency of the **Porter-Minehan Co.**, a new dealer organization. Before going with the Saxon company, Becker was identified with the **Joseph G. Blount Co.** of Atlanta for several years.

A. J. Stewart has resigned as general manager of the **Midwest Tire & Sales Co.**, Quincy, Ill., to become district manager in the Illinois and Missouri territory of the **Iowa Cork Tire Co.**, Des Moines. He will continue his headquarters in Quincy. **Frank H. Kathman**, secretary-treasurer of the Midwest company, will take over duties of president and general manager of the company and **Henry A. Ippenson** has been made assistant manager in the organization.

W. W. Barnett, Oldsmobile distributor for the Denver territory and for 16 years associated with the automobile trade in Colorado, Wyoming and New Mexico, has sold his business to **Spain-Skinner, Inc. T. H. Spain**, for the last three years actively identified with the Dodge Brothers agency in Denver, is president of the new company, and **Lewis B. Skinner**, formerly one of the owners of the Western Chemical Co., is secretary and treasurer. Barnett, who is regarded as the dean of the trade in Denver, first handled the Stoddard-Dayton in 1906. For the last ten years he has represented the Oldsmobile. He was an organizer as well as one of the first presidents of the Denver Automotive Trades Association.

Dort Sport Models

FLINT, MICH., Dec. 14—Dort sport models, both on the four and six cylinder chassis, in the future will be finished in light blue with nickeled trimmings. The equipment includes disk wheels, front bumper, windshield side wings, windshield wiper, drum type headlamps, cowl lamp, spot lamp, combination stop and tail lamp and Moto-Meter with a locking device. Spanish leather will be used on the upholstery, and the top is extra heavy khaki-colored material.

Southern Truck Resumes

GREENSBORO, N. C., Dec. 15—The Southern Truck & Car Corp. has been completely reorganized and has resumed operation. Dr. W. P. Knight is president of the company and C. E. Lowe secretary, treasurer and general manager.

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Calendar of Trade Events

Conventions

Sioux Falls.....Jan.. 15
First Annual Meeting, Automobile Trades Association of South Dakota.

Detroit .....Jan. 24
Third Annual Convention of the Michigan Automotive Trade Association.

Chicago .....Jan. 29-31
Annual Meeting, Automotive Electric Service Association, Congress Hotel.

Quincy, Ill.....March 19
Annual Meeting of the Illinois Automotive Trades Association.

Shows

Erie, Pa.....Jan. 1-6
Annual Automobile Show, under the auspices of the Automotive Association of Erie, C. R. Cummins, manager.

New York.....Jan. 6-13
Annual Automobile Show held under the auspices of the National Automobile Chamber of Commerce.

New York.....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, under the auspices of the Automobile Body Builders Association.

Oakland, Cal.....Jan. 13-20
Fifth Annual Automobile Show, Civic Auditorium, under the auspices of the Alameda County Automobile Trade Association, Robert W. Martland, manager.

Buffalo .....Jan. 13-20
Twenty-first Annual Automobile Show, 174th Regiment Armory, under the auspices of the Buffalo Automobile Dealers Association, Carl Proctor, executive secretary.

Philadelphia.....Jan. 13-20
Twenty-second Annual Automobile Show, Commercial Museum Building, under the auspices of the Philadelphia Automobile Trade Association, Louis C. Block, president.

Hudson, N. Y.....Jan. 16-20
Hudson Automobile Show, State Armory, under the auspices of Company M, J. M. Callahan, manager.

Scranton, Pa.....Jan. 18-20
Commercial Car Show, Armory, under the auspices of the Scranton Motor Trades Association, Hugh B. Anderson, manager.

Detroit .....Jan. 20-27
Twenty-second Annual Automobile Show, Inclusive of Passenger Cars, Trucks and Accessories, Municipal Garage Building, under the auspices of the Detroit Automobile Dealers Association, H. H. Shuart, manager.

Baltimore .....Jan. 20-27
Annual Automobile Show, Fifth Regiment Armory, under the auspices of the Baltimore Automobile Trade Association, John E. Raine, secretary.

Milwaukee .....Jan. 20-27
Fifteenth Annual Automobile Show, Auditorium, under the auspices of the Milwaukee Automotive Dealers Association, Bart J. Ruddle, manager.

Cleveland .....Jan. 20-27
Annual Automobile Show, New Public Auditorium, under the Auspices of the Cleveland Automobile Manufacturers and Dealers Association, Herbert Buckman, manager.

Montreal .....Jan. 20-27
National Motor Show of Eastern Canada, Almy's Building, under the auspices of the Montreal Automobile Trade Association, Limited, Adelstan Levesque, manager.

Reading, Pa.....Jan. 20-27
Annual Automobile Show, Corbitt Garage Building, under the auspices of the Reading Automobile Trade Association, H. C. Lutz, manager.

Scranton, Pa.....Jan. 22-27
Annual Automobile Show, Armory, under the auspices of the Scranton Motor Trades Association, Hugh B. Anderson, manager.

Middletown, Conn.....Jan. 24-27
Second Annual Automobile Show, Armory, under the auspices of the Middletown Automotive Dealers Association, Charles H. Brewster, chairman.

Chicago .....Jan. 27-Feb. 8
Annual Automobile Show, under the auspices of the National Automobile Chamber of Commerce, Coliseum.

Chicago .....Jan. 27-Feb. 8
Annual Automobile Salon, Drake Hotel.

Ann Arbor, Mich.....Jan. 29-Feb. 3

Wilkes-Barre.....Jan. 29-Feb. 3
Fourteenth Annual Automobile Show, Armory, under the auspices of the Automobile Dealers' Association of Wilkes-Barre, R. A. Rosenkrans, chairman.

Minneapolis .....Feb. 3-10
Annual Automobile Show, Overland Building, under the auspices of the Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Portland, Ore.....Feb. 3-10
Annual Automobile Show, Municipal Auditorium, under the auspices of the Portland Automobile Dealers Association.

Troy, N. Y.....Feb. 3-10
Ninth Annual Automobile Show, State Armory, under the auspices of the Troy Used Car Sales Corp., Frank M. Baucus, manager.

Pittsburgh.....Feb. 3-10
Twenty-sixth Semi-annual Automobile Show, Motor Square Garden, under the auspices of the Pittsburgh Automotive Dealers Association.

Allentown, Pa.....Feb. 3-17
Annual Automobile Show, Lehigh Automotive Trade Association Building, under the auspices of the Association, E. T. Satchell, president.

Winnipeg, Man.....Feb. 5-10
Third Annual Automotive Equipment Show with Radio Exhibits in Connection, under the auspices of the Western Canada Automotive Equipment Association, W. L. Williams, secretary.

Charlotte, N. C.....Feb. 5-10
Annual Automobile Show, Made-in-Carolinas Exposition Building, under the auspices of the Charlotte Automotive Trade Association.

Lansing, Mich.....Feb. 5-10

Toledo.....Feb. 5-10
Annual Automobile Show, Terminal Auditorium, under the auspices of the Toledo Auto Shows Co., H. V. Buelow, manager.

Waterbury, Conn.....Feb. 5-12
Third Annual Show at the New State Armory, under the auspices of the Waterbury Automotive Dealers Association. Passenger Cars and Accessories. M. A. Doolittle, chairman of the show committee.

Cincinnati.....Feb. 7-14
Automobile Show, under the auspices of the Cincinnati Automobile Dealers Association, Harry T. Gardner, manager.

Kansas City, Mo.....Feb. 10-17
Annual Automobile Show, under the auspices of the Kansas City Motor Car Dealers Association, George A. Bond, secretary.

St. Louis.....Feb. 10-17
Annual Automobile Show, Universal Building, under the auspices of the St. Louis Automobile Dealers Association, Robert E. Lee, manager.

Kalamazoo and Flint, Mich.....Feb. 12-17

Fort Dodge, Iowa.....Feb. 13-16
Annual Automobile Show, Sullivan Building, under the auspices of the Fort Dodge Automobile Dealers Association, John H. Wilkenson, manager.

Orlando, Fla.....Feb. 13-17
Annual Automobile Show, Fair Grounds, under the auspices of the Orlando Automotive Dealers Association, C. E. Howard, manager.

Flint, Mich.....Feb. 13-27
Annual Automobile Show, under the auspices of the Flint Automobile Dealers Association, Ralph Knight, manager.

Columbus.....Feb. 15-21
Annual Automobile Show, Memorial Hall, under the auspices of the Columbus Automobile Dealers Association, Anson B. Coates, manager.

Hartford, Conn.....Feb. 17-24
Annual Automobile Show, Armory, under the auspices of the Hartford Automobile Dealers Association, Arthur Fifoot, secretary.

Atlanta.....Feb. 17-24
Annual Southern Automobile Show, Atlanta Auditorium, under the auspices of the Atlanta Automobile Association, Virgil W. Shepard, manager.

San Francisco.....Feb. 17-24
Seventh Annual Pacific Automobile Show, under the auspices of the San Francisco Motor Car Dealers Association, Exposition Auditorium, George A. Wahlgreen, manager.

Grand Rapids and Mt. Clemens, Mich.
Feb. 19-24

White Plains, N. Y.....Feb. 19-24
Third Annual Automobile Show, Armory, under the auspices of the White Plains Automobile Dealers Association. Callahan & Partlan, directors.

Schenectady, N. Y.....Feb. 19-24
Annual Automobile Show, Armory, under the auspices of the Schenectady Automotive Dealers Association, John T. Henley, manager.

Louisville, Ky.....Feb. 19-24
Fifteenth Annual Automobile Show, under the auspices of the Louisville Automobile Dealers Association, George T. Holmes, secretary.

Trenton, N. J.....Feb. 21-24
Annual Automobile Show of Passenger Cars, Trucks and Accessories, Armory, under the auspices of the Trenton Automobile Trade Association, Frederick Petry, Jr., manager.

Albany, N. Y.....Feb. 24-March 3
Thirteenth Annual Albany Automobile Show, State Armory, under the auspices of the Albany Automobile Dealers Association, J. B. Wood, manager.

Brooklyn, N. Y.....Feb. 24-Mar. 1
Annual Automobile Show, under auspices of the Brooklyn Motor Vehicle Dealers Association, 23rd Regiment Armory.

Des Moines.....Feb. 25-March 5
Fourteenth Annual Automobile Show, Coliseum, Passenger Cars and Accessories only, under the auspices of the Des Moines Automobile Dealers Association, Dean Schooler and C. G. Van Vliet, manager.

Omaha.....Feb. 26-March 3
Seventeenth Annual Show of Passenger Cars, Trucks and Accessories, Municipal Auditorium, under the auspices of the Omaha Automobile Trade Association, A. B. Waugh, manager.

Muskegon, Mich.....Feb. 26-March 3

Syracuse.....Feb. 26-Mar. 3
Annual Automobile Show under auspices of the Syracuse Automobile Dealers Association, C. H. Hayes, manager.

Springfield, Mass.....Feb. 26-March 3
Annual Automobile Show, under the auspices of the Springfield Automotive Dealers Association.

Poughkeepsie, N. Y.....Feb. 28-March 3
Annual Automobile Show, Marian Building, under the auspices of the Poughkeepsie Automotive Dealers Association, Charles Brooks, manager.

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Calendar of Trade Events

Bay City, Mich.....March 5-10

Indianapolis.....March 5-10
Spring Automobile Show, under the auspices of the Indianapolis Automobile Trade Association, John B. Orman, manager.

Saginaw, Mich.....March 7-11
Annual Automobile Show, Saginaw Auditorium, under the auspices of the Saginaw Automobile Dealers Association, R. P. Bishop, secretary.

Newark, N. J.....March. 10-17
Annual Automobile Show, under the auspices of the New Jersey Automobile Exhibition Co., Claude E. Holgate, manager.

Washington, D. C.....March 10-17
Third Annual Spring Show of Passenger Cars and Accessories, Convention Hall under the auspices of the Washington Automotive Trade Association, Rudolph Jose, chairman of show committee.

Boston.....March 10-17
Annual Automobile Show, Mechanics Building, under the auspices of the Boston Automobile Dealers Association and the Boston Commercial Motor Vehicle Association, Chester I. Campbell, manager.

Port Huron, Mich.....March 12-17

Battle Creek, Mich.....March 19-24
Annual Automobile Show, under the auspices of the Battle Creek Automobile Dealers Association.

Greenville, S. C.....March 28-31
Annual Automobile Show, Textile Hall, Browning Goldsmith, chairman of show committee.

Alpena, Mich.....April 2-7

Races

San Diego.....January

OREGON COLLEGE HAS COURSE IN MECHANICS

PORTLAND, ORE., Dec. 16—Portland's regular winter course in automobile mechanics, held under the auspices of the extension department of the Oregon Agricultural College, opened this month with the largest enrollment in its history.

The course is open to all journeymen mechanics of Portland and vicinity, without charge, and is held one evening each week for two hours, from 8 to 10 P. M., when lectures, illustrated with lantern slides, diagrams and, in some cases, actual parts, are given. The course will continue until April.

Pierce-Arrow Sales Gain

BUFFALO, Dec. 18—In the first 11 months of 1922 passenger car sales showed an increase of 40 per cent over the corresponding period last year, reports the Pierce-Arrow Motor Car Co. In the last half of the year it is estimated that the gain over the last six months of 1921 will be close to 90 per cent. Truck sales up to Dec. 1 of the current year were 65 per cent more than those of the 1921 period.

Cadillac Not to Close

DETROIT, Dec. 18—Because of the large increase in business following its recent price cut, the Cadillac Motor Car Co. will not close for inventory two weeks the first of the year, as planned. Instead H. H. Rice, president, said the company will continue at full force and additional workmen will be taken on.

WILLYS PLANS 45,000 IN FIRST QUARTER

TOLEDO, Dec. 14—"We hope that next year will be the greatest in the history of the Willys-Overland Co.," declared John N. Willys, president, before a group of business men here. "Our inventory has been taken, and we are planning to produce 45,000 automobiles in the first quarter. This means we will have 15,000 or 16,000 men employed before April 1."

King Receivership Dissolved

DETROIT, Dec. 18—Because of the the King Motor Car Co., ordered in 1920 as a result of a voluntary bankruptcy declaration, was dissolved this week in Circuit Court here.

The New Car and Truck Description Index

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Ace.....30	1½-1¾	$2400	3⅝x5	34x3½	34x6	W
Ace.....40	2	2850	4¼x5¼	36x4	36x7	W
Ace.....60	2½-3	3400	4⅜x5¼	36x4	36x8	
Acme.....20	1	....	3¾x5	35x5n	35x5n	W
Acme.....30	1½	....	3¾x5	34x3½	34x5	W
Acme.....40	2	....	3¾x5	34x3½	34x5	W
Acme.....60	3	....	4½x5¼	36x4	36x7	W
Acme.....60L	3	....	4½x5½	36x4	36x7k	W
Acme.....90	4½	....	4½x5½	36x5	40x10	W
Acme.....125	6¼	....	4¾x6	36x6	40x12	W
American.....25	2½	3350	4 x6	36x4k	36x4dk	W
American.....40	4	4275	4½x5¼	36x5k	36x5dk	W
American.....50	5	4500	4½x6	36x5	36x12	W
Armleder.....20	1	....	3¾x3½k	34x3½k	31x6k	W
Armleder.....21	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder.....40-B	1½	....	4¼x5½	34x3½k	31x6k	W
Armleder.....40-C	1½	....	4⅛x5¼	34x3½k	31x6k	W
Armleder..HW-B	2½	....	4¼x5½	36x4k	36x7k	W
Armleder..HW-C	2½	....	4⅛x5¼	36x4k	36x7k	W
Armleder..KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder..KW-C	3½	....	4½x5½	36x5k	36x5dk	W
*Atlas.....22	1	1195	3¾x5⅛	34x4½n	34x4½n	W
*Atlas.....44	1½-2	1950	3¾x5⅛	36x6n	36x6n	W
Atterbury....20R	1½	2475	3¾x5	34x3½	34x5	W
Atterbury....22C	2½	3375	4⅛x5¼	36x4	36x4d	W
Atterbury....22C	2½	3475	4⅛x5¼	36x4	36x4d	W
Atterbury....22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury....22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury.....8E	5	4975	4¾x6	36x5	40x6d	W
Atterbury.....8E	5	5125	4¾x6	36x5	40x6	W
Autocar....21UF	1½-2	1950	4¾x4½	34x4k	31x6	D
Autocar....21UG	1½-2	2050	4¾x4½	34x4k	34x6	D
Autocar....27H	2-3	2950	4 x5½	34x5	36x7	D
Autocar....27K	2-3	3075	4 x5½	34x5	36x7k	D
Autocar....26Y	4-6	3950	4½x5½	34x6	36x12	D
Autocar....26-B	4-6	4100	4½x5½	34x6	36x12	D
Available...H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available.....H2	2	2775	4 x5	36x3½k	36x6k	W
Available...H2½	2½	3160	4 x5	36x4k	36x8k	W
Available...H3½	3½	4175	4½x5½	36x5	40x5d	W
Available.....H5	5	5375	5 x6	36x6	40x12	W
*Avery.....	1	....	3 x4a	31x5n	31x5n	1
Beck.....A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	1
Beck.....B-36	1½	1350	3¾x5	31x5	36x6	
Beck.....C-46	2	1550	3¾x5	36x6	36x6	
Beck.....D-50	2½	1950	4⅛x5¼	38x7	40x8	
Bell.....M (Iowa)	1	1495	3⅝x5⅛	35x5	35x5n	W
Bell.....E (Iowa)	1½	2100	3¾x5¼	34x3½	34x5	1
Bell.....O (Iowa)	2½	2550	4½x5½	34x4	34x6	1
Bessemer.....G	1	1450	3¼x5	35x5n	35x5n	1
Bessemer.....H-2	1½	1900	3¾x5	36x3½	36x5	D
Bessemer.....J-2	2½	2805	4⅛x5¼	36x4	36x4d	D
Bessemer.....K-2	4	3695	4½x5½	36x5	36x10	1
Bethlehem....KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem....GN	2	1795	4 x5¼	34x4	34x6k	D
Bethlehem....GN	3	2195	4 x6¼	36x4k	36x8k	D
Bridgeport.....A	1½	....	3¾x5⅛	34x3½	31x6	W
Bridgeport.....B	2½	....	4½x5½	36x4	36x4d	W
Bridgeport.....C	3½	....	4½x6	36x5	36x10	W
Brinton.....C	2	2500	3¾x5	34x4	34x5	W
Brinton.....D	3	2975	4⅛x5¼	36x4	36x7	W
Brockway.....E	1	....	4 x5	33x5n	33x5n	B
Brockway.....S-5	1½	....	4 x5	36x4	36x6	W
Brockway.....SA	1½	....	4⅛x5¼	36x4	36x6	W
Brockway.....KA	2½	....	4½x5½	36x4	36x8	W
Brockway.....K-5	2½	....	4⅛x5¼	36x4	36x8	W
Brockway.....R1	3½	....	4¾x6	36x5	35x10	W
Brockway.....R-	3½	....	4½x5½	36x5	36x5d	W
Bockway.....T-	5	....	4¾x6	36x6	40x6d	W
*Buick.....	½	945b	3⅝x4¾	31x4n	31x4n	B
Case.....	2	....	4¼x5¼	36x6	38x7	1
*Chevrolet.....	¼	510b	3¼x4	30x3½n	30x3½n	B
*Chevrolet.....G	¾	650	3¼x4	31x4n	31x4½n	B
*Chevrolet.....T	1	1095	3¼x5¼	33x4n	35x5n	W
Chicago.....C1	1½	....	4 x5	34x3½k	30x5k	W
Chicago.....C2	2½	....	4 x5	36x4k	36x7k	W
Chicago.....C3	3½	....	4½x5½	36x5	36x10	W
Chicago.....D5	5	....	4½x5½	36x6	40x12	W
Clydesdale.....10	¾-1¼	1185	3¼x5	34x5n	34x5n	B
Clydesdale.....10¾	¾-1¼	1535	3¾x5	34x5n	34x5n	B
Clydesdale.....15	¾-1¼	1890	3¾x5	34x5	34x5	W
Clydesdale.....20	1-1½	2385	3¾x5	34x5	34x5k	W
Clydesdale.....42	1½-2	2475	3¾x5	36x3½	36x6	W
Clydesdale...65X	2½-3	3250	4¼x5¼	36x4	36x8	W
Clydesdale...65EX	2½-3	3150	4½x5½	36x4	36x8	W
Clydesdale.....90	3½-4	4100	4½x5½	36x5	36x10	W
Clydesdale....120	5-6	4500	4¾x6	36x6	40x12	W
Commerce.....9	¾-1¼	1150	3¾x5	32x4½n	32x4½n	P
Commerce.....T	¾-1¼	1450	3¾x5	34x4½n	34x4½n	B
Commerce.....10	¾-1¼	2500	3¾x5	33x5n	33x5n	B
Commerce.....12	1½	1695	3¾x5	34x3½	34x4	1
Commerce.....12	1½	1890	3¾x5	35x5n	35x5n	1
Commerce.....16	2	1995	3¾x5	34x4	34x6	1
Commerce.....16	2	2150	3¾x5	35x5n	36x6n	1
Commerce.....18	2½	2150	4¼x5¼	36x4	36x7	1
Commerce.....18	2½	2495	4¼x5¼	36x6n	40x8n	1
Commerce.....25	2½	2125	4¼x5¼	36x4	30x7	W
Commerce.....25	2½	2770	4¼x5¼	36x6	40x8n	W
Cook.....51	2½	3600	4 x5½	36x6n	40x8n	W
*Corbitt.....	¾ 1	1250	3½x5	33x5n	33x5n	

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Corbitt.....E-22	1	$1480	3¾x5	34x3½	34x4	W
Corbitt.....D-22	1½	2200	3¾x5	34x3½	34x5	W
Corbitt.....C-22	2	2600	4¼x5¼	36x3½	36x7	W
Corbitt.....B-22	2½	3000	4⅛x5¼	36x4	36x7	W
Corbitt.....R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt.....A-22	3½-4	3800	4½x5½	36x5	36x10	W
Corbitt.....AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder.....AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder.....B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder.....D	2	2400	4⅛x5¼	36x4	36x7	W
Day-Elder.....C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder.....F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder.....E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn.....E	1	1600	3⅝x5⅛	35x5n	35x5n	W
Dearborn.....FX	1½	2300	3¾x5⅛	34x4	34x5	W
Dearborn.....F	1½	2180	3⅝x5¼	34x4	34x5	W
Dearborn.....43	2	2590	3¾x5⅛	34x4½n	34x7	W
Defiance.....G	1	1525	3¾x5	35x5n	35x5n	B
Defiance.....D	1½	1845	3¾x5	35x5n	36x6n	1
Defiance.....E	2	2075	3¾x5	35x5n	38x7n	1
Denby.....31	1¼	1185	3¾x5	35x5n	35x5n	B
Denby.....33	1½	2145	3¾x5	35x5n	38x7n	1
Denby.....35	2½-3	2795	4⅛x5¼	36x4	36x7	1
Denby.....27	4	3895	4½x5½	36x5	36x5d	1
Denby.....210	5	4295	4½x5½	36x6	40x6d	1
Dependable....A	¾-1	1650	3⅝x5⅛	34x5n	36x6n	W
Dependable....C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable....D	2½	2650	4 x5½	34x5	36x6	W
Dependable....E	3	2950	4¼x5½	36x4	36x7	W
Diamond T....O-3	1-1¼	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T.....T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T.....U	2-2½	2850	4 x5¼	36x4	36x7	W
Diamond T.....K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T.....EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T.....S	5	4500	4¾x6	36x6	40x6d	W
Deane.....	2½	4100b	4¼x5¾	36x5	36x7	C
Deane.....	3½	5100b	4⅜x5¼	36x5	36x5d	C
Deane.....	6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers	¾	730	3⅞x4½	32x4n	32x4n	B
Dorris.....K-2	1	2490	4 x5½	33x5n	33x5n	B
Dorris.....K-4	2-2½	3400	4¼x5½	36x4	36x7	W
Dorris.....K-7	3½	4100	4¼x5½	36x5	36x10	W
*Dort.....103	½	685a	3½x5	31x4n	31x4n	B
Double Drive...B	3	4000	4¼x5½	36x6	36x6	W
Duplex.....A	2	2775	4 x5¼	35x5n	38x7n	W
Duplex.....E	3½	3500	4¼x5½	36x6	36x8	1
Duty.....22	2	1590	3½x5	34x3½	34x5	1
Eagle.....101	1½	1875	3⅝x5⅛	34x5	34x5	I
Eagle.....100-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D.....B	3	4200	4¾x5½	36x6	36x6	B
Fageol.....1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol.....2½	2½	3900	4⅜x5¼	34x4	36x7	W
Fageol.....3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol.....5	5	5700	4½x6¼	36x6	40x6d	W
Fargo.....R	2	1700	3¾x5	36x4	36x6	1
*Federal.....	1½	1375	3¾x5	—x5n	—5n	
Federal.....SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal.....TE	1½	2175	4¼x5¼	36x3½	36x5	W
Federal.....UE	2-2½	2425	4⅛x5¼	36x4	36x7	W
Federal.....WE	3½-4	3150	4½x5½	36x5	36x5d	W
Federal.....X2	5-6	4500	4¾x6	36x6	40x6d	W
*Ford.....TT	1	380	3¾x4	30x3½n	32x4½n	W
Front Drive....C	1½	2800	3¾x5½	36x6	36x6	W
G.M.C.....K16	1	1295	3½x5½	34x5n	34x5n	B
G.M.C.....K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C.....K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C.....K-41T	5†	2450	4 x5½	36x4	36x8	W
G.M.C.....K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C.....K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C.....K-71T	10†	3700	4½x6	30x5	40x12	W
G.M.C.....K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C.....K-101T	15†	4050	4½x6	36x5	40x14	W
G.M.C.....K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W.....	1½	1850	3¾x5½	35x5	35x5	1
*Garford.....15	1	1590	3⅝x5⅛	34x5n	34x5n	W
Garford.....25-B	1½	1900	3¾x5⅛	36x3½	36x5	W
Garford.....70-H	2½	2750	4¼x5½	36x4	36x8	W
Garford.....77-D	4	3750	4½x6	36x5	36x5d	W
Garford.....68-D	5	4500	5 x6½	36x6	40x5d	W
Garford.....150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary.....F	1-1½	1775	3¾x5	36x3½	36x5	W
Gary.....I	2	2450	4 x5½	36x3½	36x6	W
Gary.....J	2½	2850	4¼x5½	36x4	36x8	W

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Gary.....K	3½	$3790	4½x6	36x5	40x5d	W
Gary.....M	5	4450	5 x6½	36x6	40x6d	W
Gersix.....M	1½	3100	4 x5½	36x3½	36x7	W
Gersix.....K	2½	3500	4½x5½	36x4	36x8	W
Gersix.....	3½	4500	4½x6	36x5	40x12	W
Gotfredson....20	1	2075	3¾x5⅛	34x5	34x5	W
Gotfredson....31	1½-2	3000	4 x5¼	36x6	38x7n	W
Gotfredson.....A	2½	3375	4 x5¼	36x4	36x7	W
Gotfredson.....B	3½-4	4475	4½x5½	36x5	36x10	W
Gotfredson....100	5-6	5500	5 x6½	36x6	40x14	W
Graham Bros.....	1	1265	3¾x4½	33x4½n	34x5n	B
Graham Bros.....	1½	1325	3¾x4½	33x4½n	36x6n	B
1Gramm-Pion..10	1	1245	3½x5	33x5n	33x5n	B
1Gramm-Pion..15	1½-2	1750a	3¾x5	36x3½k	36x5k	1
1Gramm-Pion..65	1½-2	2250a	3¾x5	36x3½k	36x5	W
1Gramm-Pion..20	2-2½	2475a	4⅛x5¼	36x4k	36x7k	W
1Gramm-Pion..30	3	3300a	4¼x5½	36x5k	36x5dk	W
1Gramm-Pion.75P	3½	4225a	4½x5½	36x6n	42x9n	W
1Gramm-Pion..40	4	3850a	4½x5½	36x5	36x5dk	W
1Gramm-Pion..50	5-6	4450a	4¾x6	36x6	40x6dk	W
Hall.....1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall.....2½	2½	3275	4⅛x5¼	36x4	36x6	W
Hall.....3½	3½	4100	4½x5½	36x5	36x5d	W
Hall.....5	5	5100	4½x5½	36x5	40x6d	W
Hall.....7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey....W OA	2	2650	4¼x5½	34x4	34x7	W
Harvey....WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey....WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye.....O	1	1375	3⅝x5⅛	34x5n	34x5n	
Hawkeye.....K	1½	1645	3¾x5½	34x3½k	34x5k	1
Hawkeye.....M	2	2115	4¼x5	36x4k	36x6k	1
Hawkeye.....N	3½	3700	4¼x6¼	36x5k	36x10k	1
Hendricksen...O	1½	2200	3⅝x5⅛	36x4n	36x5n	W
Hendricksen...N	2½	2690	4¼x5¼	36x4k	36x7k	W
Hendricksen...M	3½	3000	4¼x5½	36x5k	36x5dk	W
Hendricksen...K	5	4000	5 x6¼	36x6	40x6	W
Huffman.....B	1½-2	1795	3¾x5	34x3½	34x6	W
Huffman.....C	1½-2	1695	3¾x5½	30x3½	36x6	1
Huffman.....D	2-3	2895	4¼x5½	36x4	36x7	
Hurlburt.....A-A	1-1½	1950	3¾x5	34x5n	34x5n	W
Hurlburt.....B-B	2-2½	2800	4¼x5½	36x4	36x4d	W
Hurlburt.....C-C	3-3½	3175	4¼x5½	36x5	36x5d	W
Hurlburt.....D-D	4-4½	4150	4½x6	36x5	36x6d	W
Hurlburt.....E-E	6-6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa).B	1	1665	3½x5	34x3½	34x4	1
Indep'd't(Iowa).G	1½	2040	3¾x5¼	34x3½	34x5	1
Indep'd't(Ia.)...H1	2½	2940	4⅛x5¼	36x4	36x7	1
*Indiana.....10	1	....	3¾x5¼	31x5n	34x5n	B
Indiana.....12	1½-2	....	3¾x5¼	34x3½k	31x5k	W
Indiana.....20	2	....	4⅛x5½	36x4k	36x7k	W
Indiana.....25	2½-3	....	4¼x5½	36x4k	36x8k	W
Indiana.....35	3½-4	....	4⅜x5½	36x5k	36x5dk	W
Indiana.....51	5-7	....	5 x6¼	36x5k	40x6dk	W
*International..S	1	1250	3½x5	32x4½n	32x4½n	I
International...21	1	1550	3½x5¼	36x3½k	36x3½	I
International...31	1½	1650	3½x5¼	36x3½k	36x5k	I
International...41	2	2100	3½x5¼	36x3½k	36x6k	I
International...52	2½	3500	4¼x5¼	36x6n	36x6dn	I
International...61	3	2400	4¼x5	36x4k	36x7k	I
International...62	3	2600	4¼x5	36x4	36x7	I
International..101	5	3600	4¼x5	36x5	40x12k	I
International..102	5	3800	4¼x5	36x5	36x13½	I
Jackson.....4WD	3½	3850	4½x5½	36x7	36x7	B
K-Z.....1	1	1750	3½x5	34x3½	34x5	W
K-Z.....1½	1½	2075	3¾x5	36x4	36x6	W
K-Z.....2½	2½	2550	4⅛x5¼	36x4	36x8	W
K-Z.....3½	3½	3350	4½x5½	36x5	40x10	W
K-Z.....5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo....T	1	1295	4 x5	31x5	34x5n	B
Kalamazoo....G-1	1½	2100	3¾x5	34x4	34x5	W
Kalamazoo....LG	2	2615	4 x5	36x4	36x7	W
Kalamazoo....NH	3	3359	4 x6	36x5	36x10	W
Kalamazoo....HD	3	3350	4¼x6	36x5	36x10	W
Kalamazoo....SK	4	4000	4¼x6	36x5	36x12	W
Kalamazoo....OK	5	4500	4½x6	36x6	40x6d	W
2Kelly-S.....K-31	1½	2700	3¾x5¼	36x3½	36x6	C
2Kelly-S.....K-34	1½	2700	3¾x5¼	36x3½	36x6	W
2Kelly-S.....K-38	2½	2900	3¾x5¼	36x4	36x4d	W
2Kelly-S.....K-35	2½	2900	3¾x5¼	36x4	36x4d	C
2Kelly-S.....K-40	3½	3900	4½x6½	36x5	40x5d	C
2Kelly-S.....K-41	3½	3900	4½x6½	36x5	36x10	1
2Kelly-S.....K-42	3½	3900	4½x6½	36x5	40x5d	W
2Kelly-S.....K-50	5	4400	4½x6½	36x6	40x6d	C
2Kelly-S.....K-60	6	4600	4½x6½	36x6	40x7d	C
2Kelly-S.....K-61	5-7	4800	4½x6½	36x6	36x7d	1
Kimball.....AB	2	3675	4 x6	36x4	36x7	W
Kimball.....AC	2½	3975	4¼x6	36x4	36x8	W
Kimball.....AK	3	4500	4½x6	36x4	36x10	W
Kimball.....AE	4	5000	4¾x6	36x5	40x12	W
Kimball.....AF	5	5500	5 x6	36x6	40x7d	W
*Kissel...Express	1	1585	3⅞x5½	34x5n	34x5n	W
Kissel.....Utility	1½	1975	3⅞x5½	36x3½	36x6	W
Kissel..Freighter	2½	2875	4¼x5½	36x4	36x6	W
Kissel.....H.D.	4	3675	4¼x5½	36x5	36x12	W
Kleiber.....AA	1	2200	4⅛x5¼	34x3½k	34x5n	W
Kleiber.....A	1½	3100	4⅛x5¼	36x3½k	36x5n	W

FINAL DRIVE: -B -Bevel, C—Chain, D—Double Reduction, I -Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl. -all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *express truck or delivery wagon. **—Canadian Make. trac.—tractor. †capacity with semi-trailer.

1—Gramm Pioneer. 2—Kelly-Springfield.

Passenger car specifications on pages 51 and 52

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5½	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....D	1½	2150	3½x5	34x3½	34x5	W
Koehler.....M	2½	3175	4 x5⅛	36x4	36x7	W
Koehler.....MCS	2½	3275	4 x5⅛	36x4	36x7	W
Koehler.....F	3½	4470	4½x5½	36x5	36x10	W
Koehler,MT.Trac	5	3275	4 x5⅛	36x4	36x7	W
Krebs.....23	¾	1360	3¾x5	34x4½	34x4½	B
Krebs.....24	1	1675	3¾x5	34x5	34x5	W
Krebs.....45	1½	2275	4½x5¼	36x4	36x7	W
Krebs.....75	2½	2550	4½x5½	36x4	38x8	W
Krebs.....110	3½	3175	4½x5½	36x5	40x10	W
Krebs.....140	5	.....	4¾x6	36x6	40x6d	W
Larrabee.....X-2	1	1925	3¼x4½	34x5n	34x5n	B
Larrabee.....U	1½	2400	3¾x5	34x3½	34x5	W
Larrabee.....J	1½-2½	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½-3	3100	4½x5¼	36x4	36x7	W
Larrabee.....K-5	2½-3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½-5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5-7	4800	4¾x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5¼	36x4	36x6	W
Maccar.....H-A	2	....	4½x5¼	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5-6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack.....AB D.R.	1½	3450	4 x5	36x4k	36x3½dk	D
Mack...AB Chain	1½	3000	4 x5	36x4k	36x3½dk	D
Mack...AB Chain	2	3300	4¼x5	36x4k	36x4dk	C
Mack.....AB D.R.	2	3750	4¼x5	36x4k	36x4dk	D
Mack...AB D.R.	2½	3850	4¼x5	36x4k	36x4dk	D
Mack...AB Chain	2½	3400	4¼x5	36x4k	36x4dk	C
Mack...AC Chain	3½	4950	5 x6	36x5k	40x5dk	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac.....AB	5	3400	4¼x5	36x4	36x4d	C
Mack Trac.....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac.....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac.....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac.....AC	15	6000	5 x6	36x7	40x7d	C
*Maplesleaf.....**	1½	3000	3¾x5½	34x5n	36x6n	W
Maplesleaf...AA**	2	3600	4 x5¼	36x4	36x7	W
Maplesleaf...BB**	3	4050	4¼x5½	36x4	36x4d	W
Maplesleaf...CC**	4	4800	4½x5½	36x5	36x5d	W
Maplesleaf...DD**	5	5625	4½x5½	36x6	40x6d	W
Mason.....	1	1200	4 x5	34x5n	34x5n	B
Master.....JW	1½	2290	4½x5½	34x3½	34x5	W
Master.....JD	1½	2590	4½x5½	34x3½	34x6	D
Master.....Z	2	2290	4½x5½	34x3½	34x5	W
Master.....W	2½	2890	4¼x5½	34x4	36x8	W
Master.....DD	2½	3190	4¼x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x8	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4¼x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3⅝x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1-1¼	2000	3¾x5	34x3½	36x5	W
Menominee....H	1½	2475	4 x5	36x3½	36x5	W
Menominee....D	2-2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4¾x6	36x6	40x12	W
Moline.....10	1½	1985	3½x5	34x5n	36x6n	I
3Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5¼	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½-5	4600	4¾x6	36x6	40x6	W
Nash.....2018	1-1½	1595	3¾x5¼	34x4	34x5	1
Nash.....3018	2-2½	2150	3¾x5¼	34x4k	34x7k	1
Nash.....Quad.	2-2½	2750	4¼x5½	36x6	36x5k	1
Nash..3018, LWB	2-2½	2200	3¾x5¾	34x4k	34x7k	1
Nash.Quad. LWB	2-2½	2800	4¼x5½	36x6	36x6	1
Nash.....5018	2½	2250	3¾x5¼	34x4k	34x7k	1
4Nelson.....G2	1½	....	4½x5¼	36x3½	36x6	W
4Nelson.....G3	2½	....	4½x5¼	36x4	36x7	W
4Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
4Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5¼	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5¼	36x4k	36x7k	W
Noble.....A21	1¼	1750	3⅝x5⅛	34x5	34x5	W
Noble.....B31	1½-2	2395	3¾x5¼	36x4	36x7	W
Noble.....D51	2½-3	2795	4¼x5½	36x4	36x8	W
Noble.....E71	3½-5	3495	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3¾x5¼	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4¼x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4¼x5¼	34x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	36x3½	36x5	W
Ogden.....E	2½	....	4⅛x5¼	36x4	36x8	W
Old Hickory...W	1	$1775	3¾x5	36x3½k	36x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4¼x6	34x4	36x4d	W
Old Reliable....C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6¼	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3⅛x5¼	35x5n	35x5n	I
Olympic.....A	2½	3200	4¼x5½	36x4	36x8	W
Oneida.....B9	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C9	2½	3200	4 x5¼	36x4	36x8	
Oneida.....D9	3½	4050	4½x5½	36x5	36x10	
Oneida.....E9	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	2485	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	2585	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3185	4 x5⅛	38x7n	38x7n	B
Oshkosh.....BB	2½	3585	4 x5⅛	38x7n	38x7n	B
*Overland.....4	½	425	3⅜x4	30x3½n	30x3½n	B
Packard.....EC	2-3	3100	4⅛x5½	36x4	36x7	W
Packard.....EX	2-2½	3100	4⅛x5½	36x6n	40x8n	W
Packard.....ED	3½-4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5-7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5¼	34x3½	34x5	W
Paige.....54-20	2½	2420	4¼x5½	34x4	34x8	W
Paige.....51-18	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	36x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x6d	W
Patriot....Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot....Lincoln	2	2050	4 x5¼	34x4	34x6	W
Patriot....LS-800	2	2175	4 x5¼			
Patriot..Washgt'n	3	2900	4½x5½	36x5	36x7	W
Pierce-Arrow.....	2	3200	4 x5½	36x4	36x4d	W
Pierce-Arrow.....	3½	4350	4½x6¾	36x5	36x5d	W
Pierce-Arrow.....	5	4850	4½x6¾	36x5	40x6d	W
Pittsburgher.....	1½-2	3000	3½x5	36x4	36x6	
Pittsburgher.....	3	3800	4½x5½	36x5k	36x7	W
Power.....F	2	3150	4 x5¼	36x5	36x7	W
Power.....C	3½	....	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x6n	W
*Rainier....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4½x5¼	34x4	34x6	W
Rainier.....R-20	2½-3	....	4½x5¼	34x4	34x7	W
Rainier.....R-15	3½-5	....	4½x5½	36x5	36x5d	W
Rainier.....R-25	3½-5	....	4½x5¼	36x5	36x5d	W
Rainier.....R-17	5-6	....	4¾x6	36x6	40x6d	W
Rainier.....R-27	6	....	4¾x6	36x6	40x6d	W
Ranger..TK-20-2	1½	1450	3¾x5	36x6n	38x7n	W
*Reo.....F	1¼-1½	1185	4½x4½	34x4½n	34x4½n	B
Reliance.....10A	1½	2400	4 x5¼	36x3½	36x5	1
Reliance.....20B	2½	3100	4¼x5½	36x4	36x4d	1
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3¾x5	34x3	34x4	I
Republic...10 Exp	1	1695	3¾x5	34x5n	34x5n	I
Republic.....11X	1½	1795	3¾x5	34x4	34x6	I
Republic.....19	2½	2195	4½x5¼	36x4	36x7	I
Republic.....20	3½	3095	4½x5½	36x5	36x10	I
Rowe.....CW	1½	3000	3¾x5	36x6n	36x6n	W
Rowe.....C.D.W.	2	3300	4 x5	34x4	36x3½d	W
Rowe.....G.S.W.	3	4150	4 x6	34x5	36x5d	W
Rowe.....G.P.W.	3	5250	3¼x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4¼x6	36x5	36x6d	W
Rowe.....F.W.	5	4850	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Sanford....W-15	1½-2	2150b	3¾x5	36x3½k	36x5k	
Sanford.....25	2½-3½	....	4½x5¼	36x4	36x4d	W
Sanford.....35	3½-5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5-7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ten	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ten	3	3800	4¼x5½	36x5	38x5d	W
Schacht....4-Ten	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ten	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ten	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5¼	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....39	1½-2½	2250	3¾x5	34x3½	34x5	W
Selden.....51	1½-2½	3350	4½x5¼	34x5n	38x7n	W
Selden.....50	2½-3½	3250	4½x5¼	36x4	36x7	W
Selden.....51	2½-3½	4350	4½x5½	36x6n	40x8n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires.
k—pneumatic tires optional at extra cost n—pneumatic tires.
a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Selden.....70	3½-5	$3750	4½x5½	36x5	36x10	W
Selden.....90	5-7	4950	4¾x6	36x6	40x12	W
Seneca.....M	½	820	3¼x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3¼x4½	32x4½n	32x4½n	B
*Service.....25	1½	....	3¾x5½	34x5n	34x5n	B
Service.....21	1½	....	3½x5½	34x3½	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4¼x5½	36x5n	38x7n	W
Service.....52	3	....	4¼x5½	36x4	36x8	W
Service.....72	3½	....	4¼x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	....	3¾x5	34x5n	36x6n	W
Signal.....H	1½	....	4⅛x5¼	34x4	36x6	W
Signal.....J	2½	....	4¼x5¼	34x4	36x8	W
Signal.....M	3½	....	4½x5½	36x5	40x5d	W
Signal.....R	5	....	4¾x6	36x6	40x6d	W
*Standard.....75	1¼	1330	3¼x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½-3	2400	4½x5¼	36x4k	36x8	W
Standard.....66	3½-5	3150	4½x5½	36x5	36x12	W
Standard.....5-K	5-7	4400	4¾x6	36x6	40x14	W
*Star.....	½	610b	3½x4½	30x3½n	30x3½n	
Sterling.....1½	1½	2885	4 x5¾	36x3½k	36x5k	W
Sterling.....2	2	3085	4 x5¾	36x4k	36x6k	W
Sterling.....2½	2½	3290	4⅛x5¾	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6¼	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6¼	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6¼	36x6	40x6d	C
Sterling.....7½	7½	6000	5 x6¼	3 1x6	40x7d	C
*Stewart...Utility	¼-1½	1245	3⅝x5½	34x4½n	34x4½n	I
Stewart.....15	1½-1½	1445	3⅝x5½	35x5n	35x5n	I
Stewart.....9	1½-2	1790	3¾x5	34x3½	34x6	I
Stewart.....7-X	2½-3	2390	4¼x5½	34x4	34x8	I
Stewart.....10-X	3½-4	3190	4½x6	36x5	36x10	I
*Stewart.....	1¼	1245	4-3½x5½	34x4½	34x4½	
*Stoughton.....C	¾	1095	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3¾x5¼	34x5n	34x5n	W
Stoughton.....B	1½	2150	3¾x5¼	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5½	36x4	36x7	W
Stoughton.....F	3	3150	4¼x5½	36x5d	36x8d	W
Sullivan.....E	2	2800	4¼x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	36x5	36x5d	W
*Themart.....	1¼	1795	4 x5¼	34x5	34x5	C
Tiffin.....GW	1½	2100	4⅛x5¼	36x3½	36x5	W
Tiffin.....MW	2½	2700	4⅛x5¼	36x4	36x3½d	W
Tiffin.....PW	3½	3600a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4¼x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	36x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4⅛x5¼	35x5n	38x7n	W
Tower.....H	2½	2475	4⅛x5¼	36x4	36x7	W
Tower.....G	3½	3475	4¼x5½	36x5	36x5d	W
Traffic.....	1½	1595a	3¼x5	35x5n	35x5n	I
Traffic.....C	2	1595a	3¼x5	34x3½	34x5k	I
Traffic.....	3	1895a	3¼x5	36x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5⅛	34x3½k	34x5k	I
Transport.....35	2	1885a	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4⅛x5¼	36x4k	36x8k	I
Transport.....60	3½	2585	4¼x5½	36x4k	36x8k	I
Transport.....75	5	3185	4½x6	36x5k	36x12k	I
Traylor.....B	1¼	2390	3¾x5½	34x3½	34x5	W
Traylor.....C	2-2½	2850	4 x5½	36x4	36x7	W
Traylor.....D	3-3½	3300	4¼x5½	36x4	36x8k	W
Traylor.....F	5-6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3¼x5	34x4½n	34x4½n	I
Triangle.....A	1½-2	1985	3¾x5¼	34x3½k	34x6k	I
Triangle.....C	2-2½	2285	3¾x5¼	36x4k	36x7k	I
Triangle.....B	2½-3	2585	4 x5¼	36x4k	36x7k	I
Twin City...B.W.	2	2400	4 x5½	36x6	40x8	I
Twin City...A.W	3½	3500	4¼x6	36x5	40x5d	W
5Twin City.....B	3½	....	5⅛x6	36x6	36x6	I
5Twin City.....A	5	....	5⅛x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5½	36x3½	36x6	W
Ultimate.....AJ	2	3200	4¼x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4¼x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4¼x5½	36x4	36x4d	W
Ultimate.....BL	3	3800	4¼x5½	36x4	3 x4d	W
Ultimate.....D	5	5500	5 x6¼	36x6	40x12	W
Unitpd.....A	1½	2445	3¾x5½	36x3½k	3 x5k	W
United.....B	2½	3150	4¼x5½	36x4k	3 x7k	W
United.....C	3½	3975	4¼x5½	36x5	3 x5d	W
United.....V	5	4500	4½x6	36x6	4 x6d	W
*United States..U	1¼	1800	3⅝x5½	34x5n	34x5n	B
UnitedStates.NW	1½-2	2375	3¾x5	36x5	36x3½	W
United States...N	1½-2	2175	3¾x5	36x3½k	36x5	I
United States...R	3	3300	4 x5¼	33x4	36x4d	W
United States...S	4	4075	4½x5½	36x5	36x5d	W
United States...T	5-7	4975	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Velie.....53	2½	2185	4 x5½	36x4k	36x7k	I
Veteran.....M**	1½	2699	3¾x5¼	35x5n	35x5n	W

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Veteran.....P**	2	$3600	4½x5½	36x4	36x7	W
Veteran.....R**	3	4200	4½x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....50	½-¾	995	4 x5	32x4n	32x4n	B
Walker-JohnsonA	2	2500	3¾x5	34x3½	34x6	W
Walker-JohnsonB	3	3000	4¼x5½	36x4	36x8	W
Walter.....M	2½	3850	4½x5¾	36x4	36x8	D
Walter.....S	5	4850	4½x6¼	36x6	40x6d	W
*Watson.....C	1	1465a	3⅝x5⅛	35x5n	35x5n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2450	4⅛x5¼	36x3½k	36x5k	W
Western....L1½	1½	2450	3¾x5	36x3½k	36x5k	W
Western....W2½	2½	3250	4½x5¼	36x4	36x7	W
Western....L2½	2½	2450	4¼x6	36x4	36x7	W
Western....W3½	3½	4000	4½x6	36x5	40x5d	W
*White.....15	¾	2400	3¾x5½	34x5n	34x5n	B
White.....20	2	3250	3¾x5½	36x4k	36x7k	D
White.....40	3½	$4200	3¾x5¾	36x5	40x5d	D
White.....45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick....E	1	1225	3¾x5	34x5n	34x5n	W
White Hick....H	1½	1375	3¾x5	36x3½	36x5	W
White Hick....K	2½	1675	4⅛x5¼	36x4	36x5	W
Wichita.....K	1	1875	3¾x5¼	36x3½	36x4k	W
Wichita.....M	2	2400	3¾x5¼	36x3½k	36x6k	W
Wichita.....RX	3	3200	4¾x5¾	36x4k	36x8k	W
Wichita.....O	4	$3500	4½x6¼	36x5k	36x5k	W
Wilcox.....AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4½x5	36x4k	36x3½dk	W
Wilcox.....E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox.....F	5	4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¾x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4½x5½	36x4	36x7	W
Wilson.....G	3½	3685	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin.....A	1	1750	3¾x5	34x5n	34x5n	W,B
Wisconsin.....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin.....C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin.....D	3½	3000	4¾x5¾	34x6n	40x8	W
Wisconsin.....E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin.....F	7	4000	5 x6¼	36x6	36x12	-
Witt-Will.....N	1½	2450	3¾x5	34x5n	34x6k	W
Witt-Will.....P	2½	2900	4½x5¼	36x4k	36x8k	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.

r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders; Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P.	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm...	15-25	1185	4	Midw.	4-4½x5¼	Gas.	3
Allis-Chalm...	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm..	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork...2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork.....C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T....	15-30	1900	4	Clim.	4-5 x6½	G,K,D	4
Aultman-T....	22-45	2800	4	Own	4-5½x8	G,K,D	6
Aultman-T....	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Automot...B-3	12-24	1250	4	Herc.	4-4 x5⅛	Gas.	2-3
Avery,SR.Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4⅜x6	G,K,D	2-3
§Avery.....	....	....	*	Own	4-4x5½	G,K,D	3-4
Avery.....	12-25	....	4	Own	2-6½x7	G,K,D	2-3
Avery.....	14-28	....	4	Own	4-4⅞x7	G,K,D	3-4
Avery.....	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7¾x8	G,K,D	8-10
Bates Mule.H	15-25	....	4	Midw.	4-4½x5¼	Gas.	3
Bates Mule..F	18-25	....	*2	Midw.	4-4½x5¼	Gas.	3
‡BatesMule.G	25-35	....	*2	Midw.	4-4½x6	Gas.	..
Bear.....	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman Jr...	¾-1½	180	2	B&S	1-2½x2½	Gas.	..
*Beeman...G	2-4	240	4	Own	1-3½x4½	Gas.	..
Best.....	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best.....	60	....	*2	Own	4-6½x8½	G,K,D	8-9
¶Bolens.....	....	....	4	B&S	1-2½x2½	G.	..
Boring.....	5-10	395	4	LeR.	4-3½x4½	G.	..
Boring....1921	....	1850	3	Wauk	4-4⅜x5¾	GorK	2
**Bryan.....	15-30	....	4	Own	2-4 x5	K.	3
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	2-3
Case.....	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case.....	22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case.....	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T35	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar..5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur.....	5-2½	345	2	N Way	2-4½x4½	GorK	1
Cletrac.....F	9-16	595	*2	Own	4-3¼x4½	G,K,D	2
Cletrac.....W	12-20	1345	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Do-It-All,Baby	1	237	..	Own	1-2¾x2¾	Gas.	1
Do-It-All.....A	3-6	495	..	Own	1-4½x5	Gas.	1
Do-It-All, Jack	6	395	..	Own	1-3¾x3¾	Gas.	1
Do-It-All....6	12	495	2	Own	2-3¾x3¾	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	GorK	4-5
E-B.....AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol.....D	9-18	1175	4	Lyc.	4-3½x5	Gas.	2
Farm Horse B	18-30	1885	4	Clim	4-5 x6½	G,K	4
Fitch..4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	395	4	Own	4-4 x5	G,K	2
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt...A	18-36	$2150	4	Wauk.	4-4¾x6¾	GorK	4
Gray.....	20-36	1975	3	Wauk.	4-4½x6¼	Gas.	4
Gray.....	22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. WesternSt	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr..20	20	865	4	Own	2-5¼x6½	K,D.	2
Hart-Parr..30	30	1045	4	Own	2-6½x7	K,D.	3
‡Hart-Parr....	....	1395	4	Own	6½x7	K,D.	..
Heider.....D	9-16	628	4	Wauk.	4-4¼x5¾	G,K	2
Heider.....C	12-20	725	4	Wauk.	4-4½x6¾	G,K.	3
Heider...Cult	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light..4	12-25	985	4	Wauk.	4-4½x5¾	GorK	3
Huber Super 4	15-30	1885	4	Midw.	4-4½x6	Gas.	3
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International..	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5¼x8	G,K,D	4
¶Kinkade....	1½-3	190	1	Own	1-3 x3	Gas.	..
La Crosse....	12-24	985	2	Own	2-6 x7	G,K	3
Lauson.....5	12-25	1295	4	Midw.	4-4½x5¼	Gas.	3
Lauson.....21	15-30	1675	4	Beav.	4-4¾x6	GorK	3-4
‡Lauson Road	15-30	2000	4	Beav.	4-4¾x6	K	..
Leader.....B	12-18	685	4	Own	2-6 x6¼	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K.	3-4
‡Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Little Giant..B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant..A	26-35	3300	4	Own	4-5½x6	K	6
Lombard..1922	85-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard..1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2⅝x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	GorK	3
Minne. Gen.P	17-30	1600	4	Own	4-4¾x7	GorK	3-4
Minne. Med.D	22-44	2650	4	Own	4-6 x7	GorK	5-6
MinneHeavyD	35-70	3850	4	Own	4-7¼x9	GorK	8-9
Mohawk..1922	8-16	650	2	Light	4-3¼x4½	KorG	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch..	9-18	....	2	Own	4-3½x5	Gas.	2-3
‡Monarch.....	20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Motor Macult.	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	375	4	Own	2-3¾x4	Gas.	1
Nichols-Shep..	20-42	2650	4	Own	2-8 x10	GorK	3-6
Nichols-Shep..	25-50	3000	4	Own	2-9 x12	GorK	4-8
Nichols-Shep..	35-70	3650	4	Own	2-10½x14	GorK	8-12
Nilson Senior.	20-40	1975	5	Wauk.	4-5 x6¼	G,K	4
OilPull.....K	12-20	....	4	Own	2-6 x8	K,D	3
OilPull.....H	16-30	....	4	Own	2-7 x8½	K,D	4
OilPull.....G	20-40	....	4	Own	2-8 x10	K,D	5-6
OilPull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar...K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Pioneer.....G	18-36	....	4	Own	4-5½x6	G,K,D	4
Pioneer.....C	40-75	....	4	Own	4-7 x8	Gas.	10
Russell.....	12-24	1500	4	Own	4-4½x5¾	GorK	2-3
Russell.....	15-30	2200	4	Own	4-5x6½	GorK	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	GorK	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	GorK	8-10
Samson....M	....	445	4	Own	4-4 x5½	G,K	2
Toro Cultivator	6	750	3	LeR.	4-3½x4½	Gas.	2
ToroTractor'22	6-10	495	3	LeR.	4-3½x4½	Gas.	2
Townsend.....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend.....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend.....	25-50	2500	2	Own	4-8½x10	Ker.	4-8
TractionMotor	40-50	....	4	....	8-3½x5	Gas.	4-5
Traylor....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar...10	25-40	3750	*2	Wauk.	4-5 x6¼	GorK	4
TwinCity.....	12-20	1200	4	Own	4-4½x6	H,K	3
Twin City....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City....	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle SamC20	12-20	1295	4	Weid.	4-4 x5½	G	2-3
Uncle SamB19	20-30	1985	4	Beav.	4-4¾x6	GorK	3-4
Uncle SamD21	20-30	1895	4	Beav.	4-4¾x6	GorK	3-4
Utilitor....501	2½-4	295	4	Own	1-3½x4½	G	1
Utilitor...501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis.....K	15-25	....	4	Own	4-4½x5¾	G,K	3
Waterloo....N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore21-22	12-25	1185	4	Wauk.	4-4 x5¾	G,K	3
Whitney....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin...E	16-30	1850	4	Clim.	4-5 x6½	GorK	3
Wisconsin...F	20-40	2050	4	Wauk.	4-5 x6¼	GorK	4
Wisconsin...H	22-40	2550	4	Clim.	4-5½x7	GorK	4-6
Yuba....12-20	12-20	2400	*2	Wauk.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4½x6	G,K,D	..
Yuba....20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba.....	25-40	4750	*2	Yuba	4-5¾x7	D	..

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont.—Continental. Dom.—Domas. Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Wau[illegible]ha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor. ¶Garden Tractor. **Steam Tractor.

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (N.A.C.C.)	NAME AND MODEL	Carbureter	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle Type and Make	†Gear Ratios
$1995c	$1785	$1850	$1885c	.....	$2485	127	33x4½	H-S...	6-3½x5	29.40	American.....D-66	Strom...	G-D.....	A-K.....	s-p B&B...	B & B ..	m Hartford..	F Salis..	4.50
.....	1650	.....	.....	.....	.....	127	33x4	Own..	2-	.....	American.....Steamer	None...	L-N.....	L-N.....	None.....	None...	.....	Own..	1.75
.....	1195	.....	.....	$1450c	.....	114	32x4	Cont..	6-3½x4½	23.44	Anderson...Aluminum 6	.....	West.....	West.....	s-p B&B...	.....	.....	Salis..	....
{1495	1495	1595	{1595c	1995c	1995d	120	33x4	Cont..	6-3⅝x4½	27.34	Anderson.....Series 40	Rayfield.	Remy.....	Remy.....	s-p B&B...	Durston.	f Snead....	¾F Salis..	4.50
{1785p			{1945c																
.....	2620	2645	.....	3625	3695	130	34x4½	Own..	8-3¼x5	33.80	Apperson.....8-21-S	Johnson	Bijur.....	Remy.....	m-d Own....	Own....	m Sterling..	½F Own..	4.25
1575	1475	1545n	{1895n	2275	2345	121	32x4	Cont..	6-3⅜x4½	27.34	Auburn.....6-51	Strom...	Remy.....	Remy.....	s-p B&B...	G-L.....	m Universal..	F Salis..	4.75
.....	1395	.....	{1995n	.....	1850d	118	32x4	Cont..	6-3½x4¼	23.44	Barley.....	.....	Delco	Delco....	s-p B&B...	Fuller..	f M&E.....	Col.....	....
1800	1800	.....	.....	2400	2500	121	32x4	Cont..	6-3¼x4½	25.35	Bay State.....	Strom...	Delco.....	Delco.....	s-p B&B...	Warner..	m Spicer....	¾F Col....	4.67
2950	2950e	.....	.....	3950	3950	121	32x4	Buda.	4-3¾x5½	22.50	Biddle.....B1 & B5	Zenith..	G-D.....	Simms....	s-p Warner.	Warner..	m Spicer....	½F Std....	4.50
5000	5000	.....	.....	.....	7000	125	32x4½	Own..	4-4 x5½	25.60	Brewster.....91	Zenith..	USL.....	Bosch....	c Own....	Own....	F Own.....	F Own..	3.92
865	885	725g	.....	1175	{1395	109	31x4	Own..	4-3⅜x4¾	18.23	Buick..1923-34-5-6-7-38	Marvel..	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	¾F Own..	4.66
					{1325														
1175	1195	975g	.....	1935	1985	118	33x4	Own..	6-3⅜x4½	27.34	Buick....1923-41-4-5-47	Marvel..	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	¾F Own..	4.60
.....	.....	1435	{1625a	1895	2195	124	34x4½	Own..	6-3⅜x4½	27.34	Buick.1923 48-9-50-4-55	Marvel..	Delco.....	Delco.....	m-d Own....	Own....	m Own.....	¾F Own..	4.90
			{1675c																
2885	2885	2885	.....	{3675	{3950	132	33x5	Own..	8-3½x5⅛	31.25	Cadillac.....61	Own....	Delco.....	Delco.....	m-d Own....	Own....	m Spicer....	F Tim..	4.50
				{3750d	{4300														
1750	1790	.....	.....	2480	2575	122	32x4½	Cont..	6-3⅜x4½	27.34	Case.....X	Rayfield.	Delco.....	Delco.....	m-d Own....	Own....	f Snead....	½F Col...	5.25
.....	1990	2250	1950	2480	2975	129	34x4½	Cont..	6-3⅝x5¼	31.54	Case.....W	Rayfield.	Delco.....	Delco.....	m-d Own....	Own....	f Arvac....	¾F Col...	4.45
1185	1185	.....	.....	1595	{2295	117	32x4	Own..	6-3¼x4½	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own....	m Hardy....	½F Adams	5.13
.....	.....	1345	.....	.....	{1585	122	32x4	Own..	6-3¼x4½	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own....	m Hardy....	½F Adams	5.13
1495	1495e	1645	1595a	1995c	{2295d	123	33x4	Own..	6-3½x5	29.40	Chandler.....Six	Rayfield.	Bosch.....	Bosch.....	s-p B&B...	Own....	f Own.....	F Own..	4.45
					{2375f														
510	525	425g	.....	{840c	860	102	30x3½	Own..	4-3⅛x4	21.53	Chevrolet.....Superior	Zenith..	A-L.....	Remy....	c Own....	Own....	m Own.....	½F Own..	3.66
				{680k								Holley..		A-L.....					
1085	995	.....	1260	1295d	1495	112	32x4	Own..	6-3⅛x4½	22.50	Cleveland.....41	Strom...	Bosch.....	Bosch.....	s-p Own....	Own....	m Mech.....	¾F Own..	4.45
2685	.....	2685	2685c	3285b	{3285c	127¼	33x5	Nort..	8-3½x4½	39.20	Cole.....890	Johnson	Delco.....	Delco.....	c North..	North...	m Spicer....	F Col....	4.46
					{3685f														
1475	1475	.....	1475e	1925e	1995d	115	32x4	Cont..	6-3⅜x4½	27.34	Columbia.....Big Six	Strom...	A-L.....	A-K.....	s-p B&B...	Durston.	m Spicer....	¾F Tim..	....
995	985	.....	.....	.....	1395d	115	31x4	Cont..	6-3½x4¼	23.44	Columbia.....Light Six	Strom...	A-L.....	A-L.....	s-p B&B...	Durston.	m Spicer....	¾F Tim..	....
1395	1395	.....	{1495b	2065b	2165d	116	32x4	Falls.	6-3½x4¼	23.44	Courier.....	Till.....	Bijur.....	A-K.....	s-p B&B...	Muncie..	f Norwalk..	¾F Col...	5.00
			{1495c																
3000	3000	3000	.....	.....	4500	122½	32x4	Cont..	6-3⅝x5¼	31.54	Crawford.....22-6-60	Strom...	West.....	Bosch....	m-d B-L...	B-L.....	Spicer....	½F Tim..	....
.....	.....	.....	3500	.....	.....	135	33x5	Cont..	6-3⅝x5¼	31.54	Crawford-Dagmar...6-60	Zenith..	West.....	Bosch....	m-d B-L...	B-L.....	Spicer....	½F Tim..	....
.....	.....	.....	.....	.....	.....	142	33x5	Own..	8-3¾x5	45.00	Cunningham.....V	Strom...	Delco.....	Delco.....	m-d Own....	Own....	f Snead....	F Tim..	4.23
4350b	4350c	4350	.....	5250	6000	132	33x5	Own..	8-3½x5¼	39.20	Daniels.....D-19	Zenith..	Delco.....	Delco.....	m-d Own....	Own....	m Spicer....	F Tim..	4.50
.....	1195	.....	1495	1795	1795	114	31x4	Cont..	6-3¼x4¼	23.44	Davis.....71	Strom...	Delco.....	Delco.....	s-p B&B...	Warner..	m Peters....	½F Tim..	5.10
1595	1595	.....	1695	2095	.....	120	32x4	Cont..	6-3⅜x4½	27.34	Davis.....61-67	Strom...	Delco.....	Delco.....	s-p B&B...	Warner..	m Peters....	¾F Tim..	5.15
1175	1175	1295c	1245	1545	1595	112	32x4	H-S...	4-3½x5	19.60	Dixie Flyer.....H-S-70	Strom...	Dyneto...	Eisemann..	s-p B&B...	G-L.....	f Hardy....	F Peru..	4.75
850	880	.....	.....	980h	1195d	114	32x4	Own..	4-3⅞x4½	24.03	Dodge Brothers.....	Stewart..	N.E.....	N.E.....	m-d Own....	Own....	m Own.....	½F Own..	4.16
3350g	3950e	3950	.....	4985c	5750f	132	33x5	Own..	6-4 x5	38.40	Dorris.....6-80	Strom...	West.....	Bosch....	m-d Own....	Warner..	m Spicer....	F Tim..	4.23
865	865	.....	{1015a	{1240	{1370	108	31x4	D-Ly.	4-3½x5	19.60	Dort.....19-14	Carter..	Bosch.....	Conn.....	m-d Detlaff..	Own....	m Mech.....	¾F Flint..	4.66
			{1015d	{1020k	{1070k														
991	990	.....	.....	{1145	{1195	115	31x4	Falls..	6-3½x4¼	23.44	Dort.....25-20	Carter..	Bosch.....	Bosch.....	m-d Detlaff..	Own....	Mech.....	¾F Flint..	4.66
				{1365	{1495														
1275	1275	.....	.....	1650	1975	104	30x3½	Own..	4-2⅝x4½	11.03	Driggs.....	Zenith...	Bosch.....	Bosch.....	s-p Hoos....	Mech...	m Spicer....	¾F Own..	4.75
6500	6500	6750	.....	7800	7800	134	33x5	Own..	8-2⅞x5	26.45	Duesenberg...Straight 8	Strom...	Delco.....	Delco.....	s-p Own....	Own....	f Own.....	½F Own..	4.81
3000	3200	.....	.....	3800	4000	124	32x4½	Own..	4-3⅛x5½	24.81	Du Pont.....A	Y&T.....	West.....	Eisemann..	m-d B-L...	B-L.....	m Spicer....	Col....	4.50
890	890	.....	.....	1365	1365	109	31x4	Cont..	4-3⅞x4¼	24.03	Durant.....A-22	Till.....	A-L.....	A-L.....	s-p Own....	Own....	m,f Spicer...	¾F Adams	4.30
1600	1650	.....	.....	2250	2400	123½	32x4½	Anst..	6-3¼x4½	25.35	Durant.....B-22	Rayfield.	A-L.....	A-L.....	s-p Ansted..	Warner..	m,f Spicer...	½F Tim..	5.15
1485	1095	950g	.....	1395c	1795	112	32x4	Own..	4-3⅞x5¼	18.91	Earl.....40	Scoe....	A-L.....	Conn.....	s-p B&B...	Own....	f Own.....	½F Own..	4.66
1095	1095	.....	1095	1345	.....	118	33x4	Lyc..	4-3½x5	19.60	Elcar.....K-4	Strom...	Delco.....	Delco.....	s-p B&B...	Muncie.	m Peters....	¾F Salis..	4.50
1395	1395	.....	1395	1975	2065	118	33x4	Cont..	6-3⅜x4½	27.34	Elcar.....8-R	Strom...	Delco.....	Delco.....	m-d Warner	Warner..	m Spicer....	¾F Salis..	4.50
1125e	1125	.....	1165	1695	1615	118	33x4	Falls..	6-3¼x4¼	23.44	Elgin.....K-1	Strom...	West.....	Wagner..	s-p B&B...	Mech....	m Mech.....	¾F Col...	4.66
.....	1045	.....	.....	.....	{1895	108½	32x4	Own..	4-3⅜x5	18.23	Essex.....	Own....	Bosch.....	Bosch.....	m-d Own....	Own....	m Spicer....	½F Own..	4.66
					{1145k														
269r	298s	235g	.....	530	{595	100	30x3½	Own..	4-3¾x4	22.50	Ford.....T	Own....	Own.....	Own.....	m-d Own....	Own....	m Own.....	½F Own..	3.63
					{725														
3900	3900	.....	.....	4900	4900	132	32x4½	Own..	6-3⅜x5	27.34	Fox.....7F	Zenith...	West.....	Bosch....	m-d B-L...	B-L.....	Spicer....	½F Tim..	4.45
1900	1950	1750g	.....	2750	2850	115	32x4	Own..	6-3¼x4	25.35	Franklin.....10	Own....	N.E.....	A-K.....	s-p B&B...	Own....	m Spicer....	½F Own..	4.73
965	965	.....	.....	1115k	1365d	112	32x4	Lyc..	4-3⅛x5	21.76	Gardner.....T-R & G	Carter..	West.....	West.....	s-p B&B...	Mech....	m Mech.....	¾F Flint..	4.80
490	490	.....	.....	.....	760	100	30x3½	Own..	4-3⅝x4	21.03	Gray.....	Scoe....	West.....	West.....	m-d Own....	Detroit..	m Mech.....	½F Tim..	3.90
2475	2475e	.....	3250	.....	3475	120	32x4½	Weid.	4-3¾x5½	22.50	H.C.S.....Series 4	Strom...	Delco.....	Delco.....	m-d B-L...	B-L.....	m Spicer....	¾F Own..	....
.....	.....	2650	.....	3450	3450	125	32x4½	Own..	4-4½x4½	27.23	Handley-Knight.....	Till.....	A-L.....	A-L.....	m-d Warner	Warner..	m Spicer....	½F Tim..	4.90
.....	995	.....	.....	.....	.....	114	31x4	Cont..	6-3½x4¼	25.35	Hansen.....30	Marvel..	Delco.....	Delco.....	s-p B&B...	Detroit..	.....	¾F Tim..	....
1595	1595	1795	.....	2475c	2585	121	32x4	Cont.	6-3⅜x4½	27.34	Hanson.....60	Marvel..	Delco.....	Delco.....	s-p B&B...	Detroit..	.....	¾F Tim..	....
.....	1345	1345c	.....	1950	1950	115	32x4	H-S...	4-3½x5	19.60	Hatfield.....A-42	Zenith...	Dyneto...	Conn.....	s-p B&B...	G-L.....	m Spicer....	¾F Col...	4.66
2395	p2550e	{2395	.....	{3095	3395f	132	33x5	Own..	6-3½x5⅜	29.40	Haynes.....75	Strom...	L-N.....	King.....	s-p Warner.	Own....	m Universal..	¾F Own..	4.60
		{2550p		{3250p															
1895p	{1595	.....	.....	2395p	{2595	121	32x4½	Own..	6-3½x5	29.40	Haynes.....55	Rayfield.	L-N.....	King.....	s-p Warner.	Own....	m Universal..	½F Own..	4.11
	{1850p				{2695p														
.....	2500e	2500	.....	3300c	3600f	126	34x4½	Own..	6-3½x4¼	29.40	Holmes.....Series 4	Strom...	Dyneto...	Eisemann..	m-d B-L...	B-L.....	m Spicer....	½F Tim..	4.90
.....	1425c	1475	.....	2570c	{1525k	126	34x4½	Own..	6-3½x5	29.40	Hudson.....Super 6	Own....	Bosch.....	Bosch.....	m-d Own....	Own....	m Spicer....	½F Own..	4.45
					{2095														
1395	1395	.....	.....	.....	2295	120	32x4	Cont..	6-3⅜x4½	27.34	Huffman.....	Strom...	Dyneto...	Conn.....	s-p B&B...	Covert..	.....	F Salis..	....
{1150	1150	.....	1250a	{1635	1785	112	32x4	Own..	4-3¼x5½	16.90	Hupmobile.....Series R	Strom...	West.....	A-K.....	m-d Own....	Own....	m Universal..	¾F Own..	4.87
{1025g				{1335k															
.....	1485	1685c	.....	2985	2985	121	32x4½	Cont..	6-3¼x4½	25.35	Jackson.....638	Strom...	A-L.....	Remy.....	s-p B&B...	Covert..	f Snead....	¾F Salis..	4.75
995b	995	.....	1095a	1445c	1465d	112	31x4	Own..	6-3¼x5	25.35	Jewett.....Six	Strom...	Remy.....	A-K.....	m-d Long..	Warner..	m Mech.....	½F Tim..	4.45
1895	1795	.....	.....	2785	2485	120	32x4	Own..	6-3⅛x4¾	26.38	Jordan.....MX	Strom...	Delco.....	Delco.....	s-p Detroit..	Detroit..	m Spicer....	½F Tim..	4.42
.....	.....	.....	2150c	.....	.....	124	32x4	Own..	6-3⅛x4¾	26.38	Jordan.....H	Strom...	Delco.....	Delco.....	s-p Detroit..	Detroit..	m Universal..	½F Tim..	4.42
.....	985	.....	.....	.....	1450	111	32x3½	Gray..	4-3½x5	19.60	Kelsey.....4	Scoe....	Bosch.....	Bosch.....	f-d Own....	f-d Own	.....	Own..	4.50
.....	985	.....	.....	.....	1450	111	32x3½	Gray..	4-3½x5	19.60	Kelsey.....4	Scoe....	Bosch.....	Bosch.....	s-p B&B...	Detroit..	Snead.....	½F Std....	4.75
.....	1525	.....	.....	.....	2175	118	32x4	Walk'r	6-3½x4½	23.44	Kelsey.....6	Strom...	Bijur.....	Bosch.....	f-d Own....	f-d Own	.....	Own..	....
5000	5000	5250	.....	5000	6000	130	32x4½	Own..	8-3 x5½	28.80	Kenworthy.....8-90	.....	.....	.....	.....	.....	.....	.....	.....
1495	1495	.....	1495c	2200	2400	120	32x4½	Own..	8-3 x5	28.80	King.....K	Ball&B..	West.....	A-K.....	s-p Detroit..	Own....	f Hardy....	F Col....	4.08
.....	.....	.....	.....	1995	2550f	124	32x4½	Own..	8-3 x5	28.80	King.....K	Ball&B..	West.....	A-K.....	s-p Detroit..	Own....	f Hardy....	F Col....	4.08
.....	1885	2385	2385c	2975c	3075	124	32x4½	Own..	6-3⅞x5½	26.38	Kissel.....45	Strom...	Remy.....	Remy.....	m-d Warner	Warner..	m Spicer....	F Own..	3.92
1690	1690	1690	1890	2750	2890	121	33x4	Cont..	6-3⅜x4½	27.34	Kline Kar.....6-55-K	Rayfield.	Wagner..	Conn.....	s-p B&B...	G-L.....	f Snead....	½F Std....	4.75

MISCELLANEOUS

a—2 Passenger, d—5 Passenger,
b—3 Passenger, e—6 Passenger,
c—4 Passenger, f—7 Passenger,
g—Chassis Price.
h—All Metal Type.
k—Soft Top Type.
n—Tire Size 32x4½.
p—Sport.
r—Price without starter and demountable rims. Price, complete, $864
s—Price without starter and demountable rims. Price, complete, $893.
†Standard Phaetons.

ENGINE

Anst—Ansted
Cont—Continental
D.-Ly—Dort Lycoming
H-S—Herschell-Spillman
Lyc—Lycoming
Nort—Northway
Walk'r—Walker
Weid—Weidely

CARBURETOR

Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg
Y & T—Yale & Towne

CLUTCH

f-d—Friction drive
c—Cone
m-d—Multiple disc
s-p—Single plate
B & B—Borg & Beck
B-L—Brown-Lipe
North—Northway

STARTING, LIGHTING IGNITION

A-L—Auto Lite
G-D—Gray & Davis
L-N—Leece Neville
N. E.—North East
West—Westinghouse

GEARSET

f-d—Friction Drive
B-L—Brown-Lipe
G-L—Grant-Lees
Mech—Mechanics
North—Northway

UNIVERSAL

f—fabric
m—metal
M &E—Merchant & Evans
Mech—Mechanics

REAR AXLE

F—Floating
½F—Semi-Floating
¾F—Three-Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
Tim—Timken

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (N.A.C.C.)	NAME AND MODEL	Carburetor	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle: Type and Make	†Gear Ratios
$3985	$4090c	$4090	.....	$5500	$5500	132	33x5	Own..	8-3¼x5¼	33.80	LaFayette	Johnson	Delco	Delco	m-d Own	Own	m Own	F Own.	4.58
5500	5500	5500	.....	5500	5500	134	32x4½	Own..	6-3¾x5¼	33.75	Leach.....999	Rayfield	Delco	Delco	m-d	Own	m,f	Tim.	
1695	{1695	{1795	$2045d	2345c	{2515d	123	32x4½	Anst..	6-3¼x4½	25.35	Lexington.....23	Rayfield	G-D	Conn	m-d Ansted	Warner	f Snead	¾F Own	5.10
	{1995	{2095			{2145d														
1575	1395	.....	1575	{2085	2245	117	32x4	Own..	6-3½x5	23.44	Liberty.....10-D	Strom	Wagner	Wagner	s-p B&B	Detroit	m Spicer	½F Tim.	4.80
				{1695k															
3800	3800c	3800	.....	4400d	4700d	136	33x5	Own..	8-3¾x5	36.45	Lincoln	Strom	Delco	Delco	m-d Own	Own	m Spicer	F Tim.	4.5
6800g	7600c	7600	.....	10500	11000	142	35x5	Own..	6-4½x5½	48.60	Locomobile.....Series 8	Ball&B	West	Deloo	m-d Own	Own	m Own	F Own.	4.50
3385	3185c	3185	.....	3985	4385	136	32x4½	Own..	6-3¾x5⅛	33.75	Marmon.....34	Strom	Delco	Delco	m-d Own	Own	m Spicer	¾F Own.	3.75
885	885	.....	.....	{ 985	1335	109	31x4	Own..	4-3¾x4½	21.03	Maxwell	Stewart	A-L	Simms	c Own	Own		¾F Own.	4.36
				{1235															
6300	6300c	6300	.....	7500	7500	140	33x5	Own..	6-4½x6	48.60	McFarlan.....1922	Rayfield	West	Splitdorf	s-p B&B	B-L	m Peters	F Tim.	3.50
3950	3950c	3950c	.....	4850	5250	132	32x4½	Own..	4-3¾x6¾	22.50	Mercer.....Series 5	Ball&B	West	Eisemann	m-d Own	Own	m Spicer	F Own	4.57
.....	3750	3750	.....	5000	5000	132	32x4½	Own..	6-3¾x5	33.75	Mercer.....6	Strom	.....	Eisemann	.....	.....	.....	¾F	5.77
1895	1895	.....	.....	.....	.....	119	32x4	Cont..	6-3¼x4½	25.35	Merit	Strom	Delco	Delco	s-p B&B	Muncie	f Snead	F Col	4.60
1490b	1590	.....	1850c	2050c	2275d	120	32x4	Own..	6-3½x5	29.40	Mitchell.....F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4.42
.....	.....	1690	.....	.....	.....	127	32x4½	Own..	6-3½x5	29.40	Mitchell.....F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4.42
950	950	.....	.....	.....	.....	115	32x4½	Own..	4-3¼x4½	16.90	Monroe.....1922-S-9	Zenith	A-L	Conn	m-d Own	Mech	m Universal	¾F Own	5.0
1295	1195	p1445d	1885c	1585c	1695	115	31x4	Cont..	6-3⅛x4¼	23.44	Moon.....6-40	Strom	Deloo	Delco	s-p B&B	Warner	m Spicer	½F Tim.	4.80
1785	1785	1785	1885	2785	{2785f	128	33x4½	Cont..	6-3⅝x4½	27.34	Moon.....6-58	Strom	Deloo	Delco	B&B	B-L	m Spicer	½F Tim.	5.05
					{2485c														
1210	1240	.....	1395c	.....	2040d	121	33x4	Own..	6-3½x5	25.35	Nash.....690-96-97	Marvel	Deloo	Deloo	s-p B&B	Own	m Own	½F Own	4.50
.....	.....	1390	1645	1890c	2190f	127	34x4½	Own..	6-3½x5	25.35	Nash.....692-94-95	Marvel	Deloo	Deloo	s-p B&B	Own	m Own	½F Own	4.50
915	935	.....	.....	{1385h	{1545d	112	33x4	Own..	4-3¾x5	18.23	Nash Four.....41-4	Schebler	Deloo	Deloo	s-p B&B	Own	m Own	½F Own	4.83
				{1195k	{1275k														
2475b	2475c	{2375	.....	{3250c	3825f	130	32x4½	Own..	6-3½x5¼	29.40	National.....BB	Rayfield	West	Deloo	s-p B&B	B-L	m Arvac	F Col	4.09
		{3150		{3725c															
2500	2500e	2600c	.....	.....	3500d	128	32x4½	Cont..	6-3¼x4½	25.35	Nema.....3C	Claudel	Deloo	Deloo	s-p B&B	Detroit	m Spicer	½F Tim.	4.45
2500	2500	.....	.....	.....	5500	128	33x5	Bea..	6-3½x5¼	29.40	Nema.....1D	Zenith	Deloo	Deloo	s-p B&B	Detroit	f Spicer	½F Tim.	4.45
975	995	795g	1165c	{1465d	1545	115	32x4	Own..	6-2⅞x4¾	18.99	Oakland.....6-44	Marvel	Remy	Remy	c Own	Muncie	m Mech	F Own	4.36
				{1185a															
3750c	3750	3850	3750c	4500c	4800f	134	33x5	Cont..	6-3⅝x5¼	31.51	Ogren.....6 T D Luxe	Rayfield	Bosch	Bosch	m-d B-L	B-L	m	F Col	4.00
955	975	1350d	1075	1475	1595	115	32x4	Own..	4-3⅛x5¼	21.86	Oldsmobile.....43 A	Zenith	A-L	Remy	s-p B&B	Warner	m Own	¾F Own	4.33
1735c	1850c	1735	.....	.....	.....	122	33x4½	Own..	8-2⅞x4¾	26.45	Oldsmobile.....46	Ball&B	Deloo	Deloo	c Own	Warner	m Own	¾F Own	4.33
1625p	1375	.....	1675	1875	2025	115	32x4	Own..	8-2⅞x4½	26.45	Oldsmobile.....47	Johnson	Deloo	Deloo	s-p B&B	Warner	m Spicer	¾F Own	5.10
525	525	.....	425g	795	875	100	30x3½	Own..	4-3½x4	18.23	Overland.....4	Till	A-L	Conn	s-p B&B	Own	m Own	½F Own	4.50
2485	2485	2250g	.....	3175	3275	126	33x4½	Own..	6-3⅝x5	27.34	Packard.....Single-Six	Own	A-K	Deloo	m-d Own	Own	f Spicer	½F Own	4.39
.....	2350g	2685	.....	.....	3525	133	33x4½	Own..	6-3⅝x5	27.34	Packard.....Single-Six	Own	A-K	Deloo	m-d Own	Own	f Spicer	½F Own	4.66
3850	3850	3850	.....	5240	5400	136	35x5	Own..	12-3x 5	43.20	Packard.....Twin-Six	Own	Bijur	Deloo	m-d Own	Own	m Spicer	½F Own	4.56
1165	1465	1290g	.....	1995	2245	119	32x4	Own..	6-3¼x5	25.35	Paige.....6-44	Strom	Remy	A-K	s-p Long	Own	m Universal	¾F Salis	4.75
2195b	.....	2195	2245	3100	3155	131	33x4½	Cont..	6-3⅝x5	33.75	Paige.....6-66	Rayfield	Remy	A-K	s-p Long	Warner	m Meen	¾F Tim.	4.60
.....	1390	1425	.....	2395	2395	120	32x4½	Cont..	6-3⅝x4½	27.34	Paterson.....22-6-52	Strom	Deloo	Deloo	s-p B&B	Durston	m Hartford	½F Std	4.50
3300	2990c	2990	.....	{3300a	{3990d	128	33x5	Own..	8-3¼x5	33.80	Peerless.....23	Ball&B	Deloo	Deloo	m-d Own	Own	M Spicer	¾F Tim.	4.90
				{3400c	{4090f														
5250	5250c	5250	.....	6800	{6900	138	33x5	Own..	6-4 x5½	38.40	Pierce-Arrow.....	Own	Deloo	Deloo	m-d Own	Own	m Spicer	½F Own.	3.93
					{700														
2050	2000	2050	.....	2950	3000	126	32x4½	H-S..	6-3¼x5	25.35	Pilot.....6-50	Till	Bijur	Conn	s-p B&B	Muncie	m Hartford	⅝F Col	4.33
3150	3100c	3250	.....	4300	5100	126¾	32x4½	Own..	6-3⅝x5½	27.34	Premier.....6-D	Johnson	Deloo	Deloo	s-p B&B	Own	m Spicer	¾F	4.58
1095	1095	.....	.....	1750	1825	117	32x4	Falls..	6-3½x4¼	23.44	Premecar.....6-40-A	Strom	Wagner	Wagner	s-p B&B	Mech	m Spicer	¾F	4.66
.....	1665	.....	.....	2385	2475	116	32x4	Own..	4-3¾x5	22.50	R & V Knight.....R	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	F Salis	4.75
2475	2475c	2475	.....	3015	3105	127	32x4½	Own..	6-3½x4½	29.40	R & V Knight.....J	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	½F Tim.	4.90
.....	1615	1485	1745	{2355c	{2435f	120	33x4	Own..	6-3⅛x5	24.34	Reo.....T6 & U6	Rayfield	N.E.	N.E	m-d Own	Own	m,f Own	½F Own	4.70
				{1835	{1885														
3200	3200	3200	.....	.....	4000	131	32x4½	Dues..	4-4½x6	28.90	ReVere.....C	Strom	West	Bosch	m-d B-L	B-L	m Spicer	¾F Std	4.00
.....	1485	.....	.....	1885	1985	117	32x4	Own..	6-3½x4¾	23.44	Rickenbacker.....A	Strom	Simms	A-K	c Own	Own	m Universal	¾F Own	
2685	2485c	2685	.....	3585	3585	128	32x4½	Cont..	6-3½x5¼	29.40	Reamer.....6-54-E	Strom	Bijur	Bosch	s-p G-L	G-L	f Snead	½F Tim.	4.66
3785	3485	3650c	3650c	.....	4650c	128	32x4½	Dues..	4-4½x6	28.90	Reamer.....4-75-E	Strom	Bijur	Splitdorf	m-d B-L	B-L	f Snead	½F Tim.	3.77
10900	10900	10950	.....	.....	{13150	143½	35x5	Own..	6-4½x4¾	48.60	Rolls-Royce.....	Own	Bijur	Bijur	c Own	Own	m Own	F Own	4.25
					{12900														
1615	1615	.....	.....	2645	2645	118	33x4	Cont..	6-3¼x4½	25.35	Sayers Six.....DP	Strom	Deloo	Deloo	s-p B&B	G-L	m Arvac	½F Std	4.75
875	875	.....	.....	.....	.....	108	30x3½	Lyc...	4-3½x5	19.60	Seneca.....L-2 & O-2	Zenith	A-L	A-L	s-p B&B	G-L	m Universal	F	4.75
1095	1095	.....	.....	.....	.....	112	31x4	Lyc...	4-3½x5	19.60	Seneca.....50 & 51	Zenith	A-L	A-L	s-p B&B	G-L	Detroit	F	4.50
980	980	.....	.....	1685	1685	114	32x4	Supr..	4-3⅜x5	18.23	Sperling.....A	Zenith	Bijur	Splitdorf	s-p B&B	Warner	m Hartford	¾F Pere	
2150	.....	2395	2395	2750	3200	127	34x4½	Own..	8-3¼x5	33.80	Standard.....98	Zenith	West	Splitdorf	s-p B&B	G-L	m Arvac	½F Tim.	4.45
2750	2750	2750	2425g	3950c	3985f	130	32x4½	Own..	2-4 x5	.....	Stanley.....740	None	Bijur	None	None	None	None	½F Own	4.50
1765	1765	.....	.....	2750	.....	118	33x4	Cont..	6-3¼x4½	25.35	Stanwood Six.....	Strom	West	A-K	s-p B&B	G-L	m Peters	½F Std	4.50
319c	348s	285g	.....	580	645	102	30x3½	Cont..	4-3⅛x4¼	15.63	Star.....	Till	A-L	A-L	s-p		Spicer	Tim.	4.57
2250	2250	2450	.....	3150	3150	125	34x4½	Own..	4-3¾x5⅝	22.50	Stearns-Knight....SKL4	Rayfield	West	A-K	m-d Own	Own	f Climax	½F Own	4.50
2700	2700	2850	.....	3500	3700	130	34x4½	Own..	6-3⅝x5	27.34	Stearns-Knight.....6	Rayfield	West	A-K	m-d Own	Own	f Climax	½F Own	4.50
1575	1565c	1625c	.....	2450	2550	122	33x4½	Own..	6-3¼x4½	25.35	Stephens.....90	Till	A-L	A-L	s-p B&B	Mech	m Meeh	½F Tim.	4.9
7250	6900c	6800	{6900c	8600	8900c	138	35x5	Own..	6-4½x5½	47.27	Stevens-Duryea.....E	Strom	West	Berling	m-d Own	Own	m Own	F Own	3.4
			{5600g																
975	975	785g	.....	1225	1550	112	32x4	Own..	6-3½x4½	23.44	Studebaker....Light Six	Strom	Wagner	Wagner	s-p Own	Own	f Thermoid	½F Own	4.53
{1250	1275	1275c	1000c	1875	2050	119	32x4	Own..	6-3½x5	29.40	Studebaker..Special Six	Strom	Wagner	Wagner	s-p Own	Own	m Spicer	½F Own	4.20
{1275c				{2375															
1300g	1650	.....	1785	{2275	2475	126	33x4½	Own..	6-3⅞x5	36.01	Studebaker.....Big Six	Ball&B	Wagner	Wagner	s-p Own	Own	m Spicer	½F Own	4.77
2450	{2790c	{2640e	2670a	3490	4450	130	32x4½	Own..	4-4½x6	30.63	Stutz.....KLDH	Strom	Remy	Deloo	m-d Warner	Own	m Hartford	½F Own	5.0
	{3165c	{3015																	
1175	1175	.....	.....	.....	.....	117	33x4	H-S..	4-3½x5	19.60	Tulsa.....E-1-2-3	Zenith	Dyneto	Conn	s-p B&B	Muncie	m	F Salis	4.70
1275	1275	.....	1305	1795	1795	115	32x4	Own..	6-3⅛x4½	23.44	Velie.....58	Strom	West	A-K	s-p Dooley	Durston	m Thiemer	¾F Own	4.66
.....	1785	.....	.....	.....	2285	120	32x4	Cont..	6-3¼x4½	25.35	Washington.....6	.....	Bijur	Remy	s-p B&B	Warner	Arvac	¾F Col	4.67
.....	1990f	1890	.....	.....	2890	125	32x4½	Cont..	6-3½x5¼	29.40	Westcott.....D-48	Rayfield	Deloo	Deloo	s-p B&B	B-L	m Peters	½F Tim.	4.42
.....	1690	.....	1890	.....	2690	120	32x4	Cont..	6-3¼x4½	35.35	Westcott.....B-44	Rayfield	Deloo	Deloo	s-p B&B	Warner	m Peters	½F Col	4
2475	2475	.....	.....	3275	3475	121	32x4½	Own..	8-3¼x4	33.80	Wills Sainte Claire..A-68	Zenith	Deloo	Deloo	m-d Own	Own	m Meeh	¾F Own	4.45
1365	1235	1375	.....	1795	1950	118	32x4	Own..	4-3⅝x4¼	21.03	Willys-Knight.....20	Till	A-L	A-L	m-d Own	Own	f Own	¾F Own	4.44
.....	.....	1435	.....	.....	2195f	124	32x4½	Own..	4-3⅝x4½	21.03	Willys-Knight.....27	Till	A-L	A-L	m-d Own	Own	f Own	¾E Own	5.12
3400	.....	3400	3600	4000	4550	132	33x5	Own..	6-3¾x5¼	33.75	Winton.....40	Rayfield	Delco	Delco	m-d Warner	Warner	f Climax	¾F Tim.	4.66

MISCELLANEOUS
a—2 Passenger; d—5 Passenger
b—3 Passenger, e—6 Passenger,
c—4 Passenger, f—7 Passenger
g—Chassis Price.
h—All Metal Type;
k—Soft Top Type.
n—Tire Size 32x4½.
p—Sport.
t—Price without starter and demountable rims. Price, complete, $414.
‡—Price without starter and demountable rims. Price, complete, $443.
†Standard Phaetons.

ENGINE
Anst—Ansted
Bea—Beaver
Cont—Continental
Dues—Duesenberg
H-S—Herschell-Spillman
Lyc—Lycoming
Supr—Supreme

CARBURETOR
Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg

STARTING, LIGHTING IGNITION
A-L—Auto Lite
G-D—Gray & Davis
L-N—Leece Neville
N. E.—North East
West—Westinghouse

CLUTCH
c—Cone
f-d—Friction drive
m-d—Multiple disc
s-p—Single plate
B & B—Borg & Beck
B-L—Brown-Lipe

GEARSET
f-d—Friction Drive
B-L—Brown-Lipe
G-L—Grant-Lees
Mech—Mechanics

UNIVERSAL
f—fabric
m—metal
M&E—Merchant & Evans
Mech—Mechanics

REAR AXLE
F—Floating
½ Floating—Semi-Floating
¾F—Three Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
Tim—Timken

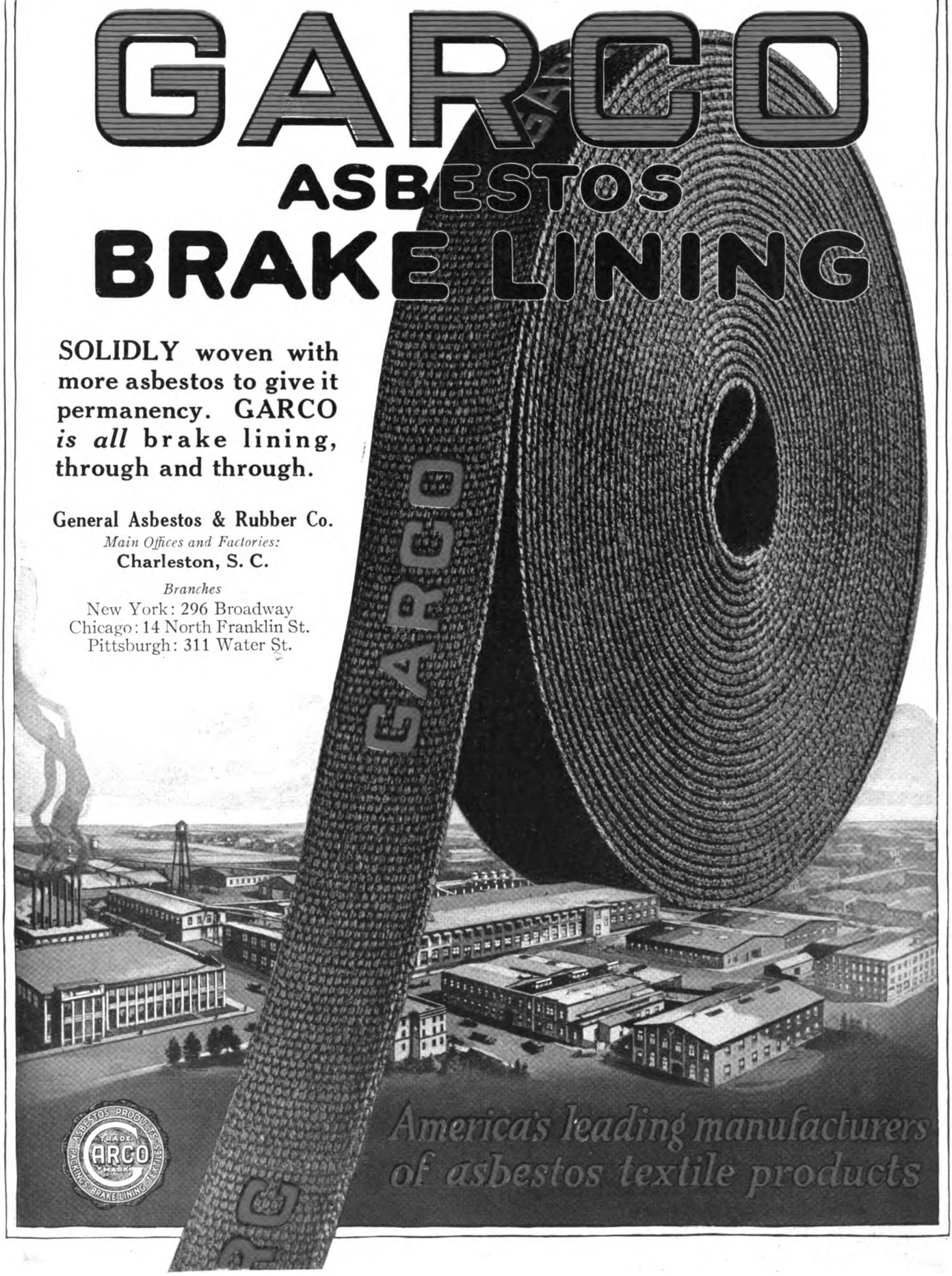
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GARCO
ASBESTOS
BRAKE LINING

SOLIDLY woven with more asbestos to give it permanency. GARCO *is all* brake lining, through and through.

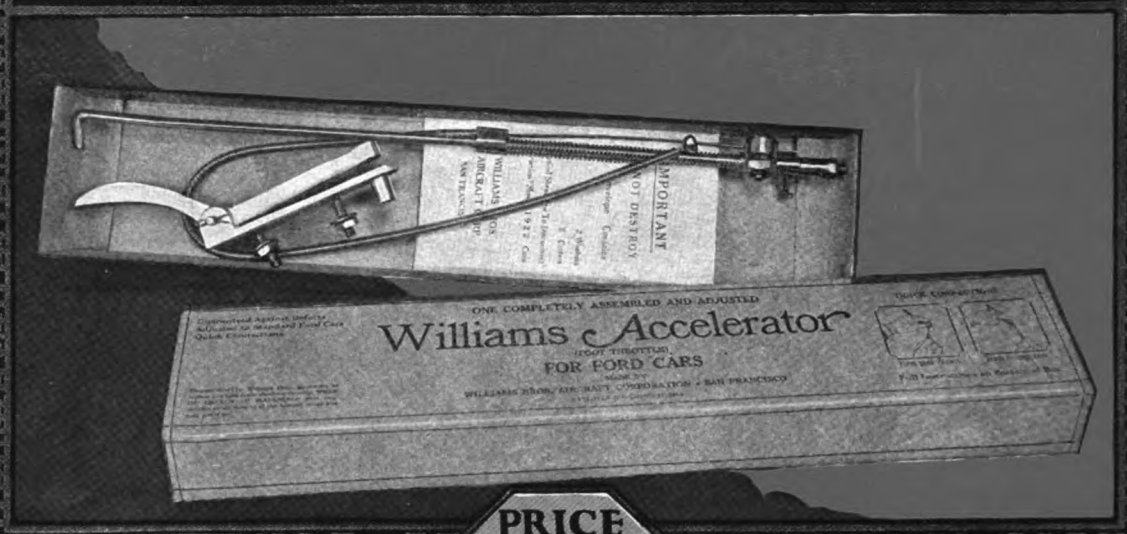
General Asbestos & Rubber Co.
Main Offices and Factories:
Charleston, S. C.

Branches
New York: 296 Broadway
Chicago: 14 North Franklin St.
Pittsburgh: 311 Water St.



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WILLIAMS ACCELERATOR
for FORD CARS



PRICE
$3.00
AND WORTH IT

QUALITY

THE WILLIAMS ACCELERATOR needs but little sales argument. Its sturdy, clean-cut construction speaks for itself. Its lack of complicated parts and extra attachments is readily seen. Its simplicity of installation and operation is apparent at a glance.

These are reasons why the Williams has always led in the accelerator field—the sales increasing 100 per cent each year. They are also an assurance that the sales will continue to increase. Write us for details. Order from your jobber.

WILLIAMS BROS. AIRCRAFT CORP.
San Francisco

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MOTOR SHOWS NUMBER

MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

NEW YORK

Tuarc
STEEL WHEELS



Standard or Optional
Factory Equipment on
Buick, Cole, Columbia,
Gardner, Jewett, Liberty,
McLaughlin, Oakland, Oldsmobile,
Packard, Paige, Reo, Rickenbacker,
and Westcott cars, and Reo Speed Wagons

MOTOR WHEEL CORPORATION, LANSING
Space C-108, New York Automobile Show

Entered as second-class matter Jan. 3, 1908, at the post office at New York, N. Y., under Act of March 3, 1879.

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NO-LEAK-O Piston Rings

THE GROOVE THAT CANNOT CLOG

Move From Your Shelves

No-Leak-O Piston Rings are easy **to sell because:**

1 - they have made *good.*
2 - they are widely *distributed.*
3 - they are nationally *advertised.*

No-Leak-O Piston Rings are the first **and only piston** ring to have the patented "oilSEALing" **groove. This groove** packs an impassable oil film in between **piston and cylinder** walls which gives *perfect oil control and compression in each individual ring.* Every genuine No-Leak-**O Piston Ring has** the word "No-Leak-O" stamped in the ring.

They are made in one piece—easy to install—**quick seating**—of finest material—guaranteed against **breakage.**

Over 200 reliable jobbers carry No-Leak-**O Piston Rings in all** standard sizes and *over* sizes.

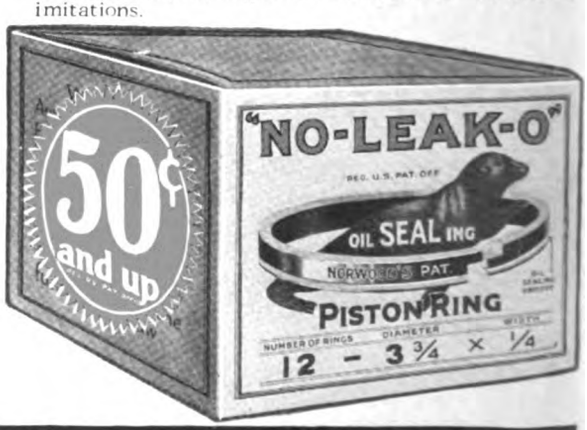
See the No-Leak-O full page advertisement in the January 6th issue of the Saturday Evening Post. It is one of the series of advertisements which is building a good business for dealers.

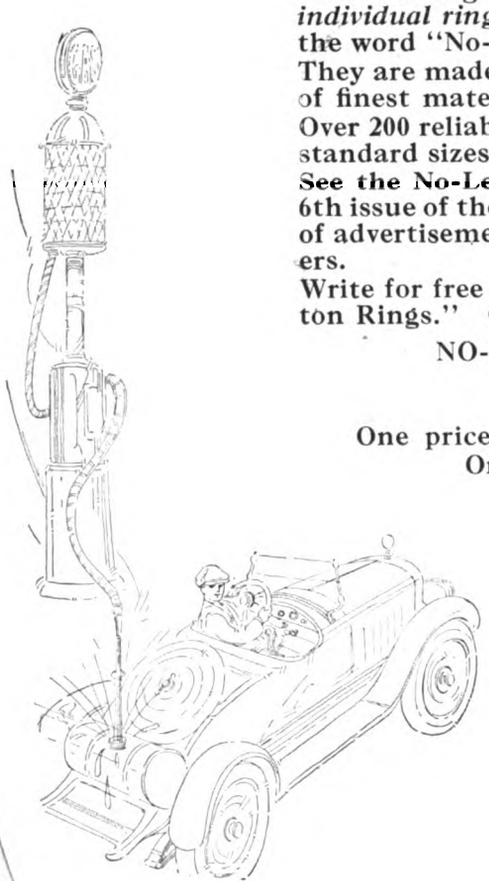
Write for free booklet, "Know the Facts About Grooved Piston Rings." Get our liberal dealers proposition.

NO-LEAK-O PISTON RING COMPANY
Dept. T-46
BALTIMORE, MD.

One price during eight years of continued success
One design—for all cars—50c and up

Important: In buying piston rings insist on the genuine No-Leak-O with the original "oilSEALing" groove, packed in this standard package bearing the famous ring and seal, our registered trade mark. Beware of imitations.





NO-LEAK-O

WON'T LEAK
because they're sealed with Oil

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MOTOR WORLD
DEALERS, JOBBERS AND GARAGEMEN
Reg. U. S. Pat. Off.
239 West 39th St., New York City Phone PENnsylvania 0080
PUBLISHED EVERY WEDNESDAY BY
The Class Journal Co.

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This is the way to display them and *Sell Them*

NO more broken bulbs with Dover Bulb Cases.

A new light is always handy and ready when the old lamp gives out.

Dover Bulb Cases have snug compartments for two large and three small lamps.

A safe, economical way to carry bulbs—they can't jar loose—they can't wobble around—they fit in snugly and securely. A safe, sane way to carry bulbs and prevent breakage.

Dealers and Jobbers: Dover Bulb Cases fill a real need—are priced right and sell fast. Display them and sell them. Make another profit. Write today.

A complete case holding 2 large and 3 small bulbs only $1.00 (without Bulbs)



DOVER STAMPING & MFG. CO.
385 Putnam Avenue
Cambridge 39, Mass., U. S. A.

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Oldsmobile in Fort Wayne, Ind.

"We believe the Oldsmobile to be the most complete line of any automobile manufactured today. The Four is the outstanding car in its price class. The Light Eight of course is in a class by itself. This opinion is based on ten years' experience in the retailing of passenger cars, during which time we have sold a number of different makes, including some of the most popular lines on the market today."

—HANKE MOTOR CAR COMPANY
WM. HANKE

October 22, 1922

No need to lose sales to competitors for lack of a complete line, if you are an Oldsmobile dealer. The Oldsmobile franchise equips the dealer with both Fours and Eights—fifteen up-to-date body models. He has a splendid Four roadster at $955 for one prospect, and the luxurious Eight sedan at $2,025 for another. Between these two types are a range of models with all the traditional Oldsmobile attractiveness and appeal.

With such a variety of cars, the Oldsmobile dealer is in a position to sell his customers not once, but several times—keeping pace with their increase in buying ability as time goes on.

And in the Oldsmobile Economy 1-ton truck he has still another source of profitable business—but under the same contract, with the same advertising message, and the same parts account.

Is it any wonder that with such a line of merchandise, and backed by the unequalled General Motors financing plan, Oldsmobile dealers are successful dealers?

Why not start the new year as an Oldsmobile dealer? We may have just the opening you want. Communicate with us today.

OLDS MOTOR WORKS, LANSING, MICHIGAN
Division of General Motors Corporation

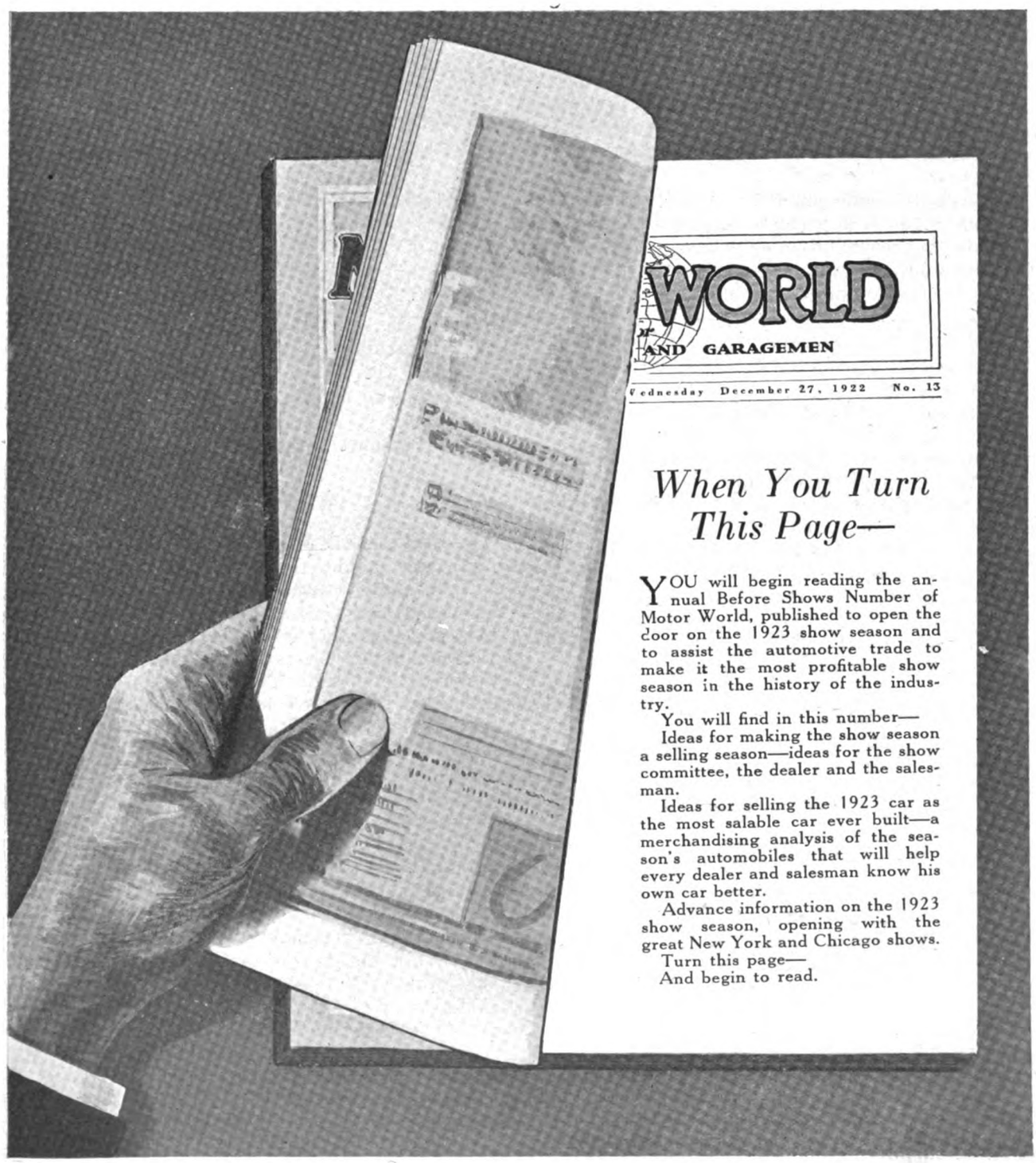
OLDSMOBILE

A PRODUCT OF GENERAL MOTORS

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MOTOR WORLD
for
DEALERS, JOBBERS AND GARAGEMEN

Vol. LXXIII New York, U. S. A., Wednesday, December 27, 1922 No. 13



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The 1923 Car Is the Most Salable Car Ever Built. It Will Help the Trade to

Make the 1923 Show Season a Selling Season

Show Committee, Dealer and Salesman, Working Together, Can Make It the Biggest Show Season

IF your automobile show is so well staged that people attend it in great throngs and make it the week's chief topic of conversation——

If your exhibit in the show is so attractive that your booth is filled with interested people much of the time——

If your salesmen on duty at the show take full advantage of the opportunity to make sales and prospective sales——

You will say, won't you, that the automobile show is a business builder?

The automobile show has been a business builder in this country for more than twenty years. It has centered public attention on the motor car by displaying hundreds of cars—the products of the entire industry—under one roof at one time. It has enabled individual dealers to show their cars to many thousands of people who could never have been reached in any other way. It has given individual salesmen a chance to put new life into their prospect lists and new vigor into their selling by providing the opportunity for fresh contacts with buyers under the favorable influence of show-time enthusiasm.

The shows through all these years have been business builders. There are many reasons why the 1903 show season can be made the most profitable show season in the history of the industry.

1923 Cars Are Show Cars

THE first reason is the 1923 car.

The 1923 car is the most salable car ever built. It is the lowest priced car ever built. This is a big factor in its salability. When the factors of greater durability, better looks, easier operation and lower upkeep cost are added the 1923 car reaches a high degree of salability.

The 1923 shows will present to the public cars built on the foundation of thirty years of experience in automobile design and production. As never before, after the shows have had their day, "everybody" will want an automobile.

The 1923 car will do its part in the 1923 shows. A study of the 1923 cars already on the market and of others to make their first appearance at the shows settles that point. The rest of the show job is yet to be done—by dealers and the committees representing them in the show management, by salesmen who will man the exhibits.

That's the show committee's job, which every dealer taking exhibit space can help by co-operation that ought to rate 100 per cent at show time if it fails to come up to the mark any other time of year.

What Dealers Can Do

WHAT must a dealer do to make the show a business builder for him? Some dealers answered this question several years ago; others have it half answered; some, newer in the field, are looking earnestly for plans that will yield them cash results on the 1923 exhibits. The individual dealer, in addition to putting the shoulder of co-operation behind the general show task, has a job for himself to make his exhibit a "high spot" in the show and to build patronage on the attraction his "high spot" has for the general public. He may be able to make his exhibit look a little more attractive than others, with displays of special models or with a striking dress of his booth with show furniture. That will help, but the dealer's big job is to sell his car and his organization, before the doors open, as a "high spot" in the show, to keep them sold throughout the show and to follow up this selling with after-show work of an intensive character. While the show committee is promoting the show the progressive dealer will be promoting his exhibit in the show. He will keep the promotion up right through the show. And in the show itself his sales force will be selecting prospects from the show crowds, interviewing them, selling some of them, listing and classifying others and making the exhibit for the time being a sales headquarters, and a hard working one at that. After the show the dealer will con-

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duct the fastest sales campaign of the entire year, to turn the show interest of as many prospects as possible into buying interest.

What must a show do to be a business building show? Show committees and managers will be asking themselves this question throughout the next few weeks. First, a show must cause talk. Unless the general public can be got to talking about the show, long before it is held and right up to the time the doors open and until the doors close, it will not be a success. Promotion and a well-staged show will bring about this result. Promotional publicity—lots of it—will make everybody think about an approaching show and talk about it; will help to keep up the talk during show week. Good staging—a well-dressed, bright show exhibiting a wide representation of the industry's products—will finish the job. It will send first nighters out around town telling everybody they meet about "the best show Our town ever had," assuring large attendances, the first essential of show success, for the rest of the week.

The Salesman's Opportunity

THE salesman's opportunity in the show is as broad as the dealer's. He can work up prospects before the doors open, discover new ones while the show is in progress and turn many of them into buyers when the close of the show frees him for canvassing work.

There is much for show committees, dealers and salesmen to learn in the experience of men in the trade in past show seasons. There have been mistakes which should be avoided and conspicuously successful methods which can be imitated or improved upon. But show committees, dealers and salesmen haven't the time to go about the country studying the shows that have gone before.

Motor World has been studying shows and show methods and in this Before Shows Number is presented practical information for the trade on automobile showmanship. There are ideas for the show committee, the dealer and the salesman. Motor World readers are invited to study and make use of them.

The show season will start in New York, as it has for many years. Under the auspices of the National Automobile Chamber of Commerce the twenty-fourth annual show will be held at the Grand Central Palace Jan. 6 to 13, opening and closing on Saturday. The Chicago show, also a manufacturer's exposition, will open three weeks later in the Coliseum. There will be big city dealer shows—in Philadelphia, Detroit, Baltimore, Cleveland, and Milwaukee—between the two national shows and after these, continuing until far into March, and in some cases into mid-April, shows in cities great and small, some in communities that cannot boast the title of city.

Make Them Selling Shows

ALL these shows, large and little, are part of the great selling system that moves motor cars from the factories to the highways. They have played an important part in this system in past years. They are looked to to carry on their share of the selling job again this year.

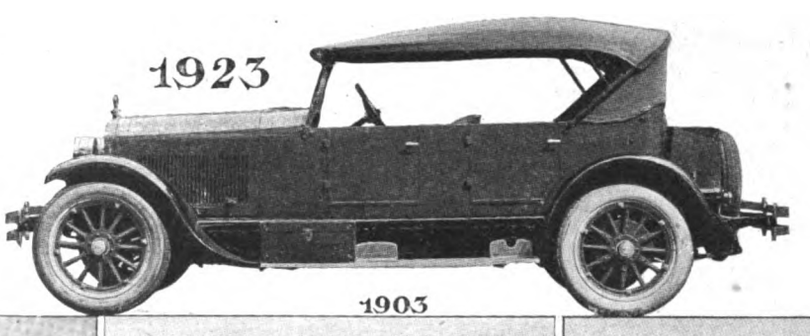
Will your town be in line with a 1923 show? Will it be a *selling show*? Will it recognize the selling power of a spectacular, yet dignified, presentation of the automobile as an essential in the transportation system of the country and as a part of the life of the people?

Will you be in the 1923 show? Will your car and your organization be among those that the show crowds will see and talk about? Will your salesmen, realizing how the already keen edge of competition has been sharpened by the production of so many salable automobiles, take a place just a little ahead of some other salesmen in presenting your cars to the big, interested crowds at the show?

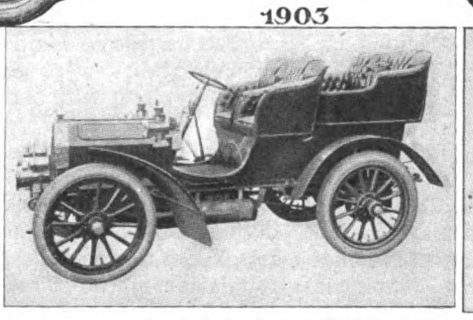
Co-operation Is Needed

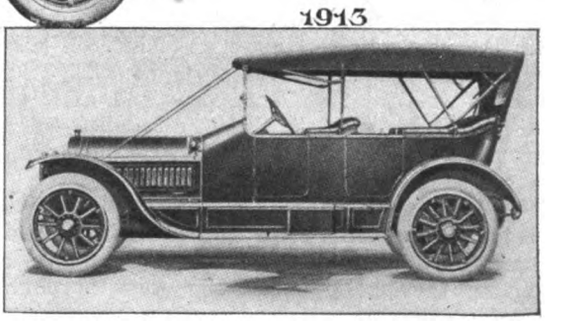
THE curtain will go up on the show season in a few days. Men in the automotive trade will find themselves once more in the glare of lights, the hum of voices, the good dress and the good nature of the public exposition. Within reach of their hands and their voices will come many thousands of people who are to become owners of new motor cars.

The prospect is bright. The sales opportunity awaits. The 1923 car is the most salable car ever built. Working together, show committee, dealer and salesman can make the 1923 show season the most interesting and profitable show season the industry has ever held.









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Big Business Year Just Ahead for the Automotive Trade

Nothing Miraculous in 1922's Record Production—Why the Business Will Continue to Grow

By Neal G. Adair

THE automotive industry has made two and a half million cars and trucks this year and the whole country is asking who bought them.

Some of the year's products, as always at this season, are in the hands of manufacturers' branches, distributors and dealers. The great bulk of the huge output, however, has passed into the hands of users. No wonder men in the industry, even, are among those who want to know who bought these cars and trucks.

To say that all kinds of individuals and corporations bought them answers the question truthfully but it fails to give any valuable information. Ask why all these vehicles were bought and a question is raised that leads toward an answer with real meaning.

Seven Reasons for Big Sales

Seven reasons for the unprecedented sales of 1922 can be advanced. They are:

1—*Generally improving business conditions.* In a year the country has progressed from a condition which prompted the President to call a conference to relieve unemployment, to one in which jobs are going begging. Virtually no other business has come back as fast or as far as the automobile business, but nearly all have undergone sufficient rebuilding to boost the country's buying power in wonderful shape.

2—*The halt in buying late in* 1920. When after-war depression hit the United States buying of cars and trucks stopped almost as though at the wave of a hand. Logical buyers of late 1920, even those who had money in hand to buy with, held off through fear of panic conditions.

3—*Delayed buying in* 1921 *due to high prices.* After the blow to business dealt in 1920, with successive blows delivered in 1921, buying power couldn't do much better than stagger along and it wouldn't pay what were popularly regarded as high prices—for anything. Automobile manufacturers began reducing prices in the fall of 1920 and there were cuts from then on through 1921, but it was not until late 1921 that the reductions were large enough to start a buying movement which got under way too late in the year to affect materially the 1921 sales volume.

4—*The drop in prices early in* 1922. This movement began with the New York show and, after a flurry of uncertainty on the part of the public, which looked for further immediate reductions, gave the spring buying season a tremendous impetus.

5—*Price reductions periodically throughout* 1922. When some of these cuts came in mid-summer, in some cases on cars whose dealers were unable to supply immediate demand, the public apparently was thoroughly convinced that rock-bottom prices had been reached and that motor car values had risen to new heights on the sound economic basis of manufacturing economies.

6—The sixth reason, *belief on the part of some prospects that prices might be raised in* 1923, was a natural outgrowth of the price reductions of the year.

7—Finally, *extension of time payment facilities* gave buying rapidly gaining momentum throughout the year. Improvement of the general business situation and particularly the liquidation of frozen credits enabled banks and acceptance corporations to accommodate more installment payments and the organization of some additional financing companies and the expansion of others contributed to the growth of this class of buying.

The conditions outlined in these seven reasons undoubtedly played an important part in building up the year's great volume of sales. Back of them, the well built passenger car of to-day was making its appeal to a public in which "everybody wants an automobile" and the truck was demonstrating its permanency in the modern scheme of transportation.

No doubt the eagerness of the trade to accept old cars in part payment for new, a practice which grew with the year's growth of the industry, was a factor of weight in the business of the year. Appealing new cars, at appealing prices, proved too great a temptation to many thousands of owners of good but used cars, and the trade-in, which has left a large supply of used cars in dealers' hands to carry into 1923, was the basis of a huge volume of new car sales.

The Outlook for 1923

Now the industry is on the threshold of another year and men in all branches are wondering what it will bring forth.

If any great proportion of delayed 1920 and 1921 sales and advanced 1923 sales were crowded into 1922 the coming year might be a slim one, but there is no reason to expect such a turn in events.

Business in general is still going forward, which seems to assure a general foundation of prosperity for the automotive industry. And regardless of how many sales of adjacent years were jammed into 1922 the replacement business alone will demand a considerable production in 1923.

No one has fixed the life of a car, though some authorities have stated it as six years. Even if it were twelve years, a million cars and trucks logically would be required to take the places of those which would be junked in 1923 out of the registration of nearly 12,000,000 vehicles. The population of the country is growing and so is its wealth and the average increased motor vehicle registration of

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the past few years, something over a million, is likely to be maintained, creating a demand for another million cars and trucks. The country most likely will want another 2,000,000 new motor vehicles, at least, in 1923, and combined car and truck production, in view of the increasing use of trucks, is not likely to go below two millions, and more probably will attain within a quarter of a million of this year's two and a half million mark.

The industry may not set a new record in 1923—probably will not—but 1923 will be a big year.

The maintenance and equipment divisions of the business have as bright an outlook. More than a million cars and trucks were added in 1922 to the registration. Nearly twelve million vehicles will be calling next year for repairs, adjustments and, in some cases, rebuilding. Nearly twelve million vehicles will be calling for tires and other supplies to keep them running. Nearly twelve million vehicles will be exposed to the salesmanship of progressive dealers and garagemen ready to equip them with accessories designed to add to their utility or operating efficiency or the comfort or convenience of their drivers.

The industry has built this year $1,558,000,000 worth of cars and trucks, wholesale value, as compared with a total value of $1,260,000,000 for the 1921 production. Translate the 1922 figure into retail valuation and it almost reached two billion dollars. That figure constitutes a tremendous business, done by the branch houses, distributors and dealers of the United States, with some subtraction, of course, for export sales. But it is only part of the picture. If we may estimate next year's car and truck business on a retail basis at two billion dollars it is conservative to say that in maintenance work, parts, accessories and tires the trade will do another three billion dollars' business, making a total of five billion dollars' turnover as the basis of 1923 profits.

But the automotive industry cannot stand alone. American industries are interdependent and the nations of the world are interdependent, so it is necessary, in attempting to look ahead into 1923, to consider the general American business situation and, to an extent, affairs across the sea.

Problems of German reparations, Near East settlement and other foreign complications make it apparent that the United States cannot expect next year any such increase in export business as would be necessary to set American industries going full tilt, but the situation in general is more hopeful than the opposite.

On this side of the water the indications point plainly to further stabilization, though the wisest business advisers advocate continued caution. The National Association of Credit Men has issued this statement:

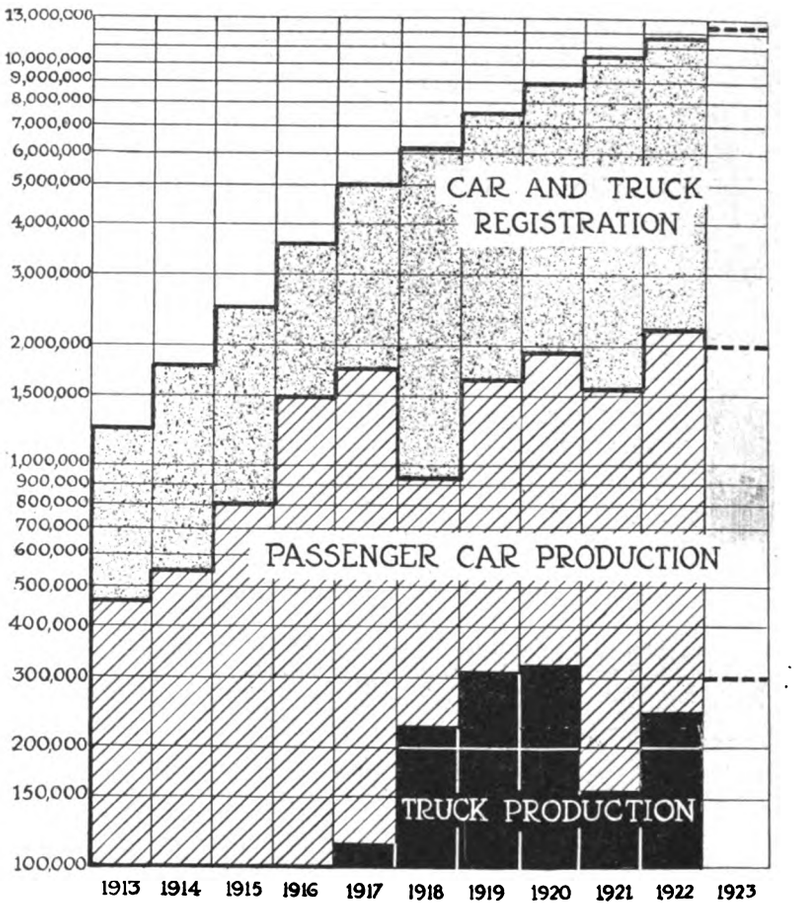
"An acceleration of trade movements has given the impression that our problems are nearing solution; that we are out of our troubles. Judging the stability of trade movements by surface appearances is not wise. Though we have made decided improvement in our general condition as viewed by the side of the two previous years, yet it would be a serious mistake to feel that our problems are over and the full swing of prosperity has come.

"The pleasantness of relying on favorable symptoms may induce a lack of effort that is needed above all things at this time to bring us fully through our difficulties."

The statement is conservatively precautionary without being pessimistic. One of the great banks, in an equally conservative pronouncement, declares that the country in 1922 "has made great progress toward a condition of industrial, mercantile and credit stability."

There is much meaning for the merchant, large or small, in these statements. They emphasize necessity for prudence in borrowing and buying, yet they hold out promise of a profitable year for the business man who will study his market and develop its possibilities.

In every branch of his business the automotive man, whether he sells merchandise, or service, or both, needs to study his field as a basis for wise buying; he needs to make his organization one that serves his trade and builds more trade by serving; he needs to appreciate as older trades have learned by years of experience to appreciate the value of good will.



A 10 Years' Picture of Automotive Transportation and Production

THE graph shows the growth of motor vehicle registration and passenger car and truck production from Jan. 1, 1913 to Dec. 31, 1922—10 years—and forecasts the same figures for 1923.

Note how steadily registrations have grown—the increases are like a set of stairs. Passenger car production has had its ups and downs dependent upon countrywide business conditions but each five year period has shown a gain and the increase over the entire 10 year period is from less than half a million to two and a quarter million cars. Truck production, reaching its highest point in the post-armistice boom period, is on the up grade again.

The dotted lines show estimated production for 1923. They are only estimates at best but well informed authorities are agreed that the country will have nearly 13 million motor vehicles registered at the end of next year and that while truck production probably will reach 300,000, passenger car production most likely will fall little if any below two million.

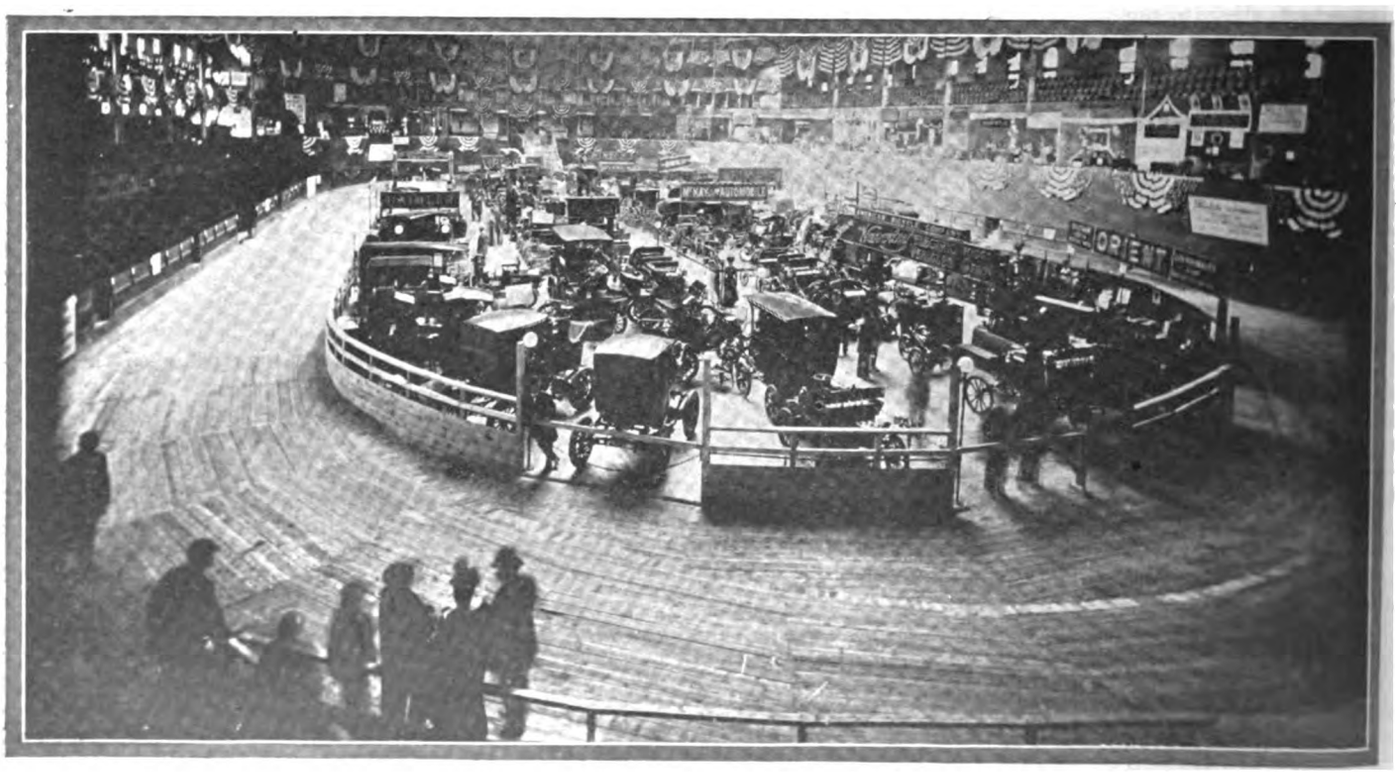
The bright future of the industry is seen in the top line—the steadily increasing use of motor transportation.

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1900 - - - - A Picture Story of Twenty-Three Years' Progress



REMEMBER the good old days of "Git a horse!"? Folks were skeptical about these "new-fangled hoss-less carriages" and they had to be shown. And remember how we showed 'em? We built a track around the exhibit, pushed a car out on it—breathed a prayer that the temperamental cusses wouldn't balk—and proceeded to prove that they ACTUALLY WOULD RUN. And remember how we put barrels in a double line and "snaked" along between 'em to show the doubting Thomases that you could steer 'em around anywhere—just as easy as driving a horse?—Yep, they were SOME days—those good old days of "Git a horse!"



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as Told in the New York Automobile Shows - - - - - 1922

TWENTY-THREE years' development has established the dependability of the motor car—has crowned it King of Transportation. And now, in royal splendor, it accepts at the shows the homage of the multitude. Folks know and respect the motor car today because it has become indispensable in every phase of civilization—and everybody wants one. Twenty-three years have surrounded it with the dignity of a great institution—and the shows today reflect, in a striking way, the progress that has been made. The cry of "Git a horse!" has changed to "Get a car!"



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Reilly Talks—

By Neal G. Adair

To Tommy Trumbull

About Show Smilers

THE Callawassa Automobile Show was to open in two weeks. C. J. Reilly, Inc., had drawn a fine central space to show the Sennett and the head of the house was talking over arrangements with Tommy Trumbull, general manager of everything and everybody around the place except Reilly himself.

"How many salesmen will we have on the job?" Reilly asked.

"Eight," said Trumbull.

"They can swing the job, but can they swing it with a smile?" Reilly suggested.

"Meaning—?" Trumbull questioned.

"Endurance," Reilly replied. "A show crowd gets tired and looks tired. Salesmen in the show get tired but they mustn't look it. The only way to keep 'em from looking it is to keep 'em from getting downright dog-tired."

"But with eight men we can have two on the job in the morning, three or four in the afternoon and six or seven at night and still work 'em only eight hours out of the twelve the show is open," said Trumbull.

"Too long," said Reilly. "Eight hours a day for eight days on a show floor—almost in the class of cruel and unusual punishments."

"Does seem long when you look at it that way," Trumbull admitted.

"Is long," said Reilly. "Don't forget a show's nothing but a show to the crowds. They don't think of the men in the exhibits as working; they're just part of the show. And a show is something people go to for pleasure, sightseeing, the thrill of the colors, the lights and crowd and so on. Build a fence around an exhibit and you wouldn't keep people out any more effectually than you would by manning it with a tired, listless, I'll-be-glad-when-the-lights-go-out crowd of salesmen."

"But we've only got eight men on the staff," Trumbull protested.

"Draft a couple more—Kelly from the service station and Jarvis from the demonstration job, maybe. School 'em a little and they'll do for off-hour fillers," Reilly suggested.

"Not so bad," said Trumbull.

To George Roper

About Getting Names

"AND the big job, Georgie, is to get names," said Reilly.

"Names?"

"Names—real names and real addresses."

Reilly and his head salesman, George Roper, who had been appointed exhibit manager for the show, were talking over the big job ahead.

"Yes, sir, names," Reilly continued. "We don't care much who the people are who drift by and just take a squint at our cars as they do at everybody else's, but when a fellow, maybe, with some of his family, comes into the booth and shows some real interest we want to know who he is."

"Ask him, that's one way to find out," Roper said.

"One way, but not always the right way," Reilly answered.

"But how else—," the salesman began.

"We got quite a few fake names and addresses last year, didn't we?" Reilly observed. "And some likely looking folks turned us down entirely; wouldn't tell us a thing."

Roper nodded.

"Let's try something new this year—on some of the likeliest looking ones," Reilly continued. "Don't scare 'em off by asking their names. Try getting them by diplomacy. Suggest that we have back at the salesroom some big, finely illustrated descriptive books on the Sennett that we are glad to mail to people who are interested in the car. Then ask the prospect for his business card so that we can send the book. Incidentally when Mr. Prospect gives you his card, hand him yours."

"Suppose they'll fall for it?" Roper asked.

"Try it," said Reilly.

To Tim Kelly

About Demonstrators

"WE'LL be doing some demonstrating show week, Tim; maybe a little more than usual," Reilly remarked one morning as he dropped into the neat little coop where Kelly had his office.

"I'm ready," the service manager said, and added, "We're always ready."

"Might be a little more so show week," Reilly suggested.

"How come?"

"Guess I've never had to kick about our demonstrators," Reilly continued. "They're kept a hundred per cent up to snuff or thereabouts. But maybe we could put 'em in a hundred and fifty per cent condition or something like that—what?"

"Maybe, but—," Kelly started to object.

"Look at it this way," Reilly interrupted. "Our cars in the show, in a setting of bright lights, brilliant decorations, flowers, rugs and Sunday-go-to-meeting togged salesmen look like a million dollars, don't they?"

"Sure do, why, last year—," Kelly began with kindling eyes.

"Never mind last year, let's see what we can do for this one," Reilly broke in. "Let's follow a prospect from the show to a demonstration—in a Sennett. He has the show picture of the Sennett, bright as the best January morning you ever saw. 'What a beauty,' his wife said as they looked at the sedan, and Mr. Prospect seconded the motion. Then comes the demonstrator, minus bright lights, decorations and all the other show accessories. It will have to be a pretty trim looking demonstrator, and a pretty sweet running one, to get by, won't it?"

"You said it," Kelly agreed. "Watch me—show week."

To Henry Bennett

About Henry Bennett

HENRY BENNETT, the Redman dealer, had been exhibiting in the Callawassa show since the first one was held twenty years ago. So had Reilly. Both had entered show after show, Reilly always with enthusiasm, Bennett invariably with the protest that he had to show because his competitors did. That's the way Bennett entered the shows—as a pessimist. The fact that he had finished each one with a creditable list of sales and prospects made no difference to Bennett. Long ago Reilly had given up hope that Bennett would ever admit the show was worth the trouble, but every year, for old friendship's sake, he dropped into the Redman dealer's office to administer a dose of show stimulant.

"Ready for the opening?" he called out as he hustled into Bennett's office.

"Sure, when I have to do a thing I do it, you know that," Bennett retorted.

"Cheerful grouch," Reilly observed.

"Just the idea," Bennett admitted. "Cornelius, you're always springing bright remarks."

"Cheerful grouch," Reilly mused. "Goes into the show because he has to. Wonders why the folks that work for him don't put more hop into the show job."

"What's my opinion of shows got to do with the way my boys handle the exhibit?" Bennett demanded. "I don't go around telling 'em everything I think about."

"But you can't conceal it," Reilly retorted. "And pessimism is catching."

"Stuff," the Redman dealer retorted.

"Good stuff," Reilly insisted. "There's more than a dog and a talking machine in the picture of 'His Master's Voice.' If you're going into the show get in all over. Let everybody around your place know it's the biggest thing in sight for a whole month before, during and after show week. Then watch the effect on your men—and the results they get at the show."

"What think?" Reilly concluded.

"You're right — sometimes," Bennett conceded.

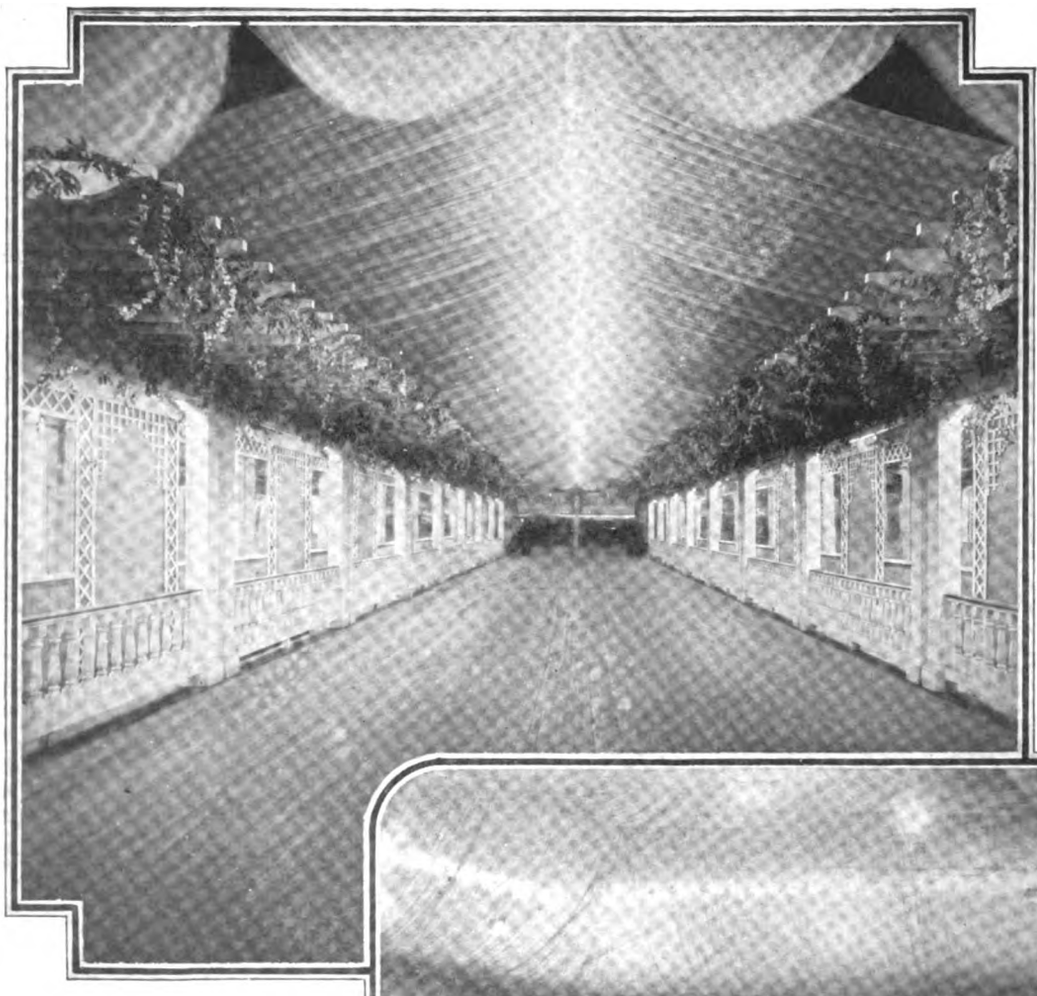
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Motor World's Portfolio of Show Time Display Ideas



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Staging a Show Worthy of the Automobile



AN Avenue de Luxe can be made a striking feature of a show. Boston always has one leading away from the entrance, but it is lined with car exhibits. In the Brooklyn show last year the crowds reached the show floor through a mirror-lined, trellised, vine decorated avenue (shown at the left). The beauty and dignity of the scene made a remarkably effective introduction to the show. Not an inch of exhibit space was sold along this avenue.



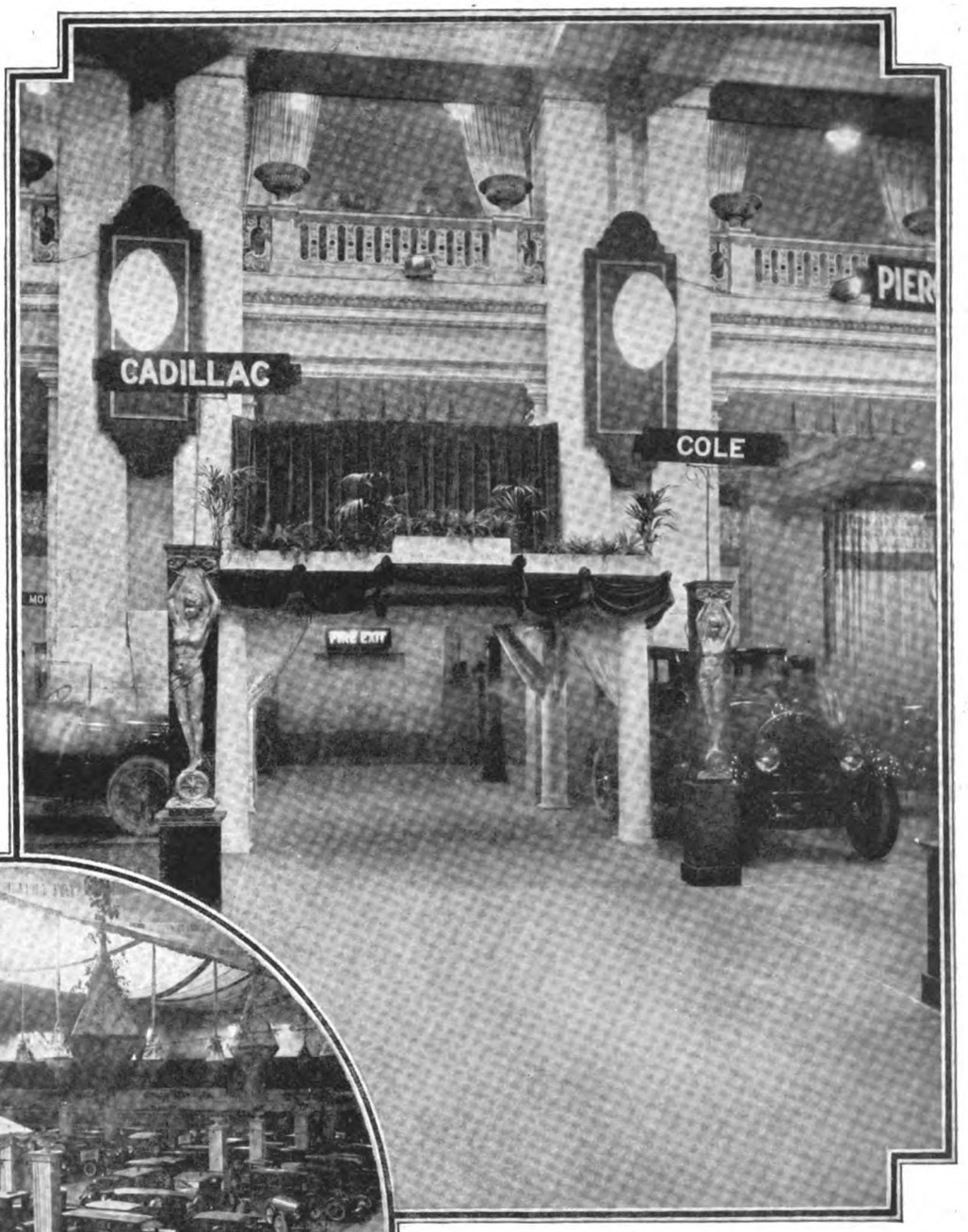
THE Brooklyn show last year was so completely dressed that the show crowds forgot they were in an armory. Filmy draperies completely concealed the iron bridgework such as holds up the roof of the average armory and mars the appearance of many a show. The decorations were simple but strikingly effective and the layout of cars avoided crowding and garagelike effects along the aisles.

The finely dressed show on the preceding page is Indianapolis, 1922

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and One That Will Make People Talk

SOMETIMES it helps promote show attendance and interest to have a contest, or several of them, in which the public can take part. If this is done, announcements in the show are effective and a platform is needed to make them from. At the New York closed car show in September the platform at the right served for making announcements. The announcer made his appearance by parting the velvet curtains at the back. Some show committees get the newspapers to chronicle in advance the time and subject of show announcements and create interest and enlarge attendance in this way.

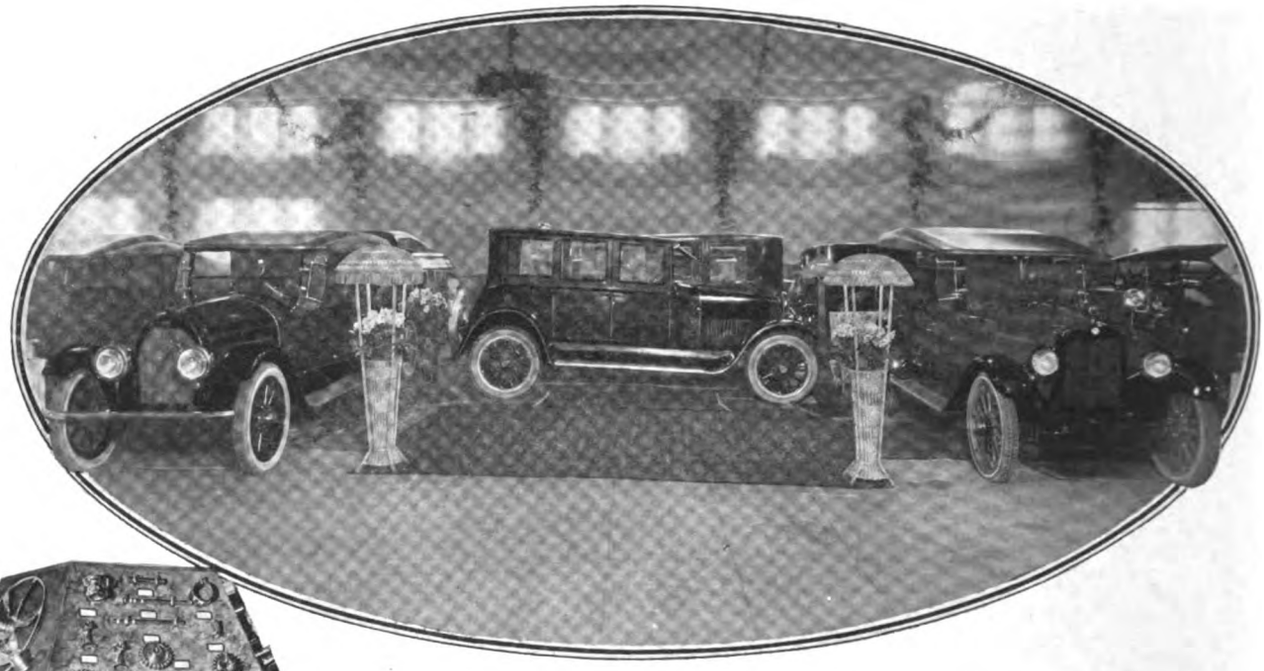




NEWARK, N. J., gave last spring's show a "hub" by setting up a pergola which contained radio apparatus for the official opening of the show by the mayor. Later the pergola was used as a booth by a woman's philanthropic organization. Many shows are built around a fountain, a great vase of flowers or some other feature that provides a striking center

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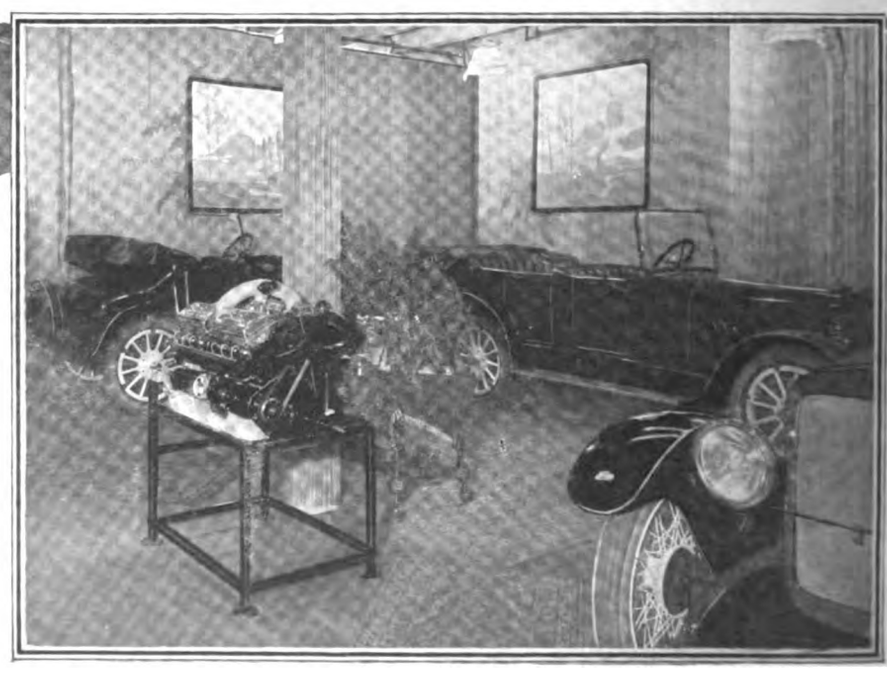
Will Your Exhibit Be a High Spot in the Show?



THE show exhibit can express the invitation, "Step in," in its very arrangement. Note how the placing of the cars, the rug and the flower baskets beckons to the show visitor to stroll in and get better acquainted with the car and the folks who sell it. The accessibility and comfort offered the show visitor in the arrangement of the exhibit has a direct bearing on the exhibit's selling power—a good thing to think about when planning the 1923 show exhibit.



HERE'S an idea for showing small parts in the car exhibit that is both useful and decorative. Since buyers more and more are being educated to an appreciation of mechanical details this display stand often can be of real selling value.

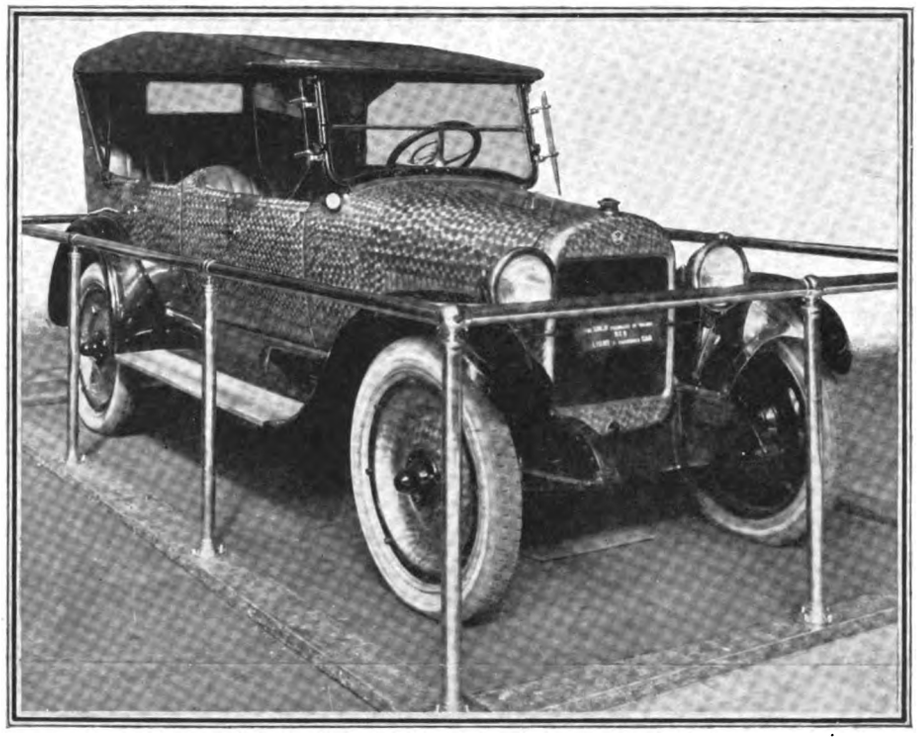


FOLKS always will be interested in "what makes it go." Invariably the crowds linger at the show exhibit that effectively displays an engine. To place the exhibit on the aisle, on a sturdy pedestal, in a way that won't detract from the general appearance of the exhibit, may well claim the careful thought of the exhibitor. Brightly painted castings and highly polished working parts attract attention, and it is always time and effort well spent to give particular attention to these details.

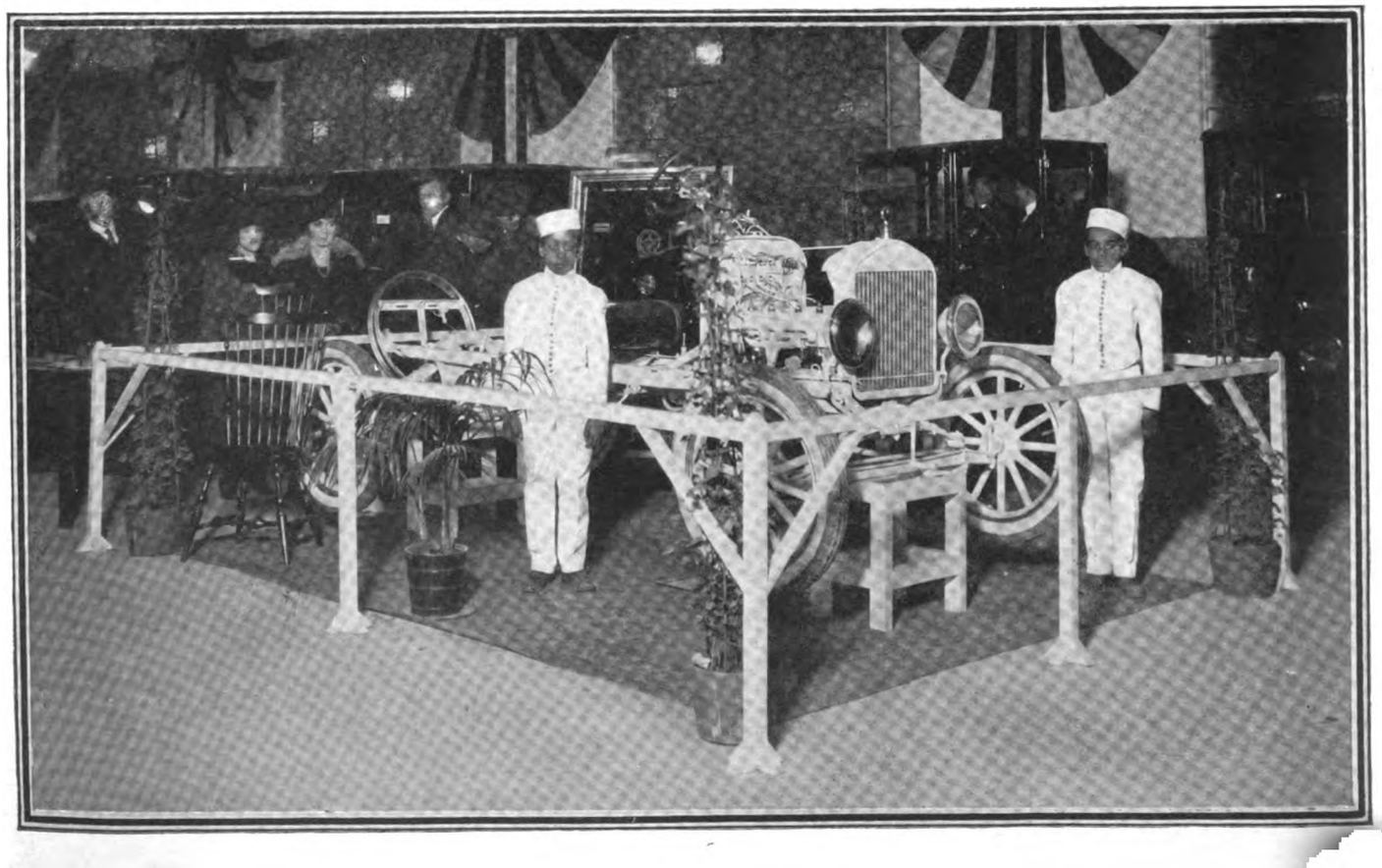
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See How These Dealers Made Theirs Stand Out

SOMETIMES it pays to go to considerable expense to provide a show exhibit feature that will make a particularly strong appeal to attract attention and cause show "talk." Special show jobs in bright colors—flaming reds and rich yellows—are effective. But, to get an effect really startling some distributors occasionally fix up a car like the one shown at the right. This car was covered with gold leaf and lacquered. After the show in which the distributor used it, the car was sent around to smaller shows in the territory in which his dealers participated. When the expense of making such a show exhibit feature as this is balanced by the opportunity to show it several times during a season it is an advertising medium of much force.



ONCE in a while a dealer can afford to do something distinctly unusual in the presentation of his car at the show. Here is an example of how the Lawfer Auto Co., Allentown, Pa., got intense show interest and publicity with a chassis attended by two uniformed negro boys. How seriously they took their jobs may be observed from the military pose assumed when the photographer said "look pretty." It is safe to assume that they were more natural when handing out catalogs to the show crowd.



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While the Show Is On Will There Be



THERE are, usually, many visitors in the salesrooms during show week — or there ought to be. One can't take his entire salesroom to the show, but he can take the show to his salesroom with a little investment in decorations and a little more attention to the tasteful arrangement of the cars on the floor. This picture of the R. R. Hall Cadillac Co. salesroom in Denver shows how palms and cut flowers were used to bring a bright, pleasant, and somewhat festive atmosphere to the salesroom.

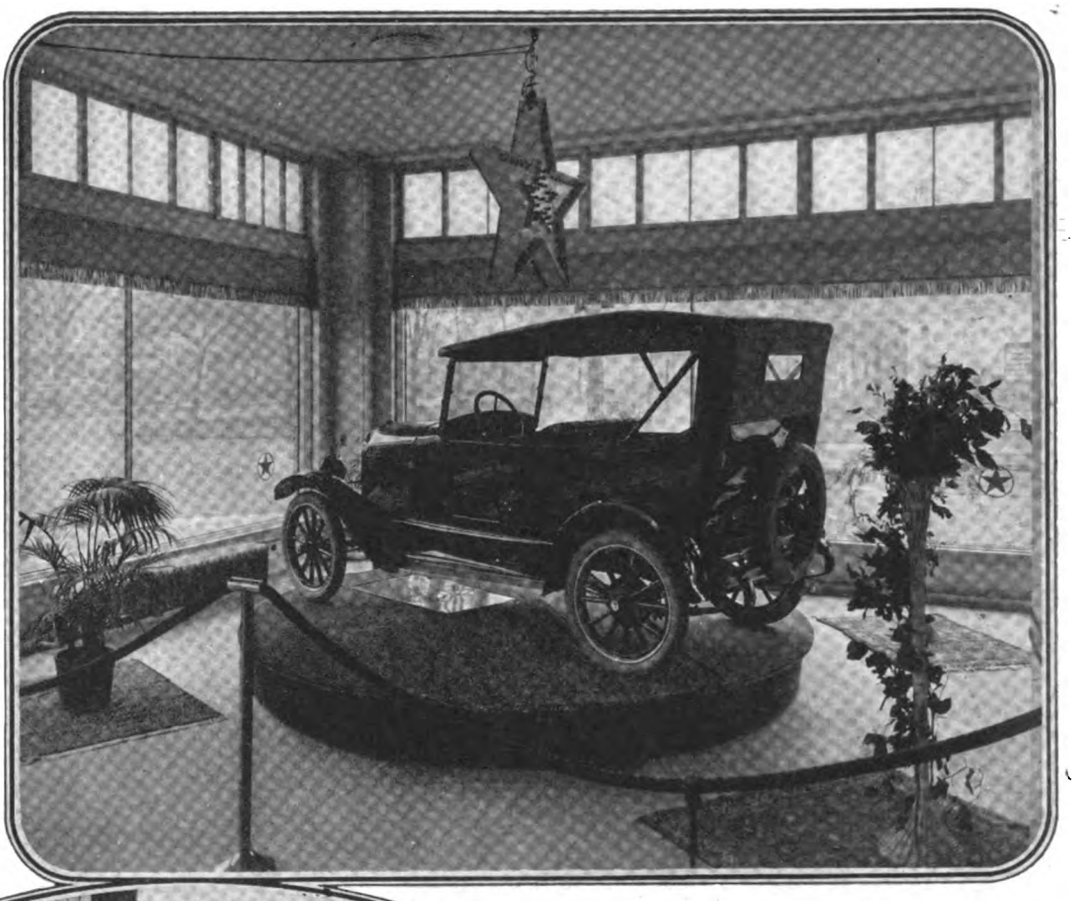


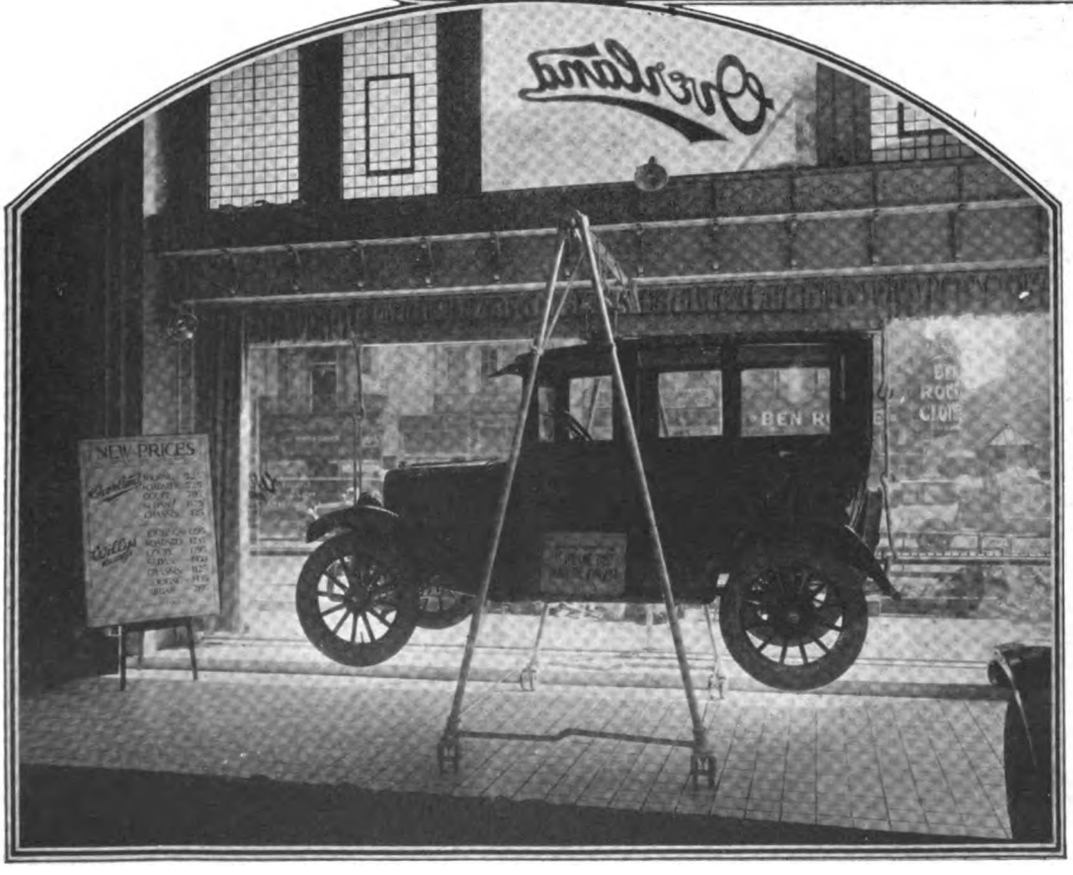
HERE is another example of how show atmosphere may be put into the salesroom at show time. This salesroom of the Studebaker branch at South Bend not only used flowers, and vines but rugs, comfortable chairs, and even a phonograph, to make the salesroom a place where people would wish to linger. It is selling atmosphere that makes people forget their worries and absorb the bright, optimistic outlook upon things that their surroundings inspire. Let's have more show atmosphere in the salesrooms for the 1923 shows.

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Show Atmosphere in Your Salesroom?

DURING the 1923 shows will be a mighty fine time to do something special in window display. When people see your exhibit at the show and get interested in some of the cars it contains, your salesroom is going to take on additional interest the next time they pass. Perhaps there is a special model that deserves particular treatment, or a selling feature of the car that can be accentuated through a special window display. A display that directs attention to this is particularly good show time advertising. The picture at the right is a Star display made by the Durant, Star and Locomobile establishment in Detroit. A small motor made the platform revolve.

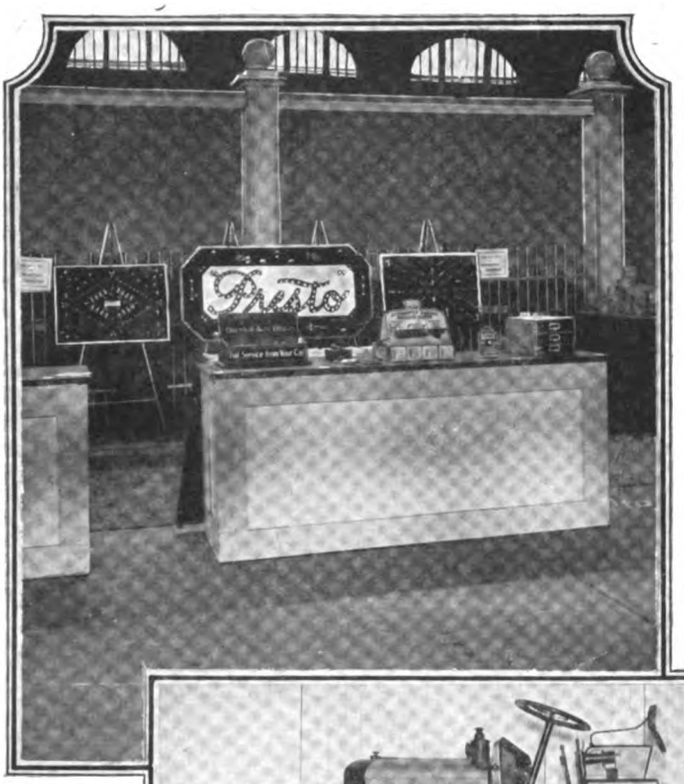




IN this display the idea that was impressed on the public was that "the perfectly balanced car is the one that wears the longest." To visualize the idea in the Willys - Overland salesroom in New York the car was hung in a yoke from a stand in the window and a sign on the running board carried the message. Another good feature that might be demonstrated with most modern cars would be the safety of the low built car. This might be done by displaying a car tilted sideways on a platform inclined at an angle of about 30 degrees. A sign might point out the safety factor in its low center of gravity.

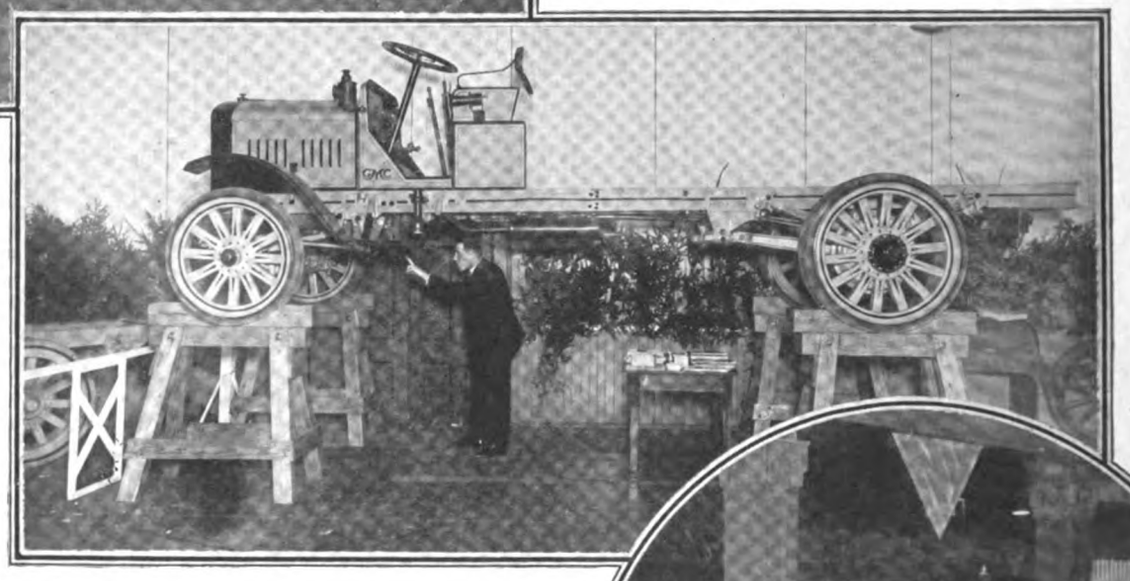
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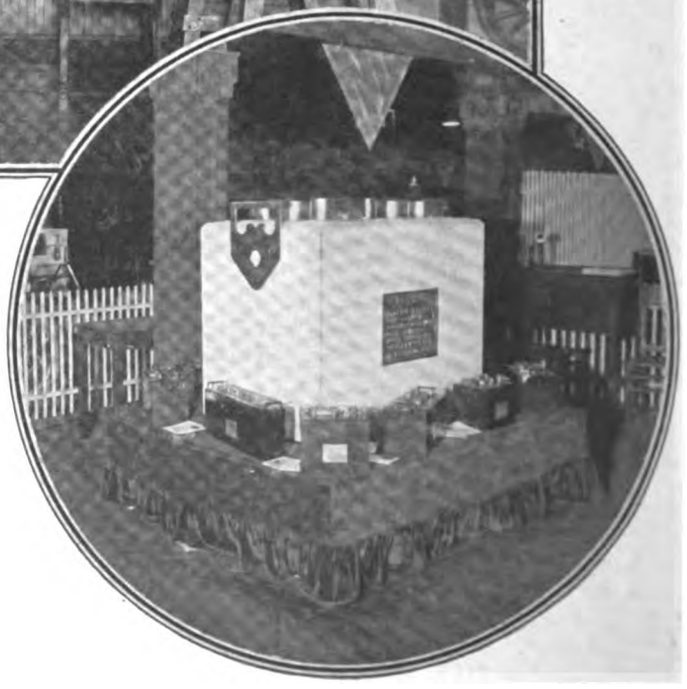
When You Plan the Truck or Equipment Exhibit



WITH space usually at a premium in the automotive equipment sections of automobile shows much thought must be given to an arrangement that will be pleasing to the eye and at the same time will carry the selling message effectively to the people in the aisles. This arrangement, in which an electric sign carried the trade name and plush covered display boards showed the products, is as effective as it is popular. A neat counter aids selling by providing a place to display items within the reach of show visitors. Working models, driven by a small motor, are particularly effective in this type of display.

GOOD ideas for displaying trucks at shows are usually at a premium. People don't stand off and admire the lines, or come closer to examine the upholstery of trucks. The truck prospect is primarily interested in the performance he is going to get, and next what the truck has to prove to him that it can deliver satisfaction in a mechanical way. In the picture shown below the truck was mounted on a set of horses that raised it far enough from the floor to allow a prospect to walk under it and inspect it minutely.





IT usually is quite a problem to make a battery show exhibit "sparkle." There's nothing very striking about a lot of black boxes. However, here is a battery exhibit idea that can be prepared with very little expense and labor. The box may be built in the shop of any battery service station from light lumber. A few coats of white paint and enamel will fill up the grain and give it a heavy appearance. The terminals and connectors may be made of tin and painted with metallic paint. Dimensions may vary according to the size and position of the display in the exhibit. One that is four or five feet long with other dimensions in proportion, according to the make of battery to be exhibited, will do for the ordinary battery exhibit. If this box is placed on a red plush covered platform and some batteries grouped around it a very striking display will result.

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The 1923 Shows

Will Bring Many Selling Opportunities—Some Will Seize 'Em, Some Will Lose 'Em— What Will You Do?

FOLKS advertise their losses, sometimes. But did you ever read one like this?

LOST—In the automobile show, one golden opportunity for more sales and profits through failure to take advantage of it when that opportunity presented itself.

Certainly not. And yet, how many of us might have advertised our losses in this way last year and the years before?

And, what is still more important, how many of us are going to continue to lose the golden opportunity of the 1923 shows?

Motor World hopes the number will be small indeed. And, to help make that number small, it is presenting, in the following pages, some *practical, workable suggestions for taking advantage of the selling opportunity, the golden opportunity, of the shows.*

Every one of the show merchandising ideas presented — those for the show committee, those for the dealer and those for the salesman — has been thoroughly tested in the laboratory of practical application. They are ideas and suggestions that have helped others, in past shows, to make the most of the show opportunity.

For most of them Leon F. Banigan, of the Motor World editorial staff, author of the twelve pages following, acknowledges the cooperation of several of the industry's successful show managers, dealers and salesmen.

While these numerous show selling ideas logically group themselves under the headings used, there is much of interest in each of these articles for every person in the automotive industry who is interested in the merchandising of its products. They contain ideas that, with a little adaptation, may be made to fit in well with the 1923 plans of show committees, dealers and salesmen.

If these stories help you to visualize your opportunities more clearly and contain a few thoughts that are helpful in rounding out your 1923 show plans these stories will have accomplished their purpose.

You will want to read these stories—every word of every one of them. You will want to combine some of the ideas they contain with the ideas that you have found successful. You will want to seize the selling opportunity of the 1923 shows and wrest from it every atom of success it holds for you.

You will want to clearly visualize, now, before the plans for your 1923 show efforts are completed, the full opportunities that these shows hold forth. You will want to know how you can best prepare the public for a favorable reception of your show, your exhibit and your cars. You will want to know how to guide the activities of salesmen in the show so as to lose none of the opportunities for making friends and prospects during the show, and you will want to know how to effectively plan and carry out a program of following up show prospects. These stories will help you visualize the opportunities and will bring to you some suggestions for making the most of these opportunities.



You will want to begin doing things NOW.

And what you want a whole lot—and plan for a whole lot—YOU WILL GET.

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How to Make the Most of the 1923 Show Opportunity

Practical Ideas for the Show Committee on Planning, Promoting and Staging a Real Selling Event

THE automotive industry is entering once more the great exposition period—a period rich in opportunity for co-operative merchandising effort in presenting the 1923 motor car to the public. How effectively the 1923 automobile will be introduced, how strongly it will appeal and how well it will sell through the year will depend to some extent on the 1923 automobile shows.

In view of this fact, the automobile show season imposes a sacred duty on the groups of men in the various cities of the country into whose hands is given the planning, promoting and staging of the 1923 shows. It imposes upon the show committees the duty of insuring the very best presentation of the motor car that it is within their power to give. This can be accomplished if the work of the show committee results in *a pleasing show and a large, interested show attendance. The show must be thoughtfully planned, effectively promoted and carefully staged.*

IN the planning of the 1923 automobile show in any town it is a good thought for the show committee to bear in mind that the primary object of automobile shows is to promote the sale of automobiles—not to make money for a dealers' association. This does not mean that the show cannot be a profitable venture—most successful shows are—but it does mean that, no matter how much money the show makes, it has failed if it has not presented the 1923 automobile in a strong merchandising way.

Many an automobile show has lost its selling value because of unbalanced planning, promoting and staging. A wonderful exposition is of little value if the show promotion fails to fill the aisles with people—interested people who are prospective car purchasers. On the other hand, aisles jammed with spectators, disappointed and disgusted at a small, unrepresentative, unimpressive, poorly managed exposition, may bring turnstile receipts, but does not help sell motor cars—in fact, it may be an actual factor of sales resistance later. There have been many of both kinds of shows.

Plan 1923 Shows Now

The 1923 shows will be good shows if the planning that should be under way now is done with the thought of making the very best presentation of the 1923 motor cars that is possible and then insuring, through adequate and effective promotion, the very largest and best attendance possible.

The basis of a well-balanced automobile show is a good show budget. Without well-proportioned and well-invested appropriations there is danger of the show plans growing strong in one department and weak in others. The lessons learned from previous shows will be the guiding forces in determining how much shall be invested in decorations, promotions, supervision, etc., to insure a well-balanced effort. It is a foresighted show committee that provides a contingent fund of 5 to 10 per cent of the total show budget for the extras that are almost certain to creep in as the show plans develop.

Use Some Street Standards



WOODEN columns like the one shown above attract lots of attention and may be used to advantage, especially if used in connection with a "court of honor" at the entrance of the show. Most cities give permission for the erection of a few of these in the business section and in the vicinity of the show building during show and a few days previous to the opening of the show

The organization of the show committee and the delegation of duties to individual members or sub-committees is an important factor in the success of show committee work, and one to which considerable thought may be profitably given.

The Show Committee

After several years' experiments in the organization and working plans of show committees, some dealer associations have greatly facilitated the handling of shows by making the board of directors of the association the active show committee. In the first place, the board of directors usually consists of a very good choice of the association's membership. Then, too, under most association by-laws, the board of directors controls expenditures, and it facilitates and expedites the work to have the power of paying bills in the hands of the committee that is spending the money.

Much thought has been given by show committees recently to interpreting the message the show is designed to carry to the public and providing a means of insuring the acceptance of this interpretation by the public. One of the most effective means of doing this was used in the Chicago show a year ago and adopted by many smaller shows that followed. This was the standardized show story. It was presented to the dealers and their salesmen at a meeting before the show and supplanted the personal ideas and con-

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clusions of individuals with a broad, clear, concise and truthful presentation of that information which the show visitor seeks concerning business conditions, prices, used-car values, etc.

The 1923 shows have a definite story to tell. The story as revealed farther along in this number of Motor World in the articles on "Selling the 1923 Car" is the story of useful, dependable, economical motor cars.

Instead of asking the public to attend the "20th Annual Automobile Exposition," which is just another way of saying, "Come and see *another* motor car show," why not invite the public to see the products of the automobile industry which the industry presents as useful, dependable, economical vehicles.

The Big Job at the Shows

It is the job of the show committees to SELL THE 1923 SHOWS FIRST TO THE DEALERS AND THEN TO THE PUBLIC. But the show is not sold to the dealer when he has sent in his check for space, nor is it sold to the public when the visitor pays at the turnstile. The show is sold to the exhibitor only when he has a true conception of what the show will do for him, of the selling opportunity that it presents. And the show is sold to the spectators only when it has carried home to them the true story of the products it exhibits.

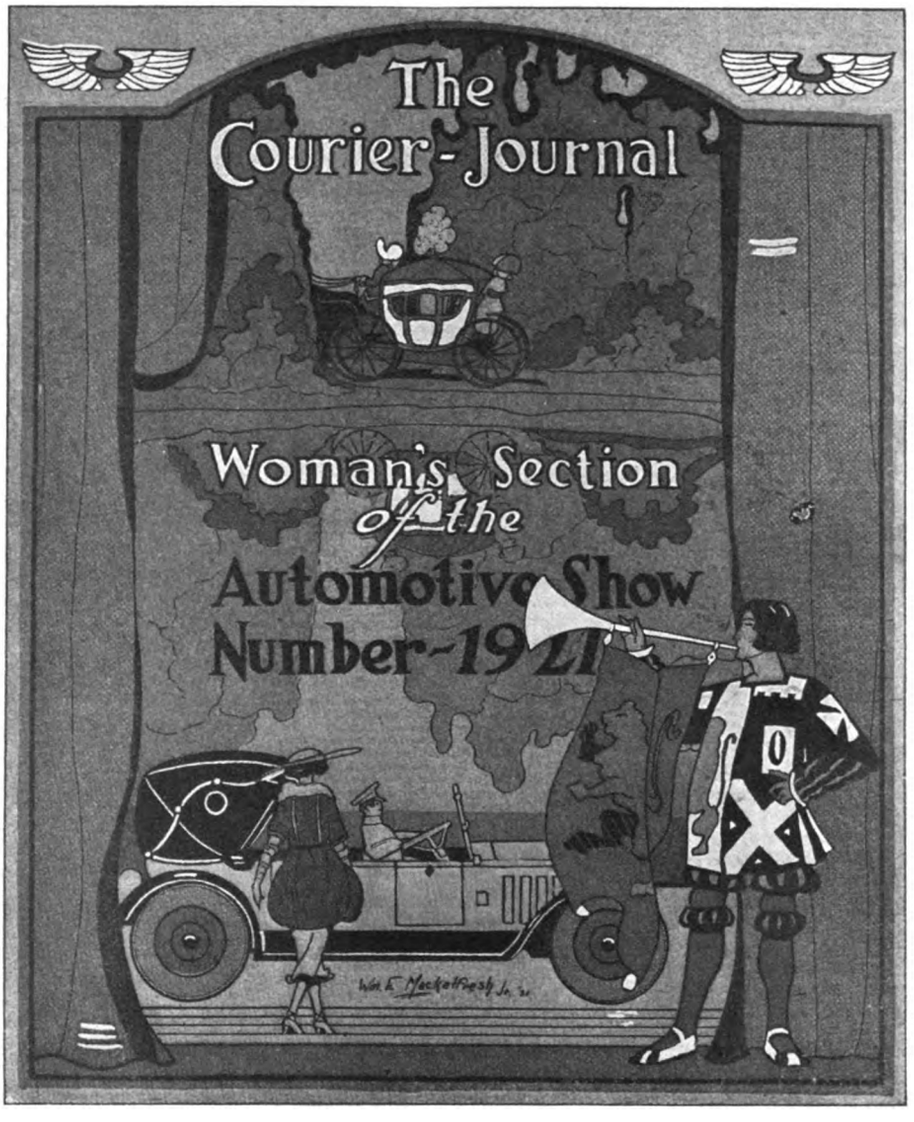
There is plenty of real constructive work for the 1923 show committees, more than selecting a building and decorating it and filling it with motor cars and people. The biggest job of all is selling the 1923 motor car—that's the reason for the shows—sometimes it is overlooked.

Selling space in the show and in the show program are activities that should begin early. In most cities where shows are an annual event the inadequacy of exposition room makes "selling the floor" a matter of signing up previous exhibitors. Selling advertising space in the show program is usually most satisfactorily handled by farming out the job to someone in town who specializes and is particularly successful in this work. Sometimes a hard-working program committee can be depended upon to get the advertising.

An activity that can very profitably precede the actual canvassing of local merchants for show program advertising is the SELLING of the show to the businesses of the town. This is usually most effectively accomplished through the local Chamber of Commerce, and it may be profitably followed up by calling on a large number of merchants and SELLING them on the opportunities for them to get into the show picture and cash in on the large rural attendance that many shows attract. In some cities local merchants get into the show picture and at the same time help advertise the show by carrying a paragraph referring to the coming show in their newspaper advertising, circularizing rural communities on the subject of visiting the store while in town for the automobile show, displaying automotive merchandise, motoring clothes, etc., in display windows.

Establishment of a publicity bureau is something that should be done early in show planning. The most satisfactory plan usually is to engage a practical newspaper man or advertising agency and hold that one man or organization responsible for getting the needed publicity. These persons know how to get newspaper publicity, how to prepare the copy that is acceptable to the newspapers. There is much of real news interest in the development of the plans for an automobile show, but it takes an experienced newspaper man to grasp the news value of pre-show events and capitalize them. Some of the effective forms of promotion used by show publicity bureaus will be described further on

Ask the Newspapers to Print Special Automobile Show Editions



MOST live newspapers capitalize the opportunities of automobile shows by getting out special show editions. Show committees can encourage this by getting the co-operation of the automotive advertisers for the papers. With this advertising as a nucleus the newspaper can often sell a large volume of general advertising for the section which not only pays for the setting of the editorial matter, but returns a good profit to the paper. The publicity bureau of the show should help in every way possible to get out these special editions by supplying material of all kinds, national and local. The above picture shows a colored front page of the woman's section of one paper two years ago

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in this story. Perhaps they contain a new idea or two for some show committees.

Another event that may profitably be planned with much thought is the pre-show dinner of the dealers and salesmen, at which final information and suggestions concerning the conduct of the show, its mission, its opportunities for co-operative effort and individual benefit for exhibitors, may be imparted.

Promoting the Shows

Next to planning, promotion is the most important factor in making the 1923 shows successful. Automobile show promotion must be strikingly interesting, yet of a dignity compatible with the great, dependable, useful commodity to be exhibited. Well-balanced show promotion makes an appeal to all interests in the show town. It begins with the selling of the show to those who are to exhibit in it, extends to the other business men in the town and closes in a strong appeal to the public. Its forms are as varied as the individual shows are in character and appearance and promotion work in various communities must be controlled by the community tastes and the promises of success for various "stunts."

Following are some show-promotion ideas that have been particularly successful in various cities and towns.

1—*Encourage newspapers to issue show editions.* The benefits of such an activity are not confined to the publicity that the show gets when the special edition is printed. The missionary work that is done by the newspaper's advertising solicitors in this special effort to sell more advertising in the special issue—advertising with an automotive appeal—is valuable in selling the show to the local business men.

2—*Have special show stationery prepared.* Most show committees have found special stationery of considerable value in a promotional way. One form of show stationery that is favorably regarded is the printing of a calendar on envelopes, letter heads, blotters that are used as envelope stuffers, etc., which substitutes the letters A-U-T-O S-H-O-W for the dates of the month on which the show is held.

3—*Have a "Court of Honor" at the entrance of the show.* This is accomplished by erecting upright columns at the entrance of the show with arches suspended across the street, painted white and decorated with laurel and flags with conspicuous signs advertising the automobile show. In addition to this, standards or flags or banners suspended from trolley wires, poles, etc., for a few blocks lead to the show building. When the show building is in the motor row section this effect may be obtained with arrows carrying show advertising, pasted on the automotive dealers' windows.

4—*Circularization of owners and prospects.* Most show committees find it profitable to send a piece of mail promotion to every registered car and truck owner in the territory and to supply dealers with material to be mailed to prospects among non-owners. With this story is shown how Brooklyn, last year, used a mail effort of this description and strengthened it by the use of window stickers, newspaper and program advertising and cards tied up by a general idea of arrangement.

5—*Supply newspapers through publicity bureau with statements of the Governor, Mayor and other prominent persons* in which reference to the motor car's place in modern civilization is extolled.

7—*Ask all automotive dealers to carry an announcement in their advertisements* for a few weeks before the show opens, calling attention to it and their participation in the show.

8—*Request restaurants and hotels to carry the show announcement on menus.*

9—*Supply pennants for hotels, stores, restaurants* and other places where the public gathers advertising the show.

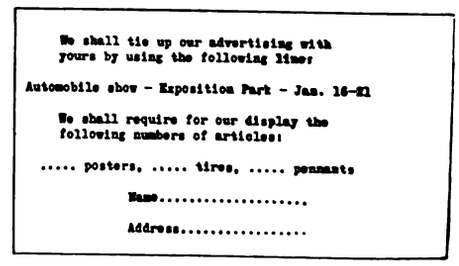
10—*Supply cloth pennants* for use on demonstration cars, service cars and other vehicles used by dealers, and by truck drivers of the vicinity.

Tying Up Show Publicity and Advertising



SHOW publicity and advertising will be stronger if all is tied together with some feature that dominates its general appearance. The Brooklyn show did this in an effective way last year. The central idea in the Brooklyn material was a cut-out of an automboile which carried an announcement of the show. These cut-outs were mailed to every registered automobile and truck owner in the territory. The same design and color was used in window pasters with which the dealers decorated display windows, those in the vicinity of the show building pasting them on the window in the form of arrows pointing to the building. The design also was used in all newspaper, theater program and other advertising used by the show committee

Getting the Merchants' Co-operation


We shall tie up our advertising with yours by using the following line:

Automobile show - Exposition Park - Jan. 16-21

We shall require for our display the following numbers of articles:

..... posters, ... tires, ... pennants

Name.....

Address.....

ROCHESTER gets the cooperation of the businesses in its city by furnishing them with posters, tires painted and carrying show advertising, pennants, etc. Here is a return postcard used by the Rochester Automobile Dealers Association in enlisting advertising co-operation among the city's business men

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Hold a "Motor Car Girl" Contest

HERE is a show promotion idea that will make a strong popular appeal, provide the newspapers with interesting material, get the co-operation of local merchants and help swell show attendance.

It is an Automobile Show Girl Contest.

The procedure in staging such a show follows:

1—Through a contest among local artists or by arrangement with one select a picture of a pretty girl.

2—Call her Miss Cleveland or Miss Richmond, according to the name of your city, or The 1923 Motor Car Girl, The Automobile Show Girl, or some similar name.

3—Publish the picture in the newspapers and announce a prize of a Ford coupe, or some other small car to the girl in your town who most closely resembles the original.

4—Appoint a committee of competent judges to make the selection from among the contestants who enter by filing their photographs with the committee.

5—Set a night shortly before the show at which the committee meets all the contestants and makes its selection.

6—Set a special show night or nights at which the winner is guest of the show, and on which the formal presentation of the prize is made.

Such a promotion feature, if well handled by the publicity bureau, can be made to develop strong public interest and a lot of newspaper publicity. It has a human interest appeal that appeals to everyone and intense interest in the contest is bound to develop. Where this feature has been used other merchants often get into the picture, and help incidentally to boost the automobile show by announcing in their advertising and in the papers that they will supply the gown, shoes, hat, hair dressing, manicure, etc., etc., for the prize winner when she appears at the show.

The actual staging of an automobile show is a job of many related details, supervision over which is usually best handled when vested in one man, or one small committee. Division of authority is usually unsatisfactory. In larger cities the show committee may wish to engage a show manager, but in most associations the work is done by the paid association secretary.

Definite regulations for the conduct of the exposition, covering restrictions on activities in the booths, time of placing exhibits, changing exhibits, etc., must be enforced if everyone is to be treated fairly, and they should be plainly established before the doors are opened.

An adequate force of porters under the supervision of one man charged with the responsibility of keeping the show, anterooms, etc., clean and pleasing is always a worthwhile investment. Uniformed ticket takers add much to the dignity and appearance of shows.

Considerable thought has been given recently to special show activities such as special nights, fashion shows, educational films, etc., as a means of attracting show patronage and supplying interesting and informative entertainment for show attendances.

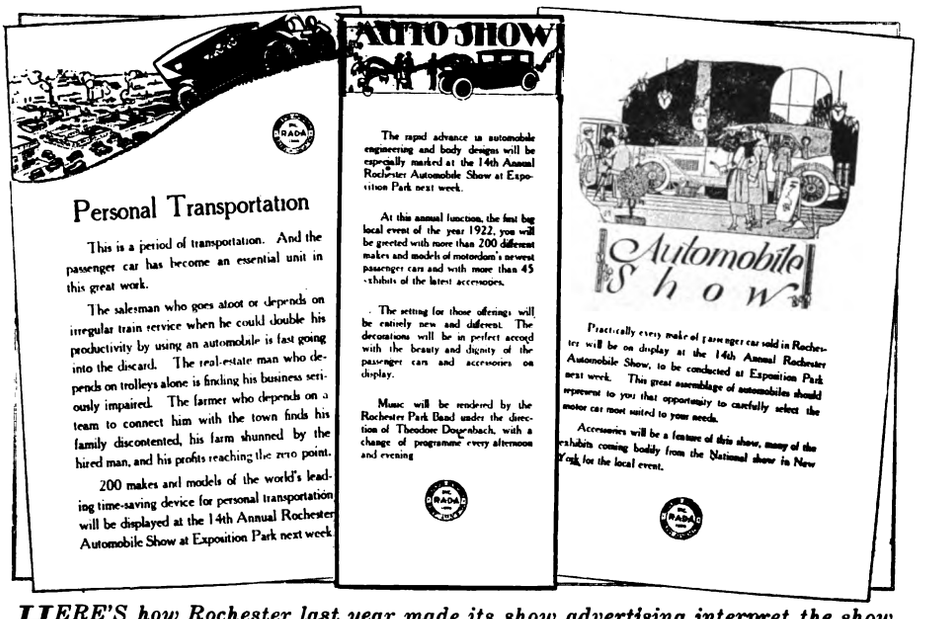
The special night feature is well known and needs little explanation here. The general procedure is to name certain nights for civic bodies and fraternal associations, issuing special invitations to the members to attend on special nights. The fashion show idea is gaining considerable popularity. These shows are generally given in the afternoon to attract women. Models, showing seasonal gowns, wraps and some motoring clothes, pass through the aisles at stated intervals.

Special Exhibits

Another interesting show feature that will be staged in many shows this year where there is space is the historical exhibit, showing early models of motor cars. This is a feature that always attracts and when well promoted may be made a good attendance builder.

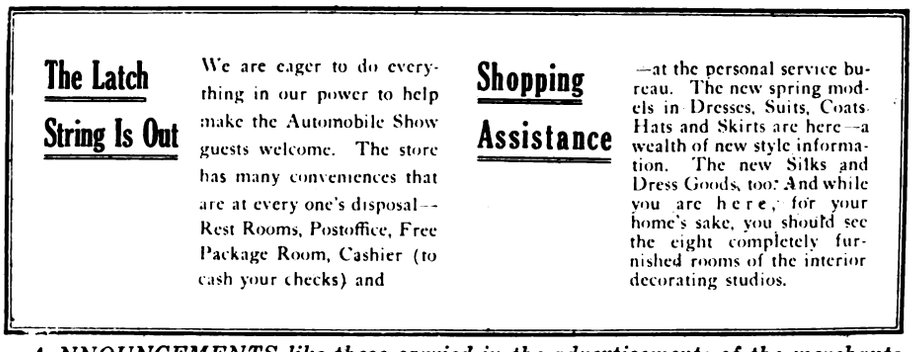
The automobile shows of 1923 will be good shows if the committees in charge of them keep foremost in the planning, promoting and staging of them the thought that the big job of the show is to SELL to the public the 1923 motor car.

Make the Show Advertising Interpret the 1923 Shows



HERE'S how Rochester last year made its show advertising interpret the show. These advertisements, used in all newspapers in the territory, did more than ask people to come to a show. They SOLD desirable features of the industry's latest products, and asked people to inspect them at the show

How Some Merchants Co-operate in Boosting the Show



ANNOUNCEMENTS like these carried in the advertisements of the merchants of the city help advertise the automobile show and at the same time allow the merchant to make a tie-up with advertising that will be beneficial to his business. Most merchants will be glad of the opportunity of doing somthing like this if it is suggested

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How to Profitably Employ the Selling Opportunities of the 1923 Shows

Some Timely Ideas for Dealers on Show Advertising, Directing Salesmen and Follow-Up

ONCE each year Opportunity, in the guise of an automobile show, visits most dealers. Opportunity rewards those who are prepared to receive the favors she is anxious to bestow. But she sheds no tears for those who are indifferent to the benefits she extends. Her departure leaves those who were prepared rewarded, rejuvenated and encouraged toward greater things. Why mourn for those who snub her?

The 1923 shows, which will begin with New York and Chicago in January and spread across the country in the next three months, embracing nearly every city and town, will again present opportunity.

The Selling Opportunity

This is the time when every automotive dealer might ask himself: "How can I get the most out of the 1923 show in my town?" It is a most pertinent question because upon what the dealer does between now and the day his automobile show opens—how he prepares to reap the harvest of the show's opportunity during the show and after the lights go out—will depend the success of the show for him, in a selling sense.

And right here—now—let's banish the mistaken belief that automobile shows sell automobiles. They don't and never were meant to, although some of us continue to be disappointed because they don't. Automobile shows provide selling opportunities. They direct the limelight of publicity toward the dealer and his car. They provide the atmosphere in which the automobile is displayed in a way that is pleasing. They put some dealers in direct contact with many persons who want to own automobiles and who may be sold automobiles. *The shows present the opportunity to sell. But selling is and always has been the job of the dealer and his salesmen.*

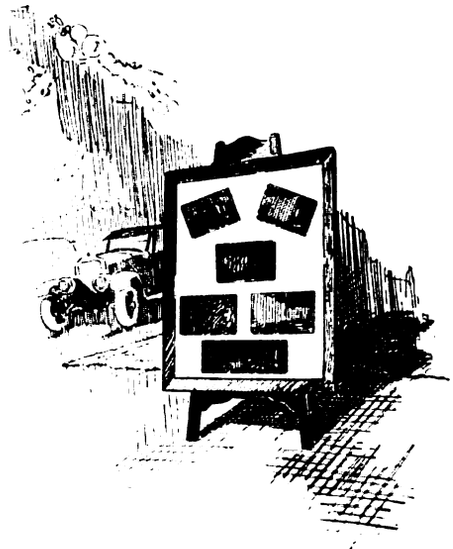
Let's not be led astray this year by the thought that when we put a few cars and palms and salesmen into a square in the automobile show we have done all that is necessary—that the show will do the rest. It won't.

The show is merely a stage. How well the dealer's "act" takes with the public depends upon how thoroughly he has "rehearsed" and perfected himself in making his appeal for public approval. His opportunity to make good must be grasped while he is in the limelight. If he grasps it there will be encores in the form of after-show sales. The public will remember the exhibits that impressed them in the show. They'll forget the others. An actor might as soon expect success without study and preparation before stepping onto the stage as a dealer who enters the show without studying, training, rehearsing and perfecting his "company" before the curtain rises.

Nor is the selling opportunity of the show confined to the week or so in which the show is held. This is but the peak of the opportunity. It begins several weeks before the doors open, when the dealer must be busy organizing for the show, perfecting his organization to make the most of the show opportunity, directing the attention of prospects to the show in the hope of closing them during or just after it, and doing the many other things that are necessary to properly prepare for the show. It continues at white heat during the show, when the dealer should bring to bear his strongest selling forces, and it continues after the doors are closed in the form of intensive and intelligent follow-up.

It is with the things that the dealer should do before the show, during the show and after the show that this story is particularly concerned.

Bringing the Establishment Into the Show



NOT only your cars, but your facilities to help them give satisfaction, are what show visitors are interested in. Where shows permit it, some dealers have found it a good plan to show pictures of their salesroom, parts department, service station, etc., on a special display board in the rear of the exhibit.

Getting Show Results

It is the purpose of this story to help dealers get out of the 1923 shows the very best returns obtainable. It is to deal particularly with how the dealer can:

1—*Prepare for the show*—get into the show picture.

2—*Direct Sales Staffs*—grasp the show week opportunity.

3—*Handle Prospects and Follow-ups*—cash in on the opportunity.

Having established clearly the idea that participation in the 1923 shows means work; that it means weeks of preparation, organization and planning; and it means the co-ordination of all the dealer's selling forces in a grand effort during show week, and prompt, alert, purposeful following up of every selling opportunity developed by the show, let's consider some of the real practical suggestions that come to us from the show successes of dealers in the past.

In the first place the dealer who has decided to enter the show wishes all of his friends and prospects, and all who are or may be possible buyers of his car, to KNOW that he is in the show. He wants to meet them at his booth when the big week arrives, to show them the very latest products of his factory and to tell them about his line. *He wants to get into the show picture.* He wants to impress on the minds of everyone that they should go to the

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automobile show and especially they should see his exhibit.

The forces that are his to use for this purpose are principally advertising and display. He will recognize the fact that while the show attracts many people who may become prospects for his car it will also attract many of his prospects who may be impressed by other cars at the show. He will wish to impress on the latter that they will be afforded a particularly fine opportunity to observe his cars under the same favorable conditions that they do the others in the show, and to register with them as a part of their show that HIS car will be there and HE will be there to tell them all about it.

The Before Show Effort

Some dealers begin as much as a month before the show opens to bombard their prospects—their entire mailing list—with letters and literature concerning their car, and accompany all of it with the announcement that the place to see the line and to learn all about it is at the show. Sometimes this effort has been very effectively carried out through a letter campaign of the "teaser" type. Sometimes it is done in a more general way through a "teaser" advertising campaign. One campaign that was particularly successful consisted of five or six mailings and newspaper ads which led the public from the bare announcement of the catalogued show space number without explanation to a complete announcement of the models to be exhibited. The last piece in the mail campaign was accompanied by an engraved invitation to visit the dealer's booth in the show, with two admission tickets.

Some of the means of getting into the show picture, before the show, which have been used by dealers in past shows are:

1—*Use of old models in street demonstrations for publicity purposes.* One dealer made a publicity stunt of this kind particularly effective and gave it a strong human interest appeal by arranging with the city health officer to give the car a "physical examination" in front of the City Hall at a certain time. The newspapers were primed for the event and on the appointed day the old car was driven to the curb in front of the municipal building. The health officer, after applying a stethoscope, reported the car "active and strong and good for many more years."

2—*Special show announcement stickers.* These stickers, printed in small, neat type and gummed along one edge, are supplied to all departments by the dealer. They are attached to every piece of mail matter that goes out, including statements, bills, regular mailing material, etc.

3—*Window cards.* Most show committees supply dealers with cards for display in the salesroom windows. Where these are not supplied it is helpful to have one or two neat cards lettered and to make them a part of the window displays for two or three weeks before the show. These cards may contain a short message inviting everyone to visit the dealer's exhibit in the coming show.

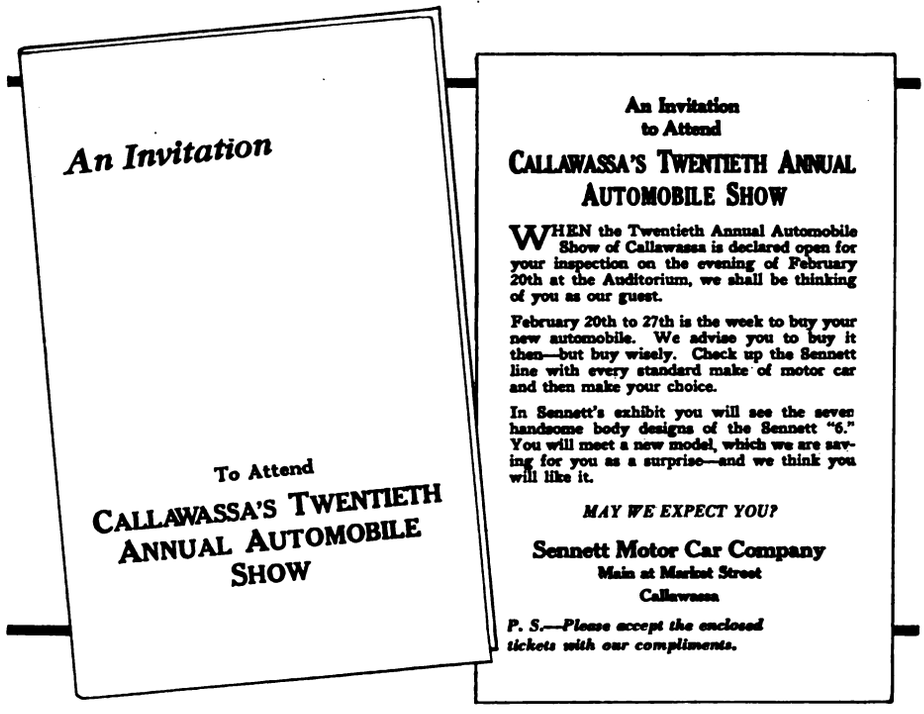
4—*Display in hotel lobby.* Placing one car in the lobby of a hotel a week or more before the show with a card attached announcing that the entire line will be displayed during the show in a dealer's booth has been very effective publicity in some larger cities. An entirely new model shown in a hotel lobby as well as in the show during show week is sometimes effectively used. Some dealers display a car in a department store before the show, as well as during the show.

One of the most important pre-show activities of the dealer is the organization and training of the entire organization to make the most of the show opportunity. This should include every person connected with the business and particularly those who will be brought into personal contact with prospects during the show. The telephone operator is an important cog in the selling machine always, and particularly at show time. Is she going to be particularly cheerful and courteous and efficient in handling the heavier phone calls that show week develops? Is the service department and its personnel going to be particular about appearance during the week when many strangers will visit it for the first time? Is the salesroom going to look its best and breath the atmosphere of the show in its arrangement and decorations during show week? Is every department going to be on its toes every minute to insure good first impressions for the many new friends the salesmen are going to make in the show, some of whom, at least, they are going to bring around to the salesroom and the service station?

The Salesman's Job

And the salesmen—there's much to be done by them in preparation for the big selling opportunity. Are they all thoroughly conversant with the selling points of the car and with its mechanical features? Do they know just how the dealer expects them to receive prospects in the booth, and what he expects them to say concerning the car? The day is past when

Letting Folks Know You're in the Show



AMONG the before show advertising activities that bring good results is the show invitation. This is generally designed and printed up a month or more before the show opens and mailed about a week before the show to prospects and friends. The invitation above suggests the form and in a general way the kind of a message that may be expected to interest people in the dealer's exhibit. Combined with show advertising and other publicity features it makes a strong before show campaign

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dealers can afford to put men into show booths who are not thoroughly familiar with the product they are to sell and who are not really capable of representing the dealer in their contact with show visitors. The 1923 show visitor will be a pretty well informed person regarding automobiles. He will expect courteous treatment and intelligent answers. AND WITH SO MANY GOOD CARS BIDDING FOR HIS FAVOR HE'S NOT GOING TO WORRY MUCH ABOUT THE PRODUCT OF THE FELLOW WHO ISN'T PREPARED TO SERVE HIM.

Many dealers insure the best possible show service to the public by issuing written instructions to salesmen and other employees concerned regarding policies, etc., and by instructing the show organization at several meetings before the show. Several pre-show meetings at which the mechanical and body details of new models are explained and fully discussed are a necessity in every dealer organization.

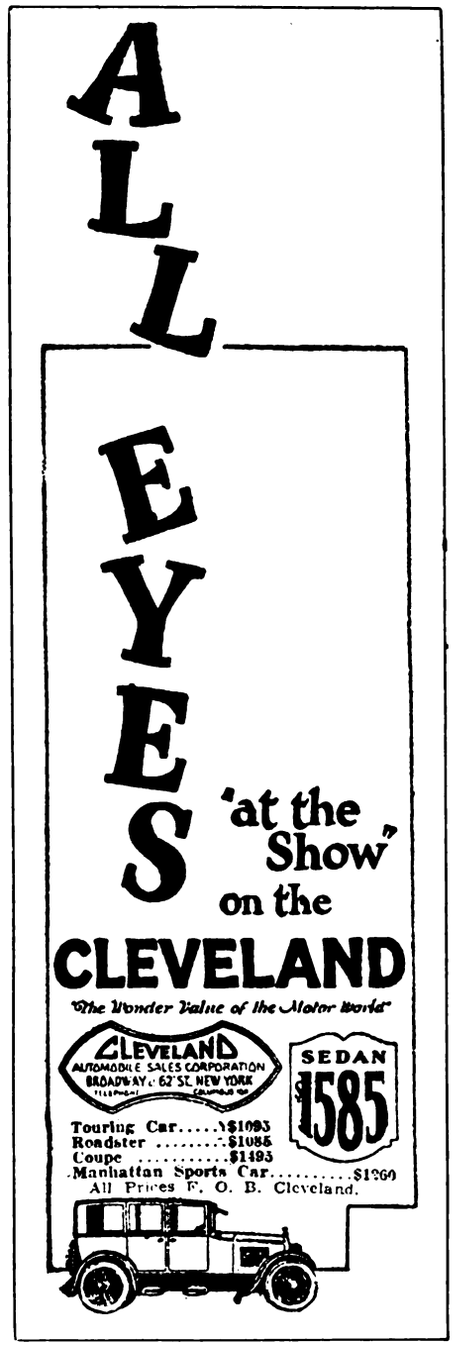
Arranging the Exhibit

Another pre-show thought is the arrangement of the show display. Some study before the show will result in better arrangement. Some dealers find it profitable to chalk off on the salesroom or service station floor a space exactly the size and shape of the one to be occupied in the show and then experiment with the arrangement of cars, tables, etc., in this space to get the best effect. Dealers are not crowding show booths as much as they used to. In most good show displays the amount of space actually occupied by cars is seldom more than 40 per cent of the entire area of the booth.

Another detail that the dealer will wish to consider in connection with his show exhibit is the color he puts into it. One bright sport model works wonders in brightening up a show exhibit, and the whole exhibit is much more pleasing if there is harmony in the colors selected. Arrangements for the models should be made early enough to insure a good selection. With the large demands for space in most shows and the cost of exhibiting, it is seldom possible or advisable for a dealer to attempt to get a car of each model into his show display. Where only two or three models are shown arrangements can be made to have the complete line well displayed in the salesroom during the show. A definite plan can be prepared for getting the promising prospects out of the show and into the salesroom to see the models not in the show.

The next big phase of the dealer's show job is the management of the display during the show. All of the regulations to be observed in the booth should be formulated before the show opens and should be thoroughly explained to those who are to be on duty. Show attendance schedules should be settled so that each salesman's hours are short enough to avoid excessive fatigue. A dog-tired salesman is a liability at an automobile show.

Show Week Advertising



It is usually a good investment to "spread" a little in advertising during the show. The show ad should point particularly to the fact that the dealer's cars are in the show and it often is good practice to use some newspaper space to tell the story the salesmen are telling at the show. Above is one attractive show ad used last year. Its chief feature is the small space in which a particularly strong show appeal was made

Then, to put the plans into effect and insure strict compliance with them there should be a booth manager WITH AUTHORITY. The dealer or his sales manager cannot stay at the booth all of the time and there should be always present one person in complete charge. The reception of visitors in the booth is usually most satisfactorily handled in a manner similar to meeting customers in the salesroom. Show booths are more attractive and inviting when salesmen, not engaged with visitors, advance from chairs at the rear to meet newcomers instead of lounging in cars and on fenders, or conducting private little vaudeville shows for the pretty girls in the aisles. Show deportment is a subject that may well be given attention at a pre-show meeting.

A good slogan for every dealer in the 1923 shows is: "GET THE NAME." There are only a few of those supersalesmen left who can look at the size of a man's shoes and tell you whether he's going to buy a car in the next ten weeks. A good dealer organization will look a man up after he has visited the show booth. Most dealers supply their salesmen with memorandum pads or cards on which to record all the information obtainable concerning the people who come into the show exhibits.

In order to have an orderly way of collecting these names many dealers arrange to have a box in the booth into which the salesmen drop the cards. These are collected each night and on the following morning the selling effort in the form of a letter or a salesman's call begins.

A short meeting every morning of show week, in which the developments of the previous day are discussed and instructions are issued serves to keep the salesmen alert and enthusiastic.

Ask 'Em to Buy

Another good slogan for every dealer's show booth is: "ASK 'EM TO BUY." Some prospects wander around in shows and wander out and keep putting off buying because nobody happens to actually ask them to buy. To some it means parting with several years' savings and some real persuasion is required to bring about the decision to give up the money. It is a fact that one distributor in a big Eastern show two years ago experienced an increase in actual show sales of more than 50 per cent after issuing orders that every person entering the booth and giving the slightest evidence of interest be asked to buy.

Upon how well the work before and during the show has been done depends, to a large extent, the oppor-

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Issuing Show Instructions to Salesmen

DEFINITE instructions, which outline in a general way the activities and conduct of persons manning the show exhibit are of considerable assistance in insuring better conducted exhibits. Many dealers find it helpful to issue a bulletin similar to the one shown below, either printed or typewritten, to every employee, and to make it the subject of a meeting during the week preceding the show. Such a bulletin not only establishes a code of ethics for the organization in the show booth, but it establishes the idea in the organization that manning a show exhibit is real, serious business if it is to be in a position to take advantage of the selling opportunities that the show provides. Perhaps you can use one this year.

C. J. Reilly, Inc., Desires That the Conduct of All Persons on Duty at the Sennett Booth in the Automobile Show, Fifth Regiment Armory, Jan. 7-14, Be Guided by the Following

Regulations

1—The booth shall be in charge of the salesmanager, who shall, upon receipt of this announcement appoint a first and second assistant who shall assume complete charge in the absence of his predecessors.

2—All retail salesmen and others on duty at the booth shall report their arrival and departure to the man in charge. Company officials and department heads will kindly observe this provision. It will facilitate their getting in communication with each other and their respective subordinates.

3—There shall be on duty at the booth at all times, in addition to the salesmen provided for in the attached schedule, one capable representative of the service department who shall be designated by the service manager.

4—Hats and overcoats shall not be worn by men on duty at the booth.

5—The use of tobacco in any form is prohibited while in the booth.

6—Men on duty at the booth shall refrain from lounging either in or around the cars, loud and boisterous talking, or any other actions that may detract from the dignity of the exhibit and bring criticism on themselves or the company.

7—Those not having business in the booth shall refrain from loitering.

8—Any inquiry that cannot be properly and promptly handled by the person to whom it is addressed shall be reported immediately to the man in charge who shall refer the matter to the proper person or department.

9—Any salesman who finds a prospect or receives an inquiry not in his territory shall, at the conclusion of the interview, refer the matter to the person in charge of the booth for reference to the proper person or department.

10—Any salesman handling a prospect outside of his territory by request or otherwise shall exercise the utmost courtesy and give the inquirer the same care and attention he would to his own individual prospect.

11—Get the name. In every interview, where there seems to be the remotest promise of a sale now or later, salesmen should get the name and address and all obtainable information concerning the visitor, record it at the close of the interview on the memo cards provided for that purpose and deposit it in the show prospect file.

12—Ask them to buy. Assume that every person who makes inquiries or shows other evidences of interest is in the market for a car, and before they leave the booth ASK THEM FOR THE ORDER.

13—Make definite appointments. Don't take, "I'll drop in to see you at the salesroom later," for an answer. Suggest a time for an interview or a demonstration during or immediately after the show.

14—Refrain from talking about other makes of cars. Don't knock. If a visitor inquires about some other make of car, ask courteously to be excused from discussion of a product you are not selling and offer to introduce the person to a salesman for the car mentioned.

15—Ask for prospects. Ask the person to whom you talk to tell you of any friends or relatives who may possibly buy. Make the suggestion: "Perhaps you know someone who might be interested in a car like this?" to visitors at the booth.

A FEW DON'TS	A FEW DO'S	
Don't guess.	Be courteous.	Be concise.
Don't argue.	Be cheerful.	Get the name.
Don't knock.	Be optimistic.	Make an appointment.

ASK FOR THE ORDER.

Above all else, C. J. Reilly, Inc., desires that no opportunity shall be lost during the show to impress everyone with the excellence of its product, the dependability of the company and the efficiency of its organization.

It expects every person who comes in contact with the public at the booth, in the salesroom, or at the service station to maintain at all times the attitude of unfailing courtesy and desire to serve.

Thank you.

C. J. REILLY, INC.
C. J. Reilly.

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tunities for effective after show work. If the dealer has insured his pre-show advertising and publicity the attendance of a large number of prospects at the show, and if during the show he has interested and impressed many more who have visited his booth, and he has been particular to get their names and other obtainable information concerning them, he has laid the foundation for many weeks of profitable work after the show.

It is prudent to have a good system of after show follow-up to be put into effect as soon as the first show prospects are developed. Because of the large number of show prospects that do not give promise of developing into immediate buyers it is generally good practice to keep them segregated from the regular prospects until a salesman has made a complete after show report on them. Individual circumstances will, of course, always guide the procedure in handling show prospects. There will be some that are hot, and must be followed up before the show is closed. There will be others who will be scheduled for visits to the salesroom or demonstrations following the show. Only the best judgment of the dealer and the salesman, in view of the circumstances, will guide the course in handling these show prospects.

In every show salesmen meet a lot of congenial folk who like to chat about cars, who ask intelligent questions, who give every indication that they are interested in automobiles, but who are not in the market. There is always the possibility that some of this type of show visitors know people who are actively in the market for cars. It is a splendid idea to cultivate such visitors for the "tips" they may be able to give on live prospects. Besides favorably impressing them against the time when they may be prospects, the salesman who is courteous in his treatment of them and who asks them to suggest persons who might want to buy often may be led to sales through them.

The 1923 automobile shows are going to offer unlimited opportunities to the dealers who are prepared to grasp them. They are going to be of value to the individual dealer as selling events in proportion to the effectiveness of his efforts before, during and after the shows.

They are going to reward those who are prepared to take the favors they can bestow.

Will YOU be ready to TAKE them?

The Dealer's Show Month Calendar

ONE month is a short time for the dealer to give to preparation for the show. There are some things that can be done many weeks before, and it is well to give some time during the dull days of winter to planning and accomplishing some of these.

For the guidance of those who can use a memorandum of some of the more important pre-show arrangements, the following is presented:

Things to be done three or four weeks before the show—

1—*Begin a "Before the Show Sales Contest" to close up prospects before the show and line up prospects for closing at the show.*

2—*Plan pre-show and show week ads, invitations, letters, etc.*

3—*Plan the show week decorations for the salesroom and place order for palms, ribbons and other materials needed.*

4—*Decide on type of memo cards or pads to be used by salesmen in show and place order for printing.*

5—*Decide on models to be exhibited at the show and on salesroom floor and arrange with factory for delivery.*

6—*Attend to any painting, decorating or other things that are considered necessary to put salesroom, service station, office, etc., in good shape for reception of show prospects.*

Things to be done the second week before the show—

1—*Begin telling the public in ads to look for you at the show.*

2—*Begin a series of sales meetings, taking up study of new models, review of present models, talks on show deportment of salesmen, etc.*

3—*Select furniture and decorations for booth and plan it by marking of space on the salesroom floor and arranging models to get best appearance.*

4—*Organize salesmen for shows, appointing booth manager and assistants and making out attendance schedule for salesmen.*

Things to do in the week preceding the show—

1—*Touch up show models and get them ready to be moved into exposition building.*

2—*Mail show invitations and tickets.*

3—*Decorate salesroom for show week.*

4—*Strengthen advertising in local papers, directing attention to your participation in the show.*

5—*Hold a meeting of entire organization and issue instructions concerning definite duties of each department and individual during the show.*

Among Ourselves

THIS is just a little chat between the editor and his readers—about this and some other numbers of Motor World.

This number gets us all set right for the show season, gets us to realizing that it isn't merely a show season, but a selling season. From opening to closing page this number is devoted to selling before, during and after the shows. Particularly will the many pages presenting the merchandising analysis of the 1923 car be of value, not only around show time, but throughout the year. This series of stories begins on page 38.

And did you notice the remarkable salesmanship story in last week's number—Dec. 20? We're talking about the article by C. S. Henshaw, Boston Dodge Brothers dealer, giving many practical suggestions for selecting, training and controlling a retail sales staff and containing ideas for salesmen as well as dealers.

Next week—Jan. 4—we shall have another strong story on the sales side of the business, presenting the plans and ideas of dealers in various parts of the country and in varied kinds of organizations regarding ways of compensating motor car salesmen.

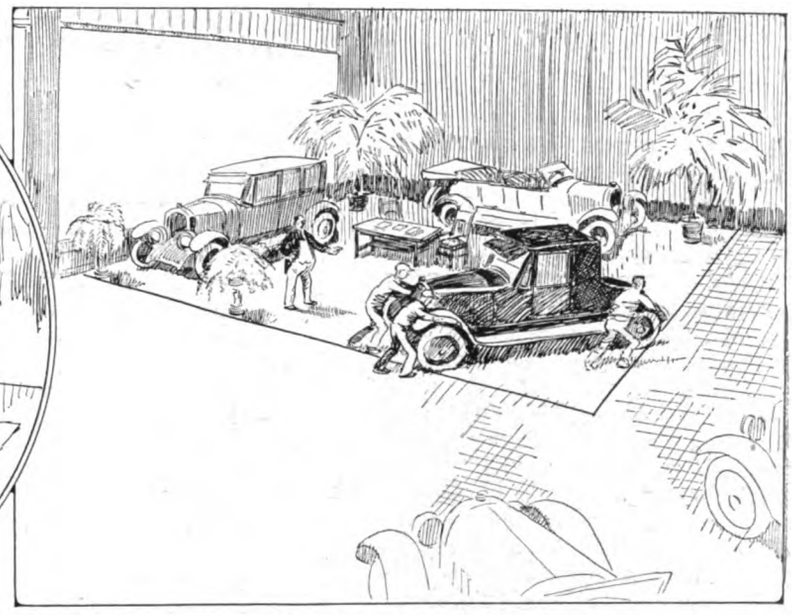
The following week—Jan. 11—Motor World will carry a detailed report of the New York show opening Jan. 6, with text and illustrations telling the story of the show and describing the new models and refinements. You needn't miss the New York show because you can't attend it. You can see the show in Motor World.

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Some Things That Help Put Selling Force Into Show Exhibits



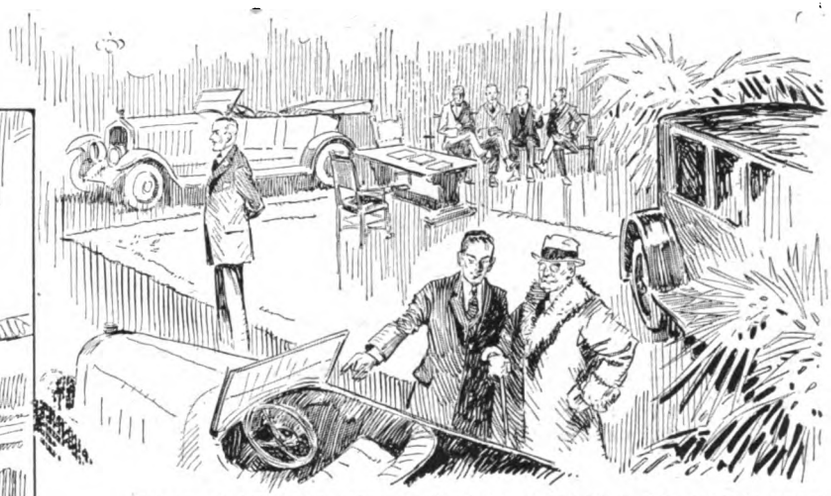
HAVE A SHOW PROSPECT FILE IN THE BOOTH.



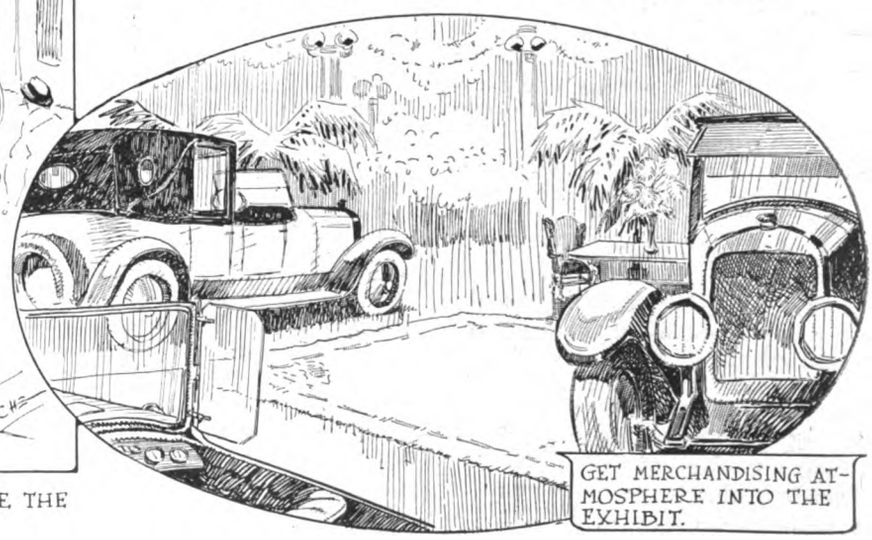
PLAN YOUR EXHIBIT IN THE SALESROOM BEFORE THE SHOW.



KEEP A DEMONSTRATOR HANDY OUTSIDE THE SHOW BUILDING —— AND USE IT.



HAVE SALESMEN NOT ACTUALLY ENGAGED SIT IN THE REAR.



GET MERCHANDISING ATMOSPHERE INTO THE EXHIBIT.

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The Salesman's Opportunity in the 1923 Shows

How He Can Make Them Produce More Sales and More Money for Him

"IS the luggage compartment in that coupe pretty roomy?" inquired the show visitor who was on the committee to present the pastor with a car on his silver jubilee.

"About forty quarts if they're carefully packed," flippantly retorted the salesman, who looked in vain for the appreciative smile on the prospect's face.

"Funny old crab," the salesman confided to another a few moments later. "The way he looked at that 'coop' I thought he was a live one, but he went cold on me all of a sudden. 'Nother half hour wasted on a dead one. Never did think much of the kind of people that came to the shows."

The Sunday School made the presentation that spring—a nice little coupe, but it wasn't of the make sold by the salesman who talked to his prospect in the lingo of the bootlegger.

All of which is to say that the salesman who would turn into profit for himself and his firm the opportunities of the 1923 show must take his part in it seriously and study how he can best introduce and sell his car before, during and after the show. He ought to hoist his hand and solemnly resolve NOW that if the 1923 show doesn't produce more real "jack" for him it won't be because he didn't make a 100 per cent show selling effort.

Quick, the Pencil!

The 1923 shows are going to be selling shows more than any that have gone before. They're going to be real pencil and contract parties, and there isn't going to be much after-show "pickings" for the fellow who isn't right up on the firing line doing his prettiest and asking 'em to buy—every minute.

Competition is going to be keen next spring. Organized selling effort is going to be better in the dealer show exhibits—many of the good outfits are planning their show selling campaign now—and the salesman who doesn't go into the 1923 show in his town thoroughly prepared will be starting way back of scratch.

There's going to be a lot more in the 1923 automobile shows for the salesman than living for a week in the shimmering show lights. There's before-show study—real old skull practice on mechanical details, selling points, closing prospects and using his personal powers to bring prospects into the show. There's meeting new faces and learning new things about the tastes and desires, and personalities of show visitors. There's the close study of prospects' peculiarities and hobbies and recording them for use in after-show selling. And—oh, boy—there's the mopping up of all the brand new leads that the show has made possible for the salesman if his work in the show has been done sincerely and thoroughly. And, best of all, there's more money for him as the result of a big job well done.

A SOUTHERN preacher of color, asked what made his sermons so interesting and convincing to his flock, said:

"Well — fust I tells 'em what I'se gwan ter tell 'em—den I tells 'em — den I tells 'em what I told 'em.

Isn't it a pretty good formula for the salesman's show time work?

Suppose, before the show, he tells 'em what he'll show 'em—and at the show he shows 'em what he's told 'em — and after the show he tells 'em what he's shown 'em—

Guess it would interest and convince a flock of prospects, wouldn't it?

Try it!

The salesmen in the 1923 shows are going to have to know more about the mechanical details of their cars—more of the whys and wherefores of the mechanical features of their cars—if they are to be prepared to answer intelligently the questions a motor-wise show attendant will ask. Further along in this number of Motor World there is a lot of information that can be of material assistance to salesmen in the 1923 shows—articles that give the reason for the use of certain types of units in certain types of cars, and how to best sell these features to show prospects. Read 'em.

Salesmen, like men in every other calling, often become so engrossed in the details of their particular jobs that they lose the vision of their bigger and broader functions in the industry. They fail to remember, sometimes, that they are, to the person whom they are trying to sell, the living, breathing, moving personification of the companies they represent—that their employers, their cars, and everything upon which they depend to make their livelihood are being judged by their own actions. How often we hear laymen say: "That's a high class outfit, I was just talking to one of their salesmen"—or the reverse. A salesman chirping at a girl in the balcony, stealing a little beauty sleep in a sedan or talking loudly across the aisle isn't going to impress the observer, who may be a prospect, with the dependability of a firm that employs that type of representative.

There are two little B's that produce the honey of after-show results in good volume for the show salesmen. They are B-CHEERFUL and B-COURTEOUS. Use them.

Thanks, for the Order!

And, above and beyond all else there is one thing that the show salesman MUST do to get results. That is—ASK 'EM TO BUY. How do you know a man won't buy if you don't ask him. Maybe he has coddled that little bundle of Liberty Bonds for four long years, and he has come to have an idea that the fellow who wants it in exchange for a motor car is going to be interested enough to ask him for it.

Perhaps there's a piano, or a fur coat, or just a coat of paint for the house next spring that has a fellow's decision to buy a new car eclipsed for the time. How do you know if you don't ask him to buy?

There's no one in the industry who is going to have so much to do in making the 1923 shows sell motor cars as the motor car salesman.

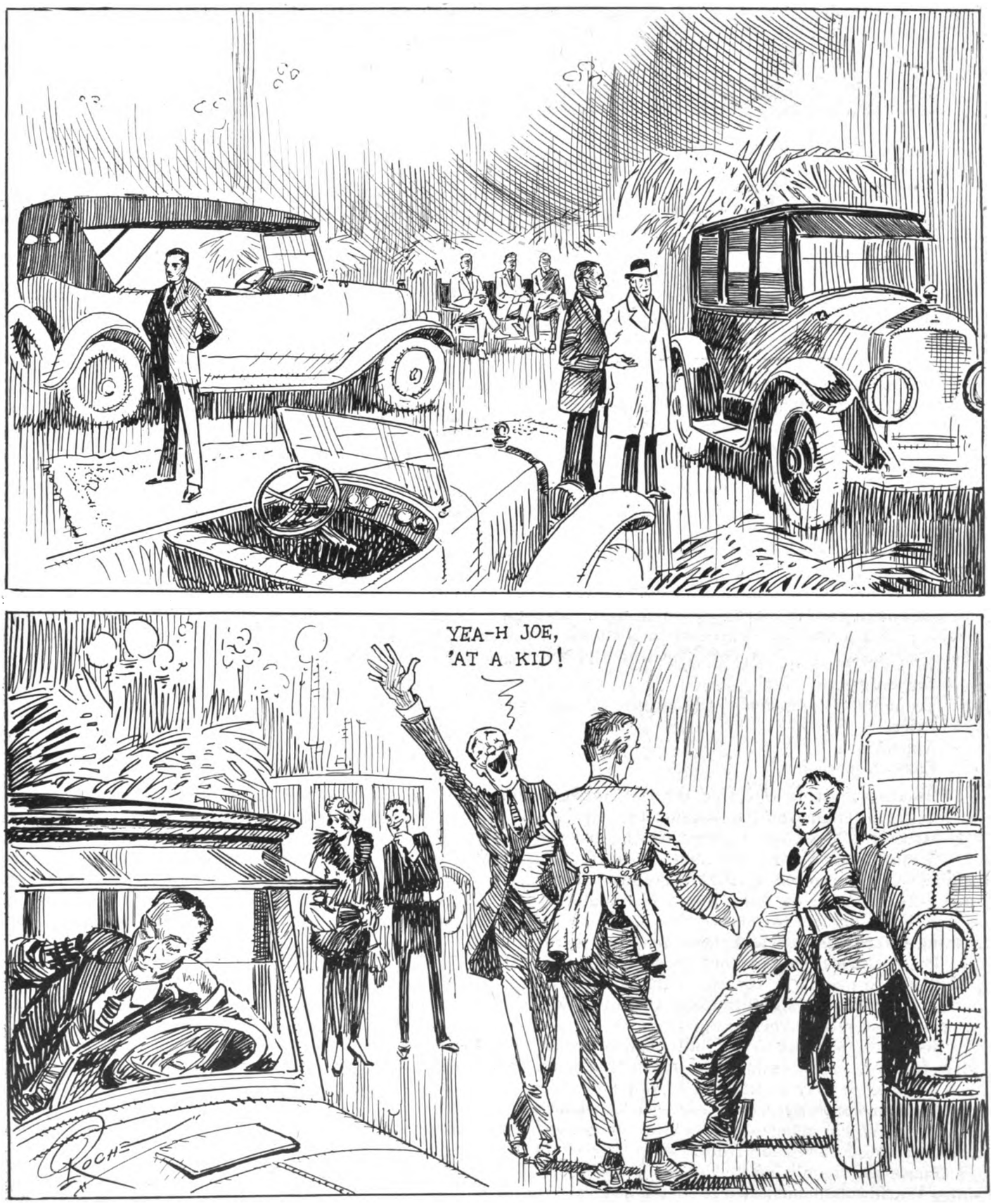
The very prosperity of the industry depends on how well he does his job.

And the place to begin doing the job right is in the 1923 shows.

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Isn't It So?

Same Exhibit, Same Salesmen, but What a Difference Show Deportment Makes



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Selling the 1923 Motor Car

Things Dealers and Salesmen Can Do at Show Time and After

THE average man contemplating the purchase of a car decides that he can afford to spend a certain amount of money. Having made this decision, he considers the various makes and models that can be bought for the amount of money he has to spend. He eventually buys the car that he has been convinced gives him the greatest value for the money he pays for it.

However, those features of motor car design and construction that make a particular car valuable to one prospect may be of little importance to another prospect. The basis by which motor car value is measured varies with the prospect. The salesman who convinces the prospect that the car he sells is the best value when judged by the prospect's own standards is the one who gets the order. Getting the prospect's signature on the order, therefore, depends on the ability of the salesman to do two things:

1—To determine by what standards the prospect with whom he is dealing measures motor car values.

2—To present arguments that will show the car he sells is the best value according to these standards.

Although the standards by which different people judge motor car values vary, and although different people attach a varying degree of importance to the same standard, it is possible and desirable to classify these standards. The standards by which prospects most frequently judge values are:

Durability.
Economy of operation (includes gas, oil, tires and maintenance).
Price.
Appearance.
Ease of operation.

Because most prospective buyers measure motor car value by one or more of these standards, the dealer or salesman who has studied the car he sells to determine why it is valuable when measured by these standards is in a position to convince the average prospect that his car is the one to buy.

Some of the things the manufacturers have been doing during the past year to make their cars more salable when measured by these standards are described on the following pages of this number. It has been impossible to tell everything that every manufacturer has done to make his product more salable. Instead Motor World presents a picture that shows how the 1923 models generally have been made more salable, making references here and there to specific cars.

These stories are designed to accomplish two things.

First, to present a review of the changes and improvements that have been made in the 1923 models, and to interpret the significance of these changes by pointing out their relation to the standards by which prospects measure motor car value.

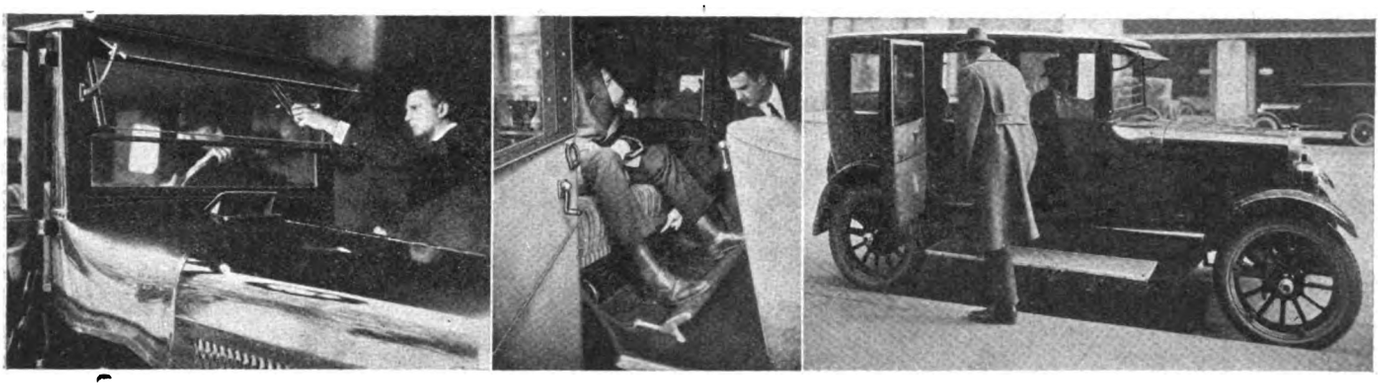
Second, to suggest to the individual salesman or dealer how he may analyze the car he sells to find out what features of its design or construction make it salable in the eyes of the prospect.

The stories were written by J. Howard Pile and Donald D. Blanchard, technical editors of Motor World, and J. Edward Schipper, field engineering editor.

Motor World believes the stories will prove of practical value to all its readers engaged in the merchandising of motor cars and of interest to its readers in other divisions of the business.

These merchandising stories are indexed on the opposite page. They begin on the page after that. Motor World commends them to its readers.

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Ideas to Help Sell the 1923 Car

Look for Them in the 25 Pages Following This Page

Do You Know Why Car Prices Are Lower? Page 40

This story tells how better cars are being built and, at the same time, selling at lower prices than ever before in spite of the fact that there have been no reductions in material and labor costs comparable to reductions that have been made in motor car prices. This result has been obtained through more efficient production methods.

Lower Priced Closed Cars a Big Sales Help Page 43

The margin between closed car and open car prices is not so large as it was a year ago. This has been an outstanding development of the year and undoubtedly accounts for the unusually heavy demand for closed cars. The application of quantity production methods to body building has reduced manufacturing costs and made lower prices possible.

Development of the Business Man's Car Page 44

What the business man looks for when he buys a car for business use. This story brings out the points that must be used in selling a car to this type of prospect and also describes special models produced by some manufacturers for this purpose.

More Miles to the Car, a 1923 Selling Point Page 46

Depreciation on the 1923 cars will be less rapid and it will cost less to maintain them, because they are stronger and more durable in every way. This story points out some of the things that have been done by different manufacturers to give their products greater endurance. Dealers and salesmen should study their cars from this viewpoint as it is one in which most prospects are particularly interested.

It Costs Less to Maintain the 1923 Car Page 50

Repair bills will be lower on 1923 cars. Better materials and workmanship will make the parts last longer and more accessible design will make repairs less costly when they are necessary. This is an important selling point and is one that will interest the prospect.

Greater Comfort in the New Cars Page 53

Riding qualities have been improved and, from a mechanical standpoint, operation is smoother and quieter. Upholstery is more comfortable and the new bodies provide more leg room. Open models offer greater protection from weather.

It's Just Fun to Run the Modern Car Page 56

Nearly all cars are owner driven. Consequently ease of operation from the standpoint of the driver is a most desirable feature. This point has been given careful consideration in practically all of the 1923 models. This story tells what some of the makers have done along these lines.

1923 Cars Are Easier to Maintain Page 59

Maintenance jobs that most owners take care of themselves are easier and simpler to perform on the new cars. As a result, owners will be less likely to shirk these duties. Greater satisfaction with the car is certain to follow.

They've Quit Juggling Motor Car Styles Page 61

This year's cars are not materially different in appearance from last year's or even the 1921 models. It seems probable that there will be no material changes for several years to come. Consequently, the new cars will not quickly become old fashioned in appearance.

Operating the New Cars Less Expensive Page 64

Every prospect is interested in what it is going to cost him to run the car. This story tells how to analyze operating expenses and what has been done in the new cars to reduce them.

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Do You Know Why Car Prices Are Lower?

Can You Tell a Prospect Why They Are?—Read This Story of Manufacturing Economies

CARS were never so good nor prices so low as they are to-day. The 1923 models offer better transportation, greater durability, greater freedom from minor troubles, additional riding comfort and all around higher grade of performance and improved appearance.

And prices to-day are lower than ever before.

Such a condition would apparently indicate that materials and labor are cheaper. While this is true when compared with wartime conditions, nevertheless, even the drop in these two items as compared with the year of 1918, does not account for the difference in price.

Better Production Methods

There is but little doubt that the tremendous advances which have been made in production methods are chiefly responsible for this remarkable accomplishment. The improvements go from one end of the line to the other. Raw materials are better, methods of manufacture are better, inspections are closer, assembly is more carefully conducted, and yet, with all of this added value in the product, the manufacturing departments are turning over the cars to the sales department for about the same money as in the pre-war period.

In the light of present day knowledge, the automobile factory of ten or even five years ago was a most wasteful organization. The amount of money thrown away in the manufacture of automobiles would, if it had been saved, have made such a drastic difference in the prices of cars and in the profits of manufacturers that the entire price history of automobiles would have been changed. The reason that automobiles of to-day are cheaper and better is that some of this money has been actually saved and the rest of it has been turned back into the manufacturing industry in purchasing better materials and workmanship, and the remainder has come off the price of the car. To put this in another way, if we were to have made the same automobile as we are getting to-day by the methods used seven or eight years ago, it is safe to say that prices would be at least 35 to 50 per cent higher. The manner in which this saving has been accomplished forms one of the most interesting phases of automotive history.

The war rendered a service to the automotive manufacturing business which cannot be overestimated. The advances made as a direct result of the war represent a development period which would have extended over at least twenty years. The close manufacturing limits insisted upon by our own and foreign governments in the manufacture of war materials simply staggered commercial manufacturing organizations when they were first brought to face the problem. With remarkable adaptability, however, it was not long before gun parts, aviation engines and other units which required these close limits, were being turned out in quantities that the government officials themselves did not at first believe possible. It was a fortunate matter, indeed, that it was to the automotive industry with its equipment of high speed tools that most of these exacting tasks fell. It is not difficult to trace a great part of the manufacturing ability to produce high grade products at low cost to the lessons thus learned.

It did not take the engineer long to realize that he could cut the cost of manufacture by so designing the products that the number of points in which very close limits were to be maintained were kept at a minimum. In other words, the product had to be designed not only for performance, but also for manufacture. The chief engineer has ceased to be a czar in the factory, as far as design is concerned. After he has finished the design, it is turned over to the production engineer with instructions by the management to make any modifications necessary to make the product more readily manufactured, without, of course, affecting performance. In other words, after the production expert has finished his survey of the design and has recommended his changes, it goes back to the chief engineer who ascertains if any of the production changes made have affected performance. If so, a compromise or change is made so that the final product is designed to attain the maximum of performance with the minimum of manufacturing cost.

All of this should not be taken to mean that manufacturing costs on our present automobiles have been cut to their limit. Improvements are now going on which will still further advance the factory to the unattainable but ever sought 100 per cent efficiency. Of course, along with this, improvements in performance are always being made so that year by year we can always expect automobile values to be better. That is, a longer life for the car with all of the other features an owner desires for less money.

Specialized Machines

When a big manufacturer outlines his program for the manufacture of a model, if he is to be successful, he has to enter into the matter whole-heartedly in order to make it a commercial success. He has to purchase machines which will do the work in the most economical manner. He has to line up his entire manufacturing organization for this product. This represents the investment of a large sum of money, so that it is quite apparent that, if he is going to make a commercial success of the proposition, he must have assured himself that he has made no mistakes and that he will not have to change his model for a considerable length of time. Too frequent change of models is disastrous at this stage of the industry. With the machine tool art developed to the extent that it is to-day, a manufacturer can, for a well designed product, purchase single purpose machines which will do the work in remarkably short time. If the manufacturing schedule is big enough to keep these machines busy continuously and over a sufficient length of time, he is justified in their purchase. This development of the machine tool art has been responsible for the reduction in the number of changes of models by the important manufacturers in the business.

The smaller manufacturer can hardly afford to purchase these tools, as he can-

Better Cars at Lower Prices

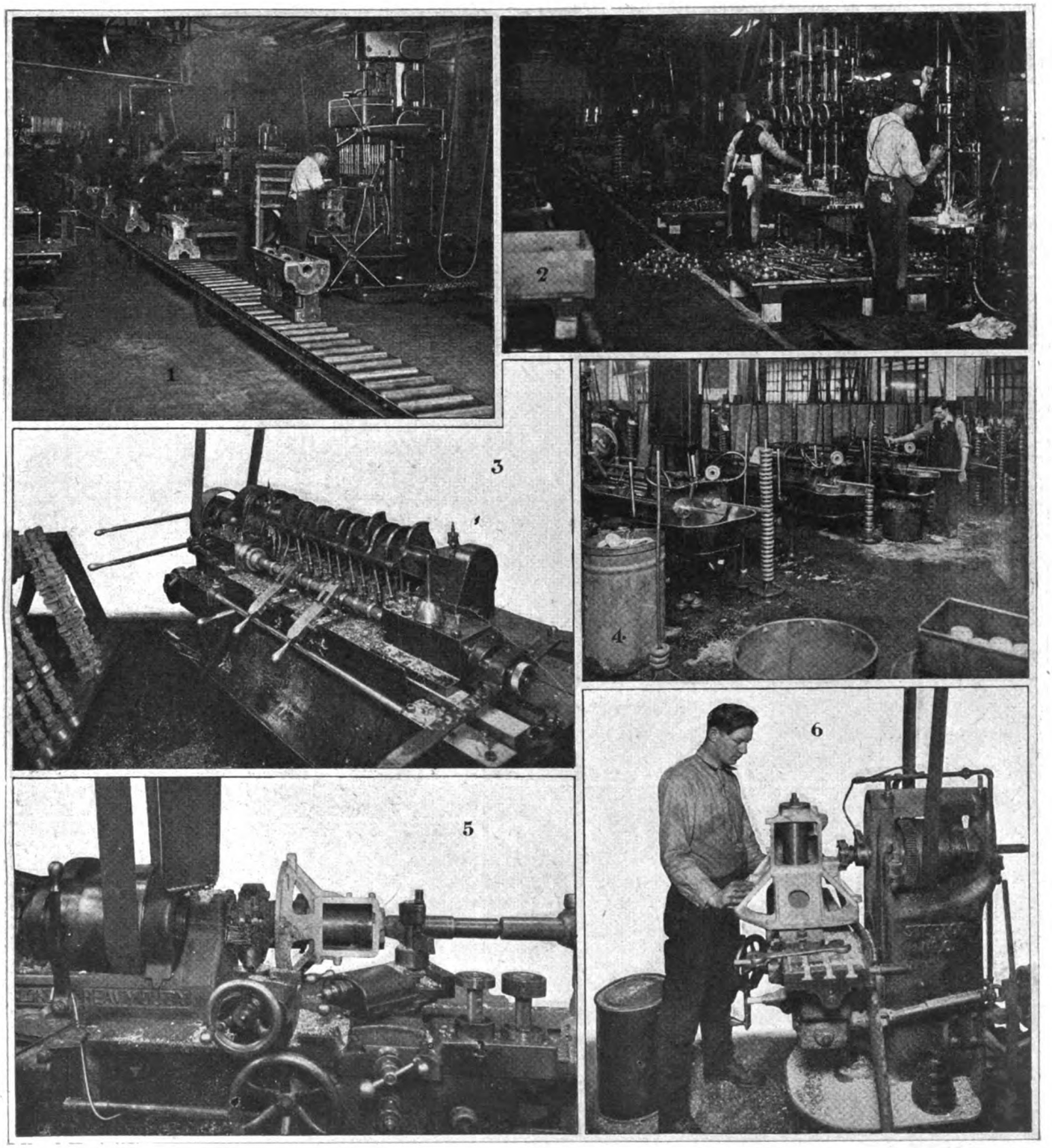
AUTOMOBILE prices have been reduced out of all proportion to any drops in material and labor costs. Manufacturing economies have made the price reductions possible. New and improved machinery and methods have reduced the labor costs per car by reducing the number of hours of labor required to make it rather than by reducing the rates paid the workman. The elapsed time from raw material to finished product has been reduced, which means smaller carrying charges.

The automotive industry has played fair with the public. It has passed the benefits of these economies on in the form of reduced prices. In many cases prices have been reduced to produce a volume of sales that would permit manufacturing economies that would justify the reduction

The salesmen of the industry are fortunate in having a product to sell that is better and less costly than ever before. Prices are down, but quality is up.

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Machines Mean Accuracy, Interchangeability and Lower Prices



Here are shown a few of the modern machine layouts that are helping to lower costs through greater volume, accuracy and ease of final assembly. 1—*Six months ago this same aisle in the same factory was crowded with men despite the fact that production was lower than at present.* 2—*Two men on connecting rod operations that formerly required five men.* 3—*An automatic camshaft machine that completely roughs the camshaft, a hitherto impossible feat. This releases one man.* 4—*One man operating five machines which are broaching gear blanks.* 5 *and* 6—*These two operations on the bell housing and gearset housing are side by side and are performed by one man*

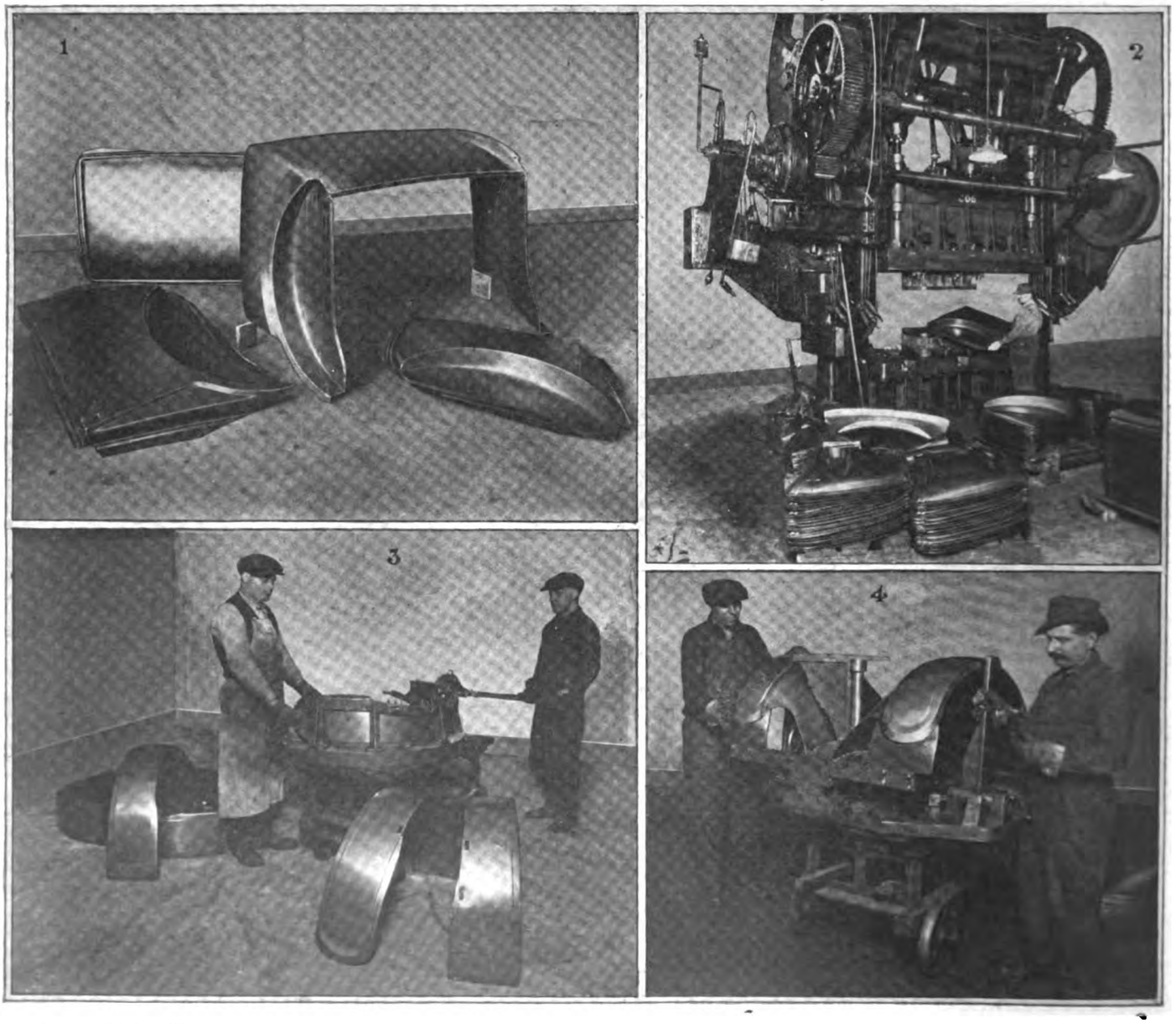
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not keep them busy enough to pay for themselves and, consequently, he is unable to manufacture as cheaply as the big manufacturer. However, the smaller manufacturer gets around this problem by purchasing parts from the outside where they are made in factories which manufacture on a sufficiently large scale to utilize the machines. Consequently, although he must pay a profit to the parts manufacturer, he is able to derive the benefits of the increased efficiency of machinery, and to offer his product at a competitive price.

There is another phase in the handling of manufacture which has had just as big an influence on the reduced price of cars as improved machine methods, and this is the tremendous reduction which has been made in the capital invested in parts in process. The shorter the period of time which elapses between the moment that a piece of raw material enters the doors of the factory and the moment it leaves as a part of a completed vehicle, the less that part has cost the manufacturer. To put this in another way, big inventories and slow manufacturing methods go hand in hand to increase the capital required to manufacture the product. The interest on this invested capital must naturally be added to the cost and must be paid by the purchaser. To-day we are working for smaller inventories; we are sending the materials through more rapidly and, consequently, it is costing less to make. Furthermore, intermediate stockrooms are being abolished wherever possible and parts, which used to leave the machine shop and repose for weeks and months in a finish stockroom, now leave the manufacturing department and go directly to the assembly floor and, consequently, costs the manufacturer less and results in a lower-priced vehicle.

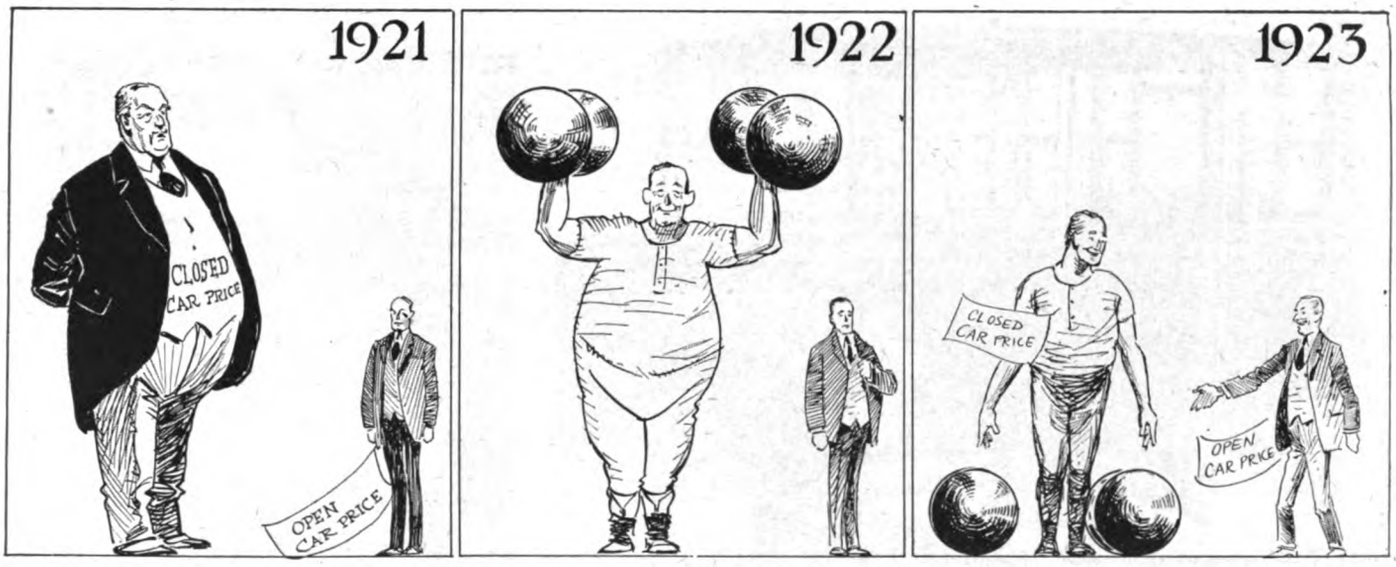
These and similar economies answer the question: "Why can we build cars better and yet cheaper?" It is a question which is often asked, and with a knowledge of these internal economies which have been effected, is not difficult to answer. In some factories previously loosely managed but now handled on a true economic basis, the reductions have been tremendous. And, furthermore, the savings are still going on and will continue to be made with the result that we can normally expect ever increasing quality at a reduced price.

Production Methods That Have Reduced Car Prices



Parts which will go together without hand fitting, filing or forcing play a big part in the reduction of prices, especially on closed cars. Making units to jigs or gages and the use of sub-assemblies in body building permits better workmanship in a shorter time. 1—*Assembly of a back panel and two side panels with the wheel housing welded in place.* 2—*A* 500-*ton press for stamping out exact duplicates rapidly insures a perfect fit of the parts.* 3—*A jig for bolt holes. The jig is curved to fit the finished shape of the fenders.* 4—*A jig for checking fenders as to contour, length, width and mounting dimensions*

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Lower Priced Closed Cars a Big Sales Help

An Interesting Story of the Things Makers Are Doing to Cut Down the Differential

LARGE decreases in the margin between closed and open car prices have been an outstanding development of the past year. Much of the unprecedented demand for closed body styles, that has developed recently, is undoubtedly the result of these reductions in closed car prices, which have been made possible by the application of production methods to body building. Economical manufacturing methods have made the low priced automobile possible and adaptations of these methods are doing the same thing for the closed body.

The public wants closed car comfort. In the past, the big stumbling block in the way of the satisfaction of this desire has been cost. Closed bodies have cost from 40 to 60 per cent more than open bodies. As long as this condition existed, closed car sales were held back. Now, however, the public can buy closed cars at from 20 to 30 per cent above the open car price, and closed car sales have grown by leaps and bounds as a result.

Lower Priced Closed Cars

It has not been possible to produce a closed car at the present low prices that would compare in every respect with the higher price jobs from the standpoints of appearance, finish, ornamentation or convenience. The higher priced jobs were practically custom built—each body a separate job. That is why they cost so much more than the open models.

The new low priced closed cars, however, have all the usefulness of the higher priced ones and they are satisfactory as to appearance and finish. They offer complete protection from the weather. They can be closed in by raising the windows for winter use and opened for summer use by lowering them. They are well and substantially finished both inside and out but costs have been reduced by the elimination of things that add nothing to the utility of the body. For example, in the Essex Coach, all screw heads are exposed. This would not be tolerated in the higher price job but is permitted here to secure low cost.

The economical production of closed bodies on a quantity basis means the manufacture of the parts of the body completely and the later assembly of these parts into the completed body. This means that the body must be designed for manufacture in this manner and the manufacturing methods must be accurate to permit assembly on this basis.

The Essex Coach was the pioneer body in this field and the methods employed in its manufacture illustrate splendidly the quantity production of closed bodies. The elimination of curves and of curved surfaces was a potent factor in reducing the manufacturing cost on this body. Practically all wood pieces in the body frame work are cut on straight lines. This materially reduces the cost of preparing the wood framing for assembly and, in some cases, makes the assembly work easier and more readily handled on an interchangeable basis.

The use of two doors in place of four permits another saving. The usual window runners have been replaced with felt liners. The glass operates between two fixed lining strips of felt. These assist in supporting the glass and prevent rattling.

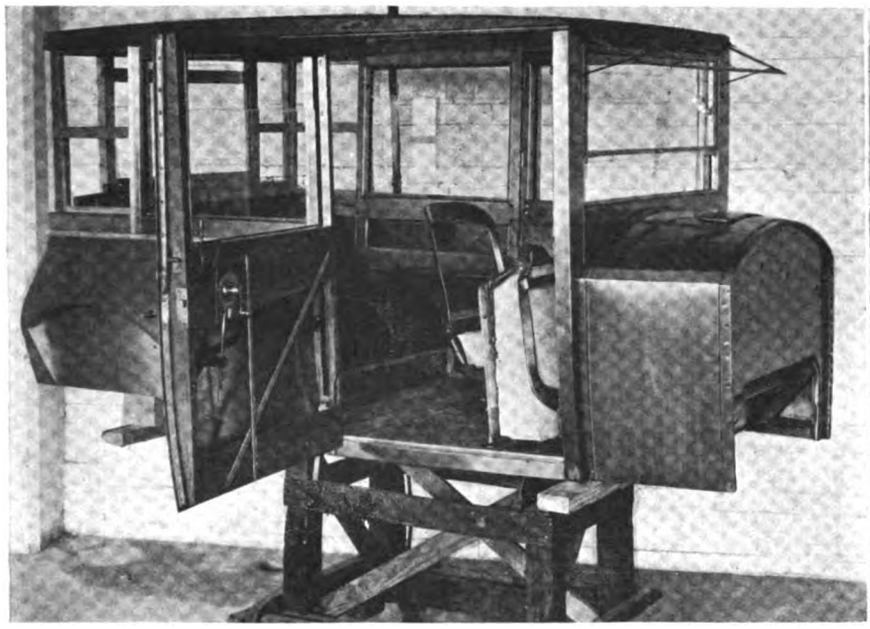
The body construction is such that it is possible to put it together in a number of sub-assemblies. The body may truly be said to be assembled instead of being built in the usual way. Very little tacking is done from the inside of the body as this can practically all be done before the parts of the body are assembled. The roof furnishes a good example of this method of construction. The entire roof is a sub-assembly and is a soft top type covered with artificial leather. The actual ceiling or roof lining is stretched across the top of the body before the roof is put on. This allows tight fitting and does away with a good part of the usual interior tacking and trimming work. The roof is then put on over the top of the lining as an independent assembly.

Window Standardization

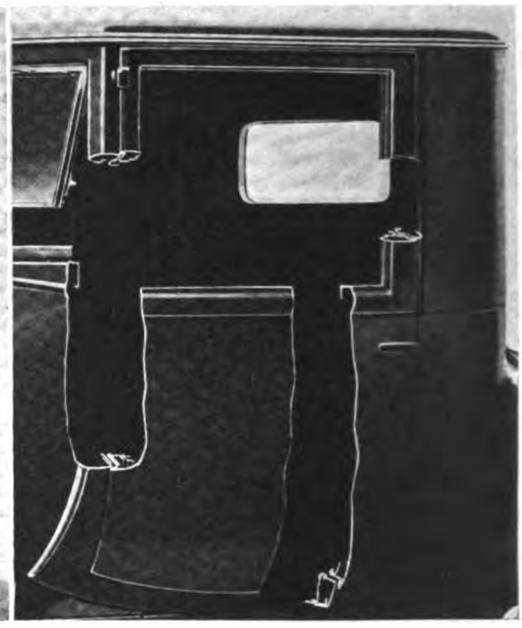
Further economies have been made by having similar parts of the body the same size. For example, all four window frames are the same size. This also means that all four pieces of glass are the same size and consequently there is no fitting of right and left in putting the body together. All plaited upholstery is detachable and, as a result, this work can be done where there is plenty of room and assembled when the body is complete.

It is important to note that none of the economies detailed in the foregoing in anyway affect the quality of the body. It is a strong, rigid structure, carefully made of good materials and the paint work is not slighted in any way. It has all the closed car utility with none of the frills that add to the cost of manufacture.

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The Essex Coach is an example of closed car production economy brought about by eliminating curved pieces and by using sub assemblies



Dodge all-steel sedan has stamped parts and baked enamel finish

The Jewett closed bodies are another example of low cost manufacturing. The Jewett sedan is a four-door job of conventional appearance selling at about 35 per cent above the open car price. The pressed steel parts for this body are made in one plant and assembled in another. They are made so accurately, however, that no assembly difficulties are experienced. The rear wheel housing is pressed out of a single piece of sheet steel. Manufacturing this part in this way eliminates several welding operations. In some cases the pressed steel parts are welded together into sub-assemblies that can be attached to the body frame as a unit. Holes for attachment are located by jigs, which further facilitates that attachment of these pressed steel parts as there is no drilling to be done when the bodies are assembled. The cowl is stamped out in several pieces which are later welded into a sub-assembly which is readily attached to the body frame. The pressed steel work is so accurately performed and the inspection is so careful that hand fitting of these parts to the frame has been materially reduced, with consequent reductions in cost.

Pressed Steel Popular

There has been a tendency all through closed body work to use pressed steel parts in place of wood. This eliminates considerable hand fitting, thus resulting in lower closed car body costs. Much expensive hand work still goes into the upholstery operations and the industry is striving to find some means of reducing these costs. This work requires highly paid labor and must frequently be done in positions that prevent rapid work.

The all-steel closed body is another development that means lower prices. The production of bodies in this manner requires dies to press the steel into shape for use in the bodies. These dies are large and expensive to make and, consequently, this manufacturing method is only adapted to large quantity production bodies. These large dies only result in manufacturing economies when the cost of making them can be distributed over a large number of bodies.

Dodge Brothers are making bodies of this type. To offset the cost of dies, the elimination of wood in these bodies results in economies and the paint work is much less expensive as two or three coats of hard baking enamel replace 15 or more coats of paint. The baking on process of finishing is made practical by the steel construction. Because of these manufacturing economies, the all steel sedan sells for only about 10 per cent more than the open models.

Development of the Business Man's Car

Some Special Models Produced—Other Closed Bodies Give Satisfaction

THE automobile is a part of the modern business man's equipment. The executive with a car at his command is not tied down by railroad schedules nor does he lose time waiting for street cars. The salesman with a car is able to increase his activities greatly. The professional man finds that a car reduces the time he spends on the road. Every day more business men are turning to the automobile as the best all around means of transportation.

Some car manufacturers have recognized the possibilities of this sales field by producing special body models for the business man. Among these are Dodge Brothers, Chevrolet, Liberty and Hupmobile. Other makers are offering their regular models for this purpose.

The business man's car must be economical and dependable. The cost of operation must be a minimum, as this expense comes out of the business, thus affecting profits. It must be reliable because business has to use it every day. In most cases, it will have to be a comparatively low priced vehicle because the average business man will want to keep his investment as small as possible and also because of the effect that first cost has on the cost of operation. These selling points are discussed in other articles in this number of Motor World.

In addition to these, the business man's car must provide for the comfort of the driver and the transportation of his luggage. The closed car is usually the better type for the business man, especially if he be doctor, executive or salesman.

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Generally, the coupe will be found to be best adapted to the needs of this field.

The business man's car must give complete protection from the weather. This is necessary for the driver's health and comfort as he must drive under all conditions of sunshine and storm. Furthermore, the business man must look well on arrival at his destination as his appearance may have considerable effect on his success in a business way. Only the closed car offers this sort of protection.

Ease of Operation

In selling, the ease with which the car is operated should be emphasized, as the business man will drive it many long hours every day and it is desirable that driving cause him as little fatigue as possible. Such features as an easy working steering gear, the convenient location of the controls, and the light action of the clutch and brake pedals should be brought out in this connection.

Luggage space is another very important consideration to the business man. The compartments provided for this purpose must be spacious. It must be easy to get baggage or sample cases in and out of the luggage compartments.

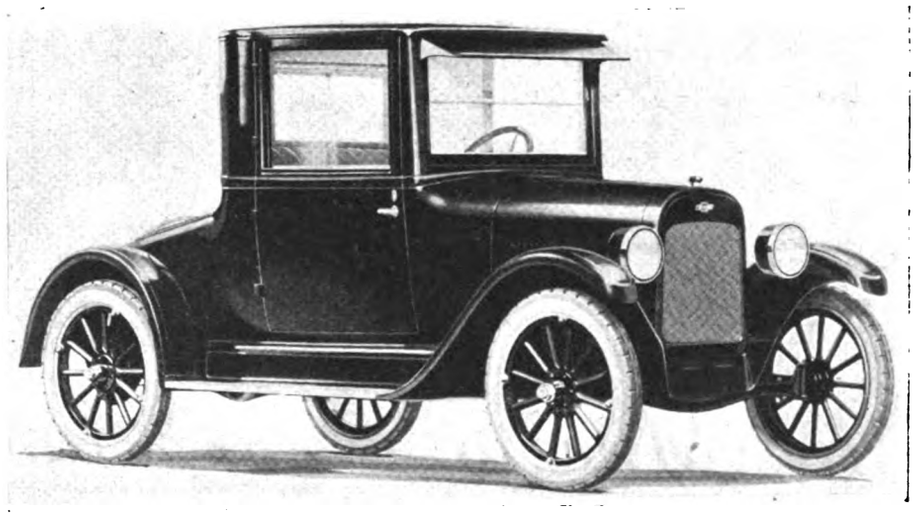
The Dodge Brothers business coupe was one of the pioneer bodies to be built specially for this field. It is an all-steel construction which gives a strong body and permits of a baked finish which is both cheap to apply and durable. The interior upholstery is leather. The Chevrolet coupe is a somewhat similar model.

The Dodge Brothers business sedan is the only one of its kind. It is an all-steel construction with baked on finish. The upholstery in the rear is removable so that this entire space may be used for luggage, and the front seat tilts forward to give greater width to the entrance to the rear compartment.

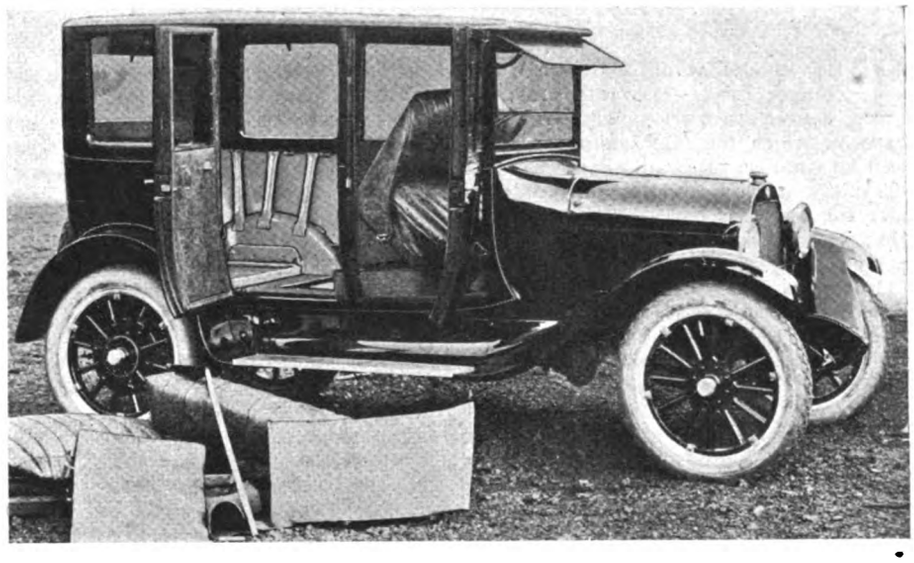
Liberty and Hupmobile have provided closed models for this purpose that sell at about 20 per cent above the open models. In the Liberty, the top is a substantially constructed steel unit of unusual rigidity. The luggage compartment is in the rear deck, the door to this compartment being about 25 x 14 in. which permits the entry of rather large cases. Equipment includes sun visor, cowl ventilator, clock, cigar lighter and door locks. The clock and cigar lighter are useful fitments that add to the salability of the vehicle. In the Hupmobile roadster-coupe, there is space for a suitcase in back of the seat as well as a commodious luggage space in the rear.

Whether a dealer has a special body model to sell to this field or must depend on the regular line of bodies, he must arm himself and his salesman with definite information on the model he is selling to business men. This information should cover the following points:

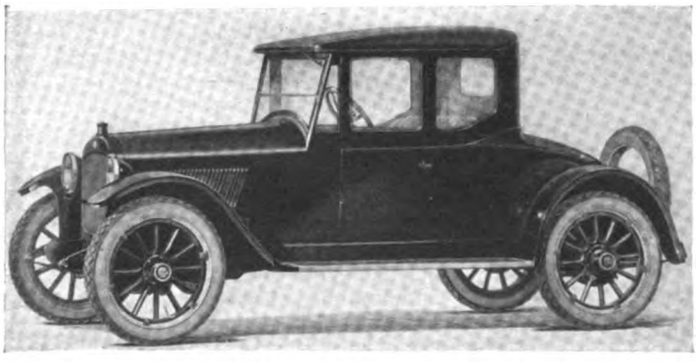
1. **Economy of operation.**
2. **Reliability.**
3. **Protection of driver from weather.**
4. **Ease of operation.**
5. **Provisions for carrying luggage.**



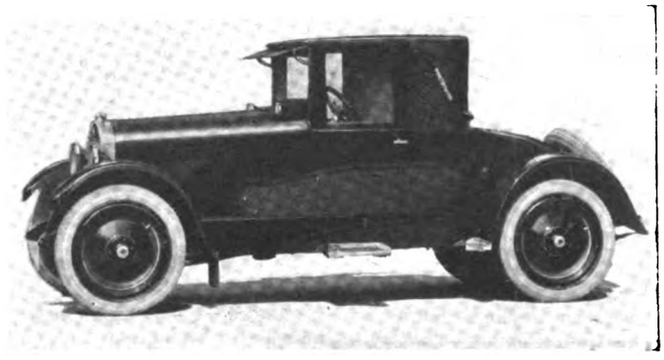
The Chevrolet utility coupe, a low priced car that is economical and offers protection from the weather. This is a satisfactory type for business use



The Dodge all-steel business sedan. All the space in back of the front seat may be used for luggage as the upholstery is removable and the doors are wide.



The Hupmobile roadster-coupe which has a large carrying space in the rear deck making it suitable for business purposes

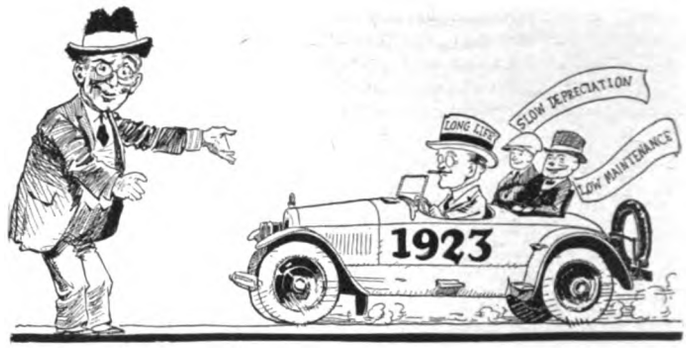


The Liberty business coupe, which, except for the top, is similar to the roadster. There is a luggage compartment in the rear deck

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THE NEW THREE-PASSENGER CAR

THE salesman of the motor car industry, who had "something to sell" in the 1922 car, will find himself in even better position to approach prospects with the 1923 automobiles. They will run more miles, depreciate more slowly and cost less to maintain than any car ever built. This story points out some of the "high spots" in this DURABLE 1923 CAR. It shows how dealers and salesmen can dig out information regarding the cars they sell, so as to be able to present them effectively to discriminating prospects.



More Miles to the Car, a 1923 Selling Point

The Modern Automobile Also Will Depreciate More Slowly and Cost Less to Maintain

THE public wants cars that are longer lived. It wants cars that depreciate more slowly. It wants cars on which the maintenance expense will be smaller. It wants cars that will operate smoothly, quietly and economically for a longer period. It wants cars that will retain their new appearance for a longer time.

Prospects are motor wise. Most of them have owned at least one car. They appreciate the importance of buying a car that lasts—one that wears out slowly. Their own experiences or, in any case, the experiences of their friends, tell them that depreciation is the biggest expense in connection with the operation of a car. Prospects are evidencing this interest in durability by such questions as, "How much can I get for it when I want to get rid of it?" and "How much will the repair expense be during the first year?"

Longer Life and Less Repairs

The factories are making strenuous efforts to enable dealers and salesmen to furnish satisfactory answers to these questions. They are putting better materials into the cars. The parts are being manufactured more accurately and greater care is being used in inspection and assembly. Designs are being changed to give longer life and greater freedom from repairs. *The 1923 car will run more miles, it will depreciate more slowly and it will cost less to maintain than any car built heretofore.*

Stiffer frames, stronger body construction and better paint work and upholstery are developments of the past year that will give longer life to the 1923 cars. Engines will be freer from vibration and the stiffer crankshafts and crankcases will mean less distortion and wear. Better lubrication and greater uniformity in the production of parts are other improvements that will contribute to greater durability in the 1923 cars.

Stiffer frames are a factor in making the 1923 car more durable. Any distortion in the frame is transmitted to the body. Such strains weaken the body, interfere with the opening of the doors and cause rattles and squeaks. By making frames stronger and stiffer, flexing and weaving of the frame members is reduced. To illustrate the value of a stiff frame, one of the new cars had its right front wheel lifted about a foot, the other three remaining on the level. Under these unusual conditions, all four doors opened readily. This shows how a stiff frame relieves the body of strains.

The frames used on the new Peerless models are of rigid design. The side members are straight and have a maximum depth of 7½ in. Tubular cross members, front and rear, are pressed into the frame to prevent twist. In addition, there is a radiator and engine front support cross member, a cross member which takes the brake rocker shaft and the front end of the torque arm, and a rear cross member for the front gasoline tank support. This frame, due to the added cross members, is stiffer and lighter than the frame used on previous Peerless models. By placing the springs directly under the frame side members, they are relieved of twisting strains from this cause.

The channel side members on the new Chevrolet Superior models are of heavier section and the cross bracing is stronger, both of which changes give the frame increased stiffness. Mercer is using about the same side members on the new six cylinder model as on the four, but there is a new and rigid cross member to support the front end of the engine, and a wider and stiffer cross member above the gasoline tank. The central cross member has wider flanges.

Stiffer Frames

The new Barley Six has an unusually stiff frame for a car of its size. The side rails are 8 in. deep with 2-in flanges, made of ⅛ in. stock. Internal gussets are employed for anchoring the cross members and there is a box section cross member against which the side rails are drawn up by a through bolt. The Buick Six frame has been stiffened considerably by increasing the thickness of the material used in the side members from $\frac{3}{32}$ to $\frac{1}{8}$ in.

Parallelling the trend toward stiffer frames is one toward stronger bodies. The new Dodge Brothers all steel coupes and sedans are good examples of this development. Buick has made numerous changes in the construction of the phaeton body for the four-cylinder chassis. These changes add to the strength and ruggedness of this body. The front pillar brace irons are heavier, as are the rear tonneau brace irons. The windshield bracket and top seat rail have also been made heavier. Ten body bolts are used to tie the body to the chassis instead of eight as formerly. The new closed bodies are also more rigid. Heavier gage metal is being used in the construction of bodies and fenders for the new Chevrolet Superior models.

Barley bodies are substantially braced with structural iron forgings. The new Oakland bodies by Fisher have heavier and wider fenders than did the former models, and are generally stronger.

More Rigid Bodies

Bodies that are protected from excessive distortion by stiff frames, and that are made rigid and strong to resist any strains will, of course, have better wearing qualities. Such bodies will not get out of alignment, thus interfering with the opening and closing of doors. They will not develop rattles and squeaks to the extent that less rigid bodies would. They will retain their appearance better, too.

Paint and upholstery on the new cars are more durable. The factories are putting in artificial drying systems that give complete control of the temperature and humidity of the atmosphere in which the paint on the bodies dries. This gives greater uniformity of elasticity and strength to the various coats of paint. Such uniformity in the painting means increased freedom from checking.

Reductions in leather prices have per-

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mitted the more general use of genuine leather in the upholstery.

Practically all of the changes that have been made in the cars mechanically have been made primarily to secure better wearing qualities. A great deal has been done to reduce vibration, as it causes failure of parts from fatigue and also increases wear. Reciprocating parts have been lightened, some makers are using longer connecting rods, and rotating and reciprocating parts are being more carefully balanced.

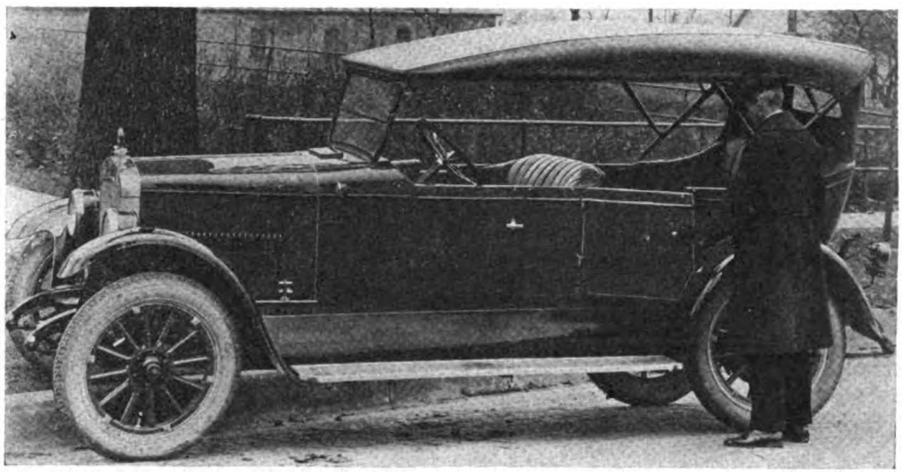
Balanced Crankshafts

Many makers are putting the crankshafts for their engines in dynamic balance. This work is now being done on a production basis whereas formerly it was more or less of a laboratory operation. This is a most important step forward. It adds considerably to the manufacturing expense but it shows that the factories are committed to a policy of making practical improvements. This dynamic balancing operation is performed on a balancing machine. Ansted, Continental, Essex, Hudson, Lycoming and Packard are among the makers to adopt this practice. Rickenbacker is balancing the flywheel and clutch dynamically as well as the crankshaft.

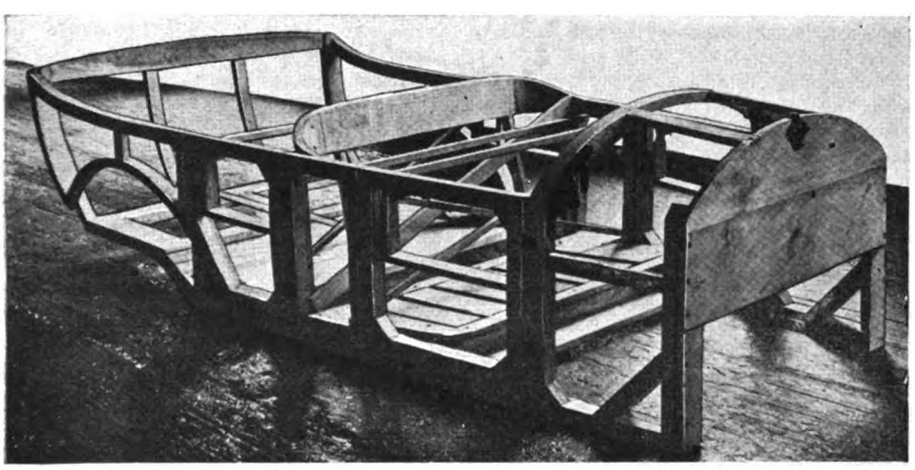
Reciprocating parts are being made lighter in the general effort to reduce vibration. Aluminum pistons are more popular than ever before. Franklin is using a forged duralumin connecting rod that weighs just a little more than half the steel rod used formerly. Longer connecting rods, such as those in the new Lycoming, Stutz and Buick engines, are also factors in reducing vibration.

Some of the factories are making selective assemblies to secure better balance. Connecting rods and pistons are weighed and those accepted are divided into three classes by weights. In assembly light rods are placed with heavy pistons, and vice versa.

Vibration is caused by unbalanced forces which are produced in the operation of the engine. Most people consider vibration simply as something that interferes with comfortable riding. It is well to understand that these unbalanced forces are harmful mechanically. Unbalanced forces resulting from an imperfectly balanced crankshaft tend to distort this part, thus placing added loads on the main bearings and perhaps setting up slight misalignments which are likely to increase wear.



Stiffer body structures are another feature of the 1923 model. The framework of the Anderson phaeton body used on this aluminum six is shown above

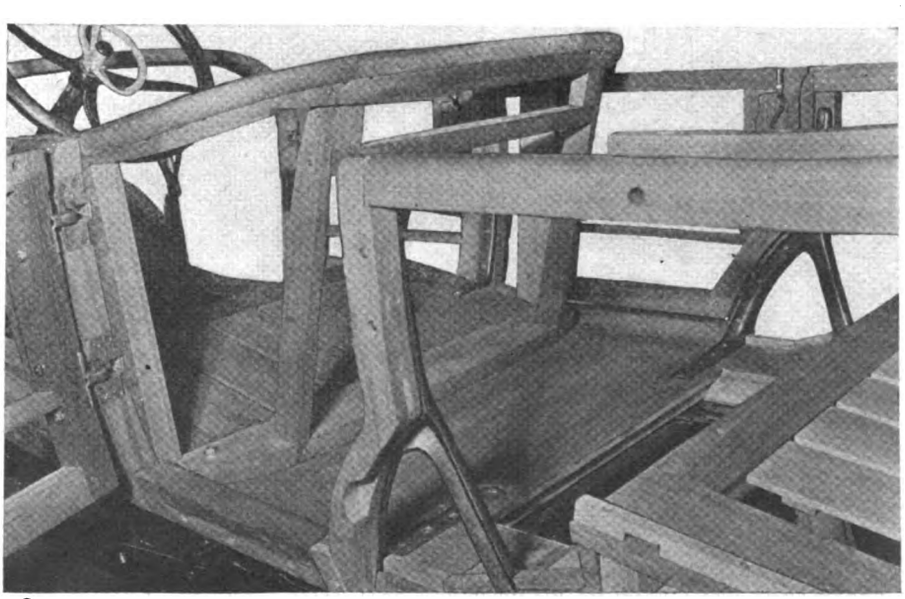


The picture shows the sturdy framework of the phaeton body used on the Anderson Aluminum Six

Crankshafts and crankcases are also being made stiffer. Both of these developments tend to reduce the wear and strain on the parts. A crankshaft that flexes very slightly puts strains both on the bearings and on the crankcase. Bearing wear is reduced with a rigid crankshaft. A stiff crankcase is better able to withstand the strains transmitted to it by the frame and also provides a better support for the crankshaft.

Stiffer Crankshafts

The crankshaft in the Falls engine built for the Dort Six is a three-bearing type of substantial dimensions. The Buick Six crankshaft has been enlarged, the diameter now being 2¼ in. Maxwell has changed from a two-bearing to a three-bearing type of crankshaft, the center bearing being 2¼ in. and the end bearings 1⅞ in. in diameter. This is an unusually heavy shaft for an engine of this size. Lycoming has a five-bearing shaft in an unusually stiff crankcase.



Buick bodies are strong. Note the steel bracing supporting the wood members

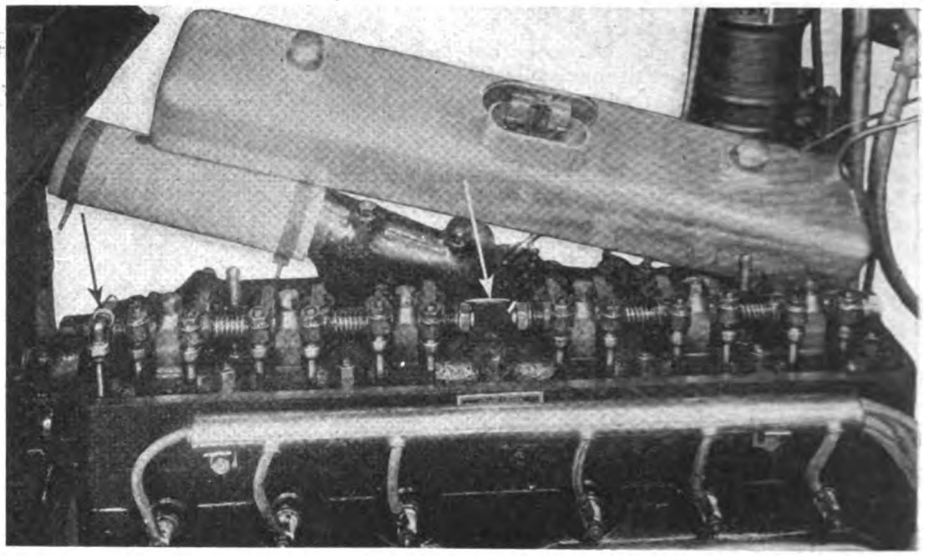
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A stiff crankcase is better able to resist distortion from the frame and to absorb the forces from the moving parts. Crankcase distortion tends to destroy the bearings, cause bind and wear, and may even result in crankshaft distortion. The Oakland crankcase has been stiffened by the addition of several webs and by the strengthening of others. The Oldsmobile Light Eight crankcase is a strong box structure. Hupmobile and Liberty are examples of crankcases that are stiffened by having the block cast integral with the upper half of the crankcase. The Jordan-Continental crankcase is split below the center line of the main bearings. In addition to providing a stiffer crankcase, this construction gives a more rigid support for the main bearings and for the gearset housing. The crankcase on the Stutz is estimated to be 50 per cent stiffer than formerly.

Reducing Cylinder Wear

Several makers are using longer pistons than formerly. This means that the side pressures on the cylinder walls are distributed over greater areas. The reduced pressure intensities cause reduced wall wear. The Buick and Franklin pistons are examples of this trend. Longer connecting rods produce similar results, but by reason of decreased angularity of the connecting rod.

Finishing the cylinder barrels by honing is a new manufacturing process that it is believed will give better wear resisting qualities. Oakland and Buick are both using this process. The tool used for this purpose is somewhat similar to an inserted blade reamer except that carborundum stones are used in place of blades. These stones grind the walls to a very fine finish.

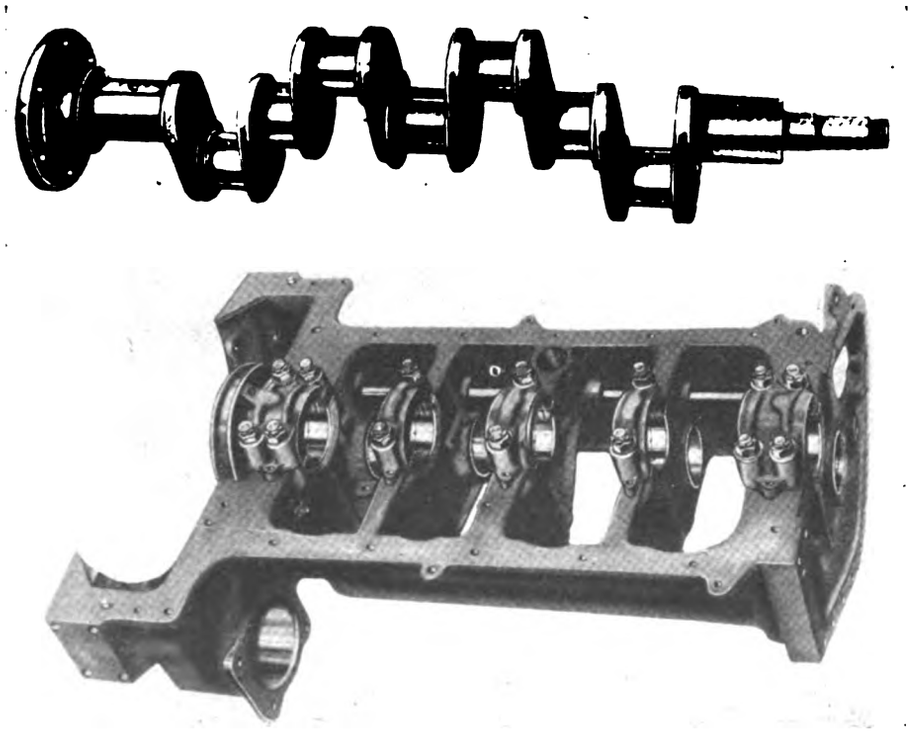


Oil is supplied under pressure to the overhead valve mechanism on the Falls engine used in the Dort. The arrow at the left points to the duct leading to the hollow rockershaft. The rockershaft is in two sections connected by a short length of tubing indicated by the arrow in the center. The aluminum valve cover has a filler opening in it and all oil used by the engine is supplied at this point

Lubrication is a most important factor affecting the life of any machine. Whenever two moving surfaces are in contact, there is wear. This wear can be materially reduced or practically eliminated, in some cases, by proper lubrication. Practically all engine makers supply oil under pressure to the main bearings, and there are many that use the hollow crankshaft system whereby the crankpins are supplied with oil under pressure. Maxwell and Lycoming are two makers to adopt the latter design, and Velie goes a step farther and carries the oil under pressure up to the piston pin by means of oil ducts on the connecting rods. The Falls engine as applied to the Dort six has the oil pressure dependent on the throttle opening. With this scheme, the wider the throttle opening or, in other words, the heavier the load, the higher the oil pressure.

In the Buick felt has been placed around the valve stems inside the springs to carry oil for the stems and guides. The felt acts as a storage reservoir for the oil, and consequently these parts are more certain to be lubricated. More positive lubrication for the front camshaft bearing in this engine is provided by an oil well at this point.

In the Stutz engine, the oil is distributed through integrally cast tubes, thus avoiding the necessity for exposed unions, tubing and soldered joints. The camshaft bearings in this engine are pressure lubricated. The cooling fan incorporates a centrifugal feed oiling system, which carries a supply of lubricant sufficient for a season's operation.



Crankshafts and crankcases are generally more rigid. The two pictures illustrate this trend. The upper one shows the five bearing crankshaft used in the new Lycoming engine. The lower picture shows the well webbed crankcase used in the same engine

Improved Oiling Systems

The engine used in the new Dort six has a built-in pressure feed oiling system which feeds the overhead valve mechanism. Oil is led under pressure through the rocker shaft, then through drilled passages through the rocker arm to the tops of the push rods. The top of the push rod ends in a cup in which the ball end of the rocker arm operates. Oil flowing under pressure from the rocker arm shaft through the drilled rocker arm comes out through a hole in the ball and into this cup. This keeps the cup and ball continually lubricated and provides a liberal film to cushion the shock. A lead is passed down through the push rod to the tappet so that the cam contact is also lubricated.

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Lubricating oil for this engine is poured through an opening in the overhead valve cover.

The new six-cylinder Midwest engine for passenger car use has a lubrication system that proportions the oil pressure to the load on the engine rather than to the engine speed. This is operated by the vacuum in the intake which is highest when the engine is running under a light load with the throttle nearly closed and lowest when the engine is pulling a heavy load with the throttle well open.

The forward universal joint is a difficult part to lubricate. For this reason owners frequently neglect it, and this neglect results in rapid wear. Buick and Gray make this universal a part of the gearset and lubricate it automatically from this point.

A step farther in automatic lubrication of adjacent parts is found in the Overland four and the Gray, in which the gearset receives its lubrication from the crankcase oil which is thrown up by the flywheel over a dam and maintained at the dam level in the gear case. Maintaining the oil at correct level in the engine, therefore, assures that the gearcase will at all times have the proper quantity of lubricant.

Anti-Friction Bearings

Maxwell has replaced the plain bearing at the rear of the transmission with a double row annular ball bearing. This change is typical of the trend toward the more general use of anti-friction bearings which wear longer and are easier to replace than the plain type.

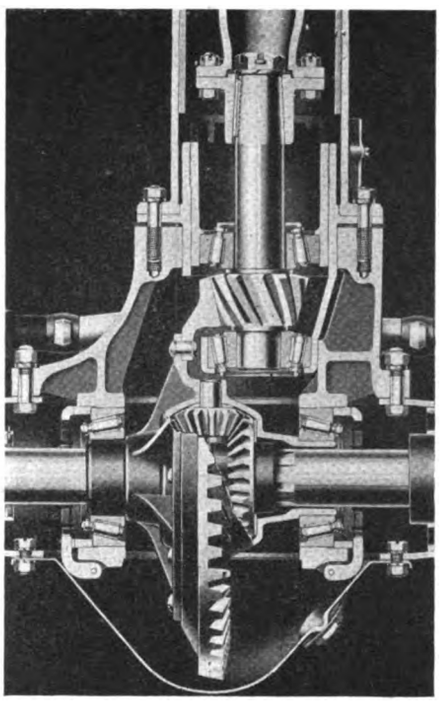
A more rigid construction is obtained at the pinion shaft by supporting it in roller bearings located on both sides of the pinion. This mounting is known as the straddle mounting. It is not a new construction, but it is gaining in favor every year. It is a construction that gives more positive alignment with consequent reductions in wear and noise. Peerless is one of the makers to adopt this construction in its new models.

The radiator is not a particularly strong structure, and it must be protected from strain. Buick has reinforced its radiator shell on the inside, and the radiator core support angles have been increased in thickness and the bolts made larger. The radiator on the Barley six is supported on two ball plates which find their own seats.

On the new Buick clutch, the housing is drop-forged of steel instead of malleable iron. The splines are now case hardened and ground, and the clutch plates are fitted to closer limits on the splines and pins. This will decrease wear and obviate rattles. Nash has also changed its clutch, particularly in the clutch shaft. This is a splined type, but is now ground on all sides.

Rigid Inspection

Increased accuracy at the factory has done much to increase the life of the 1923 car. Improvements in methods, machinery and inspection have all combined to give greater accuracy. This means that the rate of wear is very much less than would be the case with less accurately made and fitted parts.



The practice of mounting the pinionshaft in bearings on either side of the pinion is becoming more general. It gives a more rigid construction. The picture is a sectional view of the LaFayette axle

The inspection of incoming material is more rigid than ever before. Many companies, particularly spring and axle makers, are laying down both physical and chemical specifications which raw materials must meet. These companies maintain laboratories to see that materials come up to the mark. Studebaker, for instance, puts a Brinell test on every individual spring leaf. The hardness test of materials is becoming more common, and temperatures in heat treatment ovens are being held to more narrow limits.

In the foundry, too, greater uniformity is being obtained in castings. Improvements in foundry methods have resulted in a better grade of castings than were possible some years ago. More uniform castings mean greater accuracy in the machine shop. In the case of the cylinder block, it means better piston fits.

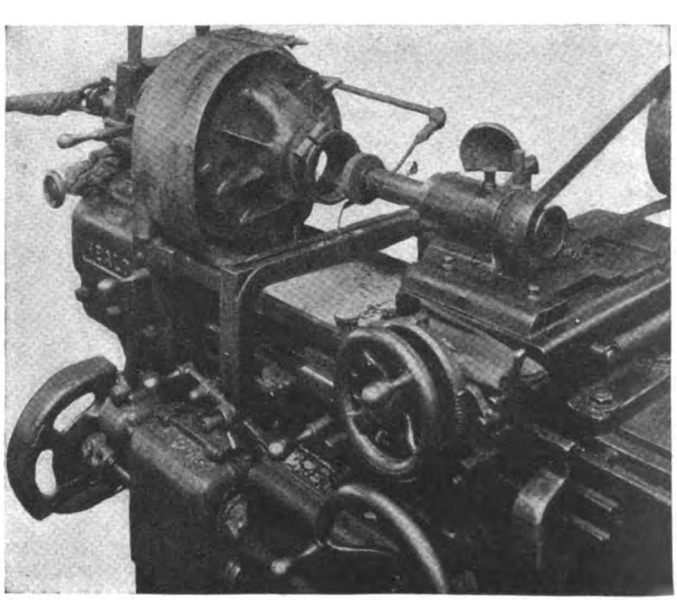
Often a good bearing is destroyed because of poor alignment or inaccuracy in the mounting. Even a slight misalignment in the supporting members for the gears and bearings in the rear axle is sufficient to cause rapid wear in this part. Very careful grinding operations are used to finish these carriers in the most up-to-date shops. In place of the reaming operation formerly employed at the Hudson and Essex plants, the bore for the pinion bearing case is internally ground. This operation is typical of many others that are giving greater accuracy with consequent improvement in the wearing qualities of the finished car.

Rust and corrosion have been guarded against in the past mainly by coating easily rustable materials such as iron and steel with good paints and enamels, and by the use of brass, bronze, aluminum and other materials that are not affected by the action of water or air. Nickel-plating and galvanizing have also been used for this purpose.

Non-Corrosive Steel

Several non-corrosive alloys of steel have been developed, which will be used in the 1923 automobile for the first time. Stainless steel is not a new product, but about the first use of this material in an automobile is believed to be in the Mercer six, in which the pumpshaft is made of this material. Steel has always been used as a pumpshaft material, although Tobin bronze has been tried. The fact that bronze and brass are usually next to the steel causes electrolysis in addition to the ordinary rusting.

Another point in the car where destruction of the steel goes on at a very rapid rate is in the valves, which are subjected to great heat and have little or no means of becoming cool between explosions. Scaling and burning is quite common, especially where engines are used continuously under heavy load. Special alloys of steel have been developed which have alleviated this trouble.

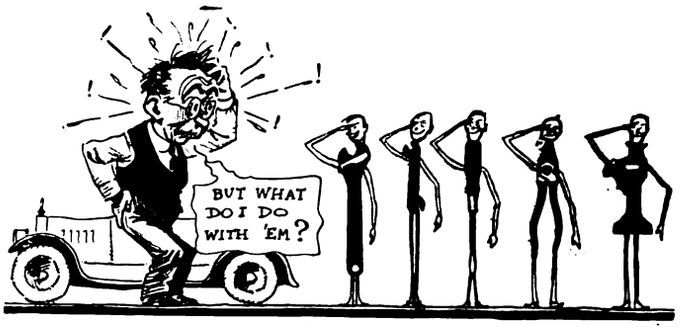


Slight inaccuracies in manufacture or assembly are sufficient to cause rapid wear. The illustration shows the bore for the pinion bearing case being internally ground. This operation on the Hudson axle was formerly performed with a reamer. The present method is being used because of its greater accuracy, which means less wear and longer life

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THE AVERAGE MAN AND HIS CAR

BECAUSE Mr. Motorist, take him by and large, doesn't know anything about machinery, the ingenuity of automobile builders has been quite generally devoted for several years to developing self-maintenance features and to simplifying the adjustment or repair of mechanism neglected by the driver. The 1923 car shows a high degree of accomplishment along this line. This story suggests some of the principal lines to follow in a study of this kind applied to your car.



It Costs Less to Maintain the 1923 Car

Better Materials and More Carefully Fitted and Accessible Parts Boon to the Owner

WHEN the automobile was young, the car buyer was making his first investment in a self-propelled vehicle. The first cost was the only thing he considered, because it was the only cost that was brought to his attention.

To-day the great majority of car buyers have owned one or more cars. Many of them have owned a half dozen. These buyers know that there is a good deal more to consider in the buying of a car than the first cost. Some buyers have been bitterly disappointed because they have either purchased cars that were not at all fitted to perform the required work, or because they expected $5,000 performance from a $500 car. Others who have made a happy choice and have used intelligence in operating and taking care of their vehicles have little or nothing to complain of in the matter of service charges.

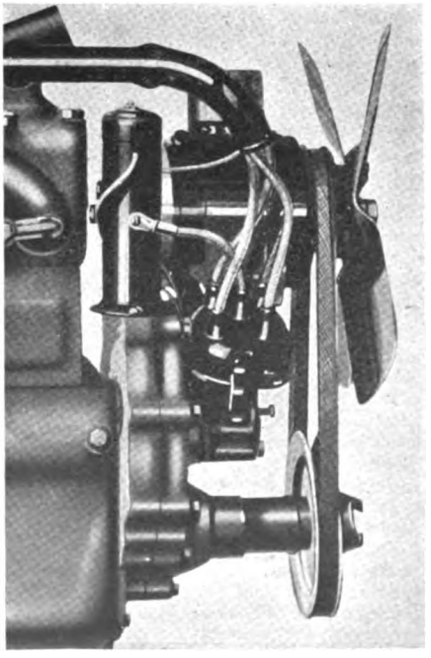
Many of the refinements found in the 1923 cars will be found there for the purpose of simplifying maintenance operations and for cutting down the cost of upkeep.

Accessibility Improved

The reduction of maintenance charges has been brought about in three ways. First, the materials of which the car is constructed are correct as to quality and size. Second, simple adjustment points and lubrication points that the owner has to take care of have been made accessible, so that they will be more likely to get attention at regular intervals. Third, such units or parts of units as have to be taken out at intervals to clean, adjust, lubricate or repair have been designed into the car so that there is a minimum amount of time and trouble getting them out and putting them back.

In addition to these three features, it can be pointed out that repair methods in general have been so improved that it costs less than formerly from the standpoint of labor charges to perform such service operations as may become necessary from time to time due to accident, neglect or natural wear. Service has become more of a business. It is better organized and standardized so that the service employer knows how long it takes to perform certain operations. Special tools and equipment mean more time saved. Speed wrenches, mechanical valve grinders, engine stands, hoists, pullers, washing tanks and special tools of all kinds make a great saving in mechanics' time which is passed on to the owner in decreased repair bills.

The flat rate method of estimating repair work in connection with the piecework method of paying service station employees in some shops has not only made it entirely practicable for the shop to estimate in advance exactly what the job will cost, but it has brought about a very definite idea of the time required to perform various operations. As a result in many cases the cost of service to the owner has been more than cut in half, while the shops continue to make the reasonable profit they are entitled to and the mechanics earn more than they did before.



The electrical units of the Maxwell are mounted in front giving a neat accessible layout and a clean engine appearance. This position also keeps the coil cool

A previous objection to car ownership that does not exist this year is high prices of repair parts. Due to the decreased cost of raw materials, reductions in labor costs and the use of improved production and distribution methods, it has been possible to reduce the cost of parts for repairs very materially, in some cases more than 50 per cent.

Owner Neglect

Among the most important features in connection with service costs is the care the owner gives the car. Probably 60 to 80 per cent of the service on a car is necessary by reason of owner neglect. It is the function of the instruction book to so explain the mechanism of the car that the owner will get a clear idea of the attention he should give it. Lubrication is one of the points that is the most neglected on the average car and the cause of much wear and consequent expense. The instruction book of to-day has gone far in making plain to the owner the parts that require lubrication, how often they should get it and what kind of lubricant to use.

Many manufacturers have realized that service on cars could be much improved and costs cut by pooling all service information, and accordingly, service manuals, sheets, diagrams and outlines of service methods have been published for distribution to car dealers and shops, with the result that mechanics are now able to perform service jobs with more real information at hand than they have ever had before.

The realization that service plays an

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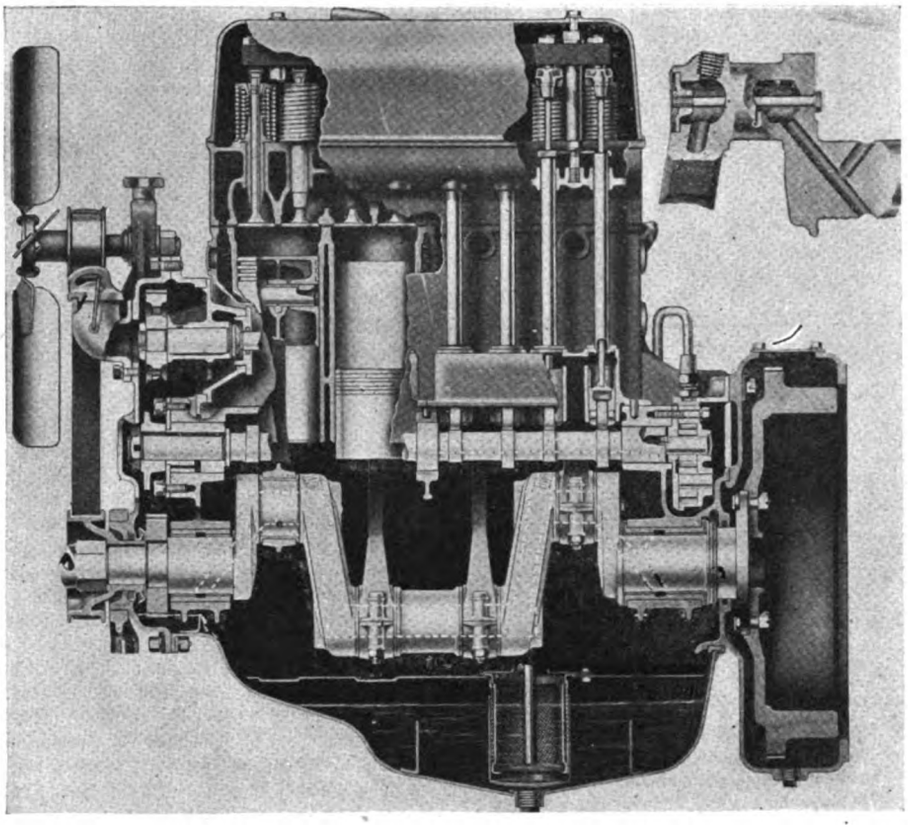
important part in the selling of the car and of keeping it sold has led to a much greater consideration of the service problem by the designer. Detachable cylinder heads are seen on a constantly increasing number of cars. The Buick four uses this design to bring about easier access to the combustion chamber. Valve cages are eliminated, the valves seating directly in the cylinder head.

The Continental 6Y engine has a detachable cylinder head fitted with extended lugs so that the head can be removed without the necessity of driving a screwdriver or chisel into the gasket. Another car provides eyes for a tackle hook.

Replacing Bearings

The refitting of bearings has always been an item of considerable expense because of the necessity of hand scraping. One design that shortens a bearing replacement job is seen in the Oakland. When the bearings are worn out, an entire new set of bearings is simply put in by dropping the bushings in place. This operation has been made possible by holding down the size on the machined parts of the crankcase to very close limits and adopting the same care to the bronze backs and bearing surfaces of the bushings. In this way interchangeability is secured. The new Midwest six cylinder engine also has bearings of this type. With a bearing construction of this kind, it is unnecessary to scrape bearings to a fit or to line ream them.

Many manufacturers use a somewhat similar method in fitting connecting rod bearings, excepting that the babbitt is cast into the connecting rod directly instead of being placed in a bronze back. The babbitt bearings in both the upper and lower holes are machined exactly to size, the holes tested for parallelism and stocks of these rods shipped to dealers and agents. It is then a perfectly simple matter to slip out the worn or burned out rods and insert the new ones, the worn rods being sent back to the factory for rebabbitting.



All oil entering the pump of the Midwest four cylinder engine is screened and the pressure lubrication system is entirely carried in the upper half of the crankcase so that the lower half can be removed easily

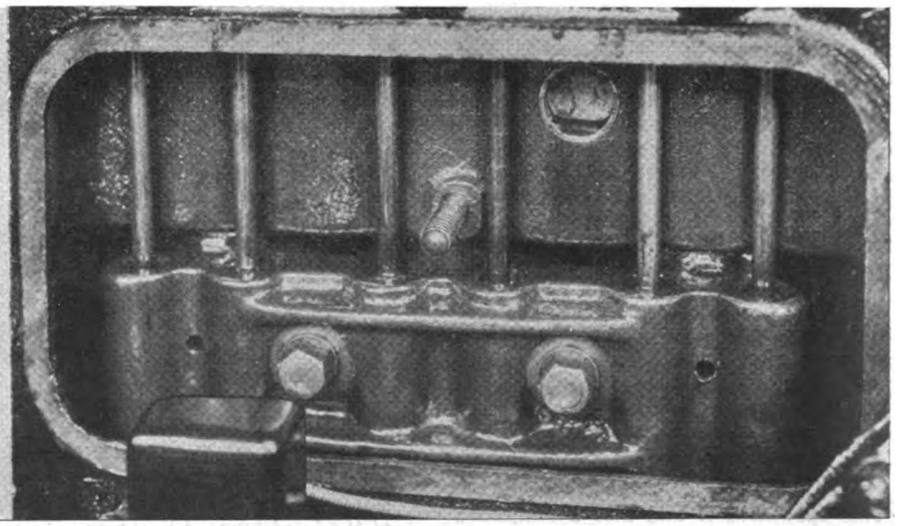
On the new Buick models bearing life is greatly increased by making the babbitt harder. In some places around other engines and moving parts, it has been found practicable to use a steel shaft in a cast iron bearing under certain conditions with a considerable increase of life to the bearing and the shaft as well.

Another feature of accessibility is the change of design of the valve tappets and guides so that they can be replaced without taking the engine out of the car and tearing it down. The Oldsmobile eight, Rickenbacker, Mitchell, Hupmobile and Falls engines are examples of a design of this kind. In these engines blocks of two or more tappets and guides can be taken out from the outside of the engine by simply taking off nuts or cap screws, after which the replacement is easily made.

Another construction feature found in a number of cars affords easy removal of the camshaft. On the Gray car the camshaft is carried in three bronze bushings which step down in size from 1 7/16 in. so that the entire camshaft can be drawn out through the front end of the engine.



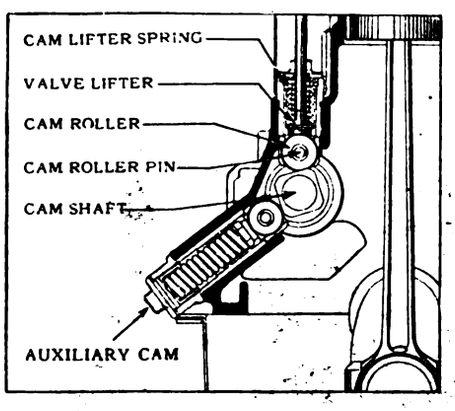
Oakland replaceable bearings simplify repair work and reduce service costs



Tappet guide blocks permit the removal of six tappet guides as a unit on the Falls engine used in the Dort and other cars. Other designs permit the removal of two or four

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A recurring feature of service cost in any car is the removal of accumulated carbon, which is generally accompanied by grinding the valves as they are usually affected by carbon in the combustion chamber. Several different methods of slowing up the formation of carbon are being used. In the new Stutz the formation of carbon is greatly retarded by machining the entire inside of the combustion chamber. Packard, Hudson, Lincoln, Lafayette, Rickenbacker and a number of others use this same method of retarding carbon formation.



Continuous spring tension on the Buick Four camshaft prevents any noise. The extra cam lobe takes up the usual slack point

As carbon in the combustion chamber is largely made up of road dirt, anything which would prevent the road dirt from entering the carbureter would lessen the accumulation of carbon deposit. Franklin has for some time been using an air cleaner and the new Series B Rickenbacker has one fitted as standard equipment. These devices filter the incoming air of dust and dirt.

Better Lubrication

Perfect lubrication would mean an end to all service work, excepting that caused by accident or breakage. But there is no such thing as perfect lubrication. Even the finest oil, of exactly the correct viscosity and suppled continuously in sufficient quantities, will not give 100 per cent lubrication, or in other words, remove friction entirely. There is always friction present when one surface moves against another, and this friction increases as the pressure increases and as the speed increases. Engineers have provided lubrication methods that reduce friction to the minimum, provided the lubricant, either oil or grease, is supplied at regular intervals. As soon as the supply of lubricant stops, the friction increases several hundred or several thousand per cent and erosion or rapid wearing away of metals begins. Better lubrication, therefore, means that the service cost is decreased because the parts will not wear out so soon. Better lubrication means both a continuous supply of lubricant to the parts that need it and also a simplified method of replacement so that the car will need a minimum of attention on the part of the owner.

A point that has heretofore been difficult to lubricate is the piston pin. A constant supply of oil to this point is now supplied by pressure on the Maxwell and Lycoming engines, and the Velie uses an oil duct on the connecting rod.

The pressure system of engine lubrication has made great gains in the past few years and is now used on the great majority of cars for 1923. Several different adaptations of this design are used, but the hollow crankshaft predominates.

While it is extremely important to get a copious supply of oil to rubbing surfaces, it is equally important to keep the oil where it belongs and one place it does not belong is in the combustion chamber. The very nice problem of allowing ample lubrication of the cylinder walls, yet keeping the oil down out of the chamber, has been worked out by careful cylinder finish, accuracy of machine work and assembling and by giving a great deal of attention to the design and fitting of the piston rings. While it cannot be said that the solution of this problem has been found, yet, with the development of constant clearance piston types, better piston rings and better methods of assembly, a great deal of the difficulty encountered on the older engines has been overcome, and one manufacturer is so sure that he has a real solution that he is giving a written guarantee of 15,000 miles against oil pumping by his engine.

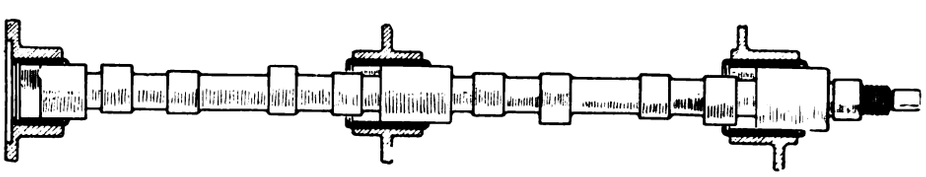
Another point in connection with lubrication from the service standpoint is the facility with which periodic attention can be given to certain units and the ease with which the system can be repaired, adjusted and cleaned.

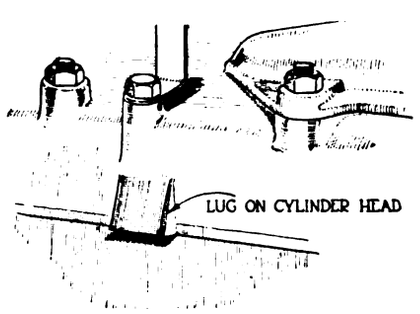
Due to the fact that gasolines are particularly difficult to vaporize, notwithstanding the very creditable vaporizing and super-vaporizing devices, there is a certain amount of raw or unvaporized fuel which finds its way down past the piston rings and into the sump. Eventually this dilutes the lubricating oil to a point where it no longer has sufficient viscosity to form a lubricating film in the bearings and between the cylinder walls and pistons. It is necessary, in view of this condition, that the oil be drained from the crankcase approximately every 500 miles in winter and every 700 miles in summer. This means that the average car will have to be drained approximately every three weeks in cold weather and every four weeks in warm weather. Several cars have made provision for easily draining the oil without the necessity of crawling underneath the car.

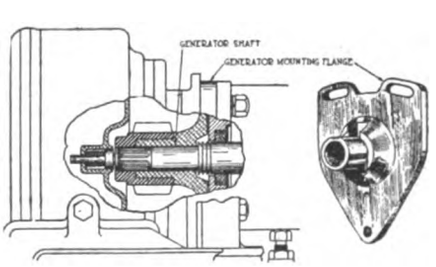
Accessible Oil Screens

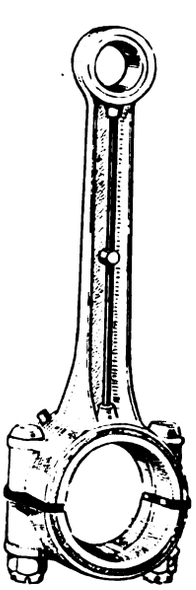
Oil screens and filters show a tendency to be much more accessible. The Lycoming engine is so designed that when the engine pan is dropped the entire pump

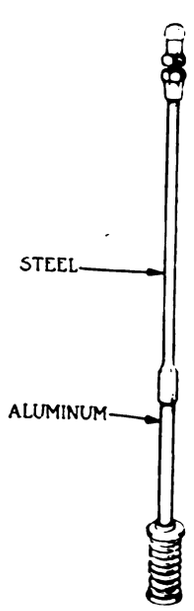
Features That Have Decreased Service Costs











At the top is the Gray camshaft which, like many others, has the bearings of decreasing size, the smallest at the back so that the camshaft can be withdrawn from the front. At the left center is shown the lug on the cylinder head of the Continental 6Y engine. At the lower left is the Franklin sprocket which drives the generator and is so arranged that it can be removed without disturbing the timing. At the right is shown the Velie method of oiling the piston pin and the Buick bi-metal push rod to insure constant tappet clearance

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and screen can be easily seen, cleaned or repaired.

Buick and Peerless models also show improvements in this respect. The Franklin and the Mitchell carry the oil tubing outside the crankcase so that in case of obstruction the connections can be easily broken and cleaned out. Other makers have taken the other extreme and cast the tubes right in the crankcase to prevent injury or breakage. The Peerless has a larger oil strainer that has been installed as an independent unit in the lower half of the crankcase. This screen is removable for cleaning without taking down the engine pan. An oil drain plug, operated by a special wrench in the tool kit allows of draining the oil without getting under the car.

In the 1923 car there is a decided effort to eliminate noise. This may sound like an impossible performance, but, nevertheless, many of the new cars have carried out the idea so successfully that it is sometimes impossible to tell whether the engine is running when standing close to the hood. Noise means lost motion somewhere, something rubbing without lubricant or something hitting. Lost motion means a hammering action, and this soon leads to wear. A bearing which knocks and pounds soon pounds its oil out, beats down the babbitt and finally the bearing gives way. Stiffer crankshafts, stiffer crankcases, harder or more carefully designed bearings and a better selection of materials have reduced the liability of knocks and rattles. Overhead valve engines, in spite of their many other advantages, have in the past been rather noisy, especially when they became old and worn. Two features of design at least have been used to reduce this noise, due to unequal expansion. The new Buick has bimetal push rods, one part being made of aluminum and the other of steel. The proportions have been so made that the ratio of expansion is the same as in the



Haynes uses the Whyte Motorcontrol on its 1923 models. This simplifies the removal of the body as no wiring need be disconnected. This location of instruments and switches is also desirable from the convenience standpoint

cylinder block. This assures that the valve tappet clearances will remain the same at all engine temperatures. To insure a supply of oil to the valve stems, the valve springs carry a felt packing. The new Falls engine has some innovations in overhead valve gear design. A positive force feed of oil is carried right through the overhead shaft and rocker arms so that there is a film of oil at all times on all working surfaces. Small cups at the upper ends of the push rods carry a supply of oil to take care of the contact between the push rod and the rocker arm, and also to absorb the click which is usually present at this point.

There is at least one place in a four cylinder engine where there is slight lost turning motion in the camshaft, and under certain conditions this is liable to develop into a decided click or light knock. The Buick four has a development to overcome this. An extra lobe or cam on the camshaft is placed at this ordinarily loose point, and a roller bearing against it takes up the slack just as would the valve tappets with the force of the valve springs behind them.

Electrical mountings are quite simple to maintain. Many cars have made the ignition unit entirely separate from the generator so that the generator can be dismounted without disturbing the timing of the ignition. The hollow sleeve mounting of the generator is another feature that cuts down the labor cost, because the entire operation is controlled by a single set screw. In the front end chain drives the adjustment is either of the automatic type, maintaining a constant chain slack, or else the adjustments are very easily gotten at and easily made. Generator charging rates on the third brush systems are easily changed. On the Ford only two small wrenches are required, and the adjustment can be made in five minutes. Brush replacements on both motor and generator are more simply made, and in the design of the unit and its installation of the engine, this feature has been carefully considered. In the past it was frequently necessary to dismount the unit in order to replace the brushes. There are few units so mounted to-day.

Wiring systems are better laid out and are more substantial, and many of them have been passed by the Underwriters Laboratories as a first class risk. This means that insulation, size of wire and fusing have been very much improved and that in the car of 1923 danger from fire due to short circuits is minimized. Troubles with electrical wiring systems are not common because of the junction blocks, fuses and simplified wiring, consequently, it is seldom necessary to trace out circuits. Instruction book wiring diagrams simplify tracing circuits.

Greater Comfort in the 1923 Cars

Smoother and Quieter Operation—Detailed Improvements Make Motoring More Pleasant

COMFORT has been given as much attention by automobile designers as any feature of the car. There are two kinds of comfort, mental and physical. Mental comfort is a sense of security or peace of mind on the part of the passengers brought about by the reliability of the automobile. Their faith in the car and its ability to get there and back without mishap has a great deal to do with their enjoyment. The factors back of this reliability are correct design and manufacture and durable materials. Coupled with these primary features of reliability are the indicators and gages which show that the various mechanisms are performing their duties correctly. These gages tell the driver at a glance what is going on and remove the chief obstacle of enjoyable driving —worry.

Mental Comfort

The 1923 car can be said to have reached a point where worry is almost removed from the list of things the driver has to do. Every vital mechanism is protected in some way from going wrong by gages, fuses, cut-outs, emergency tanks, etc. Tire trouble, due to the general use of the cord tire, is almost a thing of the past and many cars run tires from 8000 to 20,000 miles without puncture or blowout.

Mental comfort features are generally only realized after the owner has driven the car for some time. They are not usually given the sales attention that they deserve. The man who has never owned a car will not appreciate them at once. The more experienced motorist will generally look for them the first thing.

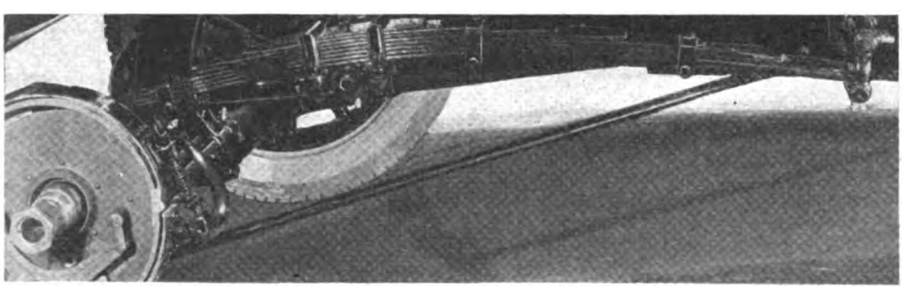
Physical comfort can be shown in demonstration. A great many factors of design and construction contribute to physical comfort.

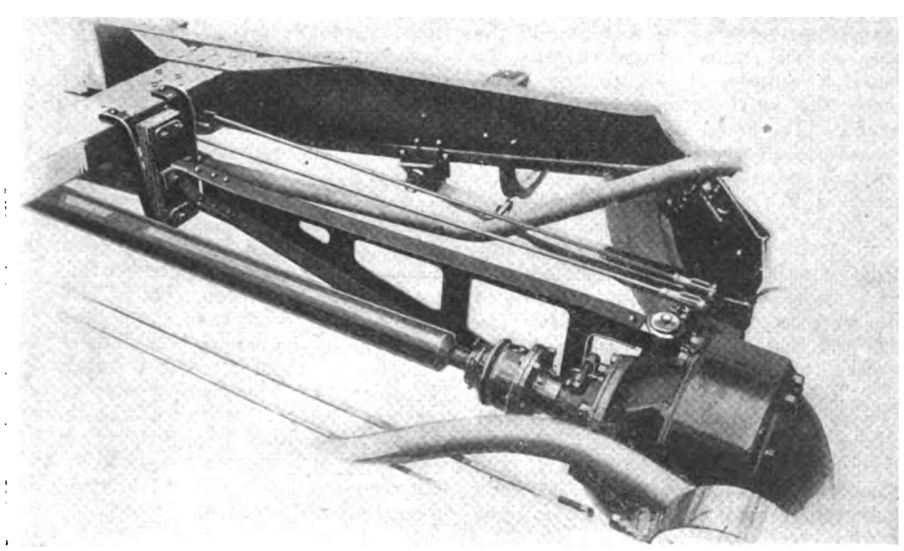
Freedom from noise, vibration, squeaks and rattles is of prime importance and the 1923 car can be truthfully said to have reduced these evils to a minimum. The careful balancing of crankshafts and flywheels, together with selective assembles of connecting rods and pistons,

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has reduced the vibration in the power plant to almost nothing. Many manufacturers are using these methods and the results obtained make the cars of 1923 stand out above all former models. Anti-friction bearings, improved bearing mountings and more care in the design and assembly of the steering mechanism are responsible for a great reduction in vibration through the chassis. Correct bearing arrangement and mounting leads to a reduction in wear and reducing wear

Spring and Torque Arm Changes





At the top is the redesigned spring on the Buick in which the changing of the center member position gives easier riding. At the bottom is shown the new Peerless fabric connection for the torque arm, previously a difficult point to lubricate, now requiring no lubrication

cuts out the rattles. Spring shackles have undergone some improvement both as regards design and what is still more important, lubrication. Gear noise in the engine has been eliminated by using spiral gears, composition gears working against metal, or silent chains.

The most direct contribution to comfort is easy riding. This is secured through springs, tires and cushions, these three absorbing the unevenness of the road. An important factor in easier riding in the greatly increased use of cord tires which do not require such high pressure inflation as do fabric tires. They are therefore able to absorb many of the small unevennesses in the road surface instead of transferring the jolts to the springs, which happens when higher tire pressures are used. A slightly softer tire also makes steering much easier on rippled roads which will cause a highly inflated tire to skid at high speeds.

Little change is noticeable in spring design and construction this year, practice having proved the worth of present designs. There is, however a decided tendency toward the fitment of rebound plates or shock absorbers as standard equipment, the practice being quite general among the sport models.

Cushions play a very important part in comfort and while any sort of a cushion may be reasonably comfortable for a short ride, the increase in long distance touring has centered the attention of the body designer on the shape and make-up of the cushions. In the closed cars there is a tendency toward higher seat backs, with spring backed upholstery, giving a maximum of comfort. The general lowering of the height of cars has brought with it a slight reduction in the height of seats, therefore it will be found that seats in general are at a greater angle than before. Attention also has been given by most builders to greater leg room.

A feature that is becoming more prevalent with the straighter side bodies is the ability to lower the glass in the closed models all the way so that the driver's left elbow can rest on the sill. Door sizes are better adapted to easy entrance and exit and the newer two door sedans or four passenger coupes have extra wide doors.

Driver visibility is much improved. Blind spots have been removed or reduced and there is a distinct trend toward rear windows which allow better vision by means of a mirror in front of the driver. Many phaetons and roadsters have adopted plate glass for the rear window, making it large enough to be useful and redesigning the rear curtain to carry the extra load. Better headlamps give driving light at night and non-glare devices assist in preventing accidents and causing annoyance to pedestrians and passing motorists. Windshield wipers of the automatic or hand operated variety are fitted to an increasing number of cars. One of the Pierce-Arrow closed models has two windshield wipers, one on each side of the shield.

Protection against heat, cold, rain and wind has made great advances. Many closed models are regularly fitted with car heaters which take their heat from the spent exhaust gas. Doors have been made close-fitting, and windshields on the closed models are being more tightly fitted not only for protection against cold winds but against rain as well. Rubber gaskets and beads fitting into gutters are used for this purpose and the rubber strip along the joint of the glass keeps a tight joint at this point.

Better Fitting Curtains

On the open cars the curtains are made to fit better. It has been something of a job to make a tight joint between the curtains and the slanting windshield but this has been worked out satisfactorily. Paige has a triangular metal frame with glass and Studebaker uses a triangular strip of curtain for a filler. Better fastenings are used on some other cars. The general use of windshield wings on sport models has greatly added to the comfort of the occupants of both front and rear seats. With windshield wings and better fitting curtains it is now possible on many open cars to fit a car heater and maintain a comfortable temperature although naturally there will be more air leaks than in a closed car.

The California top is being fitted to an increasingly greater number of open models. This furnishes at once closed car comfort with open car advantages and at a price generally somewhere in between the two. Many of these tops have clever means of disposing of the side panels when they are not being used. Some have the panels slide down into the doors and body and others have a hinged arrangement whereby they are folded into a compartment between the doors.

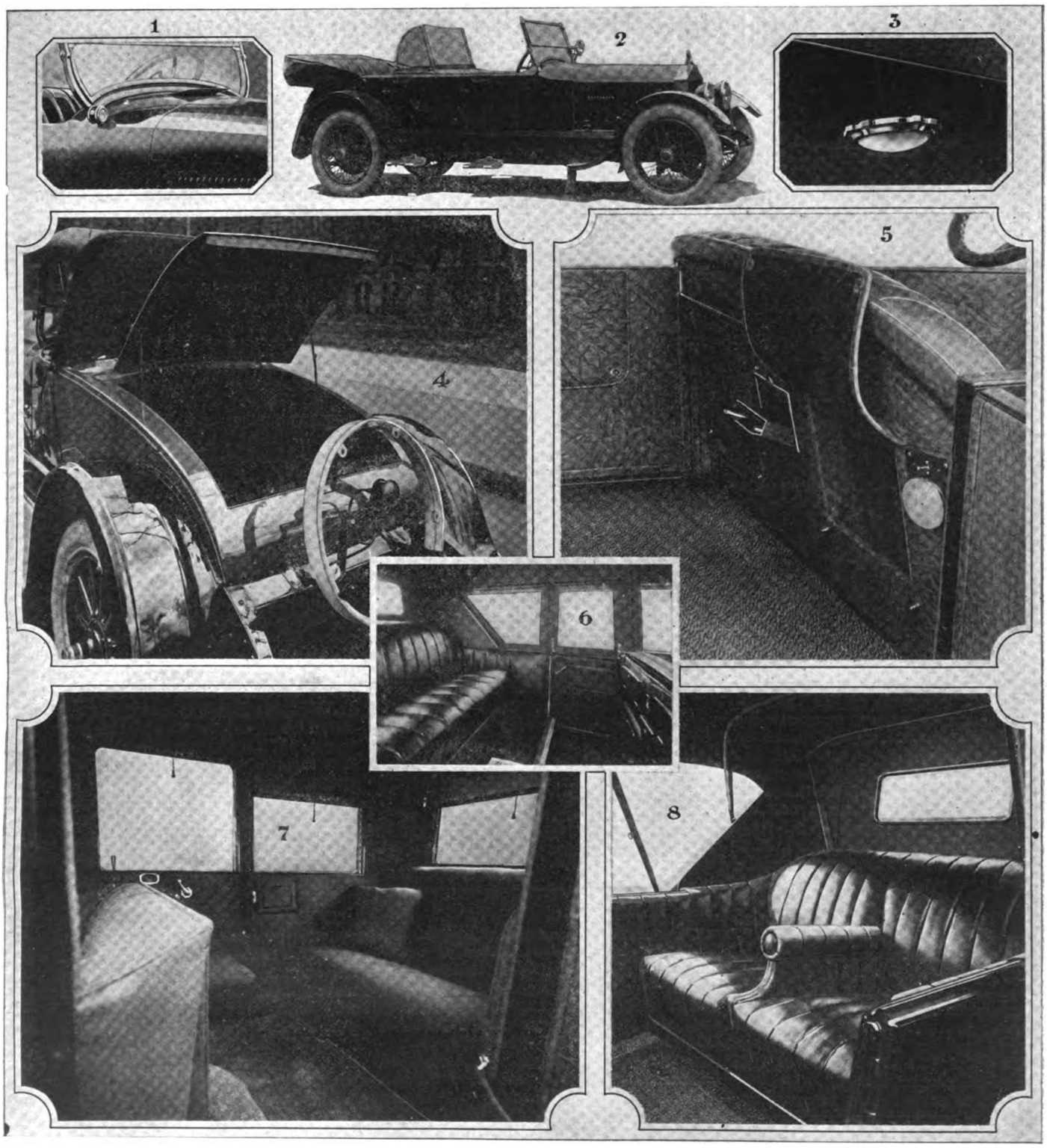
Lever Operated Windows

Practically all door windows on closed models are lever operated. Some makers still use a strap lift on rear quarter windows, but there is a disposition to use either a Pullman window catch or a lever regulator on these too. Several cars have an arm rest in the center of the rear seat. Studebaker uses this type. On some models this is removable so as to allow for the seating of three persons.

With the added conveniences and better design from a comfort standpoint it is now possible to drive cars in the cold, rain and snow of fall and winter and be practically as comfortable as in the spring and summer. The 1923 car is essentially a year round car.

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Little Things That Add to Driver and Passenger Comfort



1—Cowl ventilators add to the driver's comfort. They are quite common on the 1923 models. The illustration shows the Chandler. 2—This Roamer sport model has a tonneau windshield. 3—Peerless provides a dome light on its permanent top models. 4—Spacious luggage compartments like this one on the Durant are selling points. 5—Reo uses the back of the front seat. 6—Interior of National permanent top model with glass side panels in place. 7—The inside of the Lexington sedan looks comfortable. 8—The divided rear seat on the Studebaker speedster is a comfort feature not ordinarily found on popular priced cars

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It's Just Fun to Run the Modern Car

Makers Have Done Wonderful Work in Developing Ease of Operation

THERE is a thrill to operating any fine piece of mechanism—an airplane, a well balanced typewriter, the engine of the Twenty Century Limited or a motor car. Perhaps the operation of any of these may fall within the daily duties of the operator and so it might be called work. On the other hand there is a sense of satisfaction or pleasure in the work and the way the machine responds to the controls.

The 1923 car, with its added improvements and refined mechanism, is a pleasure to drive whether that driving be done as part of the daily routine or as recreation.

Car control has three essentials, starting, running and stopping. Coupled with these are visibility from the driver's seat and the knowledge that certain units are performing their functions properly as indicated on gages or dials.

Easy Starting

The 1923 car is greatly improved in all these respects. Cars are started now in the coldest weather with little difficulty. There is better provision for drawing a "firable" mixture into the cylinders.

The running control of the car consists in the ability easily to accelerate the speed, slow down, climb hills, back up and all the other things that a car has to do in the course of a run. The clutch, gearset and steering wheel are the prime factors in the running control and the brakes are to be depended upon for stopping. In addition to these prime factors of control, there must be means by which the driver is kept informed as to the operation of the various units. The oil must circulate, the generator must charge, the cooling system must be operating correctly and the speed of the car and the distance traveled should be observable. All these and other operations are taken care of in the instrument equipment and many of the vital operations are made as nearly automatic as possible so as to leave the driver free of complicated manipulation.

There is no great change in car starting methods within the year. Yet certain details have been refined that permit the driver to step from the curb to his seat and with the very minimum of exertion to start the engine. Principal among these refinements has been the grouping and positioning of switches and controls. No uniform system of placing these controls exists, yet the general lay-out of the mechanical controls has a great deal of effect upon the positioning of the starting controls. The aim has been to effect the operation of starting the car with the least possible number of motions on the part of the driver.

An inseparable part of the starting operation, especially in cold weather, is the choke or primer. The conditions under which the engine starts in cold weather are a good deal more difficult than most people realize, yet designers have been able to overcome these difficulties to such an extent that the average owner really does not know they exist.

Starting is successfully accomplished either by means of a carbureter choke or by a primer which either atomizes the fuel at a point between the carbureter and the combustion chamber or else applies heat from the storage battery to some point in the manifold system thereby vaporizing the liquid fuel and making the firing of the mixture more certain.

Among the 1923 cars using heating primers are Franklin and Lincoln. The Lincoln device is called the "Electrofog." In both cars the storage battery current is used to heat the gasoline to a point where it becomes a permanent gas or fog which is easily combustible when drawn into the combustion chamber and fired in the usual manner.



Some Day Maybe—

A YOUNG fellow will be able to sit back in the tonneau with his girl while his voice controls his car by means of some yet unheard of development of radio. Some day, MAYBE. In the meantime designers have gone so far in work along automatic control lines that the ease of operation of the present-day automobile is one of the wonders of the world. There are a few mechanically inclined owners who like to fuss with controls, but the average buyer of a car wants to have everything done for him but starting, steering and stopping. There is much in the equipment of the 1923 car to talk about in an interview with this average buyer. Are you UP on all these features of your car? Look in this story for hints that may help you make a sale some day.

Engine Temperature Control

Two other mechanical features that assist in reducing the time of the starting period are the use of shutters, either thermostatically or manually controlled, and the use of thermostats in the cooling system to allow for more rapid heating of the engine cylinders. Any one of these three control systems allows the water in the circulation system to get up to a normal operating heat in a very short time as compared with the time it would take were no such method provided.

Not only is the engine of the 1923 car easier to start, but it is also easier to control after it is running. During the past year engine controls have been simplified somewhat although there was no particular difficulty experienced before. Several cars, including Cadillac, Peerless, Reo and Jordan, have eliminated the conventional quadrant on top of the steering wheel. With the universal use of the foot throttle or accelerator with the one exception of the Ford, the use of the hand controls for spark and gas has decreased greatly and there is a tendency therefore to make them a little less conspicuous and to get them out of the way.

Automatic Spark Advance

In flat level country the spark lever is practically not touched after advancing the spark to the proper position following the starting of the engine. In hilly or mountainous country, the spark lever will be brought into action more frequently. Some cars use an automatic spark advance which at all times maintains the spark at the point of greatest engine operating efficiency. This means that instead of retarding the spark from time to time when the engine begins to knock, the car is simply driven at the desired speed and the automatic advance retards the spark when or even before conditions demand it. As soon as the need of a retarded spark has passed, the spark is again advanced to its maximum point. The great advantage of such a piece of mechanism is in the return advancement. When the spark is manually operated, the driver very often forgets

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to advance it again, with the result that the engine is operated for a long time with retarded spark thus losing power, using more fuel and heating the engine. Many 1923 cars are fitted with an automatic spark advance.

Less Driver Attention

Summing up the ease of control of the engine on the 1923 car, it might be said that attention on the part of the driver is reduced to a minimum. Oil, gasoline, water, spark and so on are all made to perform their functions with practically no attention on the part of the driver.

Aside from the engine controls, which are few in number and simple, the only other control elements in the car are the gearshift, which determines the gear ratio or power ratio between the engine and the rear wheels, the steering gear, the clutch and the brakes.

The clutch has not undergone any radical change in design and the only notable refinement is the rearrangement of some parts and the use of slightly different materials which give an easier engagement. The harsh clutches of some five years ago are not to be compared to the smooth acting units used today.

In general the foot pressure required to release the clutch is not so great as in previous years. This has been brought about either by decreasing the spring pressure, as in the case of the new Peerless, or by increasing the leverage between the throw-out and the pedal. It is more than likely that this gradual change has been brought about by the increase in the number of women drivers. The new Rickenbacker is fitted with a clutch designed to require lighter pedal pressure and yet give more even pressure to the friction surfaces. It is of the disk type.

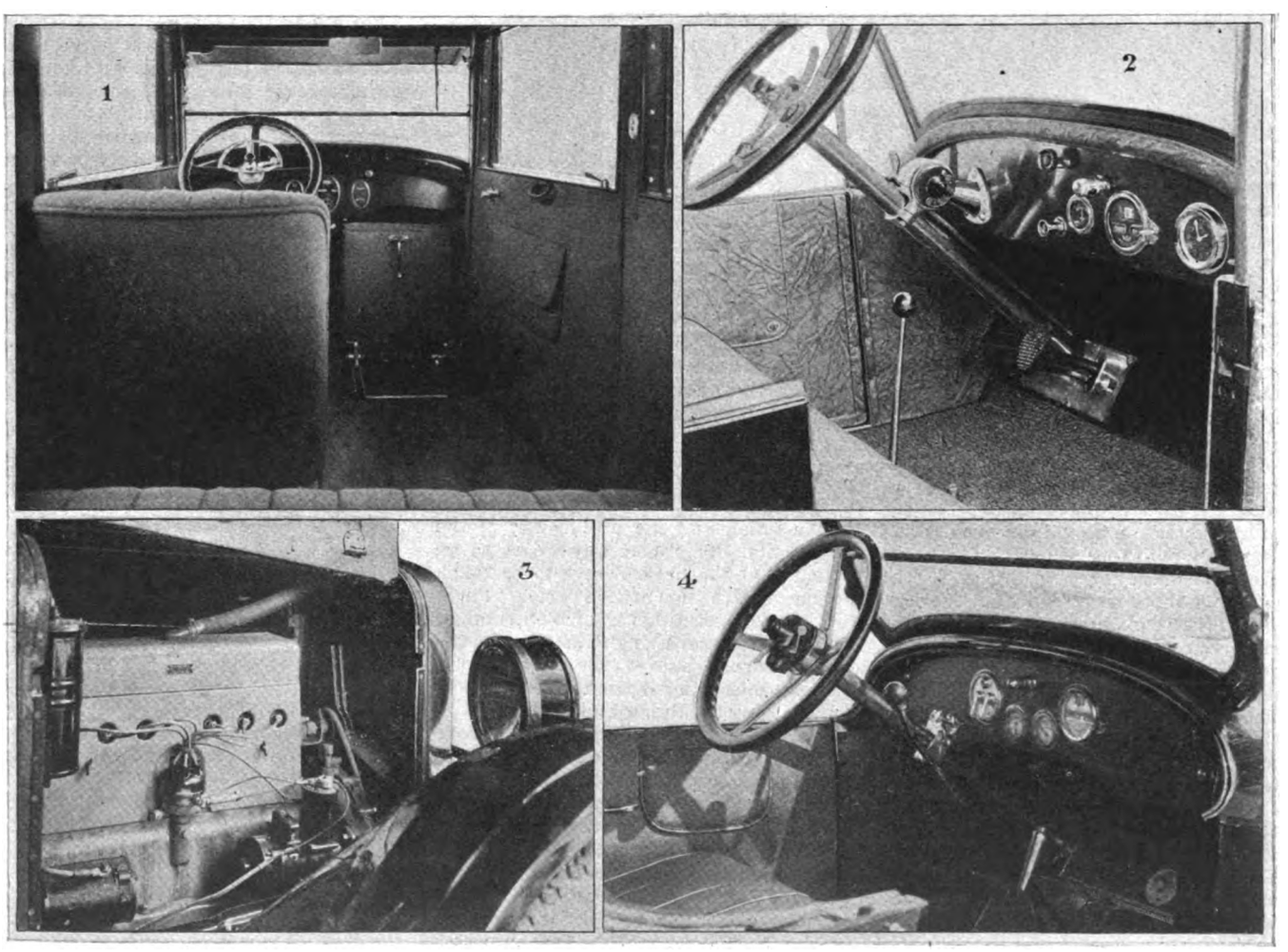
From the standpoint of ease of operation, little change has been made in gearshifts. In several instances slight changes have been made in the curve of the gear shift lever or in the length of the lever to bring it within more convenient reach of the driver. An instance of a change of this kind is seen in the Chevrolet Superior model in which the hand brake lever is placed behind the gearshift lever, thus giving more room in the driving compartment and by a change in the bend of the gear shift lever, it is so placed that the driver's hand does not come in contact with the instrument board.

Few changes are to be noted in the design of steering gears. Chevrolet has changed to a worm and screw type. In general the diameter of steering wheels has increased and 19 in. seems to be a pretty generally accepted size. Many of the steering rims are now corrugated on the inside for easier gripping, especially when the driver is wearing gloves. Some of this corrguating is even carried to the outside of the wheel. Consequently the car can be driven with a very light grip on the rim compared to the grip required on a perfectly smooth rim.

Larger Steering Wheels

The increase in diameter of the steering wheel not only allows a more comfortable position on the part of the driver, but also gives an increased leverage for steering, but this leverage is

Making the Car Easier and More Comfortable to Drive

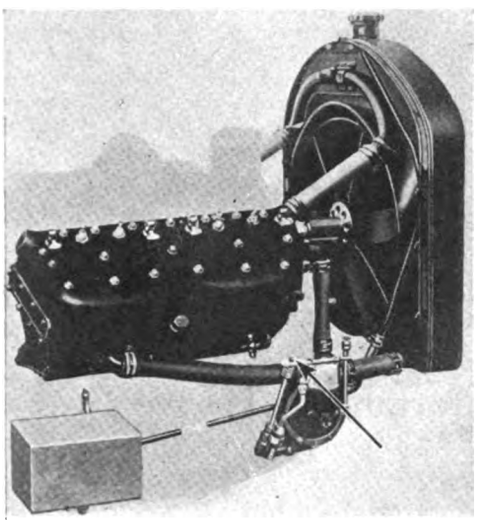


1—Looking from the rear seat of the Packard Single Six Coupe with its unusual range of visibility. A compact dash arrangement simplifies control of the units. 2—The Reo driving compartment with its convenient driving controls. The switches are on the steering column. 3—Oakland models have a reversible headlamp which can be turned to throw the beam on the engine in case of trouble at night. 4—The Oakland driving compartment. The gear shift lever is unusually long so that the driver has to reach only a few inches from the steering wheel. The dimmer switch is on the steering column

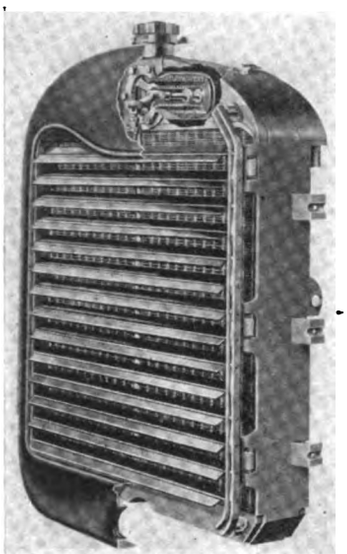
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still further increased in many cases by a still greater gear reduction in the gear itself, some manufacturers specifications calling for as much as 12 to 1 whereas previously the gear ratio on passenger cars did not go much above 9 as a maximum.

Another trend toward easier steering is in the increased use of anti-friction bearings in the steering pivot pins, especially on the heavier cars. Some manufacturers have adopted ball bearings at this point and others are using tapered roller bearings.



Cadillac uses a condenser for collecting and condensing alcohol vapor which is drawn back into the radiator when it cools



The Lincoln radiator shutters are operated by a Sylphon thermostat according to the engine temperature

A number of improvements in manufacturing methods are responsible for easier steering without increasing the gear ratio. Most all these methods have to do with better machine methods to reduce friction at a number of points. The alignment of king pins, steering arms and tie rod bolts is one element. The design and layout of the pitman arm is another. The polishing of balls and removing of the machined ridges goes far in preventing the elimination of a lubrication film with consequent friction. Where grease is used as a lubricant for the king pins, it is possible to put it in with sufficient pressure to reach all working parts.

Brake Designs Differ

Considerable diversification exists in the matter of brake design both as to the actual type of braking mechanism and the connecting linkage between the brake pedal and the brakes. It was at one time considered desirable to have brakes equalized and while theoretically this is desirable, it has been found that the unequalized brake operates practically as well as the equalized brake provided the adjustment is properly made on the unequalized brake. Among the equalized brakes, the cable type working through a pulley at the pedal end has gained considerable popularity, being found in the Reo and several other makes. Rolls Royce uses a segment of a differential which has given satisfaction over a considerable period of time. The series B Rickenbacker is also using a differential type equalizer.

The transmission brake which was one of the features of design brought to the front during 1921 has continued to hold the attention of makers. Several companies who did not go over to this form of brake at first have now done so. The Franklin is one of these. The advantage of the transmission brake is that it can be made quite small because it operates through the gear reduction of the rear axle and therefore has a leverage of around 3½ or 4 to 1.

The greatest amount of brake wear generally occurs during the first hundred miles of driving, due to the compression of the lining and the ironing out of the high spots. This generally wears to an extent that the brakes have to be taken up again at the end of this period. Packard has decreased this trouble by running the brakes on revolving drums before the car is turned out of the factory, the process smoothing down the high spots, compressing the lining and putting a polish on the lining much as would be done in the first hundred miles of actual service. It is said that this operation makes unnecessary the customary brake adjustment after the first few days.

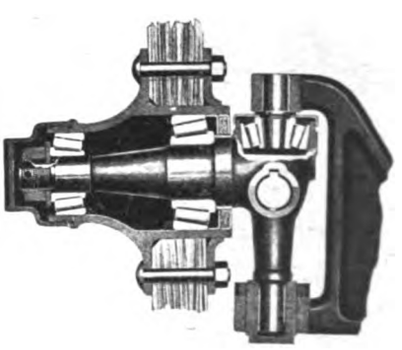
Practically all necessary indicating instruments are mounted on the dash today with the exception of the oil gage and the gasoline gage, few satisfactory methods having been developed so far by which these instruments can be so mounted. The new Buick has developed a satisfactory instrument for recording gasoline level at the dash and the new models are so fitted. While it has not been considered feasible to mount an oil level gage on the instrument board, a great majority of cars, especially in the higher price classes, have indicators showing that the oil is actually circulating. These answer the question of oil level in a way, because when the oil gets too low, it stops circulating.

It is universal practice to have an electrical indicator on the dash to show when the battery is being charged and when discharged. On most cars this takes the form of a zero center ammeter with a graduated scale both ways from the zero showing readings up to 20 or 30 amperes. Other indicators, such as that used on the Franklin, simply indicate charge or discharge. The Franklin, and some others, have a control whereby the charging of the battery can be discontinued during long runs in the daytime to prevent overcharging of the battery.

There is a distinct tendency toward the fitting of a clock on the dash even on the more moderate priced cars. On cars using pressure systems of fuel feed it is also customary to have a gage to indicate the tank pressure and where pressure lubrication systems are used the oil gage takes the form of a pressure gage indicating in pounds.

The Engine Temperature

For a long time there has been a growing tendency to consider a water meter as a necessary part of the equipment of the motor car because it gives a direct check on engine temperature and indicates at once any derangement in the cooling or lubrication systems in the engine. A previous disadvantage has been the inability of the driver to see it at night. A new type recently brought out by Moto-Meter allows the dial to be brought in front of the steering column. One or two other makes, notably the Borg & Beck heat indicator, have dials that can be mounted on the instrument board, thus giving the driver an opportunity of watching engine temperature at night as well as in the day time.



Roller bearings applied to the king pins reduce friction at this point. This is a Timken application

The subject of dash indicators would not be complete without a mention of the Whyte Motorcontrol now used on the Haynes model 75. This device places all the indicating instruments under one glass in a compact unit and also contains the spark and throttle levers, switches and horn button.

Greater provision has been made for driver visibility on the 1923 car than

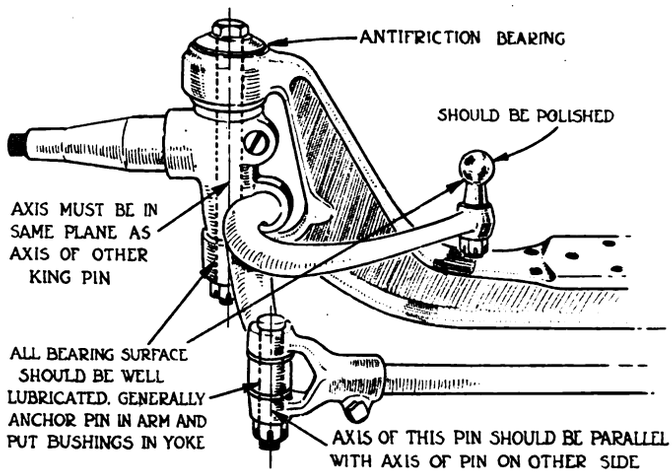
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ever before. On open models the windshield design is such that a clear vision is afforded all the way across and where a thick support is used this is often filled in with glass, as in the case of the Paige, to afford an even wider range of vision. On closed cars the thick post at the front on both sides has been cut down in size and so proportioned that the smallest section comes opposite the driver's eye. These so-called blind spots, both in front of the driver and behind, have received careful study.

The successful operation of the automatic windshield cleaner has been responsible for its being made part of the standard equipment of many cars. Other cars are often fitted with a manually operated type of windshield cleaner. The automatic types are operated either by a vacuum pump taking vacuum from the intake manifold or by a small electric motor which draws a very small amount of current from the battery.

The present practice of slanting the windshield, in addition to improving the appearance of the car, has also been a great help to better driving because it has eliminated the direct reflections of lights from behind. Instead of being thrown directly in the driver's eyes, these reflections are now thrown down.

With all these accessories, controls, instruments and conveniences within arm's reach, the 1923 car can be said to be really the acme of convenience. Within the driver's reach is the control of every piece of mechanism on the car that requires control. The recent development of the stoplight has now made it unnecessary for the driver to even extend his arm when he is about to come to a stop. That is automatically taken care of when he depresses the brake pedal which action lights the step light.



Requirements of easy operating steering gears as exemplified in the 1923 cars. Care in manufacture and assembly has made these improvements possible

1923 Cars Are Easier to Maintain

Little Jobs the Owner Can Do Have Been Made Easy in the New Cars

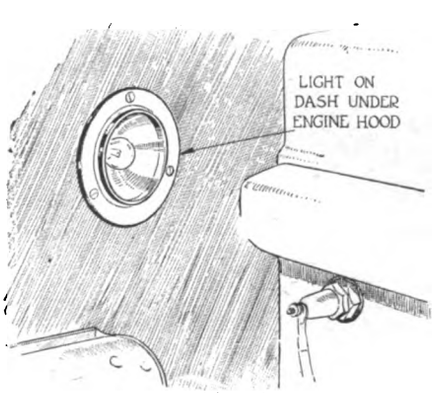
THE service an owner gets out of his car depends largely on the care he takes of it. If he lubricates it regularly, keeps it in proper adjustment and takes a real interest in its general welfare, he will realize the long life and performance that the manufacturer has built into it. However, if he neglects it, the car will operate poorly, repair costs will be heavy, and the car will depreciate rapidly.

Some owners depend entirely on the service station for maintenance work, and many dealers have established monthly inspection and adjustment services to meet their needs. There are other owners who get some measure of enjoyment out of tinkering around their cars and will do a certain amount of this maintenance work. How much of this work they will do depends on the time and trouble they are willing to spend on it and also on the convenience with which the various little jobs may be done. The easier it is made for an owner to do the little maintenance jobs that add so much to the life and performance of his car, the more likely he is to do them.

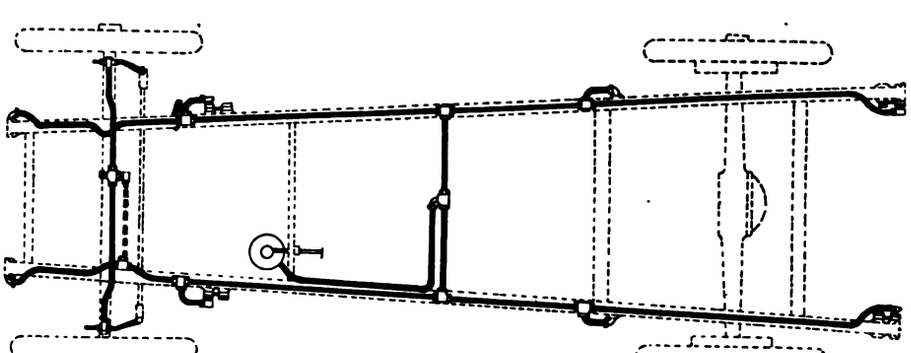
There are many features of the 1923 cars that make them easier for an owner to maintain. Such selling points are worth bringing out, especially in the case of the mechanically inclined prospect.

Chassis lubrication is a much simpler job than it used to be on many cars. The installation of pressure fittings for use with a grease or oil gun has taken much of the dirt and inconvenience out of this job. In the case of the Courier, chassis lubrication is taken care of from a central tank by means of oil ducts leading to the various wearing points. A manually operated plunger on the dash supplies the motive force to move the oil.

Some manufacturers have given considerable thought to the location of oil and grease cups with the idea of getting them into more accessible locations. The position of the cup on the top of the Buick steering gear is an example of this. Buick is also placing felt around

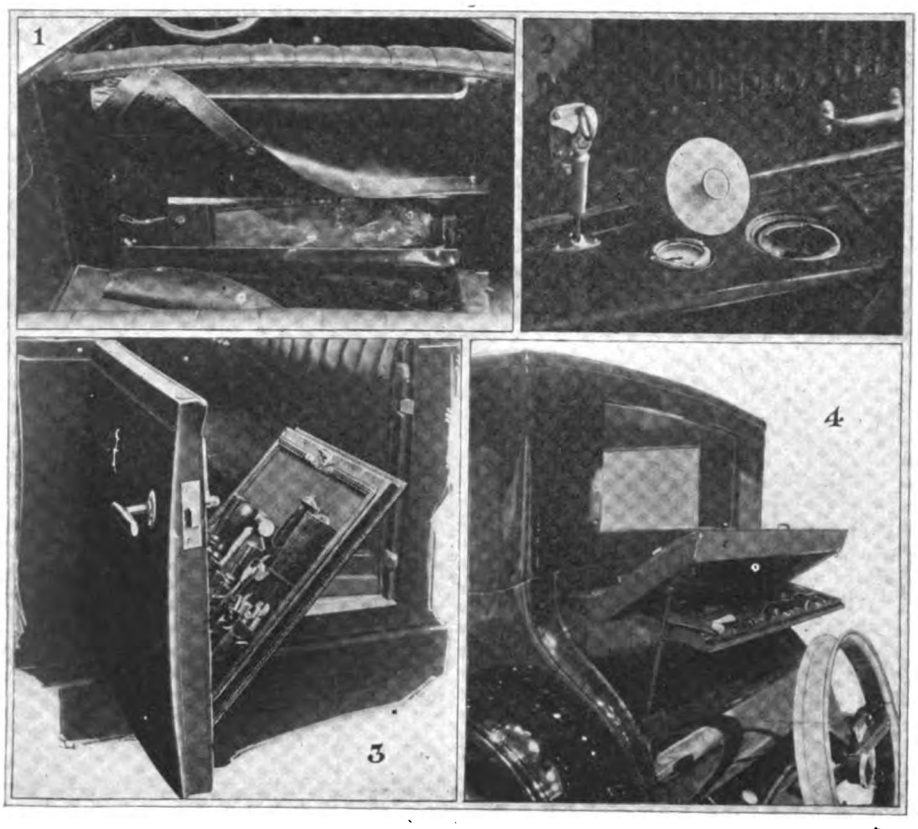


The National has a light under the hood to facilitate night repairs and adjustments



The new Courier chassis is lubricated by a central lubrication system. There are no grease or oil cups at any point on the chassis. The Kellogg system is used on this car

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1—*Mitchell provides two storage compartments in the back of the front seat —one for the right side curtains and the other for the left side curtains.* 2—*The oil filler and oil level gage are outside of the hood on the Standard Eight.* 3—*Several makers are using this method of storing tools.* 4—*Oldsmobile provides tool storage under the cover of the luggage compartment on the rear deck of one of its closed models*

the valve stems inside the springs. The felt acts as an oil reservoir and makes it necessary to lubricate at these points less frequently. Holes, with sliding covers, have been placed in the rocker arm covers so that the rocker arms may be oiled without removing the large cover.

Dort, in the new six cylinder job, has made the lubrication of the overhead valve mechanism automatic. This unusual construction, which eliminates maintenance at this point entirely, is described and illustrated on page 48 of this issue of Motor World.

On the Standard Eight, the engine oil supply may be replenished and the oil level gage read without lifting the hood. The dry sump system of lubrication is used in this engine. In this system, the oil supply is carried in an external reservoir and, in the case of the Standard, this reservoir is located on the frame side member. This makes it possible to get the oil filler opening and the oil gage outside of the hood.

As the quality of the fuel has gone down, difficulties due to crankcase dilution have increased. The unburned portion of the fuel has constantly been becoming a larger percentage of the total and consequently complete changes of crankcase oil are necessary more frequently. When the drain plug is located underneath the car, draining the oil is a dirty and disagreeable job. Some makers, including Marmon, Peerless, Velie and Rubay, have made provision for opening this plug from the top, which makes a much simpler job of changing the oil.

More Accessible Batteries

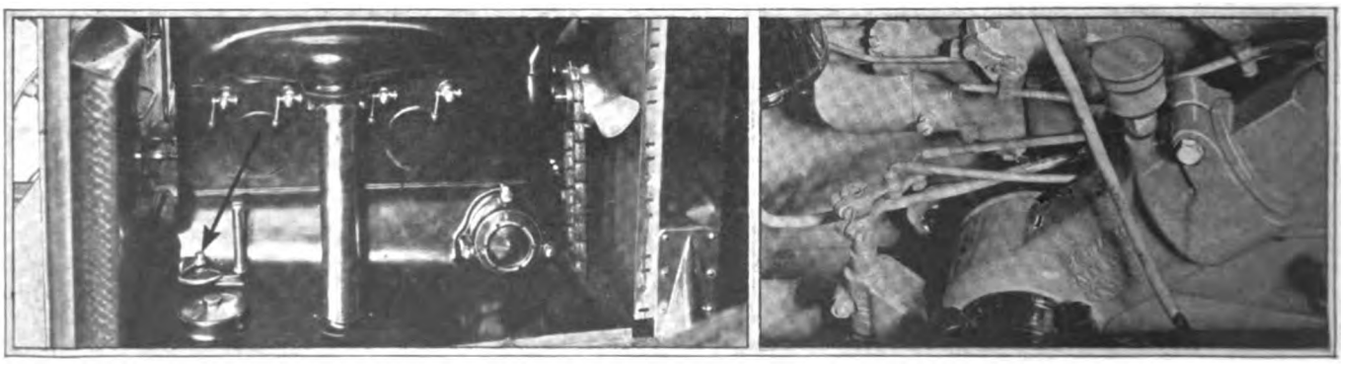
The accessibility of the battery has a very important effect on the care it gets. If it is hard to get at, the chances are it will not get water as often as it should. The most popular location seems to be under the front seat and this is a comparatively good one from the standpoint of accessibility. Batteries located between the splasher and the frame are also convenient for the owner to maintain although, in some cases, this does not permit a desirable installation from the service station viewpoint.

Brake adjustments are about the same as in other years. However, some makers are providing larger brakes which makes adjustments necessary less frequently. Packard is running the brakes in at the factory to avoid the adjustment that is usually necesary at the end of about 200 miles of operation.

Better Quality Tools

Tools supplied with cars as regular equipment are of better quality generally and the outfits are more complete. The provision for storing tools is also better in many cases. Peerless has a very neat tool compartment in the right front door and Oldsmobile has provided tool storage facilities in one of its closed models, in the cover of the luggage compartment on the rear deck.

The provisions for carrying side curtains have been materially improved. The practice of carrying them in the top has about disappeared. Some makers are storing them in the door pockets and others in the back of the rear seat. The arrangement on the Mitchell is unusually good. On this car there are two compartments in the rear of the front seat —one compartment for the left side curtains and the other for the right side curtains.



1—*The dilution of the oil in the crankcase by unburned fuel necessitates frequent changes of the oil. This condition results from the low grade fuel available at the present time. This operation is made comparatively easy by having the drain plug operated from above as otherwise it is necessary to crawl under the car to open it. The illustration shows this feature on the Rubay.* 2—*Lubrication on the Buick steering gear is made easier by turning the housing around so that the grease cup is on top. This new position also prevents the grease leaking out*

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They've Quit Juggling Motor Car Styles

Standardization of Appearance Will Help the Salesman in His Work

NOT so long ago, each year was marked by radical changes in body styles. Looking backward ten years, the 1913 bodies were enough different from those of 1912 to make the two readily distinguishable. The differences between the 1923 and the 1922 bodies, however, are so slight that, with few exceptions, the two are not easy to distinguish. In all general respects, this year's cars are similar in appearance to last year's. Such changes as have been made during the past year are for the most part of a minor nature and do not materially alter the general appearance of the car.

The changes that have been made, however, have all resulted in improved appearance, and have been factors in making the 1923 car the best appearing one that has ever been built. The fact that 1923 brings no radical body changes is an important selling point. It means that body styles are approaching standardization. The 1923 car may be bought with complete confidence that it will be stylish in appearance for several years to come.

Styles Are Stabilized

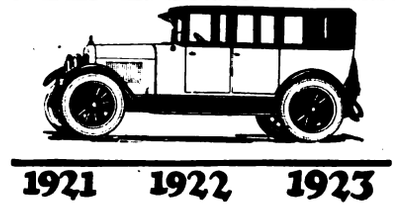
Style is of considerable importance to most prospects. People don't like to have the age of their cars advertised by the style of the bodies any more than they like to wear clothes that are out of style. Because, each year, the changes in body styles have become less and less noticeable, it is safe to predict that body styles for several years to come will be very similar to the current ones. Consequently, the 1923 car is an unusually good buy from the investment standpoint as it is not likely to depreciate because of changes in body styles that would make it old-fashioned in appearance.

Exceptions help to prove any rule. There are a few cars that present a radically changed appearance for 1923. The new models, however, are in every case in strict accord with the current styles. Where radical changes have been made in the body styles, the 1922 models, in most cases, varied materially in appearance from the prevailing styles of a year ago. Consequently the changes made in the 1923 models simply mean that these makers have given their cars a more conventional appearance.

The prevailing styles call for a long, low car. This is especially true of the open models although many of the closed cars possess these characteristics to a greater degree than ever before. Straight side rails, straight line hoods and somewhat rectangular radiators help give the 1923 cars the desired appearance of length and also give apparent reductions in height.

Speaking of Styles





MEN engaged in selling automobiles can turn to their advantage the fact that car appearance has become noticeably standardized. Radical changes from year to year are of the past, if developments of the past two or three years may be taken as a criterion. The public likes the long, low bodies now being produced, and the straight lines, which accentuate length and lowness, have also met with general approval. Consequently there is no reason for the sudden changes in design that marked the experimental stage of the industry. Dealers and salesmen can sell the fact that the stylish 1923 cars will be in style for several years to come. Buyers who go strong on appearance needn't worry about making an investment in a 1923 model; they won't be ashamed of it next year. What are the appearance features of your car? Why does it "look like the money"? What are its strong points of good looks that have been in development for three or four years to the point where they are going to stay put? In view of the fact that appearance counts so much with some buyers, the subject is worth study, isn't it?

The use of the high radiator with a practically horizontal hood line is now almost universal. In practically every case, the hood line and the cowl line are continuous. Dodge, Chevrolet and Peerless have made changes to secure this effect. In the case of Dodge and Chevrolet, the radiator shape is about the same except for the greater height. In the case of Peerless, the shape of the radiator is entirely changed.

Straight Lines Predominate

The long straight lines of the prevailing body styles naturally give a low appearance. In some cases, the overall heights of the bodies have undergone actual reductions. The tops of the side frame members on the Buick Six are three inches lower than in former models. This was accomplished by a change in the spring suspension. Peerless has made the wheelbase three inches longer and has reduced the wheel sizes, both changes making for more stylish appearance. Small wheels and tires are also in very great favor. There are only four makers using the 35-in. size and eight using the 34-in. size. Practically all the manufacturers are equipping with tires of 33 in. or less diameter.

There are a few other changes affecting appearance that have been more or less general. The drum type head lamp is used almost universally on the 1923 models. Nickel trim is being more widely used and disk wheels have attained considerable popularity. Not considering sport models for the present, equipment is more complete and this is especially true on the closed models. Consequently the car buyer has less money to spend for additional equipment that is very nearly essential to the operation of the car. And this equipment, which consists of Moto-Meters, bumpers, sunshades, etc., adds materially to the general appearance of the car. The California top has also gained in favor.

Permanent Top Popular

The phaeton with a permanent top will be seen in considerably greater numbers than ever before. Starting several years ago as a California top, this feature has proved very popular. At present some of the types are known as Pasadena tops. The price of these permanent top phaetons is in between the regular phaeton and the sedan or coach, it has nearly all the advantages of the really closed type as well as the usual advantages of the open car and in addition such conveniences as dome lamps can be used which are not possible with the collapsible tops.

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Inasmuch as practically nobody ever drives with a top down either in warm or cold weather, there is no reason why the permanent type top should not be one of the popular models in 1923. The weather proof features and convenience of sliding windows as against curtains should make it appeal to the prospect if nothing else. The new Rickenbacker Series B features a permanent top job.

The two outstanding developments of the year are the sport models and the low-priced two door sedan jobs. The appeal of the sport model results largely from its appearance. The appeal of the low-priced two door sedan is, of course, mostly from the standpoint of its utility, but the manufacturers have made this type very attractive for its appearance also.

The sport models have some advantages from the standpoint of comfort and utility resulting from the more complete equipment, but people buy them primarily because of their snappier appearance. These models are painted in brighter colors and they are fitted out with a thorough equipment of accessories, many of which are finished in nickel. Sport models of the roadster and phaeton types are now being produced by about 50 different manufacturers.

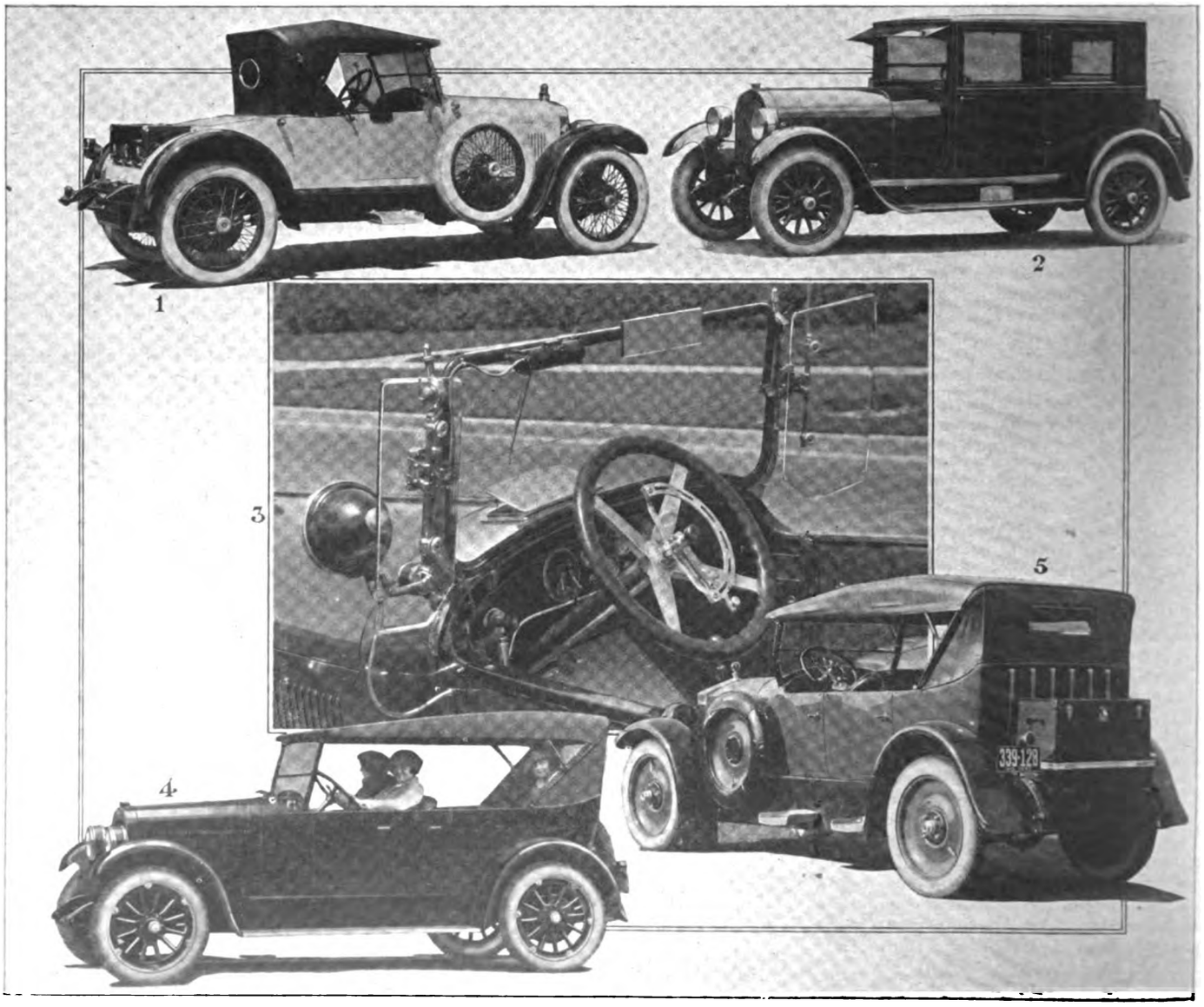
Sport Models Better Looking

Many of the early sport models had individual aluminum steps, but the running board is now being used more generally. Polished aluminum scuff plates are frequently fitted on the splasher and these simulate the appearance of the steps. A trunk and trunk carrier are frequently included in the equipment. Generally this equipment is located in the rear as on the Nash, and in such cases polished trunk bars are mounted on the rear of the body to protect the finish and also to improve the appearance. Nash mounts the spare wheel on the runningboard forward of the door to the driver's compartment. Auburn carries the spare at the rear and mounts the trunk just in back of the left front fender.

Disk wheels are usually furnished as regular equipment on sport models. Other equipment includes cowl ventilators, windshield wings, front and rear bumpers, Moto-Meters, smoking sets, rear vision mirrors, foot rests, robe rails and the like.

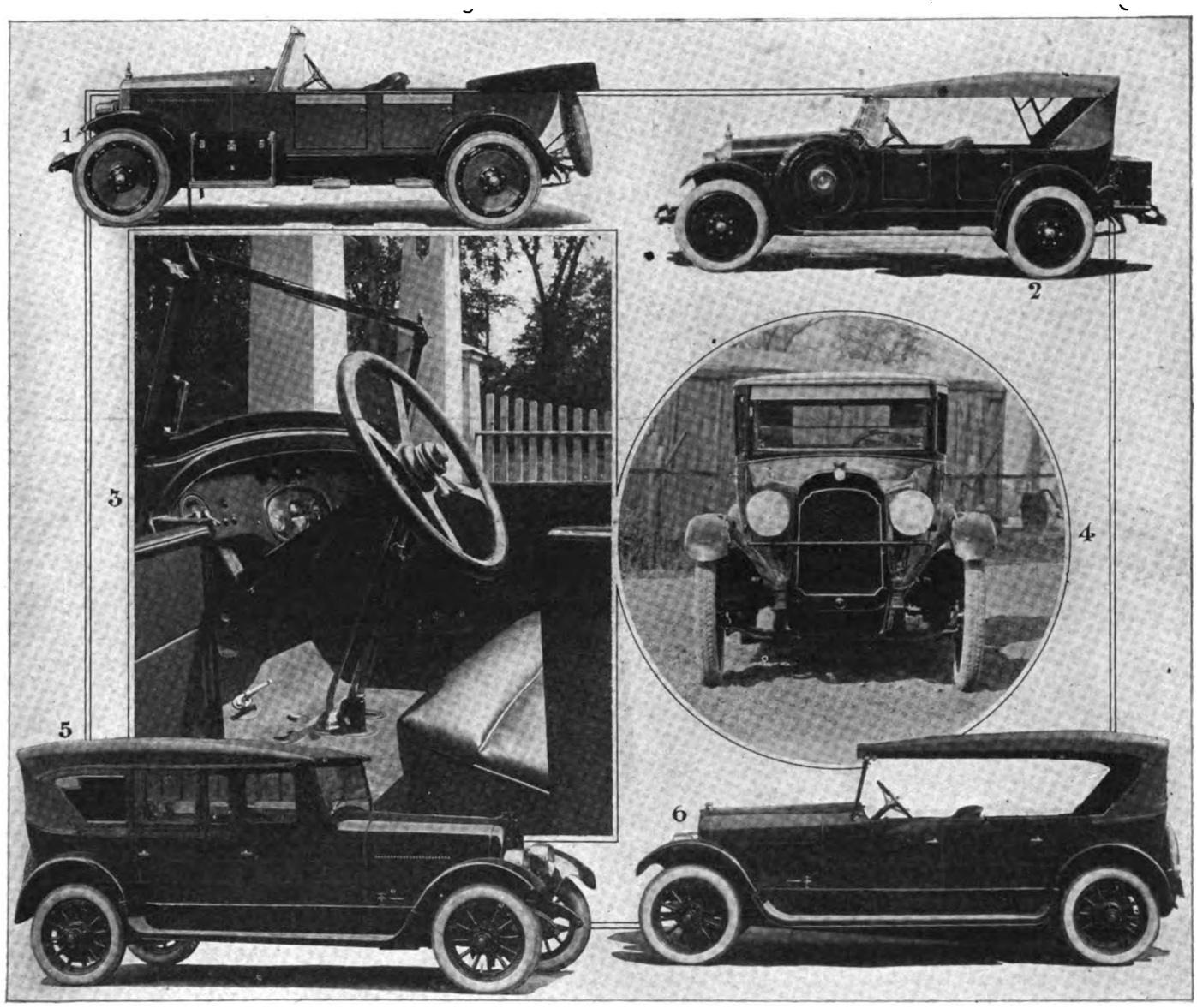
The bodies are usually narrower in the rear than the standard types and the use of wheel housings is obviated. Fenders are fastened flat against the body sides. Lake (purplish red) and

Straight Lines Feature 1923 Body Styles



1—The H. C. S. roadster—the trunk is in addition to the luggage compartment in the rear deck. By mounting the spare wheels forward of the cowl, the trunk is made readily accessible. 2—This Westcott two-door sedan type is typical of the lower priced closed body models. 3—Equipment is generally more complete. The illustration shows the conveniences on the Stutz windshield. 4—This Cleveland phaeton is typical of current open body styles. 5—Rear view of Moon sport showing trunk, trunk rack and polished metal guards on rear of body

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Straight Hood Lines Find Universal Favor

Practically all makers have adopted the high radiator with the hood line running clear back to the windshield. 1—Auburn sport model with trunk forward of the cowl. Disk wheels are typical of this body type. 2—Nash sport model with spare wheel forward and trunk rack at rear. Scuff plates on splasher simulate individual steps. 3—Simple controls and clean dashboards improve appearance. The illustration shows the Jordan. 4—Buick, Studebaker and Chalmers are using a bright metal bead around the opening in the radiator shell. 5 and 6—Marmon phaeton with permanent top with and without glass side panels

black, and blue and black are the predominating sport body colors. These offer a very excellent background for the extensive nickel trimmings used. Striping is frequently employed.

The low-priced closed cars are almost without exception of the close-coupled variety. To many people, these short closed bodies are much more attractive than the regular four-door sedan type. The overhang at the rear is entirely eliminated in this body style, and the proportions are unusually pleasing. The doors are wide and the windows are broad, both of which characteristics improve the appearance of the car.

This two door sedan type, which is known variously as coach, brougham, etc., have very fine proportions. They are longer than a coupe and shorter than a sedan. The wide doors and large quarter panes improve the lines generally. Some makers provide a trunk and trunk rack to finish the body off at the rear. Curves are avoided in these bodies to reduce production costs, but with prevailing body styles this is an advantage from the standpoint of appearance as straight line bodies are most popular. Something has been sacrificed in interior finish and appearance in this body type to secure low price, but at that these bodies are decidedly attractive.

The all steel construction used by Dodge Brothers on the business coupe and sedan has advantages from the appearance standpoint. This construction permits a baked on finish that should be very durable. This, of course, means that this car will retain its bright finish for a longer period. There has been a general improvement in painting methods which should result in more durable finishes and this fact will contribute towards making the 1923 car better looking.

Disk wheels have gained considerably in favor during the past year. Many people like their appearance better than other types of wheels, and they are easier to keep clean.

Getting back to the appearance of the new cars generally, the general cleaning up of the instrument boards is a noteworthy development in the 1923 models. The speedometer makers have provided combination units in attractive casings which eliminate crowding by placing several instruments under one glass. These combinations sometimes include speedometer, clock, oil gage and ammeter, and in other cases only the speedometer and the clock.

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Operating the New Cars Is Less Expensive

Better Materials and Finish, Improved Accessibility and Lesser Fuel and Storage Costs

EVERY person in the country wants an automobile. Only two things stand in the way of the consummation of this desire, the ability to pay for it and the ability to pay for running and keeping it. Prospects may be roughly divided into three classes:

1—Well-to-do, with whom the first cost and upkeep are immaterial.
2—In comfortable circumstances, able to pay a moderate cost, but have to be economical about upkeep.
3—Not so well off, to whom the first cost is something of an obstacle and cost of upkeep also important.

The people who buy the most cars in this country are in the last two groups and the cost of operation is important to both. During the latter part of the world war and in the period of high prices following it, the cost of upkeep rose to such a point that many people who were able to pay for a car were unable to keep it. The idea still persists in the minds of many that these conditions still prevail.

To the prospect's question, "How much does it cost to operate?" the salesman will have to answer not so much in dollars, but in comparison with costs before and during the war.

General Items of Expense

There are nine general items of expense in the operation of a passenger car. In the order of their size they are:

Depreciation
Gasoline
Storage
Repairs
Tires
Oil
Insurance
License fees and taxes
New equipment.

It will cost less to operate the 1923 car than earlier cars. This reduction is brought about in some cases by changes within the car itself and, in other cases, by changes in outside conditions.

Depreciation has always been one of the biggest items of expense, and this will be reduced considerably in the 1923 car. The depreciation of the car is the difference between the price paid and the present value. Many factors in the car itself help to make this difference less; in other words, to increase the value of the used car. Better paint jobs mean a great deal in improving appearance, which figures materially in selling a used car. Improved methods of painting and the increasing use of steel bodies with baked on enamel or japan make lasting jobs.

Another feature in the reduction of depreciation is the tendency to retain body and chassis lines in new models. The most rapid depreciation occurs when makers turn out new models with entirely different looking bodies or chassis. There is a decided tendency in the new cars to retain the general features of the 1922 cars, and it is quite likely there will be less and less change as time goes on.

Reducing Depreciation

More durable materials and better workmanship mean longer life, and the longer the life of the car, the less depreciation has to be written off each year. Better facilities are also provided for owner upkeep. This means that the owner, by proper lubrication, adjustment and minor repair, can keep the vehicle almost as good as new for an indefinite length of time, so far as operating conditions are concerned.

The gasoline bill for the 1923 car is going to be considerably lower. Improvements made within the last two years have made it possible to burn the present day low grade fuels more nearly completely and under all conditions, and this results in increased gasoline mileage. Manifold hot spots, air heaters, improved carbureter designs and a study of the whole combustion problem have contributed largely to the better burning of fuel. The control of the engine temperature by shutters, thermostats, thermo-syphon systems or radiator covers in cold weather is responsible for warmer engines, which are able to operate much more efficiently than cold engines. Another factor entering into the reduction of fuel costs is the lower price of gasoline, which is to-day some 10 to 15 per cent less than it was a year ago. It is not safe to predict that gasoline will be lower in price, but it is fairly safe to say that it will not go higher than it is now.

The storage of the car for a time was a considerable element in the expense of upkeep. This, like all housing problems, was an outgrowth of the war and caused largely by the diverting of building materials and labor to war-time enterprises. The building of both public and private garages fell far behind and costs accordingly went up. With the resumption of building and the lowering in price of building materials, it is now possible to build a private garage for a moderate sum, and the building of public garages has been going on at such a rate that the shortage of storage space is rapidly being overcome and storage prices have dropped to a point where they are quite reasonable, in fact, only slightly higher in most cases than before the war.

Repairs on the average represent only about 8 to 10 per cent of the cost of upkeep. Repair costs have come down due to the reduction in price of parts and the more economical methods used in service stations.

Low Tire Expense

Tire expense is reduced more in proportion than any other item of upkeep. Tires are cheaper now than ever before in the history of the automobile. In addition to this, the general use of the cord tire has increased tire mileage from an average of 4000 or 5000 to upwards of 12,000. The cord tires cost no more now than the fabric tires did before the war, and the fabric tires, with less mileage, cost even less.

Oil and grease are not subjects of reduced costs and should not be. The price of oil is somewhat lower than it was, but it takes just as much oil and grease to properly lubricate the car as it ever did, and to feature a greater number of miles to the gallon of oil is simply preaching ruination of the mechanism. The cost of lubrication is a small proportion of the total cost.

Insurance, license fees and taxes are in general about the same as they have been in the past. Many changes in the wiring, addition of locks and fire prevention features have made it possible to secure better ratings from the insurance companies.

The Cost Per Mile

PASSENGER cars can be operated to-day at a cost of from 8 cents a mile upwards, the lower prices applying, of course, to the lighter and lower priced cars. This means that with more than two people in the car, the cost of transportation is on a par with railroad transportation. In some cases the cost is less. Lower costs in the car itself, its parts and service and lower prices of outside supplies necessary to car operation have brought about this reduction in the cost of running the car.

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80 Car Makers to Exhibit in the National Shows

List Shows a Reduction of Twelve from Last Year
The Complete List for Both Shows

EIGHTY car makers have been allotted spaces in the New York and Chicago shows. This is twelve less than were registered for these shows a year ago. The corporate names of the exhibitors, their addresses and the cars they make are given, also whether they exhibit at New York, Chicago, or both shows.

Name	Make	N.Y.	Chi.
American Motors Corp. of N. J., Plainfield, N. J.	American	x	x
Anderson Motor Co., Rock Hill, S. C.	Anderson	x	x
Apperson Bros. Automobile Co., Kokomo, Ind.	Apperson	x	x
Auburn Automobile Co., Auburn, Ind.	Auburn	x	x
Barley Motor Car Co., Kalamazoo, Mich.	Roamer	x	x
Bournonville Rotary Valve Motor Co., Hoboken, N. J.	Rotary Six	x	x
Buick Motor Co., Flint, Mich.	Buick	x	x
Cadillac Motor Car Co., Detroit	Cadillac	x	x
J. I. Case T. M. Co., Racine, Wis.	Case	x	x
Chalmers Motor Car Co., Detroit	Chalmers	x	x
Chandler Motor Car Co., Cleveland	Chandler	x	x
Chevrolet Motor Co., Detroit	Chevrolet	x	x
Cleveland Automobile Co., Cleveland	Cleveland	x	x
Climber Motor Corp., Little Rock, Ark.	Climber		x
Cole Motor Car Co., Indianapolis	Cole	x	x
Columbia Motors Co., Detroit	Columbia	x	x
Cortland Cart & Carriage Co., Sidney, N. Y.	Hatfield	x	
Courier Motors Co., Sandusky, Ohio	Courier	x	x
Crawford Automobile Co., Hagerstown, Md.	Crawford, Dagmar	x	x
G. W. Davis M. C. Co., Richmond, Ind.	Davis	x	x
Detroit Electric Car Co., Detroit	Detroit Electric		x
Dodge Brothers Co., Detroit	Dodge Brothers	x	x
Dorris Motor Car Co., St. Louis	Dorris	x	x
Dort Motor Car Co., Flint, Mich.	Dort	x	x
Durant Motor Company of N. Y., Inc., Long Island City, N. Y.	Durant	x	x
Earl Motors, Inc., Jackson, Mich.	Earl	x	x
Elgin Motor Car Corp., Argo, Ill.	Elgin	x	x
Elkart Motor Car Co., Elkart, Ind.	Elcar	x	x
Essex Motors, Detroit	Essex	x	x
H. H. Franklin Mfg. Co., Syracuse, N. Y.	Franklin	x	x
Gardner Motor Co., Inc., St. Louis	Gardner	x	x
Gray Motor Corp., Detroit	Gray	x	x
H. C. S. Motor Car Co., Indianapolis	H. C. S.	x	x
Handley Motors, Inc., Kalamazoo, Mich.	Handley Knight	x	x
Haynes Automobile Co., Kokomo, Ind.	Haynes	x	x
Hudson Motor Car Co., Detroit	Hudson	x	x
Hupp Motor Car Corp., Detroit	Hupmobile	x	x
Jordan Motor Car Co., Inc., Cleveland	Jordan	x	x
King Motor Car Co., Inc., Detroit	King	x	x
Kissel Motor Car Co., Hartford, Wis.	Kissel	x	x
Lafayette Motors Corp., Indianapolis	Lafayette	x	x
Lexington Motor Co., Connersville	Lexington	x	x
Liberty Motor Car Co., Detroit	Liberty	x	x
Lincoln Motor Co., Detroit	Lincoln	x	x
Locomobile Co., Bridgeport, Conn.	Locomobile	x	x
McFarlan Motor Corp., Connersville, Ind.	McFarlan	x	x
Maxwell Motors Corp., Detroit	Maxwell	x	x
Mercer Motors Co., Trenton, N. J.	Mercer	x	x
Milburn Wagon Co., Toledo, Ohio	Milburn Elec.		x
Mitchell Motors Co., Inc., Racine, Wis.	Mitchell	x	x
Moon Motor Car Co., St. Louis	Moon	x	x
Nash Motors Co., Kenosha, Wis.	Nash	x	x
National Motor Car & Vehicle Corp., Indianapolis	National	x	x
Noma Motors of N. Y., New York City	Noma	x	
Nordyke & Marmon Co., Indianapolis	Marmon	x	x
Oakland Motor Car Co., Pontiac, Mich.	Oakland	x	x
Olds Motor Works, Lansing, Mich.	Oldsmobile	x	x
Packard Motor Car Co., Detroit	Packard	x	x
Paige-Detroit Motor Car Co., Detroit	Paige & Jewett	x	x
W. A. Paterson Co., Flint, Mich.	Paterson	x	x
Peerless Motor Car Co., Cleveland	Peerless	x	x
Pierce-Arrow Motor Car Co., Buffalo, N. Y.	Pierce-Arrow	x	x
Pilot Motor Car Co., Richmond, Ind.	Pilot	x	x
Premier Motor Corp., Indianapolis	Premier	x	x
Rauch & Lang, Inc, Chicopee Falls	Rauch-Lang	x	x
Reo Motor Car Co., Lansing, Mich.	Reo	x	x
Rickenbacker Motor Co., Detroit	Rickenbacker	x	x
Root & Van Dervoort Engineering Co., E. Moline, Ill.	R. & V. Knight	x	x
Sayers & Scoville Co., Cincinnati	Sayers		x
Stanley Motor Carriage Co., Newton, Mass.	Stanley	x	x
Star Motors, Inc., New York City	Star	x	x
F. B. Stearns Co., Cleveland, Ohio	Stearns	x	x
Stephens Motor Car Co., Inc., Moline, Ill.	Stephens	x	x
Studebaker Corp., So. Bend, Ind.	Studebaker	x	x
Stutz Motor Car Co. of Am., Inc., Indianapolis	Stutz	x	x
Velie Motors Corp., Moline, Ill.	Velie	x	x
Westcott Motor Car Co., Springfield, Ohio	Westcott	x	x
C. H. Wills & Co., Marysville, Mich.	Wills Ste. Clair	x	x
Willys-Overland, Inc., Toledo, Ohio	Overland, Willys-Knight	x	x
Yellow Cab Mfg. Co., Chicago	Ambassador	x	x

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More Than 300 Equipment Makers Will Show New Products

DEMANDS for space in the equipment sections of the New York and Chicago shows again exceeded the available supply. More than three hundred manufacturers were accommodated, however, and the section promises to be widely representative of this part of the industry.

Name	N. Y.	Chi.
A		
A. C. Spark Plug Co., Flint, Mich.	x	x
Alexander Mirroscope Co., Inc., Portchester, N. Y.	x	
Alfon E. Bahr Co., Chicago.		x
Alloy Foundry & Machine Corp., New Rochelle, N. Y.	x	
Aluminum Die-Casting Corp., Garwood, N. J.	x	
American Auto Lamp Co., New York.	x	
American Automatic Devices Co., Chicago.		x
American Bronze Corp., Berwyn, Pa.	x	x
American Chain Co., Inc., Bridgeport, Conn.	x	x
American Chemical Paint Co., Philadelphia.	x	
American Federal Wheel Co., Chicago.		x
American Pump & Tank Co., New York.	x	
American Taximeter Co., New York.	x	x
Apex Electric Mfg. Co., New York.	x	
Apollo Magneto Corp., Kingston, N. Y.	x	x
Arkay Sales Co., New York.	x	
Arrow-Grip Mfg. Co., Inc., Glens Falls, N. Y.	x	x
Art Metal Works, Inc., Newark, N. J.		x
Asch & Co., Inc., New York	x	x
Austin-Brandmiser Corp., New York.	x	
Auto Bed Camp Mfg. Co., New York.	x	
Auto Hone Co., Inc., Buffalo, N. Y.	x	x
Auto Metal Products Co., Inc., New York.	x	
Auto Pedal Pad Co., Inc., New York.	x	
Auto Specialties Mfg. Co., St. Joseph, Mich.	x	x
Auto Table Co., Inc., Richmond Hill, N. Y.	x	x
Automotive Gear Works, Atlanta, Ga.		x
Automotive Parts Mfg. Co., New York.	x	
Autoquip Mfg. Co., Inc., Rochester, N. Y.	x	
B		
B. G. Corp., New York.	x	
Barnes Foundry Co., Inc., New York.	x	
Barnes, Wallace Co., Bristol, Conn.	x	
Bassick Mfg. Co., Chicago.	x	x
Baush Machine Tool Co., Springfield, Mass.	x	
Beans Spring Co., Massillon, Ohio.	x	
Becker Bros., Inc., Chicago	x	x
Bell Safety Bumper Co., Inc., Brooklyn.	x	
Beneke & Kropf Mfg. Co., Chicago.	x	x
Benzer Corp., Brooklyn	x	
Berg Auto Trunk & Specialties Co., Long Island City.	x	
Bethlehem Spark Plug Co., Inc., Bethlehem, Pa.	x	x
Biflex Products Co., Waukegan, Ill.	x	x
Blueblaze Motor Specialties Corp., Long Island City, N. Y.	x	
Borg & Beck Co., Chicago.		x
Bowen Products Corp., Auburn, N. Y.	x	x
Boyle Valve Co., Chicago.		x
Brewer-Titchener Corp., Cortland, N. Y.	x	x
Bridgeport Coach Lace Co., Bridgeport, Conn.		x
Britton Auto Products Co., Inc., New York.	x	x
Brown-Lipe-Gear Co., Syracuse, N. Y.	x	x
Brunner, Mfg. Co., Utica, N. Y.	x	
Buda Co., Harvey, Ill.		x
Edw. G. Budd Mfg. Co., Philadelphia	x	
Budd Wheel Co., Philadelphia.	x	x
Bunting Brass & Bronze Co., Toledo, Ohio.	x	x
Bullard Machine Tool Co., Bridgeport, Conn.	x	x
Burpee-Johnson Co., Indianapolis.	x	x
Byrne, Kingston & Co., Kokomo, Ind.	x	x
C		
C. G. Spring Co., Kalamazoo, Mich.	x	x
Camerson Mfg. & Sales Corp., New York.	x	x
Carr Fastener Co., Cambridge, Mass.	x	
Cat Automotive Parts, Detroit.		x
Champion Mfg. Co., Chicago.		x
Champion Pneumatic Machinery Co., Chicago.	x	x
Champion Products Mfg. Co., Newark, N. J.	x	
Chicago Tool & Kit Mfg. Co., Chicago.		x
Clark Equip. Co., Buchanan, Mich.	x	x
Clark-Turner Piston Co., Los Angeles.	x	x
Cleveland Pneumatic Tool Co., Cleveland.	x	x
Continental Motors Corp., Detroit, Mich.	x	x
Cord Tire Corp., Chester, W. Va.		x
Coulter Mfg. Co., Inc., Buffalo, N.Y.		x
Courtesy Service & Sales Co., Chicago.		x
Covert Gear Co., Inc., Lockport, N. Y.	x	
C. Cowles & Co., New Haven, Conn.	x	x
Cox Brass Mfg. Co., Albany, N. Y.	x	x
Cuno Engineering Corp., Meriden, Conn	x	
Curtis Pneumatic Machinery Co., St. Louis.		x
D		
Dalton & Balch, Chicago.	x	x
Ralph E. DeCastro, New York.	x	
Deeks Motor Products, Inc., Exeter Boro., Pa.		x
B. G. Desmond Mfg. Corp., Long Island City, N. Y.	x	
A. J. Detlaff Co., Detroit.		x
Detroit Motor Casting Co., Detroit.	x	x
Dickerson Auto Appliance Co., Warrenton, Va.	x	x
Dickinson & Co., Inc., Minneapolis.	x	x
Disco Electrical Mfg. Co., Detroit.		x
Doehler Die-Casting Co., Brooklyn, N. Y.	x	x
Dominion Asbestos & Rubber Corp., New York.	x	
Double Seal Ring Co., Chicago.	x	x
Doughty Mfg. Co., Inc., New York.	x	
C. A. Dunham, Chicago.		x
E		
E. A. Laboratories, Inc., Brooklyn, N. Y.	x	
Eagle-Ottawa Leather Co., Grand Haven, Mich.	x	x
Eberhard Mfg. Co., Cleveland, Ohio	x	x
Eclipse Machine Co., Elmira, N. Y.	x	x
Ensign Carbureter Co., Chicago.	x	x
Evans & Ould, New York.	x	x
Everyday Piston Ring Co., E. Rochester, N. Y.	x	x
F		
Fan Flame Spark Plug Co., Yonkers, N. Y.	x	
Wm. M. Farans, New York.	x	
J. H. Faw Co., New York.	x	
Fitzgerald Mfg. Co., Torrington, Conn.	x	x
Flash Sales Corp., Chicago.		x
Folberth Auto Specialties Co. Cleveland.	x	x
Foster Machine Co., Elkhart, Ind.	x	x
Franklin Die-Casting Corp., Syracuse, N. Y.	x	
Fulton Co., Knoxville, Tenn.	x	
G		
Gabriel Mfg. Co., Cleveland.	x	x
Gasco Mfg. Co., Lancaster, Pa.	x	
General Automotive Corp., Chicago.	x	x
General Electric Co., Schenectady, N. Y.	x	x
General Safety Signal Co., Newark, N. J.	x	
Gearo Mfg. Co., Quincy, Ill.		x
L. H. Gilmer Co., Tacony, Pa.	x	
Gits Bros. Mfg. Co., Chicago.		x
Globe Machine & Stamping Co., Cleveland.	x	
Globe Mfg. Co., Battle Creek, Mich.		x
Greengfield Tap & Die Corp., Greenfield, Mass.	x	
H		
C. M. Hall Lamp Co., Kenosha, Wis.		x
L. P Hallady Co., Decatur, Ill.		x
Edw. V. Hartford, Inc., New York.	x	x
Hartford Battery Mfg. Co., Milldale, Conn.	x	
Hartland Co., Inc., New York.	x	
Robt. H. Hassler, Inc., Indianapolis, Ind.	x	x
Hayes Mfg. Co., Detroit.	x	x
Hayes Wheel Co., Jackson, Mich.	x	x

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Name	N. Y.	Chi.
...ald Machine Co., Worcester, Mass.	x	x
Heinze Electric Co., Lowell, Mass.	x	x
Heintz Mfg. Co., Philadelphia.	x	
Hercules Bumper Corp., Detroit.		x
Hercules Motor Mfg. Co., Canton, Ohio.	x	x
Hobson Oil Co., Inc., New York.	x	
Ernest Holmes Co., Chattanooga, Tenn.	x	x
Geo. L. Holmes, New York.	x	
John C. Hoof & Co., Chicago.		x
Hopkins Mfg. Co., Hanover, Pa.	x	x
Houdaille Co., Buffalo, N. Y.	x	
Houpert Machine Co., Long Island City, N. Y.	x	x
I		
Imperial Brass Mfg. Co., Chicago.		x
Inland Products Co., Inc., St. Louis.	x	
International Nickel Co., New York.	x	
J		
J. & B. Mfg. Co., Pittsfield, Mass.	x	x
Jennings Corp., Pittsburgh, Pa.	x	
Johnson Auto Lock Co., St. Louis.	x	x
C. N. & F. W. Jonas, Chicago.	x	x
K		
K-W Ignition Co., Cleveland.	x	x
Kant-Rust Products Corp., Rahway, N. J.	x	
Kant-Skore Piston Co., Cincinnati, Ohio.	x	x
L. Kellenberger & Co., Geneva, Switzerland.		x
Kellermann Crystal Prod. Co., New York.	x	x
Klaxon Co., Newark, N. J.	x	
Kokomo Electrical Co., Kokomo, Ind.	x	x
Kraeuter & Co., Inc., Newark, N. J.	x	x
Kulas-Snyder Mfg. Co., Cleveland, Ohio.	x	x
L		
Laduna Products Corp., New York.	x	x
La-Lo Chemical Co., Inc., Providence, R. I.	x	
Landis Tool Co., Waynesboro, Pa.	x	x
Lane Bros. Co., Poughkeepsie, N. Y.	x	
Lesher, Whitman & Co., New York City.		x
Light Mfg. & Foundry Co., Pottstown, Pa.	x	
Link-Belt Co., Chicago.	x	
E. C. Long Piston & Alloy Co., Detroit.	x	x
Lovejoy Mfg. Co., Boston.	x	x
Lowe Motor Supplies Co., New York.	x	
Lubricator Mfg. Co., Philadelphia.		x
Lyons Mfg. Co., New Haven, Conn.	x	
M		
J. C. McAdams Co., New York.	x	x
S. S. McClelland Co., New York.		x
McCord Mfg. Co., Inc., Detroit, Mich.	x	
McQuay-Norris Mfg. Co., St. Louis.	x	x
Majestic Sales Agency, Chicago.		x
Macbeth Evans Glass Co., Pittsburgh, Pa.	x	
Manley Mfg. Co., York, Pa.	x	x
Manufacturers Foundry Co., Waterbury, Conn.	x	
Robt. Marcus Co., New York.	x	
Marko Storage Battery Co., Brooklyn.	x	
Medina Mfg. Co., Medina, Ohio.	x	x
Menger Mfg. Co., New York.	x	
Merchant & Evans Co., Philadelphia.	x	x
Metal Stamping Co., Long Island City, N. Y.	x	x
Michigan State Auto School, Detroit.		x
Midwest Engine Corp., Indianapolis, Ind.	x	x
Milburn Puncture Proof Tube Co., Chicago.		x
Miles Piston Ring Sales Co., New York.	x	x
Miller Auto Supply Co., New York.	x	
Millers Falls Co., New York.	x	
Mirrolike Mfg. Co., Inc., Long Island City, N. Y.	x	
Moto-Meter Co., Inc., Long Island City, N. Y.	x	x
Motor Car Supplies Co., Inc., New York.	x	
Motor Wheel Corp., Lansing, Mich.	x	x
Mullins Body Corp., Salem, Ohio.		x
N		
Nacto Cleaner Corp., New York.	x	
Naperville Machine Co., Inc., Naperville, Ill.		x
National Association of Curled Hair Mfrs., Philadelphia.	x	
National Collapsible Rim Corp., New York.	x	x
National Marine Lamp Co., Forestville, Conn.	x	
National Seal Co., Inc., Brooklyn.	x	x
New England Fabrics Mfg. Co., New Haven, Conn.	x	
New Era Spring & Specialties Co., Grand Rapids, Mich.	x	
Nolenz, Inc., New York City.	x	
Norton Co., Worcester, Mass.	x	
O		
Oakes Co., Indianapolis, Ind.	x	x
P		
Pantasote Co., New York.	x	x
Panyard Piston Ring Sales Co., Detroit.	x	
Partridge, Singer & Baldwin, New York.		x
Pederson & Flanagan, Inc., New York.	x	
Pennsylvania Piston Ring Co., Cleveland, Ohio.	x	
Perfection Heater & Mfg. Co., Cleveland, Ohio.	x	x
Perfection Gear Co., Chicago.	x	x
Philadelphia Storage Battery Co., Philadelphia.	x	
Philbrin Corp., Kennet Square, Pa.	x	
Prest-Air Corp., New York City	x	
Pines Mfg. Co., Chicago, Ill.	x	x
Pioneer Motor Bearing Co., Brooklyn.	x	
Wm. E. Pratt Mfg. Co., Chicago.	x	x
Preferred Utilities Co., Inc., New York.	x	
W. E. Pruden Hardware Co., New York.	x	
Pyrene Mfg. Co., Newark, N. J:	x	x
R		
Rajah Auto Supply Co., Bloomfield, N. J.	x	x
Rajo Motor Co., Racine, Wis.		x
Ramspring Bumper Co., Chicago.		x
Recording Devices Co., Dayton, Ohio.	x	x
Reus Mfg. Co., Baltimore, Md.	x	x
Rex Mfg. Co., Connersville, Ind.	x	x
Rich Mfg. Corp., New York.	x	
Geo. H. Rives Mfg. Co., Inc., Brooklyn, N. Y.	x	
Ryser Machine Works, Chicago.		x
S		
Safstrom Mfg. Co., Chicago.	x	x
Sage Bros., Inc., Brooklyn, N. Y.	x	
Schaap Co., Brooklyn.	x	
Wm. H. Schaefer & Bro., New York.	x	
H. Scherer & Co., Detroit.		x
Schleider Mfg. Co., New York.	x	
A. Schrader's Son, Inc., Brooklyn.	x	x
Shults Automotive Corp., New York City.	x	
Scintilla Magneto Co., Inc., New York.	x	
Sherwood Petroleum Co., Inc., Brooklyn.	x	
H. B. Shontz Co., Inc., New York.	x	
Shore Instrument & Mfg. Co., Jamaica, L. I.	x	
Simmons Mfg. Co., Cleveland.	x	
Simplex Corp., Chicago.	x	x
Simplex Wind Shield Wing Co., Chicago.	x	x
Simplicity Engine & Mfg. Co., Port Washington, Wis.	x	
Simpson-Simplex Rim Adjuster Co., Philadelphia.	x	
F. L. Smithe Machine Co., Inc., New York.	x	
Spiro Mfg. Co. C., New York.	x	
S. S. Stafford, Inc., New York City	x	x
Staff Bros. Co., New York.	x	
Standard Auto Parts Co. of Am., Newark, N. J.	x	
Standard Non Skid Grip Co., Metuchen, N. J.	x	
Standard Textile Products Co., New York City.		x
Standard Utilities Co., Allentown, Pa.	x	
Stemco Engineering Co., Dayton, Ohio.	x	
Stewart-Warner Speedometer Corp., Chicago.	x	x
Steyn, Pease Co., New York.	x	
Stokes Carbureter Co., Inc., Hampton Bays, L. I.	x	
Stouts Wheel Sales Co., Buffalo, N. Y.	x	x
Stromberg Motor Devices Co., Chicago.	x	x
Sun Co., Philadelphia, Pa.	x	x
Superior Lamp Mfg. Co., Inc., New York.	x	
Swartz Mfg. Co., Freeport, Ill.		x
Sweet & Doyle Foundry & Machinery Co., Troy, N. Y.	x	x
T		
Thompson Spring Co., Wilmington, Del.	x	
Timken-Detroit Axle Co., Detroit.	x	x
Tonneau Shield Co., Inc., New York.	x	x
Torsion Test Piston Ring Corp., Newark, N. J.	x	x
Travers, Chicago.	x	x
Trindl Co., Chicago.		x
Triple Action Spring Co., New York.	x	
Triplex Machine Tool Corp., New York City.	x	
Turner Mfg. Co., Kokomo, Ind.		x
U		
U. S. Auto Lamp Mfg. Co., New York.	x	
U. S. Axle Co., Pottstown, Pa.	x	
U. S. E. Corp., New York.	x	
Union Agencies, Inc., Chicago.		x
United Autoware Co., Inc., New York.	x	
United Metal Spinning Co., Inc., Brooklyn.	x	
United States Chain & Forging Co., Pittsburgh, Pa.	x	x
Universal Tool Co., Garwood, N. J.	x	
Utica Compressor Co., Inc., Utica, N. Y.	x	
V		
Vacuum Oil Co., New York.	x	x
Van Norman Machine Tool Co., Springfield, Mass.	x	x
Van Wheel Corp., Oneida, N. Y.	x	x
Veeder Mfg. Co., Hartford, Conn.	x	x

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More Than 300 Equipment Makers Will Show New Products

DEMANDS for space in the equipment sections of the New York and Chicago shows again exceeded the available supply. More than three hundred manufacturers were accommodated, however, and the section promises to be widely representative of this part of the industry.

Name	N. Y.	Chi.
A		
A. C. Spark Plug Co., Flint, Mich.	x	x
Alexander Mirroscope Co., Inc., Portchester, N. Y.	x	
Alfon E. Bahr Co., Chicago.		x
Alloy Foundry & Machine Corp., New Rochelle, N. Y.	x	
Aluminum Die-Casting Corp., Garwood, N. J.	x	
American Auto Lamp Co., New York.	x	
American Automatic Devices Co., Chicago.		x
American Bronze Corp., Berwyn, Pa.	x	x
American Chain Co., Inc., Bridgeport, Conn.	x	x
American Chemical Paint Co., Philadelphia.	x	
American Federal Wheel Co., Chicago.		x
American Pump & Tank Co., New York.	x	
American Taximeter Co., New York.	x	x
Apex Electric Mfg. Co., New York.	x	
Apollo Magneto Corp., Kingston, N. Y.	x	x
Arkay Sales Co., New York.	x	
Arrow-Grip Mfg. Co., Inc., Glens Falls, N. Y.	x	x
Art Metal Works, Inc., Newark, N. J.		x
Asch & Co., Inc., New York	x	x
Austin-Brandmiser Corp., New York.	x	
Auto Bed Camp Mfg. Co., New York.	x	
Auto Hone Co., Inc., Buffalo, N. Y.	x	x
Auto Metal Products Co., Inc., New York.	x	
Auto Pedal Pad Co., Inc., New York.	x	
Auto Specialties Mfg. Co., St. Joseph, Mich.	x	x
Auto Table Co., Inc., Richmond Hill, N. Y.	x	x
Automotive Gear Works, Atlanta, Ga.		x
Automotive Parts Mfg. Co., New York.	x	
Autoquip Mfg. Co., Inc., Rochester, N. Y.	x	
B		
B. G. Corp., New York.	x	
Barnes Foundry Co., Inc., New York.	x	
Barnes, Wallace Co., Bristol, Conn.	x	
Bassick Mfg. Co., Chicago.	x	x
Baush Machine Tool Co., Springfield, Mass.	x	
Beans Spring Co., Massillon, Ohio.	x	
Becker Bros., Inc., Chicago	x	x
Bell Safety Bumper Co., Inc., Brooklyn.	x	
Beneke & Kropf Mfg. Co., Chicago.	x	x
Benzer Corp., Brooklyn	x	
Berg Auto Trunk & Specialties Co., Long Island City.	x	
Bethlehem Spark Plug Co., Inc., Bethlehem, Pa.	x	x
Biflex Products Co., Waukegan, Ill.	x	x
Blueblaze Motor Specialties Corp., Long Island City, N. Y.	x	
Borg & Beck Co., Chicago.		x
Bowen Products Corp., Auburn, N. Y.	x	x
Boyle Valve Co., Chicago.		x
Brewer-Titchener Corp., Cortland, N. Y.	x	x
Bridgeport Coach Lace Co., Bridgeport, Conn.		x
Britton Auto Products Co., Inc., New York.	x	x
Brown-Lipe-Gear Co., Syracuse, N. Y.	x	x
Brunner, Mfg. Co., Utica, N. Y.	x	
Buda Co., Harvey, Ill.		x
Edw. G. Budd Mfg. Co., Philadelphia	x	
Budd Wheel Co., Philadelphia.	x	x
Bunting Brass & Bronze Co., Toledo, Ohio.	x	x
Bullard Machine Tool Co., Bridgeport, Conn.	x	x
Burpee-Johnson Co., Indianapolis.	x	x
Byrne, Kingston & Co., Kokomo, Ind.	x	x
C		
C. G. Spring Co., Kalamazoo, Mich.	x	x
Camerson Mfg. & Sales Corp., New York.	x	x
Carr Fastener Co., Cambridge, Mass.	x	
Cat Automotive Parts, Detroit.		x
Champion Mfg. Co., Chicago.		x
Champion Pneumatic Machinery Co., Chicago.	x	x
Champion Products Mfg. Co., Newark, N. J.	x	
Chicago Tool & Kit Mfg. Co., Chicago.		x
Clark Equip. Co., Buchanan, Mich.	x	x
Clark-Turner Piston Co., Los Angeles.	x	x
Cleveland Pneumatic Tool Co., Cleveland.	x	x
Continental Motors Corp., Detroit, Mich.	x	x
Cord Tire Corp., Chester, W. Va.		x
Coulter Mfg. Co., Inc., Buffalo, N.Y.		x
Courtesy Service & Sales Co., Chicago.		x
Covert Gear Co., Inc., Lockport, N. Y.	x	
C. Cowles & Co., New Haven, Conn.	x	x
Cox Brass Mfg. Co., Albany, N. Y.	x	x
Cuno Engineering Corp., Meriden, Conn	x	
Curtis Pneumatic Machinery Co., St. Louis.		x
D		
Dalton & Balch, Chicago.	x	x
Ralph E. DeCastro, New York.	x	
Decks Motor Products, Inc., Exeter Boro., Pa.		x
B. G. Desmond Mfg. Corp., Long Island City, N. Y.	x	
A. J. Detlaff Co., Detroit.		x
Detroit Motor Casting Co., Detroit.	x	x
Dickerson Auto Appliance Co., Warrenton, Va.	x	x
Dickinson & Co., Inc., Minneapolis.	x	x
Disco Electrical Mfg. Co., Detroit.		x
Doehler Die-Casting Co., Brooklyn, N. Y.	x	x
Dominion Asbestos & Rubber Corp., New York.	x	
Double Seal Ring Co., Chicago.	x	x
Doughty Mfg. Co., Inc., New York.	x	
C. A. Dunham, Chicago.		x
E		
E. A. Laboratories, Inc., Brooklyn, N. Y.	x	
Eagle-Ottawa Leather Co., Grand Haven, Mich.	x	x
Eberhard Mfg. Co., Cleveland, Ohio	x	x
Eclipse Machine Co., Elmira, N. Y.	x	x
Ensign Carbureter Co., Chicago.	x	x
Evans & Ould, New York.	x	x
Everyday Piston Ring Co., E. Rochester, N. Y.	x	x
F		
Fan Flame Spark Plug Co., Yonkers, N. Y.	x	
Wm. M. Farans, New York.	x	
J. H. Faw Co., New York.	x	
Fitzgerald Mfg. Co., Torrington, Conn.	x	x
Flash Sales Corp., Chicago.		x
Folberth Auto Specialties Co. Cleveland.	x	x
Foster Machine Co., Elkhart, Ind.	x	x
Franklin Die-Casting Corp., Syracuse, N. Y.	x	
Fulton Co., Knoxville, Tenn.	x	
G		
Gabriel Mfg. Co., Cleveland.	x	x
Gasco Mfg. Co., Lancaster, Pa.	x	
General Automotive Corp., Chicago.	x	x
General Electric Co., Schenectady, N. Y.	x	x
General Safety Signal Co., Newark, N. J.	x	
Gearo Mfg. Co., Quincy, Ill.		x
L. H. Gilmer Co., Tacony, Pa.	x	
Gits Bros. Mfg. Co., Chicago.		x
Globe Machine & Stamping Co., Cleveland.	x	
Globe Mfg. Co., Battle Creek, Mich.		x
Greengfield Tap & Die Corp., Greenfield, Mass.	x	
H		
C. M. Hall Lamp Co., Kenosha, Wis.		x
L. P Hallady Co., Decatur, Ill.		x
Edw. V. Hartford, Inc., New York.	x	x
Hartford Battery Mfg. Co., Milldale, Conn.	x	
Hartland Co., Inc., New York.	x	
Robt. H. Hassler, Inc., Indianapolis, Ind.	x	x
Hayes Mfg. Co., Detroit.	x	x
Hayes Wheel Co., Jackson, Mich.	x	x

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Name	N. Y.	Chi.
...ald Machine Co., Worcester, Mass.	x	x
Heinze Electric Co., Lowell, Mass.	x	x
Heintz Mfg. Co., Philadelphia.	x	
Hercules Bumper Corp., Detroit.		x
Hercules Motor Mfg. Co., Canton, Ohio.	x	x
Hobson Oil Co., Inc., New York.	x	
Ernest Holmes Co., Chattanooga, Tenn.	x	x
Geo. L. Holmes, New York.	x	
John C. Hoof & Co., Chicago.		x
Hopkins Mfg. Co., Hanover, Pa.	x	x
Houdaille Co., Buffalo, N. Y.	x	
Houpert Machine Co., Long Island City, N. Y.	x	x
I		
Imperial Brass Mfg. Co., Chicago.		x
Inland Products Co., Inc., St. Louis.	x	
International Nickel Co., New York.	x	
J		
J. & B. Mfg. Co., Pittsfield, Mass.	x	x
Jennings Corp., Pittsburgh, Pa.	x	
Johnson Auto Lock Co., St. Louis.	x	x
C. N. & F. W. Jonas, Chicago.	x	x
K		
K-W Ignition Co., Cleveland.	x	x
Kant-Rust Products Corp., Rahway, N. J.	x	
Kant-Skore Piston Co., Cincinnati, Ohio.	x	x
L. Kellenberger & Co., Geneva, Switzerland.		x
Kellermann Crystal Prod. Co., New York.	x	x
Klaxon Co., Newark, N. J.	x	
Kokomo Electrical Co., Kokomo, Ind.	x	x
Kraeuter & Co., Inc., Newark, N. J.	x	x
Kulas-Snyder Mfg. Co., Cleveland, Ohio.	x	x
L		
Laduna Products Corp., New York.	x	x
La-Lo Chemical Co., Inc., Providence, R. I.	x	
Landis Tool Co., Waynesboro, Pa.	x	x
Lane Bros. Co., Poughkeepsie, N. Y.	x	
Lesher, Whitman & Co., New York City.		x
Light Mfg. & Foundry Co., Pottstown, Pa.	x	
Link-Belt Co., Chicago.	x	
E. C. Long Piston & Alloy Co., Detroit.	x	x
Lovejoy Mfg. Co., Boston.	x	x
Lowe Motor Supplies Co., New York.	x	
Lubricator Mfg. Co., Philadelphia.		x
Lyons Mfg. Co., New Haven, Conn.	x	
M		
J. C. McAdams Co., New York.	x	x
S. S. McClelland Co., New York.		x
McCord Mfg. Co., Inc., Detroit, Mich.	x	
McQuay-Norris Mfg. Co., St. Louis.	x	x
Majestic Sales Agency, Chicago.		x
Macbeth Evans Glass Co., Pittsburgh, Pa.	x	
Manley Mfg. Co., York, Pa.	x	x
Manufacturers Foundry Co., Waterbury, Conn.	x	
Robt. Marcus Co., New York.	x	
Marko Storage Battery Co., Brooklyn.	x	
Medina Mfg. Co., Medina, Ohio.	x	x
Menger Mfg. Co., New York.	x	
Merchant & Evans Co., Philadelphia.	x	x
Metal Stamping Co., Long Island City, N. Y.	x	x
Michigan State Auto School, Detroit.		x
Midwest Engine Corp., Indianapolis, Ind.	x	x
Milburn Puncture Proof Tube Co., Chicago.		x
Miles Piston Ring Sales Co., New York.	x	x
Miller Auto Supply Co., New York.	x	
Millers Falls Co., New York.	x	
Mirrolike Mfg. Co., Inc., Long Island City, N. Y.	x	
Moto-Meter Co., Inc., Long Island City, N. Y.	x	x
Motor Car Supplies Co., Inc., New York.	x	
Motor Wheel Corp., Lansing, Mich.	x	x
Mullins Body Corp., Salem, Ohio.		x
N		
Nacto Cleaner Corp., New York.	x	
Naperville Machine Co., Inc., Naperville, Ill.		x
National Association of Curled Hair Mfrs., Philadelphia.	x	
National Collapsible Rim Corp., New York.	x	x
National Marine Lamp Co., Forestville, Conn.	x	
National Seal Co., Inc., Brooklyn.	x	x
New England Fabrics Mfg. Co., New Haven, Conn.	x	
New Era Spring & Specialties Co., Grand Rapids, Mich.	x	
Nolenz, Inc., New York City.	x	
Norton Co., Worcester, Mass.	x	
O		
Oakes Co., Indianapolis, Ind.	x	x
P		
Pantasote Co., New York.	x	x
Panyard Piston Ring Sales Co., Detroit.	x	
Partridge, Singer & Baldwin, New York.		x
Pederson & Flanagan, Inc., New York.	x	
Pennsylvania Piston Ring Co., Cleveland, Ohio.	x	
Perfection Heater & Mfg. Co., Cleveland, Ohio.	x	x
Perfection Gear Co., Chicago.	x	x
Philadelphia Storage Battery Co., Philadelphia.	x	
Philbrin Corp., Kennet Square, Pa.	x	
Prest-Air Corp., New York City	x	
Pines Mfg. Co., Chicago, Ill.	x	x
Pioneer Motor Bearing Co., Brooklyn.	x	
Wm. E. Pratt Mfg. Co., Chicago.	x	x
Preferred Utilities Co., Inc., New York.	x	
W. E. Pruden Hardware Co., New York.	x	
Pyrene Mfg. Co., Newark, N. J.	x	x
R		
Rajah Auto Supply Co., Bloomfield, N. J.	x	x
Rajo Motor Co., Racine, Wis.		x
Ramspring Bumper Co., Chicago.		x
Recording Devices Co., Dayton, Ohio.	x	x
Reus Mfg. Co., Baltimore, Md.	x	x
Rex Mfg. Co., Connersville, Ind.	x	x
Rich Mfg. Corp., New York.	x	
Geo. H. Rives Mfg. Co., Inc., Brooklyn, N. Y.	x	
Ryser Machine Works, Chicago.		x
S		
Safstrom Mfg. Co., Chicago.	x	x
Sage Bros., Inc., Brooklyn, N. Y.	x	
Schaap Co., Brooklyn.	x	
Wm. H. Schaefer & Bro., New York.	x	
H. Scherer & Co., Detroit.		x
Schleider Mfg. Co., New York.	x	
A. Schrader's Son, Inc., Brooklyn.	x	x
Shults Automotive Corp., New York City.	x	
Scintilla Magneto Co., Inc., New York.	x	
Sherwood Petroleum Co., Inc., Brooklyn.	x	
H. B. Shontz Co., Inc., New York.	x	
Shore Instrument & Mfg. Co., Jamaica, L. I.	x	
Simmons Mfg. Co., Cleveland.	x	
Simplex Corp., Chicago.	x	x
Simplex Wind Shield Wing Co., Chicago.	x	x
Simplicity Engine & Mfg. Co., Port Washington, Wis.	x	
Simpson-Simplex Rim Adjuster Co., Philadelphia.	x	
F. L. Smithe Machine Co., Inc., New York.	x	
Spiro Mfg. Co. C., New York.	x	
S. S. Stafford, Inc., New York City	x	x
Staff Bros. Co., New York.	x	
Standard Auto Parts Co. of Am., Newark, N. J.	x	
Standard Non Skid Grip Co., Metuchen, N. J.	x	
Standard Textile Products Co., New York City.		x
Standard Utilities Co., Allentown, Pa.	x	
Stemco Engineering Co., Dayton, Ohio.	x	
Stewart-Warner Speedometer Corp., Chicago.	x	x
Steyn, Pease Co., New York.	x	
Stokes Carbureter Co., Inc., Hampton Bays, L. I.	x	
Stouts Wheel Sales Co., Buffalo, N. Y.	x	x
Stromberg Motor Devices Co., Chicago.	x	x
Sun Co., Philadelphia, Pa.	x	x
Superior Lamp Mfg. Co., Inc., New York.	x	
Swartz Mfg. Co., Freeport, Ill.		x
Sweet & Doyle Foundry & Machinery Co., Troy, N. Y.	x	x
T		
Thompson Spring Co., Wilmington, Del.	x	
Timken-Detroit Axle Co., Detroit.	x	x
Tonneau Shield Co., Inc., New York.	x	x
Torsion Test Piston Ring Corp., Newark, N. J.	x	x
Travers, Chicago.	x	x
Trindl Co., Chicago.		x
Triple Action Spring Co., New York.	x	
Triplex Machine Tool Corp., New York City.	x	
Turner Mfg. Co., Kokomo, Ind.		x
U		
U. S. Auto Lamp Mfg. Co., New York.	x	
U. S. Axle Co., Pottstown, Pa.	x	
U. S. E. Corp., New York.	x	
Union Agencies, Inc., Chicago.		x
United Autoware Co., Inc., New York.	x	
United Metal Spinning Co., Inc., Brooklyn.	x	
United States Chain & Forging Co., Pittsburgh, Pa.	x	x
Universal Tool Co., Garwood, N. J.	x	
Utica Compressor Co., Inc., Utica, N. Y.	x	
V		
Vacuum Oil Co., New York.	x	x
Van Norman Machine Tool Co., Springfield, Mass.	x	x
Van Wheel Corp., Oneida, N. Y.	x	x
Veeder Mfg. Co., Hartford, Conn.	x	x

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Name	N. Y.	Chi.
Vibration Specialties Co., Philadelphia.	x	
Volator Co., Chicago.	x	x
W		
Waltham Watch Co., Waltham, Mass.	x	x
Warner-Patterson Co., Chicago.	x	x
John Warren Watson Co., Philadelphia.	x	x
Waukesha Motor Co., Waukesha, Wis.	x	x
Weaver-Ebling Auto Co., New York.	x	
Weaver Mfg. Co., Springfield, Ill.	x	x
Weldo Patch Mfg. Co., New York.	x	
Wel-Ever Piston Ring Co., Toledo, Ohio.		x
Wengraf Mfg. Co., Long Island City, N. Y.	x	
Westinghouse Air Spring Co., Chicago.	x	x
Weston Electrical Instrument Co., Newark, N. J.	x	
Wethet Watching Alarm Corp., New York City.	x	
Wheeler-Schebler Carbureter Co., Indianapolis, Ind.	x	x
Whitney Mfg. Co., Hartford, Conn.	x	
Whittemore-Sim Co., Inc., New York.	x	
Wildenberg Bros., New York.	x	
K. R. Wilson, Buffalo, N. Y.	x	x
Wire Wheel Corp. of Am., Buffalo, N. Y.	x	x
Witherbee Storage Battery Co., Inc., New York.	x	
F. Wolkow & Sons, Louisville, Ky.	x	
Wyman-Gordon Co., Worcester, Mass.	x	
Y		
Yellow Jack-It Mfg. Co., Chicago		x

Where the "Most Salable Car Ever Built" Will Be Displayed in the 1923 Shows

THERE is every indication that the automobile shows of 1923 will far outstrip the shows of former years in number as well as in beauty and the application of up-to-the-minute selling effort. Nearly every state is represented now in the roll call of shows for next year, and every week brings the announcement of more to be held.

While the past few weeks have produced some shows, the season will open in a big way with the National Shows in New York and Chicago in January. From these larger expositions of the manufacturers, the shows will spread across the country into cities and towns, providing the opportunity for millions of people to see "the most salable car ever built," and opportunities for distributors and dealers to meet these millions of people in the shows and make new prospects for the big spring selling season that the shows usher in.

Following is a list of the shows announced to date. Is your show here? If not, send in the information and answer "here" to the 1923 roll call.

Erie, Pa.....Jan. 1-6
Annual Automobile Show, under the auspices of the Automotive Association of Erie, C. R. Cummins, manager.

New York....Jan. 6-13
Annual Automobile Show held under the auspices of the National Automobile Chamber of Commerce.

New York....Jan. 8-13
Second National Automobile Body Builders Show, Twelfth Regiment Armory, under the auspices of the Automobile Body Builders Association.

Pasadena....Jan. 8-13
Annual Automobile Show, Hotel Green, under the auspices of the Pasadena Motor Car Dealers Association, D. B. Hall, manager.

Pittston, Pa.....Jan. 9-13
First Annual Automobile Show, State Armory, David Harris, manager.

Oakland, Cal.....Jan. 13-20
Fifth Annual Automobile Show, Civic Auditorium, under the auspices of the Alameda County Automobile Trade Association, Robert W. Martland, manager.

Buffalo....Jan. 13-20
Twenty-first Annual Automobile Show, 174th Regiment Armory, under the auspices of the Buffalo Automobile Dealers Association, Carl Proctor, executive secretary.

Philadelphia....Jan. 13-20
Twenty-second Annual Automobile Show, Commercial Museum Building, under the auspices of the Philadelphia Automobile Trade Association, Louis C. Block, president.

Hudson, N. Y.....Jan. 16-20
Hudson Automobile Show, State Armory, under the auspices of Company M, J. M. Callahan, manager.

Scranton, Pa.....Jan. 18-20
Commercial Car Show, Armory, under the auspices of the Scranton Motor Trades Association, Hugh B. Anderson, manager.

Detroit....Jan. 20-27
Twenty-second Annual Automobile Show, Inclusive of Passenger Cars, Trucks and Accessories, Municipal Garage Building, under the auspices of the Detroit Automobile Dealers Association, H. H. Shuart, manager.

Baltimore....Jan. 20-27
Annual Automobile Show, Fifth Regiment Armory, under the auspices of the Baltimore Automobile Trade Association, John E. Raine, secretary.

Milwaukee....Jan. 20-27
Fifteenth Annual Automobile Show, Auditorium, under the auspices of the Milwaukee Automotive Dealers Association, Bart J. Ruddle, manager.

Cleveland....Jan. 20-27
Annual Automobile Show, New Public Auditorium, under the auspices of the Cleveland Automobile Manufacturers and Dealers Association, Herbert Buckman, manager.

Mortreal....Jan. 20-27
National Motor Show of Eastern Canada, Almy's Building, under the auspices of the Montreal Automobile Trade Association, Limited, Adelstan Levesque, manager.

Reading, Pa.....Jan. 20-27
Annual Automobile Show, Corbitt Garage Building, under the auspices of the Reading Automobile Trade Association, H. C. Lutz, manager.

Scranton, Pa.....Jan. 22-27
Annual Automobile Show, Armory, under the auspices of the Scranton Motor Trades Association, Hugh B. Anderson, manager.

Middletown, Conn.....Jan. 24-27
Second Annual Automobile Show, Armory, under the auspices of the Middletown Automotive Dealers Association, Charles H. Brewster, chairman.

Chicago....Jan. 27-Feb. 3
Annual Automobile Show, under the auspices of the National Automobile Chamber of Commerce, Coliseum.

Chicago....Jan. 27-Feb. 3
Annual Automobile Salon, Drake Hotel.

Wilkes-Barre....Jan. 29-Feb. 3
Fourteenth Annual Automobile Show, Armory, under the auspices of the Automobile Dealers' Association of Wilkes-Barre, R. A. Rosenkrans, chairman.

Binghamton, N. Y.....Jan. 29-Feb. 3
Annual Automobile Show, State Armory and Kalurah Temple, under the auspices of the Binghamton Automobile Dealers Association, John W. Williams, manager.

Ann Arbor, Mich.....Jan. 29-Feb. 3

Minneapolis....Feb. 3-10
Annual Automobile Show, Overland Building, under the auspices of the Minneapolis Automobile Trade Association, W. R. Wilmot, manager.

Portland, Ore.....Feb. 3-10
Annual Automobile Show, Municipal Auditorium, under the auspices of the Portland Automobile Dealers Association.

Troy, N. Y.....Feb. 3-10
Ninth Annual Automobile Show, State Armory, under the auspices of the Troy Used Car Sales Corp., Frank M. Baucus, manager.

Pittsburgh....Feb. 3-10
Twenty-sixth Semi-annual Automobile Show, Motor Square Garden, under the auspices of the Pittsburgh Automotive Dealers Association.

Allentown, Pa.....Feb. 3-17
Annual Automobile Show, Lehigh Automotive Trade Association Building, under the auspices of the Association, E. T. Satchell, president.

Winnipeg, Man.....Feb. 5-10
Third Annual Automotive Equipment Show with Radio Exhibits in Connection, under the auspices of the Western Canada Automotive Equipment Association, W. L. Williams, secretary.

Charlotte, N. C.....Feb. 5-10
Annual Automobile Show, Made-in-Carolinas Exposition Building, under the auspices of the Charlotte Automotive Trade Association.

Lansing, Mich.....Feb. 5-10

Toledo....Feb. 5-10
Annual Automobile Show, Terminal Auditorium, under the auspices of the Toledo Auto Shows Co., H. V. Buelow, manager.

Winnipeg, Ont.....Feb. 5-10
Annual Automobile Show, Minto Armories, under the auspices of the Winnipeg Motor Trades Association, A. C. Emmett, manager.

Waterbury, Conn.....Feb. 5-12
Third Annual Show at the New State Armory, under the auspices of the Waterbury Automotive Dealers Association. Passenger Cars and Accessories. M. A. Doolittle, chairman of the show committee.

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Cincinnati .....Feb. 7-14
Automobile Show, under the auspices of the Cincinnati Automobile Dealers Association, Harry T. Gardner, manager.

Kansas City, Mo.....Feb. 10-17
Annual Automobile Show, under the auspices of the Kansas City Motor Car Dealers Association, George A. Bond, secretary.

St. Louis .....Feb. 10-17
Annual Automobile Show, Universal Building, under the auspices of the St. Louis Automobile Dealers Association, Robert E. Lee, manager.

Kalamazoo and Flint, Mich.....Feb. 12-17

Utica, N. Y.....Feb. 12-17
Annual Automobile Show, under the auspices of the Utica Motor Car Dealers Association, Inc., W. T. Love, field secretary.

Fort Dodge, Iowa.....Feb. 13-16
Annual Automobile Show, Sullivan Building, under the auspices of the Fort Dodge Automobile Dealers Association, John H. Wilkenson, manager.

Orlando, Fla.....Feb. 13-17
Annual Automobile Show, Fair Grounds, under the auspices of the Orlando Automotive Dealers Association, C. E. Howard, manager.

Flint, Mich.....Feb. 13-27
Annual Automobile Show, under the auspices of the Flint Automobile Dealers Association, Ralph Knight, manager.

Sioux City, S. D.....Feb. 14-17
Annual Automobile Show, City Coliseum, under the auspices of the Sioux Falls Automobile Dealers Association.

Columbus .....Feb. 15-21
Annual Automobile Show, Memorial Hall, under the auspices of the Columbus Automobile Dealers Association, Anson B. Coates, manager.

Hartford, Conn.....Feb. 17-24
Annual Automobile Show, Armory, under the auspices of the Hartford Automobile Dealers Association, Arthur Fifoot, secretary.

Atlanta .....Feb. 17-24
Annual Southern Automobile Show, Atlanta Auditorium, under the auspices of the Atlanta Automobile Association, Virgil W. Shepard, manager.

San Francisco.....Feb. 17-24
Seventh Annual Pacific Automobile Show, under the auspices of the San Francisco Motor Car Dealers Association, Exposition Auditorium, George A. Wahlgreen, manager.

Grand Rapids and Mt. Clemens, Mich. Feb. 19-24

White Plains, N. Y.....Feb. 19-24
Third Annual Automobile Show, Armory, under the auspices of the White Plains Automobile Dealers Association. Callahan & Partlan, directors.

Schenectady, N. Y.....Feb. 19-24
Annual Automobile Show, Armory, under the auspices of the Schenectady Automotive Dealers Association, John T. Henley, manager.

Louisville, Ky.....Feb. 19-24
Fifteenth Annual Automobile Show, under the auspices of the Louisville Automobile Dealers Association, George T. Holmes, secretary.

Trenton, N. J.....Feb. 21-24
Annual Automobile Show of Passenger Cars, Trucks and Accessories, Armory, under the auspices of the Trenton Automobile Trade Association, Frederick Petry, Jr., manager.

Albany, N. Y.....Feb. 24-March 3
Thirteenth Annual Albany Automobile Show, State Armory, under the auspices of the Albany Automobile Dealers Association, J. B. Wood, manager.

Brooklyn, N. Y.....Feb. 24-Mar. 3
Annual Automobile Show, under auspices of the Brooklyn Motor Vehicle Dealers Association, 23rd Regiment Armory.

Des Moines .....Feb. 25-March 5
Fourteenth Annual Automobile Show, Coliseum, Passenger Cars and Accessories only, under the auspices of the Des Moines Automobile Dealers Association, Dean Schooler and C. G. Van Vliet, manager.

Omaha .....Feb. 26-March 3
Seventeenth Annual Show of Passenger Cars, Trucks and Accessories, Municipal Auditorium, under the auspices of the Omaha Automobile Trade Association, A. B. Waugh, manager.

Muskegon, Mich.....Feb. 26-March 3

Yonkers .....Feb. 26-Mar. 3
Annual Automobile Show, State Armory, Callahan & Partlan, directors.

Syracuse .....Feb. 26-March 3
Annual Automobile Show under auspices of the Syracuse Automobile Dealers Association, C. H. Hayes, manager.

Springfield, Mass.....Feb. 26-March 3
Annual Automobile Show, under the auspices of the Springfield Automotive Dealers Association.

Oklahoma City.....Feb. 26-March 3
Annual Automobile Show, Coliseum, under the auspices of the Oklahoma City Motor Car Dealers Association, Edgar T. Bell, manager.

Portland, Me.....Feb. 26-March 3
Annual Automobile Show, under the auspices of the Portland Automobile Dealers Association, Myton D. Kidder, manager.

Poughkeepsie, N. Y.....Feb. 28-March 3
Annual Automobile Show, Marian Building, under the auspices of the Poughkeepsie Automotive Dealers Association, Charles Brooks, manager.

Amsterdam, N. Y.....March 5-10
Fourth Annual Automobile Show, State Armory, J. J. Callahan, director.

Bay City, Mich.....March 5-10

Indianapolis .....March 5-10
Spring Automobile Show, under the auspices of the Indianapolis Automobile Trade Association, John B. Orman, manager.

Nashville, Tenn.....March 5-11
Annual Automobile Show, Hippodrome Building, under the auspices of the Nashville Automobile Trade Association, H. W. Shanks, chairman.

Saginaw, Mich.....March 7-11
Annual Automobile Show, Saginaw Auditorium, under the auspices of the Saginaw Automobile Dealers Association, R. P. Bishop, secretary.

Newark, N. J.....March 10-17
Annual Automobile Show, under the auspices of the New Jersey Automobile Exhibition Co., Claude E. Holgate, manager.

Washington, D. C.....March 10-17
Third Annual Spring Show of Passenger Cars and Accessories, Convention Hall, under the auspices of the Washington Automotive Trade Association, Rudolph Jose, chairman of show committee.

Boston .....March 10-17
Annual Automobile Show, Mechanics Building, under the auspices of the Boston Automobile Dealers Association and the Boston Commercial Motor Vehicle Association, Chester I. Campbell, manager.

Port Huron, Mich.....March 12-17

Battle Creek, Mich.....March 19-24
Annual Automobile Show, under the auspices of the Battle Creek Automobile Dealers Association.

Greenville, S. C.....March 28-31
Annual Automobile Show, Textile Hall, Browning Goldsmith, chairman of show committee.

Alpena, Mich.....April 2-7

Green Bay, Wis.....Aug. 27-30
Annual Automobile Show, Brown County Fair Grounds—De Pere, Wis., under the auspices of the Green Bay Association of Commerce, W. F. Kermin, managing director.

Sacramento .....Sept. 3-8
Annual Automobile Show, State Exposition Grounds, under the auspices of the Motor Car Dealers Association of Sacramento, H. W. Leonard, manager.

Memphis .....Sept. 23-30
Annual Automobile Show, Tri-State Fair Grounds, under the auspices of the Automobile Dealers' Association, Thomas H. Smart, manager.

Little Rock, Ark.....Oct. 8-13
Annual Automobile Show, under the auspices of the Little Rock Automobile Dealers Association, A. W. Parke, manager.

ALABAMA TERRITORY CONTINUES GAINING

BIRMINGHAM, Dec. 26—As an indication of the trade and activity in all lines in the Birmingham district, the fact that the reported bank clearings for the months of September, October and November have totaled more than $350,000,000, and in each month have exceeded the $100,000,000 mark against a previous high-water mark of $89,000,000 in December, 1920, is worthy of note. The records of clearings are compiled in exactly the same manner as they were during the years 1920 and 1921.

The activity in automobile sales has had a great deal to do with the enormous gain in the clearings, which amounted to 44 per cent more than the clearings in the same months last year.

Conditions in Birmingham are continuing to improve instead of striking the peak, with practically every furnace in operation and all the iron and steel product manufacturing plants going at full force. With all minor industries feeling the effects of the trade revival, and with only the reduction in the production of coal on the wrong side of the ledger, automobile dealers are justified in their feeling that the coming winter will show the largest sales of any year in the history of the city.

LESS GASOLINE USED; PRODUCTION GREATER

WASHINGTON, Dec. 26—The monthly report of the Bureau of Mines shows that the domestic consumption of gasoline had decreased by 18,000,000 gallons, or 3.6 per cent, during October as compared with previous month. It was, however, about 7.5 per cent above the figure for October last year.

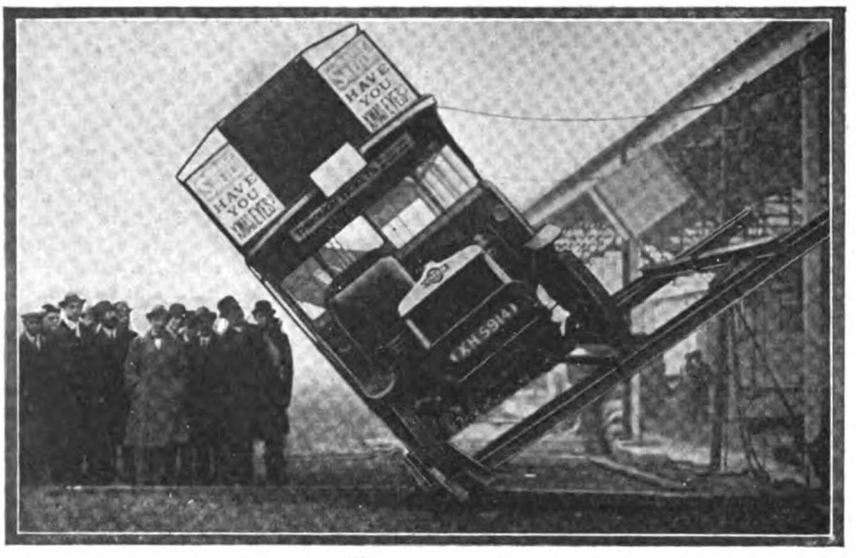
October production of gasoline amounted to 566,278,689 gallons, the highest recorded except for last July, when this figure was exceeded by only 3,400,000 gallons. This is a daily average of 18,267,054 gallons, an increase of about 30,000,000 gallons over the September output, or an increase of 2.15 per cent in the October daily average production. The gasoline output was 28 per cent greater in October, 1922, than it was last year in the same month.

Use Garage for Tractor Course

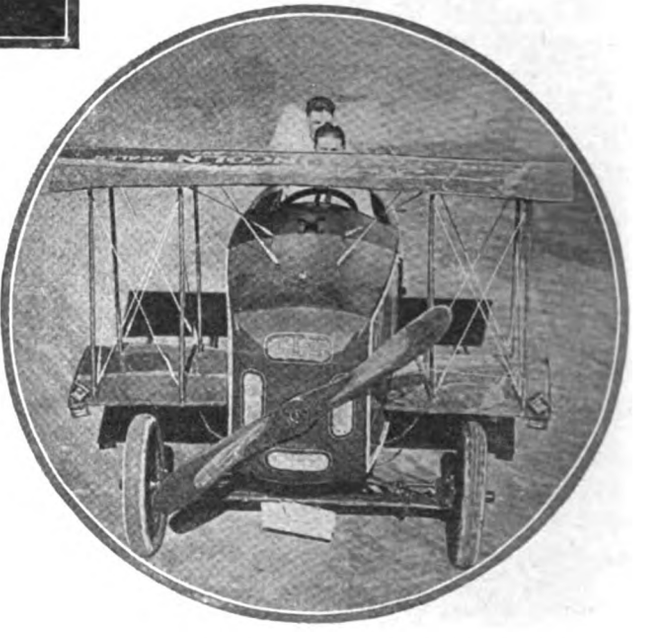
ROCK ISLAND, ILL., Dec. 26—The garage of J. W. Schaab will be used by the Rock Island County Farm Bureau for a special tractor school course for its members from Feb. 26 to 28. Experts from the college of agriculture, University of Illinois, will have charge of the classes, which will be limited to 35. Each tractor firm in the tri-cities will be invited to exhibit a tractor for demonstration and study purposes.

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Motor World's Weekly Pictorial Review

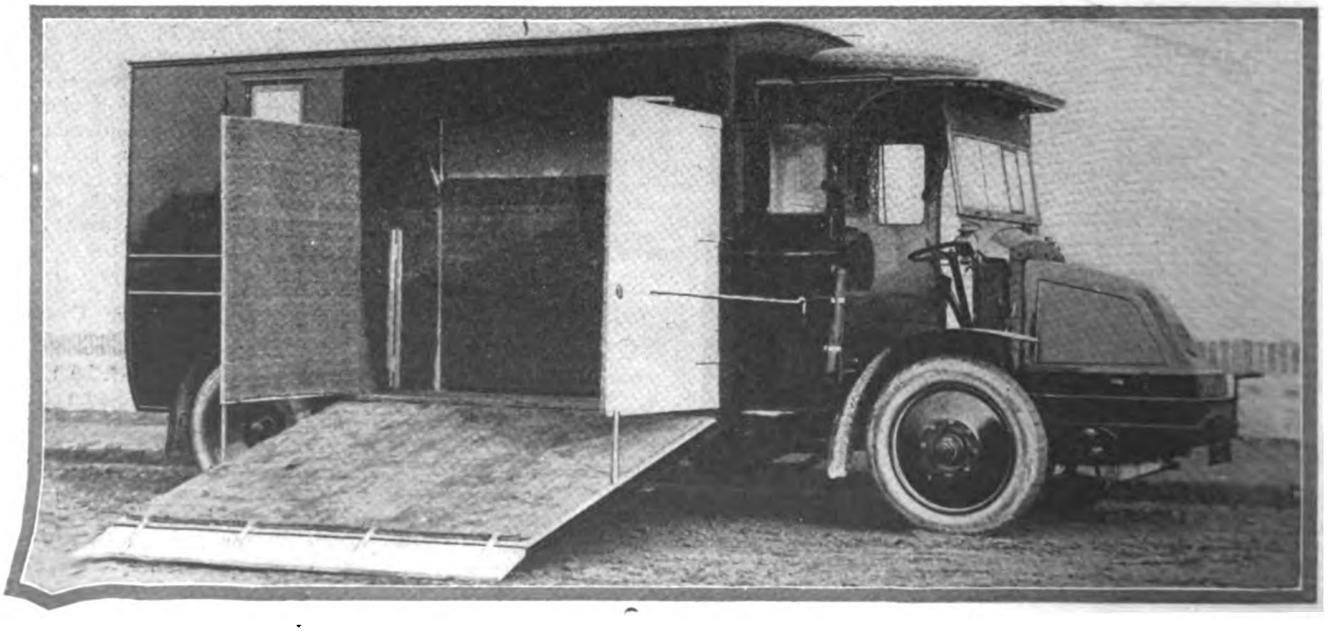


When delegates of the Royal Automobile Club Conference, England, visited the Mechanical Works at Chiswick lately they were interested in the experiments made to prove the safety of the London buses. One of the experiments was the placing of the bus at an acutely "tipped" angle to demonstrate the amount of "tilt" that could be negotiated with safety



Ever see a flying Ford? Well, maybe not, but here's one all ready for a flight. A Los Angeles Ford dealer has built a special body on a Ford, complete in every detail, and equipped with all the necessities of an airplane, wings, tail, propeller—everything. The little car has created a lot of commotion "flying" through the streets of Los Angeles, piloted by its owner

This luxurious truck was imported from France by Joseph E. Widener for the transportation of his racing horses from one track to another, and for their stabling while at the tracks. It is a front drive model. A side of the body is hinged to offer a sloping runway. One feature is the low center of gravity

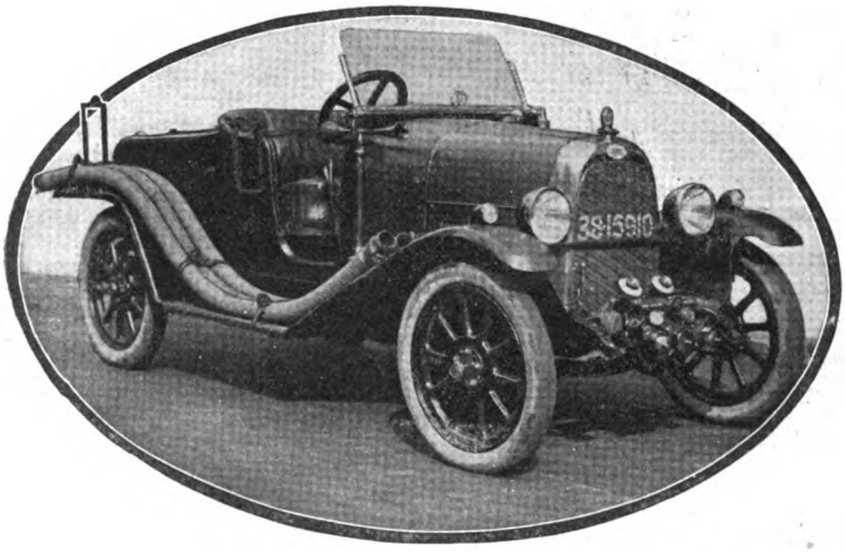


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of New and Interesting Things Automotive



Chicago housewives are soon to be taught the art of cooking by means of a truck with a miniature kitchen inside and a dainty and efficient cook presiding therein, whose duty will be to go from place to place and teach housewives how to cook better food. Mrs. Christine Frederick, national food expert, is in charge of the project



Any motor car or truck can become an effective fire engine by the addition of a high speed turbine water pump placed in front of the radiator and driven direct from the crankshaft. The invention is of particular interest to small communities unable to afford more expensive fire equipment and to farmers who might buy the apparatus on a cooperative basis. Pumps of the design necessary are being made by Merio Tamini, an Italian engineer, who at the present time is selling the entire output of his factory to the Fiat company



Police departments are getting deeper and deeper into inspection of automobiles to prevent carelessness and the resultant accidents. In New York, not long ago, police officers stopped cars and inspected the brake bands. This activity may be expected to spread to other large cities

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Will You Watch the 1923 State Legislatures?

Legal Editor Offers to Help Trade to Secure Better Automotive Laws if Needed

THE legislatures of a big majority of the States will convene in regular session next month, January, but to date there has been little talk about proposed garageman's lien laws to be introduced in the various States.

How will the automotive dealers benefit by the passage of laws beneficial to their business? In direct proportion to the effort they expend in attempting to have such beneficial legislation enacted into law.

Perhaps the dealers in the great majority of States where there are no really adequate laws for the protection of garagemen and repairmen are satisfied—if not it is up to them to prepare now for the introduction of new lien laws or other desired laws at the coming legislative sessions and arrange to get together to support such proposed bills.

Automotive dealers cannot reasonably expect others to back laws which will benefit their industry alone, especially if they will not take the trouble to back them themselves. If they are not willing to go to a little trouble and to some expense to secure laws which will protect them they must be willing to be classed as a rather poor lot of business men.

There is no legislation that the various legislators will not pass so long as it is reasonable and so long as there is a strong insistent demand for its passage and there is no legislation that will pass so quickly and appear on the statute books in so short a time as legislation sponsored by strong, well organized groups of responsible business men. The dates on which the various legislatures convene again in 1923 are as follows:

Alabama	Jan. ..
Alaska	Mar. 5
Arizona	Jan. 8
Arkansas	Jan. 9
California	Jan. 2
Colorado	Jan. 3
Connecticut	Jan. 3
Delaware	Jan. ..
Florida	Jan. ..
Georgia	June 28
Hawaii	Feb. 21
Idaho	Jan. ..
Illinois	Jan. ..
Indiana	Jan. ..
Iowa	Jan. 8
Kansas	Jan. ..
Kentucky	Jan. ..
Louisiana	May 3
Maine	Jan. ..
Maryland	Jan. ..
Massachusetts	Jan. 4
Michigan	Jan. ..
Minnesota	Jan. 2
Mississippi	Jan. 3
Missouri	Jan. ..
Montana	Jan. 2
Nebraska	Jan. ..
Nevada	Jan. 16
New Hampshire	Jan. 4
New Jersey	Jan. 10
New York	Jan. 16
North Carolina	Jan. 1
North Dakota	Jan. 4
Ohio	Jan. 9
Oklahoma	Jan. ..
Oregon	Jan. 8
Pennsylvania	Jan. 2
Porto Rico	Feb. 12
Rhode Island	Jan. 3
South Carolina	Jan. 10
South Dakota	Jan. 2
Tennessee	Jan. ..
Texas	Jan. ..
Utah	Jan. 8
Vermont	Jan. ..
Virginia	Jan. ..
Washington	Jan. 10
West Virginia	Jan. 10
Wisconsin	Jan. ..
Wyoming	Jan. ..

Note.—The editor will be glad to hear from individual dealers or from trade organizations in any of the above States who are desirous of submitting new bills to their various legislatures and will be glad to aid and assist them in every way possible.

Three Wise Men

ONE was sick — he consulted a doctor and became well.

One sought spirituality—he consulted a holy man and was saved.

One was in the automobile business—people owed him money he could not collect — folks browbeat him into filling demands he thought were unjust — his garage burned down and he bought a lot of folks new automobiles — his wash rack man smashed a car delivering it on the request of a customer and he paid the bill—he fixed a car for a man who didn't own it and got stung—his partner eloped with his wife and liquor — BUT THAT WAS BEFORE HE BECAME A WEEKLY READER OF THIS PAGE.

He writes frequently to the legal editor now.

He's a wise man.

Selling Without Warranty

The Supreme Court of Montana recently pointed out in a case which came up on appeal before it that parties to a contract may expressly stipulate that the property which is the subject of the contract and which is sold is not warranted.

In this case a rebuilt tractor was purchased together with other machinery and afterward an action for breach of warranty was instituted by the buyer who actually recovered judgment for $800 in the trial court.

The seller thereupon appealed the case and the Supreme Court reviewing the matter reversed the judgment of the lower court on the showing by the seller that the property had been sold without a warranty, saying, "Personal property may be sold without a warranty and parties to a contract may expressly stipulate as they did by the contract in this case that property sold is not warranted." Friesen vs. Hart-Parr Co., 209 Pacific Reporter, page 986.

Dealer's Liability in Chattel Mortgage Sale

Editor Motor World:—Will you please answer through your legal columns advising whether in Michigan a dealer who sells a car on a contract note which is virtually a chattel mortgage is liable for personal damage caused by the purchaser of the car.—A. A. Co., Battle Creek, Mich.

Answer:—In Michigan, as I understand it, a car owner is responsible for damages caused by a car owned by him unless the car was being driven at the time of the accident without his knowledge or consent. Your courts have not held like those of South Carolina have that an owner may be responsible even though the car was being used without his knowledge or consent. State vs. McClung, 233 S. W. Reporter, page 54, nor have they decided like the New York courts and the courts of most of the States have that a car owner is only responsible when a car is being used within the scope of his business, etc.

In your State (Michigan) it has been held that an owner is responsible for accidents caused by one to whom he has loaned his car.

As I see it in your State you would probably be held liable if you sold a car under a conditional bill of sale, reserving title to the car in yourself, but would not be held responsible if you sold the car, passing title to the purchaser and then took back a chattel mortgage to secure the price. My recommendation is that you take your contract to a local Michigan lawyer for examination. I would be very glad to hear what he has to say about it in view of your question.

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Along the Automotive Newsway

By Leo Roche



PRESIDENT HARDING PRESENTS STERLING, COL., TEACHER WITH DIPLOMA OF HONOR, AND LIMERICK, N.Y. LAD WITH CERTIFICATE OF MERIT AS THE WINNERS OF THE NATIONAL SAFETY ESSAY CONTEST.

UNCLE SAM ORDERS GREATER CARE IN OPERATION OF GOVERNMENT OWNED TRUCKS TO ELIMINATE RECKLESSNESS

OLDS MOTOR WORKS OFFERS THREE PRIZES FOR THE BEST WINDOW DISPLAYS BY ITS DEALERS AND DISTRIBUTORS. BETTER WINDOWS — MORE SALES.

REPLIES TO N.A.C.C. QUESTIONNAIRE SHOW 60 PER CENT OF CAR OWNERS PREFER CLOSED CARS AND 40 PER CENT WANT OPEN MODELS.

THE MAN WHO PLAYED SANTA CLAUS—MAKING POSSIBLE THE BEST XMAS THE INDUSTRY EVER HAD.

DETROIT JUDGE ORDERS TWENTY ONE MOTOR SPEEDERS EXAMINED FOR SANITY.

WILL ROGERS WILL BE ONE OF THE SPEAKERS AT ANNUAL DINNER OF N.A.C.C.

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MOTOR WORLD
DEALERS, JOBBERS AND GARAGEMEN
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Our Industry—As an Employer

THE automotive industry provides work for two and a half million persons. Half a million of them are employed in the car, truck, parts and automotive equipment and tire factories. Another half million are in the trade—distributors, dealers, garagemen and their sales, office and mechanical workers. Another half million are engaged in other industries from which the automotive industry buys finished or unfinished products—metals, wood, leather, rubber, glass, oil and paper. A million men are employed as chauffeurs. The families of these two and a half million workers, getting their living from the automotive industry, possibly comprise 7,500,000 persons, surely exceed 5,000,000, almost one-twentieth of the population of the United States.

Swatting Public Confidence

A DEALER recently distributed circulars offering to allow $500 "on any automobile that runs, as part payment on the purchase of a brand new car" of the make he sells. The offer was limited to about a week, expiring the last day of 1922, and indicated to the initiated that the dealer probably had a trading allowance of $500 or more from his factory to clear out quickly models to be displaced by a new 1923 line. The dealer's local public probably was not initiated to the extent that it knew the real story behind such a proposal, but people in his town would be likely to arrive at one of two conclusions, either that the car was overpriced or that the dealer had a mighty big discount to play with in used-car trading. Either conclusion not only hurts the dealer concerned but the entire automotive trade of the community.

The time is going to come when factories will abandon the weak, deceptive trading allowance and, if they must dispose of a lot of cars to be superseded, come out frankly and cut the price and tell the public why. When they do, dealers will not be tempted into practices that hoodwink the public and continue to make it difficult for the industry and the trade to win the place they deserve in public esteem.

1 Salesman—1 Dealer—1 Million

IT S a little more than a month old—the idea of Ray W. Sherman of the Automotive Equipment Association's merchandising department that if every salesman of every jobbing house would select one dealer as a subject of special assistance in merchandising accessories, a million dollars' increase in business, for manufacturers, jobbers and dealers, probably could be attained. The idea is a baby yet, but it is growing lustily and reports are coming in from all parts of the country that salesmen and dealers have set to work on this novel co-operative plan.

In most cases jobber salesmen are the prime movers. They are asking dealers to join the movement. As the campaign gains momentum we imagine some dealers will begin to ask themselves, "Why am I not in this thing?" Nobody will keep them out. Every additional wide-awake merchant who joins the campaign gives it so much additional strength, makes it so much easier to reach the million mark—perhaps pass it.

Are you the kind of fellow who could make things hum in a business-building, profit-building movement like this? Ask your jobber salesman about it.

There Are Used Car Buyers

A RETAIL dealer in the East announced several weeks ago that he was through with used cars, that he would take no more used cars in trade and would dispose of those on hand as soon as possible.

Perhaps this is one solution of the used car problem but it has two serious disadvantages.

In the first place, it has been estimated that nearly 80 per cent of the car buyers are already car owners and therefore in considering the purchase of a new car, they have also to consider the disposition of the car already on their hands. For a dealer to suddenly announce that he would take no more cars in trade would seem on the face of it to be handing business to his competitors on a silver platter.

In the second place, the used car has a definite place in automobile merchandising. Even if a dealer were to limit the cars he took in trade to those of the make he handled, he would be able, by reconditioning, to sell at a low price used cars in reasonably good condition. By properly following up such buyers from the sales and service end, he would without a doubt be able to turn

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many of these used car buyers into new car buyers inside of a year.

There are many potential buyers who cannot afford a new car at present or who are a little timid about spending a considerable proportion of their savings on one. They are, however, ready to purchase a used car which would carry the reputation of the house. The new car dealer who can get their business is adding just so much to his volume and at the same time is enlarging his list of customers. His chief difficulty is to conduct the transaction at a profit. But some dealers are doing it.

Outdoor Winter and the Automobile

A DEALER wrote us a few days ago asking how he and his fellow dealers could get the motor car a little more prominently into the winter sports of his community. His town is strong for skating, tobogganing and skiing and people use their cars more or less to get to and from the scenes of these activities, but the car doesn't get into the picture in newspaper stories and 'round the fireside conversations.

What the motor car needs in this dealer's city, as in many others, is promotion as a means of greater enjoyment of outdoor winter. If skating, tobogganing and skiing races are all the rage, why not a winter motor tour, or a whole series of them, with contest features? Some dealers or dealer associations have organized winter motoring clubs, which have gone on somewhat difficult trips at times, at other times have engaged in "runs" to skating, coasting or dining rendezvous and in many ways have got winter driving talked about and written about in the newspapers.

Any such activity, while suggesting the automobile for winter pleasures, also presents it as a year 'round utility. Dealers finding a way to promote winter driving will encourage wider use of cars in cold weather, which is good business for everybody in the trade and which also increases owners' satisfaction in their vehicles. They will find eventually also a breaking of winter-time sales stagnation.

So many people rate motoring as their first recreation that it is a wonder cars are laid up even in the deep-snow country. Fewer of them would be laid up if dealers made more fuss about their availability for winter use.

The New Jersey Highway Plan

NEW JERSEY'S highway plan, which provides that construction costs be paid by all the people and the maintenance costs by the motorists, has a common sense appeal that is winning approval. Already it has been predicted that the New Jersey plan will be adopted by many other States as a means of meeting one of the great problems of the day—providing funds for the establishment of adequate State highway systems.

Practical application of the plan in New Jersey has been made possible by the approval of the voters at the November election of the $40,000,000 highway bond issue to finance highway and bridge construction over a period of five years. The law provides that every cent of the money be invested in actual construction work. The maintenance costs are provided for by receipts of the motor vehicle department.

Equally as interesting as the plan itself are the steps that are being taken to insure getting 100 cents' worth of highways for each dollar spent in construction. If this is not accomplished it will not be the fault of the Good Roads Association of New Jersey, which sponsored the movement for the adoption of the highway plan, steered it through an election to victory, and which now will assume the roll of "watch dog of the treasury" and extend its advisory help in putting the plan into operation. This association, composed of civic associations representing all parts of the State, has a membership of more than 200,000 individuals, among whom are thousands of the State's influential business men. Incidentally, its guiding spirits are automotive men.

What promises particularly satisfactory results in New Jersey is the fact that Governor-elect Silzer, who will play an important part with the Legislature in the beginning of the State's new highway program, has asked the Good Roads Association to accept the responsibility of helping to safeguard the public's interest in the awarding and carrying out of the highway contracts.

There is politics—plenty of it—in the New Jersey project, just as there is and always will be in highway building that is done under the direction of Legislatures, road commissions and others whose members owe their places in them to political forces, but the big, outstanding and important thing is that one State has hit upon a plan of highway construction that appeals to the people as fundamentally sound in principle, and behind the plan there is a strong statewide association that is pledged to help safeguard, through appointing inspectors and co-operating with the authorities, the expenditure of the people's money.

Things to Think About

THE average man doesn't get much excited about New Year's resolutions, but the average man—and most of us are—will discover, if he looks himself and his business over, that he is doing some things he shouldn't do and failing to do some others that he should do. And New Year's is about as good a time as any to get going right.

"Nobody will need to walk," says the automobile committee of Shriners co-operating in the entertainment of members of the order from all over the country in Washington next June. Eighty-five hundred local cars, added to 35,000 visiting cars, it is estimated, will do the trick. The plans are mentioned as just one more of those impressive things the motor car can do and is doing.

A dealer says you can talk continuously for two hours about an automobile without repeating. Sure can—if you know your car.

A newspaper writer says that "Owning an automobile in New York puts victim in luxury class." There seem to be a lot of peculiarly willing "victims"—in New York and elsewhere.

Wallace Page, Boston jobber, says his dealers did so well selling accessories for Christmas gifts that he's going to suggest applying the idea to birthday presents. Well, why not?

The New Year—make it snappy and it will be happy.

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Manufacturers Shorten Inventory Period

STOCKS TO BE TAKEN WHILE PLANTS OPERATE

Body Shortage and Large Demand Pile Up Orders in Detroit District

DETROIT, Dec. 23—Inventory taking in a majority of factories in the Detroit district will be limited to a much smaller period of time than usually given. Few factories will close for the holiday week, the usual inventory period, and instead the stock taking will be made in a great many instances while factories are at least in partial operation, with a complete cessation only in the days at the first of the year.

This condition is particularly true of most of the car factories, all the body manufacturing companies, and of many of the parts and accessory makers. The body manufacturing end of the industry is the busiest of all in its attempt to keep abreast of the large flood of closed body orders with present inadequate facilities. Car makers are buying closed bodies wherever they can get them but they have been unable to get either sufficient or satisfactory deliveries.

Plants Behind on Closed Cars

Some factories have been down for days at a time owing to closed body shortage and this has resulted in a piling up of orders which will take weeks to cut down. One factory will not take orders on certain of its closed models for delivery in less than a month. Several factories which have gone along uninterruptedly are from two weeks to two months behind on certain closed body models; in fact the closed body type deliveries generally are running behind orders.

Sport type models also have enjoyed a large amount of popularity and these have helped materially to keep buying at higher market through the winter. Manufacturers have been frankly surprised at the volume of business that the special model cars have developed and instead of just supplying a limited demand that would help to sustain operations in the dull season, the business has assumed important proportions.

Because of the buying in closed models and sport types, both of which take considerably longer in production than the standard models, the car factories have been kept busy, though their production totals have been falling off somewhat from the earlier season. There also has been considerable manufacturing of open standard models, though these in large part have gone to storage either at dealer establishments or factory warehouses to prepare for early spring business and poor shipping conditions during the winter.

With winter weather setting in, automobile factories here are finding railroad service falling off, as was expected. The wisdom of preparing for bad shipping conditions has been borne out by conditions following the first fall of snow which resulted in several temporary embargoes affecting roads entering Detroit. Driveaways are inadvisable for the present at least and more snow will make them next to impossible.

Bad weather conditions, with the poor condition of railroad equipment following the strike, can easily result in factories here being compelled to operate low schedules for the first month of the new year. Storage facilities at the plants and city are limited, and unless it is possible to ship by freight, part time operation must follow.

Companies with well-financed dealer organizations have prepared for this to some extent, but the supply of cars in dealers' hands throughout the country is low as compared with other years and much too low to meet a long cessation of shipping.

GASOLINE TANK DROPS BUT CAR STILL GOES

MILWAUKEE, Dec. 23—The man who always gets more miles to the gallon than his neighbor, and the salesman who claims his carburetor auxiliary will cut gasoline bills in half, must look to their laurels.

From Oconto, Wis., comes the authenticated story that while enroute from Green Bay to Peshtig, Wis., W. E. Ules and a companion reached a point near Oconto when their engine gave a few gasps, popped a couple of times and then "up and died."

Investigation revealed that the gasoline tank was missing. Ules and companion promptly walked back to look for it. Four miles down the road they found the tank lying in the middle of the highway.

New Liberty Car Likely

DETROIT, Dec. 21—Plans for refinancing of the Liberty Motor Car Co. are expected to be completed this week when a new manufacturing policy may be announced under which its line will be extended to include a light six model which will sell in the $1,000 field.

RAIL RATES LOWERED FOR N. A. D. A. MEETING

Certificates Must Be Secured from Headquarters — Program Being Prepared

ST. LOUIS, Dec. 26—Business administration and other subjects of exceptional interest to automobile business men will comprise the program for the 1923 sixth annual convention of the National Automobile Dealers Association in Chicago, Jan. 27 to 30, inclusive. Through the year 1922 the National Automobile Dealers Association has had a corps of field men developing the One-of-a-Thousand program.

The program for the meeting will be devoted entirely to the subjects which the automobile dealer has said were his most troublesome problems to-day. These can be largely classed under four major subjects dealing primarily and directly with merchandising.

Conditions throughout the United States as reflected by the close contact established this year by the N. A. D. A. with the automobile merchants, indicate that 1923 will be a year in which many changes must be made in the methods of merchandising. Some suggestion of these changes will be contained in the program of the January convention.

Men of Prominence to Speak

The program will include men of national prominence in business and in the automotive industry. Details of the program are practically complete and will be ready for announcement soon.

As in former years, the railroads have made concession to the N. A. D. A. in providing special rates of fare. Certificates for the special rates must be obtained from the St. Louis headquarters of the N. A. D. A. This has been changed this year because of the difference in the membership affiliations caused by the adoption of the One-of-a-Thousand program. The membership of the N. A. D. A. embraces practically every State, and there are indications that the 1923 convention will be the most largely attended of any in the history of the organization.

New Star Rubber Sales Head

AKRON, Dec. 26—Frank P. Harrington has been named director of sales by the Star Rubber Co. Harrington has been 21 years in the rubber business. His long career includes sales connections with Goodrich, Miller and Dayton, his work with the two former organizations covering ten and nine years, respectively.

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1923 Outlook Excellent, Summary Indicates

PARTS MAKERS GET EXECUTIVES' VIEWS

Car Production Is Expected to Equal That of Present Banner Year

NEW YORK, Dec. 26—The analytical survey of the automotive industry which is being made by the Motor and Accessory Manufacturers Association has reached a stage where a recapitulation of the views of the leading executives paints a picture of the 1923 outlook that is most encouraging.

Classifying these views, General Manager M. L. Heminway summarizes the outlook as follows:

1—That the 1923 outlook in the automotive industry is unquestionably good.

2—That 1923 passenger car production probably will equal that of 1922.

3—That truck production will show an increase in 1923.

4—That renewals during 1923 alone will require 1,800,000 vehicles.

5—That the re-entry of the farmers into the buying market will add substantially to car and truck sales.

6—That there will be a good export business for the automotive industry, particularly in the South American and Far Eastern areas.

7—That the financial situation in the industry during 1923 will be marked by keen competition, strengthening the well-established companies and putting the others to the final test.

8—That fundamental credit conditions will be sound and well stabilized.

9—That car manufacturers are giving greater emphasis to closed cars, sport models and light sixes.

10—That more and more accessories and devices, which in the past have been regarded as extras, are being adopted as standard equipment by car manufacturers.

As a result of this survey and his own observations during a year of close contact with the industry, Heminway has discovered that the motor industry is rapidly developing along railroad lines, by which he means that the manufacturers now realize that they are producing and selling transportation rather than vehicles or units.

Statement by Heminway

Heminway says:

To me this development indicates the destiny and opportunity of the automotive industry. More than that, the industry can adjust itself more effectively and more economically to the transportation needs of the nation because it can learn from the blunders as well as the triumphs of the railroads.

From considerable traveling about the trade during the past twelve months, I am convinced that this is the basic doctrine in the minds of the outstanding leaders of the automotive industry. Selling transportation rather than vehicles or units, makes for the railroad mind, as I regard it—thinking in terms of distance annihilated, production and distribution costs reduced and the scope of commercial and social life enlarged.

Dealer Worked in 1922 to Insure His Future, Says "Tom" Hay of Chicago in New Year Message Sent to Trade Body of Which He Is President

CHICAGO, Dec. 25.—In his message for the new year sent to the members of the Chicago Automobile Trade Association, President Thomas J. Hay says, in part:

"Here is the great business lesson of this year.

"During the gloomy months every dealer was on his toes trying to sell cars. It was a buyer's market and the buyers realized it. Whenever tips on prospects were secured, dealers followed them up immediately. Prospects were likened to gold nuggets—and gold nuggets they proved to be this year.

"During this struggle for business we were all building for the future, whether we realized it or not. We were laying the foundation for better business this year and were paving the way to better business in 1923. Many prospects obtained in 1921 were converted into buyers in 1922.

"In other words, we were insuring our future—and this is what every successful business does.

"Now that we are passing into another year, let us continue the building up policies that we pursued in 1921. Regardless of conditions, let us follow up every prospect as if our very existence depended upon it. Let us improve our businesses wherever possible—our sales forces, our service stations, our office forces—in fact, our entire organizations.

"Nineteen hundred and twenty-two has been one of the most successful years in the history of the automobile business. Let us all resolve to make 1923 a still better year. Conditions are favorable. The rest is up to each and every one of us."

EVERY SIXTH PERSON IN OREGON OWNS CAR

PORTLAND, ORE., Dec. 26—Registration of automobiles in Oregon has now exceeded 133,000, and it is estimated there is now one automobile for each six persons in the State. Such was the report this week by the state traffic department, the figures covering the present year up to Dec. 1.

At that time, according to the report, there had been registered during 1922 a total of 133,816 motor vehicles, 3203 motorcycles and 541 automobile dealers. The figures on automobiles and trucks, which are combined carried together and not segregated in the figures, show a gain from 118,169 registered at this time last year, or about 13 per cent. It is estimated that total registrations by the end of the year will reach 135,000.

With the present registration, figuring 800,000 population for the State of Oregon, this State now has one automobile for each six people. This places the State well to the front in this regard among the States of the Union.

IOWA IS CONSIDERING LOWER LICENSE FEES

DES MOINES, Dec. 26—Among the legislation which is scheduled to be introduced at the coming session of the Iowa Legislature which meets in Des Moines early in January are a number of bills which will have a direct bearing upon the motor trades industry of the State.

One of the most important in its bearing announced thus far is a bill which will be fathered by Secretary of State Ramsey and the State automobile department which seeks to make a material reduction in the license fees.

Iowa now stands almost at the top among the States of the Union in the amount of money paid by motorists in license fees.

Another bill which will be watched closely is one now under draft by officials of the Iowa League of Municipalities, an organization of city officials, looking toward regulation of buses.

Duplex Not to Expand Line

DETROIT, Dec. 26—Officers and directors of the Duplex Truck Co. were re-elected at the annual meeting of stockholders. Plans which the company was considering for broadening its field of manufacture have been abandoned, and operations will be confined to building the Duplex line of trucks as formerly. The company is planning an active selling campaign for the year.

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STUDEBAKER RUSHES WORK ON NEW UNITS

Company Is Figuring on Turning Out 600 Automobiles Daily Next Year

SOUTH BEND, IND., Dec. 26—Figuring on a production of 600 cars a day during 1923—325 a day at South Bend and 275 at Detroit—the Studebaker Corp. is rushing to completion several additional factory units, of which five are in South Bend and two in Detroit.

When completed these buildings will add over 1,000,000 sq. ft. of floor space, bringing the total manufacturing floor space of all plants to 7,100,000 sq. ft. and the cost to $41,000,000. All of these buildings are well under way and will be completed shortly after Jan. 1.

At South Bend the first new unit is a four-story building 172 ft. x 518 ft., an addition to the present Light-Six closed body plant. When completed this plant will consist of one great building 172 ft. x 769 ft., four stories high, devoted entirely to the production of closed bodies for the Light-Six model, and will allow for the production of 150 bodies a day.

Enlarging Assembly Building

The final assembly building at South Bend is being enlarged by a four story addition 72 ft. x 246 ft., this space being required for the increased production. To the stamping plant has been added a one-story extension 96 ft. x 100 ft., allowing for additional capacity of steel stampings.

Facilities for storing and shipping completed cars are handled in the new four-story building 76 ft. x 624 ft., which parallels the final assembly building and which is adjoined by an inclosed train shed 80 ft. x 624 ft. The storage building provides storage space for 1000 finished cars and all shipments will be made indoors. The court between the storage building and the final assembly building will be glass covered, affording greater capacity for final inspection of cars.

The last new unit at South Bend is an addition to the powerhouse, 48 ft. x 116 ft., two stories high. In it will be installed 16,000 kw. power generating equipment of the latest type, which will supply all of the electric power required by the South Bend plants.

Two Units in Detroit

In Detroit there will be two units, one of which will be a five-story building, 58 ft. x 441 ft., for the final assembly and testing departments. The second unit will be a four-story building, 95 ft. x 248 ft., which will be used for various machining operations and stores.

All of the new buildings are of reinforced concrete construction, fire-proof and with equipment of the latest and most advanced design, much of it especially built to permit of economies in the manufacture of Studebaker cars. An interesting feature in connection with the expansion program is that the new buildings are being constructed and equipped with a minimum interruption to operation.

While concrete is poured on the upper stories, machinery and equipment are installed in the lower floors. When the South Bend factories were first planned six years ago, they were designed with the idea of increasing production without interfering with operation. In laying out machinery, spaces were left alongside machines installed, for others that would be required as the output of cars mounted.

The corporation has just completed the erection of a concrete and steel service building three stories high and 143 ft. x 148 ft. located in Cleveland. This is a model building in every respect. The most advanced ventilating and lighting systems and equipment of all kinds have been installed throughout.

The Winton building four stories high and with a total floor space of over 51,000 sq. ft. on the corner of Broadway and 70th Street, New York City, is now being remodeled as a Studebaker sales room.

In Brooklyn, the corporation has let contracts for the erection of a new sales and service building four stories high and 173 ft. x. 191 ft. Contractors expect to have it ready for occupancy shortly after the first of the vear. An additional building 175 ft. x 200 ft., five stories high is being erected on West 131st Street, New York City.

These service buildings are necessary to render proper service to Studebaker owners in the Metropolitan district.

YOUNGEST CAR THIEF FOUND IN MILWAUKEE

MILWAUKEE, Dec. 22 — The world's youngest automobile thief has been apprehended in Milwaukee. He is just a month older than 10 years, and the police give his name as Georgie Kusch. He was caught after a hot chase by two motorcycle officers, who followed him about three miles along city streets and finally cornered him on the North Avenue viaduct.

During most of the wild journey Georgie maintained a speed of 40 m.p.h. Two boys, one 14 and the other 16, occupied the rear seat. At the police station, Georgie readily admitted his crime and said, "Sure, I stole the car. How can a feller learn to drive when he's got no car? I can't buy any so I just took one. I've taken 'em before."

Holds Individual Show

ATLANTA, Dec. 26—Ten new cars sold in a single week as a result of an individual winter automobile show was the record achieved by D. C. Black, Buick dealer and president of the Atlanta Automobile Association, the early part of this month.

N. A. C. C. PREPARES FOR TRUCK MEETING

Four Speakers Will Present Papers at Gathering to Be Held January 11

NEW YORK, Dec. 26—Problems of the truck industry will be thoroughly threshed out at the general meeting of the motor truck members of the National Automobile Chamber of Commerce, called for Thursday, Jan. 11. The call for the meeting has been sent out by General Manager Alfred Reeves of the N. A. C. C., and it is expected that there will be an attendance truly representative of this branch of the industry.

A tentative program has been prepared and subjects for discussions and papers settled upon, but the list of speakers is not ready for announcement. The meeting is scheduled to start at 10 o'clock in the morning at N. A. C. C. headquarters. There will be two papers discussed in the morning and two or more in the afternoon, Chairman Windsor T. White of the truck committee presiding.

The four leading papers will be on the following subjects:

What is wrong with the motor truck industry?

How can manufacturers and dealers co-operate to make truck paper more attractive to the bankers?

Is there need for a terms committee similar to that in other industries where deferred payments are a factor in sales?

Best methods for finance companies to handle truck sales, including the length of time truck paper should run.

Other subjects include: Parts makers' service stations and their relation to local dealers, national users and retail customers, and the proper relation of the parts manufacturer with the manufacturer of motor trucks.

FRANKLIN SCHEDULE CALLS FOR 50 DAILY

SYRACUSE, Dec. 23—Production of Franklin cars for 1923 calls for 50 cars a day, which, if reached, will be the biggest in the history of the H. H. Franklin Manufacturing Co. During the first quarter it is expected that 3525 cars will be built.

It is also announced that the local plant will not close down for the usual 10-day inventory period, in order that production may be maintained. The heavy demand for cars and the fact that shipments of bodies are nearer normal is given as the reason for the omission of the inventory shut down.

J. W. White to Develop Disk Wheel

BUFFALO, Dec. 26—The Wire Wheel Corp. of America has assigned to J. W. White the development of the disk wheel with which the corporation is broadening its manufacturing and distributing organization.

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DEALERS ORDER TIRES AS PRICE TALK GROWS

Manufacturers Well Booked for Spring Delivery—Akron Still Holds Off

AKRON, Dec. 23—That next spring will usher in the greatest era of prosperity and expansion the tire industry has ever known, according to Akron tire manufacturers, is indicated by the fact that practically all tire-producing companies in the Akron district to-day have booked for spring delivery from 25 to 50 per cent more business than they had on their books a year ago at this time.

Every Akron tire plant is increasing production steadily in order to build up finished goods inventories and have a sufficient reserve supply of tires on hand to meet an expectedly heavy demand in the spring.

It is estimated that tire production soon will be back to 100,000 casings a day in Akron, and some manufacturers would not be surprised to see the gross tire output mount to 125,000 casings a day by early spring.

Talk of tire price increases has greatly stimulated current sales, for many dealers are getting orders in now before the prices are boosted.

Waiting for Movement to Start

All Akron companies are "sitting tight" as to price boosts, but some admittedly have new price schedules already printed. All that is needed is for some one company to start the movement and the rest will be quick to tumble into line.

Manufacturers here say that unless the Stevenson act, passed by England and providing a graduated tax on all crude rubber exported, is either rescinded or modified, it will heap a burden of $100,000,000 upon rubber manufacturers in America next year, and that most of this will have to be passed on to the tire user, resulting in much higher prices.

The only remedy they see is to have Congress pass legislation making possible and encouraging the use of American capital in financing the establishment of rubber plantations in the Philippine Island where climatic conditions are akin to those in the rubber producing belt of Sumatra; and also to induce South American Republics to grow rubber trees so that supplies may reach this country and can avoid the British export tax.

Cadillac Sales Gain After Cut

DETROIT, Dec. 26—Cadillac sales in the first week after a recent price cut showed an increase of 22 per cent and on the second week 90 per cent, according to reports received by Lynn McNaughton, general sales manager, from distributors in all parts of the country. Deliveries the first week amounted to 60 per cent and improved 150 per cent in the second. Production now is running over 50 per cent in closed cars, McNaughton said, but many buyers are coming into the market for open cars in anticipation of waiting lists in the spring.

FEWER CARS STOLEN IN PORTLAND, OREGON

PORTLAND, ORE., Dec. 26—Automobile thieves are finding it harder and harder to ply their trade, judging from the annual report of the Portland Chief of Police, covering the 12 months ending on Nov. 30, 1922.

During that period, says the report, a total of 516 automobiles were stolen, of which 490 were recovered, leaving a percentage not yet found of but 5.3. In addition 13 cars stolen prior to this year were found and returned to their owners, while 16, stolen in other parts of the country, were found and returned. A total of $523,982 was represented in the thefts, about half of which was covered by insurance, it was reported.

GRAY WILL EXHIBIT NEW SEDAN AT SHOWS

DETROIT, Dec. 23—Gray Motor Corp. will exhibit a new four-door sedan at the New York and Chicago national shows for the first time anywhere, and in addition will display for the first time the complete Gray line of roadster, phaeton, coupe and coach. The price of the coach has been increased from $760 to $785. The coupe, which is now being shipped, is $715.

H. W. Burritt, formerly special tax counsel for all Ford Motor Co. interests, has been made secretary and assistant treasurer of Gray, being directly associated with President F. L. Klingensmith. L. R. Martell, formerly production manager at Gray, has been made commercial manager, working in the sales department with D. Henry Bonner, sales manager. The advertising and service departments have also been brought under the direction of the sales department. Shipments to Canada for distribution through the sales organization of the Gray-Dort company are now going forward in considerable volume.

The following distributors have been added by Gray: R. E. Jordan, Dallas; Montana-Haynes Motor Sales Co., Butte; M. L. Graham Co., Salt Lake City; Taylor A. Faulder, Sydney, Ohio, and C. J. McKinney Co., Laredo, Tex.

Planning New Building

KNOXVILLE, TENN., Dec. 26—A new building to cost approximately $80,000 to $100,000 will be constructed in the near future in this city by the Cherokee Motor Co., Studebaker distributor, as a sales and display room and service station. it is announced by Claude C. Reeder, president of the company.

FORD HOUSTON HEAD ON TOUR OF MEXICO

Looking Out for Sales Possibilities—Will Study Economic Conditions

DETROIT, Dec. 23—R. S. Abbott, manager of the Houston branch of the Ford Motor Co., is now in Mexico on an extensive trip during which he will visit all Ford distribution sources in the country. Particular attention will be paid to sales possibilities to decide what will be necessary to increase business throughout the republic. Endeavor will also be made to educate the people on the use of the Ford products for their special requirements.

The trip is practically a duplicate of one taken a year ago. Abbott will travel south to the Isthmus of Yucatan and west as far as Sangeronimo. Economic conditions will be studied separately and compiled individually by states. A considerable part of the time will be spent in Mexico City.

The Houston plant of the Ford company exports all cars shipped to that country. It is the intention of the company to locate an assembly branch in Mexico when economic conditions are considered satisfactory. Abbott's investigation, though fundamentally designed to increase business of the Houston plant, will also provide information on developments in Mexico and is a link in the company's plan of manufacture. This development, however, is declared still some distance away.

PRICES OF USED CARS AT LOW MARK IN IOWA

DES MOINES, Dec. 26—According to a study just completed by S. P. Whiting, secretary of the Motor Trades Bureau of the Des Moines Chamber of Commerce, prices of used cars in November reached the lowest mark in the history of Iowa motor markets.

Whiting bases his conclusion on a survey of the weekly sheets covering used car transactions of the Des Moines motor dealers, supplemented by special reports from the leading dealers of central Iowa. Six representative makes were used in making the investigation.

The survey reveals that reduced prices of new cars through lower priced material and keener competition was one of the principle reasons for the drop in used car prices. It also shows that every decline in new car prices has been accompanied by an even sharper cut in used cars.

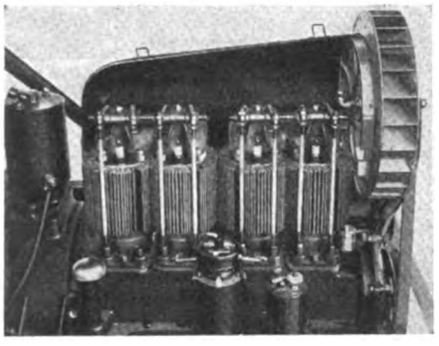
Another reason given for the new low mark by Whiting is that the present methods of financing purchase of new cars by manufacturers and motor financing companies has worked to a decided advantage for the new cars as it gives the purchaser a plan for buying a car with a down payment no larger than the price of a used car.

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CHEVROLET PRODUCES COPPER-COOLED CAR

Line to Be Marketed With Superior—Touring Model to Sell for $725

FLINT, MICH., Dec. 22—The copper-cooled car which has been in process of development by the General Motors Corp. in its research laboratory at Dayton, Ohio, is now in production at the Chevrolet plant. It will be marketed as a Chevrolet and will sell along with the Chevrolet water-cooled Superior Model, which will be continued. Deliveries are already under way and some dealers have received cars.



The new copper-cooled Chevrolet engine

For more than a year considerable interest has been created by the fact that General Motors was developing an air cooled car. The most radical change from conventional practice is to be found in the engine, which is air cooled through the medium of copper fins which are electrically welded to the cast iron cylinders so that full advantage can be taken of the superior heat conductivity of the copper.

The cylinders are manufactured in Dayton, the copper fins being made in special machines which form them into shape and give the necessary height for clearance between cylinders and at points at which the push rods come, thus making a continuous band of copper around the cylinders. The bore is 3½ in. and the stroke the same. There are four cylinders. Cooling is by air suction from a centrifugal type fan.

Five Body Models

In appearance the new Chevrolet is similar to the Superior, but practically none of the parts are interchangeable. Five bodies are furnished, roadster, touring car, coupe, sedan and sedanette, and the price will be just $200 more than the Super, or $725 for the touring car.

Aside from the engine, the chassis follows conventional lines in general. The electrical equipment is Remy, the carbureter a Carter and the universals Mechanics Machine. The clutch is a dry disk and the gearset of the three speed type. The service brake is on the rear wheels and the emergency brake on the rear end of the gearset. Propulsion is through the springs and torque is taken through a torque arm. The springs are quarter elliptic all around. The wheelbase is 101 in., touring car weight 1670 lb., and gear ratio 4.44 to 1.

A complete illustrated description of the new General Motors copper-cooled Chevrolet will appear in the Jan. 3 issue of Motor World.

PIERCE-ARROW GIVES CORCORAN PROMOTION

BUFFALO, Dec. 27—Laurence E. Corcoran has been named general sales manager of the Pierce-Arrow Motor Car Co. He has been associated with the Pierce-Arrow company for 17 years, and for the last two years has been passenger car sales manager. Corcoran will have complete direction of merchandising and distribution of both passenger cars and trucks.

Immediately in charge of car selling will be Thomas J. O'Rourke as car sales manager. O'Rourke has been associated with the passenger car sales division of the company for 16 years. Robert C. Patten, who for several years has been truck sales manager, has been appointed executive in charge of the development of sales of fleets of trucks to national users.

The promotions are made at the height of one of the most successful selling seasons in the history of the company. Results for the last six months of the year show that passenger car sales have increased 90 per cent over the figures of the same period a year ago, while the leap in truck shipments for the same period totals 65 per cent.

FORD WILL CONSTRUCT PLANT NEAR CHICAGO

DETROIT, Dec. 22—Ford Motor Co. has announced its intention of building a $6,000,000 plant near Chicago. The location selected is at Hegewisch, on the Calumet River and Nickle Plate Railroad. It will be a four-unit plant, each unit of which will cost $1,500,000, the first one to be in operation by next May. Sixteen thousand men will be employed at the start.

Ford company officials state this is the first step of a program of expansion planned, which will be one of the greatest industrial developments the world ever has seen, including, as it does, a great industrial plant at New Orleans, a unit at St. Louis and water power development at St. Paul. Ford denies he has any intention of withdrawing from Detroit.

Detroit Air Cooled Shows Car

DETROIT, Dec. 22—The Detroit Air Cooled Car Co. is displaying a sedan model in its showroom in this city as part of its display at the Hotel Commodore during the national show week. The company is planning to build about 1000 cars in 1923 at the factory recently acquired in Wayne.

OLD TIME SALESROOM IS DEPICTED IN SKIT

Suddenly Scenes Fall, at Chevrolet Meeting, Showing One of Modern Type

INDIANAPOLIS, Dec. 26—The Chevrolet zone meeting held here for all Chevrolet Indiana dealers and for many from Ohio, Illinois and Kentucky was attended by 250 Chevrolet representatives and the Chevrolet band. "Service, More Service and Yet More Service" was the theme of the talks led by Colin Campbell, general sales manager of the company.

At the evening session a skit was staged incident to the banquet, entitled "John Martin, Auto Dealer, Undertaker, Justice of the Peace, Dispenser of Gasoline and Accessories."

A compact stage all set disclosed, when the curtains were drawn, an automobile store in a country town, the walls pock-marked with all manner of signs setting forth the various endeavors of said John Martin, together with posters of events past, present and the future at the Opera House for which John got tickets in return for the space. It looked as real as some accessories-loaded windows with their scores of signs all fighting for attention.

When the scene opened, Martin was back, but his sign said "Out." The interviewer in the person of Earl Dawson, district sales manager, hit off the utter futility of the place as a salesroom or store, and finally persuaded the "dealer-undertaker-justice-of-the-peace and dispenser-of-gasoline-and-accessories" to push the brick walls over and clean house.

Martin finally stripped the walls, disclosing a well ordered establishment with but one sign and clear windows showing the Chevrolet looking through the glass, and a well supplied stock of parts and accessories at one side. Even John Martin looked surprised at the improvement.

It may sound very simple, but it made a hit, and from remarks heard afterward, it is judged that some dozens of junk signs have since been lifted from dealers establishments in this zone.

CONNECTICUT TRUCK ROAD TO BE URGED

HARTFORD, CONN., Dec. 26—State Highway Commissioner Charles J. Bennett will recommend to the Legislature which convenes Jan. 3 the construction of the special highway for the exclusive use of motor trucks, extending from Bridgeport, Conn., to the New York State line which has been under discussion for some time.

The proposed truck route is about 30 miles long, and a highway 22 ft. wide and would require an appropriation of about $1,500,000. One of the plans suggested to meet the expense of maintaining this route is a tax of two cents a ton-mile, which would bring in a revenue of about $280,000 annually.

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New York May Follow Boston Used Car Plan

ADOPTION PROBABLE WITH TURN OF YEAR

Meeting Held to Consider Proposition—Brooklyn and Newark in Movement

NEW YORK, Dec. 22—It seems fairly certain that early in the new year automobile merchants of the Metropolitan territory will be handling used cars under a co-operative plan. There is every indication that New York, Brooklyn and Newark, N. J., will adopt the essentials of the Boston plan.

Newark already has its co-operative plan under way. A large majority of dealers of the New Jersey metropolis joined the movement at a meeting a little over a month ago and selected George Smith, a former Newark dealer, as secretary. The Newark used car valuation book is in the hands of the printer and with its appearance the plan of dealer co-operation will be in full swing.

Brooklyn dealers have had several meetings at which co-operation was virtually decided upon, though final action was deferred pending consideration of the subject by the Automobile Merchants Association of New York.

The New York dealers to-day heard the story of the Boston plan told by L. B. Sanders, secretary of the Boston Used Car Statistical Bureau, who had previously described the work at meetings in Newark and Brooklyn. The board of directors of the New York Association had investigated the plan before the meeting was held and will take final action in the near future. From the sentiment indicated at the meeting it seems certain that action will be favorable.

The New York meeting was attended by a majority of the larger branch managers and distributors, with Lee J. Eastman, president of the Packard Motor Car Co. of New York and president of the association in the chair.

The Boston plan, with slight modifications, already is in operation in Philadelphia, Baltimore, Syracuse and a number of other cities.

Tire Prices Increased

TRENTON, N. J., Dec. 21—Empire Tire & Rubber Corp. and Murray Rubber Co. have announced a 12½ per cent increase on tire prices and a 15 per cent increase on tubes, effective, Jan. 1.

Cuts Down Show Program

PHILADELPHIA, Dec. 26—The show committee for Philadelphia's twenty-second annual automobile exhibition at the Commercial Museum, Jan. 13 to 20, inclusive, has decided to eliminate an elaborate program and substitute therefor a four-page, pocket-size folder, showing the floor plan and list of exhibits.

Paul M. Swisher, a graduate of the Pennsylvania Museum School of Industrial Art, was declared the winner of the show poster design. He was the winner also at last year's poster contest.

GRAY TRACTOR NAMES SYKES GENERAL HEAD

MINNEAPOLIS, Dec. 22 — George Sykes, whose extensive selling experience has made him familiar with the problems which tractor distributors and dealers are facing, has been appointed general manager of the Gray Tractor Co. of this city.

The acquisition of Sykes will not change the personnel of the organization, Gray continuing as president; H. D. Dodge in charge of sales, and George Bird as branch manager of the Wichita office. The management of the Gray Tractor Co. of Canada, Ltd., remains in the hands of Albert Prugh and James Letham.

MILBURN IS OFFERING NEW RUNABOUT MODEL

TOLEDO, Dec. 26—Milburn Wagon Co. has developed a two passenger electric runabout which may be described as a cross between a coupe and a roadster.

The standard model 27-L, five-passenger brougham shows many improvements in both workmanship and performance. Additional battery capacity is provided with a heavier duty motor, while equipment includes snubbers, Alemite lubrication and all instruments necessary to insure intelligent and easy operation.

Supplementary to this model, the Milburn is also offering a four-passenger coupe mounted on the same chassis as the 27-L. This vehicle, which is designated as model 27-F, presents a staggered interior seating arrangement, the driver's seat being set forward in the same manner as in three-passenger gasoline car coupe design. An additional auxiliary seat is mounted forward on the right side, directly under the front window, thus permitting a total seating capacity for four passengers.

H. H. Hewitt Dies

BUFFALO, Dec. 24—Herbert H. Hewitt, founder and president of the Hewitt Rubber Co. which manufactures Hewitt tires and mechanical rubber goods, died here to-day. He was born in Detroit 67 years ago and as a youth entered the employ of the Pullman works in Chicago and soon became manager. He came to Buffalo 20 years ago.

AIMS TO STANDARDIZE METHOD OF FINANCING

Association in Chicago Prepares Schedule for Selling of Automobiles

CHICAGO, Dec. 23—A move toward standardization of practices in the financing of retail sales of automobiles on the deferred payment plan has been made by the Central Auto Finance Association, with headquarters in Chicago, which is preparing to send out to the trade a circular defining certain conditions and restrictions which are to be observed.

The circular sets forth the following conditions:

For new passenger cars, open and closed, notes are to have a maximum maturity of 12 equal monthly payments.

For used passenger cars, open and closed, the minimum down payment must be 50 per cent of the time price and notes are to have a maximum maturity of 10 equal monthly payments.

Cars sold as demonstrating cars, because of insurance restrictions, will be treated as used cars and are subject to the used car terms and rates.

The financing of used cars will be restricted to cars not more than four years old, as per conference insurance rulings.

No deals involving hold-outs, reserves or infractions of the foregoing can be accepted.

The circular emphasizes the statement that the monthly payments must be equal and from members of the association, it is learned that the reason for this is that in a good many cases where payment of the balance in 12 equal monthly installments would require a monthly sum beyond the means of the buyer it has been the practice to accept 11 small notes with a large one at the end. This practice is frowned upon by the association as a poor business method.

Although the circular does not state a minimum down payment on new cars the members of the association generally require not less than one-third of the time price.

Tennessee Tire Makers

MURFREESBORO, TENN., Dec. 26—The Tennessee Rubber Co. has been organized here to engage in the rubber and tire manufacturing business. Incorporators are A. D. McKnight, W. S. Winn and James M. Butler.

Distributor Leaves for Coast

BALTIMORE, Dec. 26—H. D. Howell, for many years representative of the Reo organization in this city, was tendered a farewell dinner last week by more than 100 of his friends in the trade. Howell will make his future home in California.

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BODY BUILDERS WORK WITH LITTLE LET-UP

Only Brief Interruptions to Come During Holidays—Busy on Closed Types

MILWAUKEE, Dec. 26—More regular employees are at work in Milwaukee automotive industrial shops this week than probably ever before in the period between the holidays. Ordinarily the layoff for the year-end begins on the day before Christmas and sometimes does not end until Jan. 8, the extra week being for inventories, but this year most shops are too busy for the customary extended recess.

Body shops are especially busy, and the local plants specializing in closed types are working at top speed, with only brief interruptions over Christmas and New Year's Day. Very little is going into stock, as most shops are not yet caught up with current orders. On open types of bodies, production is going forward, too, but the main effort is to satisfy shipping instructions on coupe and sedan bodies.

Advance orders for passenger car units, including engines, frames, axles, gears, etc., held by Milwaukee shops are liberal, and while shipments this week are expected to aggregate rather light and will be next week as well, instructions are expected which will mean a resumption of heavy deliveries about Jan. 8 or 10.

The uncommon situation exists that several dealers in Milwaukee will carry over some unfilled orders into the New Year. Ordinarily by the middle of December all deliveries have been made and the year's business is virtually at an end. In the present instance the unfilled business is almost entirely in coupe and sedan types.

TRAINLOAD SHIPPED TO SOUTH BY DURANT

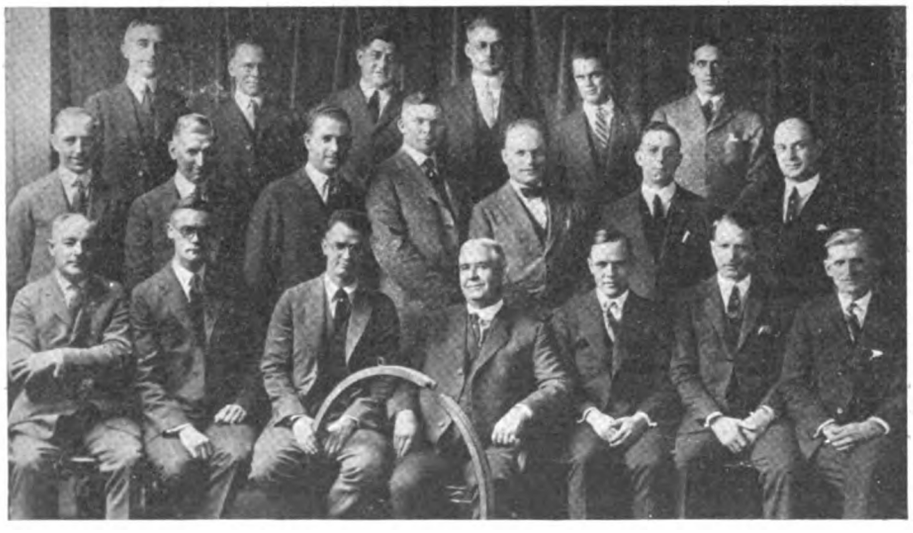
ATLANTA, Dec. 22—A special Atlantic Coast Line train reached Augusta, Ga., Dec. 15 by way of Richmond, Va., from New York, consisting of 40 cars loaded with 188 Durant and Star automobiles consigned to southeastern dealers, and said to be the second largest trainload of automobiles ever shipped in the United States. It was the largest trainload ever sent to the South.

Eight of the freight cars were consigned for distribution from Augusta, seven each from Columbus, Ga., Atlanta and Knoxville; six from Macon, three from Montgomery, and two from Mobile. The Atlanta distributor states that every one of the Durant and Star cars contained in the shipment were sold before leaving the factory.

Honor Dodge Representative

BOSTON, Dec. 26—Hallock Drake Day, New England district representative for Dodge Brothers, was tendered a surprise dinner here on the eighth anniversary of his taking charge of the territory. It was held at the Copley Square Hotel, and about 75 guests were present from all over New England. Special floral pieces were sent to Day's office and to his home. At the dinner he was presented with a handsome hall chime clock. C. S. Henshaw, Boston distributor, arranged the affair, assisted by members of his sales force.

Piston Ring Men at A. E. A. Convention



A number of executives and district managers of the No-Leak-O Piston Ring Co. attended the recent convention of the Automotive Equipment Association held in Chicago. Reading from left to right, front row, they are: W. G. Sparling; L. G. Matthews, treasurer; J. E. Norwood, Jr., factory manager; J. E. Norwood, Sr., president; C. M. Swaim, R. G. Bowman and C. E. Stevenson. Middle row: E. L. Bixby, J. G. Cochrane, H. L. Strasburger, P. R. Acton, sales manager; F. A. White, assistant sales manager; B. C. Beisel and J. P. Hardesty. Back row: L. E. Malican, J. W. Van de Grift, F. B. Archibald, P. H. Briggs, H. M. Vercoe and L. R. Vercoe, Jr.

350 DEALERS HEAR TALKS ON TRACTORS

Representatives of Manufacturing Companies Appear Before Iowa Meeting

DES MOINES, Dec. 26—Over 350 implement and tractor dealers attended the twenty-seventh annual convention and exposition of the Iowa Implement Dealers Association held here. Exposition space at the Coliseum was let to more than fifty exhibitors.

Guy H. Hall of the National Institute of Progressive Farming gave a heart-to-heart talk to the dealers, outlining the work of the Institute and explaining how its work toward progressive farming benefited the individual dealer. David Darragh of the Hart-Parr Co. made a talk on "Crop Assurance" in which he explained the tractor's position in the agricultural world.

C. S. Brantingham of the Emerson-Brantingham Co., F. R. Sebenthal of Eau Claire, Wis., and Tom Witten of Trenton, Mo., spoke on subjects of dealer interest. Margaret Boylon of Kansas City led the convention singing which was a feature of each session of the convention.

J. H. Hogen of Waukon, Iowa, was elected president of the association for the coming year. C. H. Chase of Sioux City was named vice-president, and T. F. Wherry of Des Moines was re-elected secretary.

Although the attendance was not as great as was expected, many dealers expressed the belief that the convention was better from every standpoint than any previous meeting of the Iowa association.

MOTO-METER REPORTS HAVING BANNER YEAR

NEW YORK, Dec. 23—The annual sales conference of the Moto-Meter Co., Inc., has been held at the factory in Long Island City. District sales managers and field representatives from all territories are present for the purpose of making plans for the coming year.

It was announced at the meeting that the sales for the first six months of 1922 exceeded the entire sales for the previous year, and that those for the entire year more than exceeded any previous year in the company's history.

Oshkosh Tractor Receiver

MILWAUKEE, Dec. 26—Miss Alma Barry, attorney, has been appointed receiver of the Oshkosh (Wis.) Tractor Co. in a friendly action brought in the Milwaukee County Circuit Court.

Van Kerr Schedule

CHICAGO, Dec. 22—Van Kerr & Co., bankrupt manufacturer of intensifiers for spark plugs, has filed a schedule in the United States District Court giving liabilities as $87,712 and assets as $3,293.

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PROTEST CAR SEIZURE FOR CARRYING LIQUOR

Dealers in Portland, Oregon, Aroused by Federal Policy of Confiscation

PORTLAND, ORE., Dec. 26—Protest against the Federal policy of confiscating automobiles used to carry liquor, even when not the property of the person involved in the law violation and used without the consent or knowledge of the actual owner, has been voiced by the Automobile Dealers Association of Portland, in the form of a telegram to the National Automobile Dealers Association.

The action came after one of the dealers had lost an action in Federal Court in which a car that he was selling on the installment plan was involved. This has occurred several times in Portland recently, despite the fact that the automobile dealers take every possible precaution against selling to those who may become engaged in illicit liquor trade.

Cites Railroad Car as Example

Ralph J. Staehlig, secretary of the association, says, in discussing the stand of the Portland dealers:

The automobile men cannot see why the automobile should be singled out for confiscation when it has been a liquor carrier, in cases in which the operator is in no sense the owner or direct agent of the owner of the car. To be consistent the courts should confiscate every Pullman car in which liquor is found. The dealer, who is in no sense a party to the violation of the prohibition laws, feels that he is entitled to greater protection than the courts give him.

Portland automobile dealers take every precaution against selling automobiles on time to bootleggers. Before a man can buy an automobile on time payments from any Portland house member of the association he is made to fill out a financial statement that requires responsible references. This statement was prepared with the assistance of two local bankers, and calls for bank references.

In response to the wire from the Portland association the N. A. D. A. responded that it is fully aware of the condition and is studying ways and means of securing relief.

KENTUCKY TRUCK MEN SEEK REPEAL OF LAW

LOUISVILLE, Dec. 26—An organization has been formed by the Truck Operators' Association to take legal steps to repeal the load limit law which is now effective.

It is claimed by the association that this law practically puts all trucks of more than 2-ton capacity out of commission for four months of the year and thereby increases the cost to the farmer.

The case of Charles W. Nally, Cox's Creek, was cited by the association. Nally runs a dairy at that point and supplies Louisville milk dealers. Under the law, Nally will be compelled to use the railroad with increased hauling charges. It is said that the law will force more than 1000 farmers to resort to railroad shipments to deliver their produce to the market, instead of large trucks.

The association plans a state-wide campaign to have the law either amended or repealed. Officers elected were: President H. C. Kelting of Louisville; secretary, Herman Cotton of Louisville, and treasurer, Arthur Weber of Louisville; executive committee, L. W. Gibbs of Frankfort, J. E. Lloyd of Louisville and W. R. Crume of Springfield.

Receiver for Saxon

DETROIT, Dec. 26—David C. Bayne, secretary of the Saxon Motor Car Corp., has been named receiver of that company, Judge Tuttle directing, in the court order, that he shall take care of the service parts for Saxon owners.

Busy Times Scheduled for New York and Chicago While National Shows Are Being Held in Those Cities Under the Auspices of the N. A. C. C.

NEW YORK, Dec. 26.—Events taking place during the national show weeks in New York and Chicago are announced as follows:

NEW YORK

Jan. 6-13—National Automobile Show, Grand Central Palace.
Jan. 8-13—Automobile Body Builders' Association Show, Twelfth Regiment Armory.
Jan. 9-12—Society of Automotive Engineers' Annual Meeting.

Jan. 8

10.00 A.M.—National Automobile Chamber of Commerce Export Manufacturers' Convention.
6.30 P.M.—Rubber Association Dinner, Waldorf-Astoria.

Jan. 9

2.30 P.M.—National Motor Truck Committee Meeting.
6.30 P.M.—N. A. C. C. Annual Dinner, Hotel Commodore.

Jan. 10

10.00 A.M.—N. A. C. C. Directors' Meeting.
10.00 A.M.—Franklin Automobile Co.'s Sales Conference, Commodore; Luncheon 1.00 P.M.
Evening—Eastern Oldsmobile Dealers' Meeting-Dinner, Commodore.
6.30 P.M.—Motor and Accessory Manufacturers' Association Dinner, Commodore.

Jan. 11

6.30 P.M.—S. A. E. Dinner, Pennsylvania Hotel.
Hupmobile Luncheon and Dealers' Meeting, Commodore.
New York State Merchants' Association.
Special General Meeting, Truck Members, N. A. C. C.

CHICAGO

Jan. 27-Feb. 3—National Automobile Show, Coliseum and First Regiment Armory.
Jan. 27-Feb. 3—Annual Automobile Salon, Drake Hotel.
Jan. 29-31—Automotive Electrical Association's Annual Meeting, Congress.

Jan. 27

10.00 A.M.—National Automobile Dealers' Association's Directors' Meeting, LaSalle.

Jan. 29

10.00 A.M.—Sixth Annual Convention, N. A. D. A., LaSalle.
8.00 P.M.—Annual Banquet, N. A. D. A., LaSalle.
N. A. C. C. Advertising Managers' Convention (tentative date).

Jan. 30

10.00 A.M.—Concluding Session, N. A. D. A., LaSalle.

Jan. 31

10.00 A.M.—N. A. C. C. Directors' Meeting.
10.00 A.M.—N. A. D. A. Directors' Meeting, LaSalle.
10.00 A.M.—Franklin Automobile Co.'s Sales Conference, Congress; Luncheon, 1.00 P.M.
Evening—Central and Western Oldsmobile Dealers' Meeting-Dinner, LaSalle.
S. A. E. Meeting and Dinner, Congress.

Feb. 1

Hupmobile Luncheon and Dealers' Meeting, Congress.

BOOST GIVEN ROADS AT FARMERS' MEETING

CHICAGO, Dec. 26—The development of an adequate highway transportation system by Federal and State governments was urged here by the representatives of the American Farm Bureau Federation at its fourth annual convention.

A resolution was adopted and sent to members of Congress requesting that the national and State governments take prompt steps to develop a well-rounded transportation system of first grade highways, which would be interstate in their relation.

Co-operative marketing by trucks was urged as a means of solving, to a large extent, the transportation problems of the farmer and as a possible factor in securing better prices for farm produce by the elimination of "excess" middlemen.

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CHANGES IN THE TRADE

Baltimore Lexington Co., Inc., has been appointed distributor for the Lexington.

Larson Motor Co. has changed its principal office from Portsmouth to Norfolk, Va.

Leo P. Weeder has joined the Marmon Boston Co., in charge of its used car department.

Hanson-Tyler Auto Co. has taken the Sioux City, Iowa, agency for the Star and Durant.

Chester R. Giddings has taken over the Liberty in Springfield, Mass., succeeding the **William B. Chellis Co.**

R. E. Cortright and **F. A. Roethlisberger,** of South Bend, have taken the Fort Wayne, Ind., Chevrolet agency.

Harry E. Oechsli has returned to Spokane after an absence of several years and will resume handling Ford Motor Co. products.

McCusker-Foulks Co., Milwaukee, has been incorporated by **John Foulks** and **William McCusker,** to act as retail dealer in the Chevrolet.

Packard Deluxe Motor Car Co. has been organized at Peoria, Ill. The incorporators include **W. E. Stedman, W. P. Phillips** and **H. E. Hudson.**

R. D. Rockstead, Milwaukee, Wisconsin distributor of the Lexington and Earl, has also been appointed distributor of the Gardner in the same territory.

Goodyear Rubber Co., Middletown, Conn., has increased its capital stock from $50,000 to $300,000, according to papers filed with the Secretary of State at Hartford.

S. A. Dunham, Syracuse, N. Y. and **Fred L. Whiting** of Jordan have established an agency for Stewart trucks in Syracuse, under the name of **Stewart & Whiting.**

Stewart Motors Corp., Boston, distributor of the Stewart truck in New England for years, is now handling the Columbia. **H. Ross Maddocks** will be in charge of the line.

Ebener-Sauer Co., Milwaukee, has been organized to act as local retail dealer in the Auburn, under the **Herford White Co.,** Milwaukee, distributor in Wisconsin and Upper Michigan.

Bell-Korfmann, Inc., Milwaukee, has been organized to distribute the Rolls Royce in Wisconsin and Upper Michigan. The principals are **R. Ellsworth Bell** and **Calvin L. Korfmann.**

H. J. Strack, Des Moines, will distribute the Columbia in central Iowa, under the name of the **Strack Motor Sales Co.** Quarters have been secured at 1429 Locust Street, Des Moines, Iowa.

Kelley Auto Co. is the latest addition in the motor field in Houston, Texas. The company is composed of **G. W. Kelley** and **John Woolson.** Case cars will be distributed in South Texas.

Moline-Knight Auto Co., Milwaukee, distributor of and dealer in the R & V Knight, announces that **Sidney B. French** has retired as a partner and the business will be continued by **C. E. Bowers.**

Cash-Bissell Co. has been organized at Jacksonville, Fla., and will establish in that city a large garage and service station. Officers are **D. O. Cash,** president and **L. E. Bissell,** secretary and treasurer.

Chapman-Marvin Co. has been organized at Jacksonville, Fla., to establish there an automobile agency. Officers are **H. R. Chapman,** of Jacksonville, president and **Guy Marvin,** secretary and treasurer.

Dade City Motor Co. has been organized at Dade City, Fla., to establish an automotive agency and service station. Officers are **D. D. Covington,** president and **Forest L. Mixen,** secretary and treasurer.

Youngstrom Co. of Des Moines has secured the services of **Hilding Anderson** as shop superintendent. Anderson was formerly connected with the factory branch of the Packard Motor Car Co. at Chicago.

Goff-Caughman Auto Co., Columbia, S. C., has been organized by **Maynard Goff** and **Verner Caughman,** both of that city, and has taken the distributing agency for the Velie in five counties of South Carolina.

Carolina Auto Sales Co., of Columbia, Tenn., has opened a branch dealer agency in Greenville, S. C., it is announced by **C. T. Sumner,** who heads the company. The company handles the Chalmers and Maxwell in the Carolina territory.

Orlando Jordan Co. has been organized at Orlando, Fla., and will distribute the Jordan car in that section of Florida. Officers of the company are **C. C. Corpening,** president; **G. M. Sherman,** vice-president and **Gordon Doss,** secretary and treasurer.

C. L. Hatfield, Decatur, Ill., has purchased the accessory and battery business of **Good Bros.,** that city. This firm ranks with the oldest exclusive accessory firms in the state, having opened for business eleven years ago. The retiring firm was composed of **J. B. Good** and son, **Elmer Good.**

Carolina Auto Sales Co., Chalmers and Maxwell dealers, have opened sales service rooms in Greenville, S. C. The company is a branch of the **Carolina Auto Co.** of Columbia and Newberry and is owned by **C. T. Summers** and **J. W. Smith, Jr.,** of Newberry. **J. D. M. Smith** will be the local manager.

New England Velie Co., Boston, has arranged with a new organization known as the **Fiske Motors, Inc.,** to handle the Velie line at retail in the Boston territory, the former company looking after the wholesale trade. **C. Harold Smith** will manage the Fiske business. He was sales manager for the Velie company.

Tracey Green, Bloomington, Ill., who has been associated with **Thayer Morrow,** distributor of the Dodge Brothers cars in that territory, has embarked in business for himself and has been appointed distributor for the Chevrolet in the central Illinois territory. **T. S. Bunn** distributor of the Chevrolet for several years, will now concentrate on the Nash.

Baltimore Cadillac Co. has been consolidated with the **Mar-Del Mobile Co.,** Baltimore, the new organization to be known as the **Cadillac Co. of Baltimore.** The officers of the new company are **George Miller,** president; **James Muehleisen,** first vice-president; **F. S. Bilven,** second vice-president; **Paul Jones,** secretary and **Earl Williams,** treasurer and general manager.

Arthur J. Doyle has been appointed general manager of the **Universal Motor Car Co.,** Nashville, Tenn. The assistant manager is **Richard H. Payne;** the superintendent of the service department, **Roy Lewis** and the manager of the parts department, **R. W. Blake.** The company handles Ford Motor Co. products. **J. M. Walker** is president, **John K. Walker,** vice-president and **A. L. Crabtree,** secretary.

C. C. Davis, Galesburg, Ill., has purchased the interest of his partner, **W. W. Culver,** in the **Davis-Culver Motor Co.** The company has been distributing Studebaker cars in the Knox County territory. Davis will continue the business under the name of the **C. C. Davis Motor Co.** For a number of years Davis served as distributor at Bloomington, Ill., and for a number of years was located in Oklahoma City. He has also been engaged in the automotive trade in California and Indiana.

Studebaker Motor Corp. has opened a factory branch in Indianapolis in the quarters formerly occupied by the **Sterling Motors Co.** Until a short time ago the Studebaker line was handled by the **Buck Salon Co.,** which recently took over the Dort and Chandler for distribution throughout the state. The Studebaker contract and territory for a limited portion of the state had been in effect for years. **W. J. Owens,** retail sales manager, and **George Mander,** wholesale representative, are to be in charge of the branch.

30,000 PEOPLE VISIT FORT WORTH EXHIBIT

FORT WORTH, TEX., Dec. 26—Thirty thousand people attended Fort Worth's first "closed car week."

Five thousand crowded into Main Street each day at noon to witness the parade. That many inspected the specially decorated salesrooms in the evenings.

Only closed car models were displayed.

The parade, which was participated in by forty dealers, started promptly at noon each day and traversed thirty blocks downtown.

Sales were increased by the show.

Closed car possibilities have never been sufficiently demonstrated in the Southwest. Automobile owners were inclined to look upon this particular type of car as a luxury, or as one fitted for the cold climate. Texas, they said, was too balmy for closed cars. But this feeling is being rapidly dissipated under the careful campaigning of the dealers, and as a consequence, sales of closed cars have been heavier this year than ever known before.

"Closed Car Week" contributed to this.

Service Truck Reorganizing

CHICAGO, Dec. 21—Reorganization of the Service Motor Truck Co. of Wabash, Ind., is under way under the direction of a committee of creditors which has placed Paul Moore, formerly director of sales for the company, in charge as general manager. Moie Cook has resigned as secretary and has become associated with the Indiana Truck Motor Co. Pending the reorganization, the Service company is operating in the usual manner and, according to members of the committee, is receiving an increasing number of orders.

Manages Janesville Chevrolet Plant

MILWAUKEE, Dec. 26—T. E. Houghton, formerly assistant manager of the Flint works of the Chevrolet Motor Co., has been transferred to Janesville, Wis., as manager of the new Chevrolet plant established in the former works of the Samson Tractor Co., which is being enlarged and a Fisher body shop added. Production will start about Jan. 15.

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ASSOCIATION ACTIVITIES

Regrinders Association Formed

INDIANAPOLIS, Dec. 26—The Central Cylinder Regrinders Association has been formed here at a meeting of 25 of the 60 cylinder regrinders of the state.

The aims of the new organization are to bring about higher standards, and some sort of standardization in methods. An educational campaign is to be evolved to educate the motorists on the true cylinder regrinding situation.

T. A. Meyer of Indianapolis was elected president, with W. W. Adams, Fort Wayne, vice-president; J. T. Andrews, Indianapolis, secretary, and George W. Kemp, Muncie, treasurer. The board of directors includes the officers and the following: Val. H. Lindenschmidt, Evansville; H. B. Shank, Fort Wayne, and V. J. Thampher, Connersville.

Joseph T. Pflume of Cincinnati; Anten Vonnegutt, Indianapolis, and M. R. Westmoreland of St. Louis were the speakers. Several committees were appointed to report at the next meeting, to be held here Feb. 21. The heads of these committees are C. W. Yount, Indianapolis, membership; G. B. Fields, Terre Haute, advertising and sales; F. F. Cartwright, Indianapolis, dues and finance, and George W. Kemp, standards, adjustments and education.

Atlanta Meeting This Month

ATLANTA, Dec. 21—The Atlanta Automobile Association announces that dates for the 1923 Southern Automobile Show to be held again at the Auditorium here, have been selected for the week of Feb. 17 to 24, and that Virgil W. Sheppard will be general manager for the third successive year.

Tentative plans for the show are to be discussed by the dealers at the annual convention of the Atlanta association to be held this month, and officers of the association also will be elected at this meeting.

Sheppard advises that all space for automobile and truck display purposes at the auditorium has already been disposed of, and that the association will construct a mezzanine balcony that will provide several thousand additional feet of space. Approximately 75 per cent of the accessory has also been taken, and indications are that the 1923 show will undoubtedly be the biggest event of its kind ever held in the southern field.

Houston Salesmen to Organize

HOUSTON, TEXAS, Dec. 26—The automobile salesmen of Houston are to form an association composed of more than 125 men who make a business of selling automobiles. Eventually it is planned to bring into the organization all the automobile salesmen in South Texas. When the association is formed it will affiliate with the Houston Automobile Trades Association, making the Houston motor business 100 per cent organized. R. M. Chamberlain, C. W. Pitschmann, C. Manford and F. W. Mozart are handling the preliminary features of the organization.

Northwest Tractor Body Formed

MINNEAPOLIS, Dec. 26—The Northwest Implement and Tractor Association has been organized at a meeting here of members of the Northwest Tractor Trade Association and the Minneapolis Implement Club. The latter was made up of implement and farm equipment dealers and numbered 40 members, while the association of the former, composed of tractor men and formed five years ago, had 35 members. J. E. Gardner, president of the tractor organization, is the head of the new association. These organizations have sponsored exhibits held annually in connection with the automobile show and the automobile and implement section of the annual Minnesota state fair.

Discuss Elgin Future

CHICAGO, Dec. 21—Plans to reorganize the Elgin Motor Corp. now in the hands of a receiver and resume the manufacture of cars were discussed yesterday at a meeting of creditors with the referee in bankruptcy and representatives of the stockholders.

It was announced that stockholders have subscribed $150,000 toward a fund to be used in getting the company out of its difficulties. It was suggested that this money be used to resume operations at once. The company's liabilities are $833,649 and its assets are approximately $400,000. Another meeting is to be held in the near future.

The New Car and Truck Description Index

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Specifications of Current Motor Truck Models

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Ace.....30	1½–1½	$2400	3⅝x5	34x3½	34x6	W
Ace.....40	2	2850	4⅛x5¼	36x4	36x7	W
Ace.....60	2½–3	3400	4⅛x5¼	36x4	36x8	
Acme.....20	1	....	3¾x5	35x5n	35x5n	W
Acme.....30	1½	....	3¾x5	34x3½	34x5	W
Acme.....40	2	....	3¾x5	34x3½	34x5	W
Acme.....60	3	....	4½x5¼	36x4	36x7	W
Acme.....60L	4½	....	4½x5½	36x4	36x7k	W
Acme.....90	4½	....	4½x5½	36x5	40x10	W
Acme.....125	6½	....	4¾x6	36x6	40x12	W
American.....25	2½	3350	4 x6	35x4k	36x4dk	W
American.....40	4	4275	4½x6	36x5k	36x5dk	W
American.....50	5	4500	4½x6	36x5	36x12	W
Armleder.....20	1	....	3¾x5¼	34x3½k	34x6k	W
Armleder.....21	1½	....	3¾x5¼	34x3½k	34x6k	W
Armleder....40-B	1½	....	4¼x5½	34x3½k	34x6k	W
Armleder....40-C	1½	....	4½x5¼	34x3½k	34x6k	W
Armleder..HW-B	2½	....	4¼x5½	36x4k	36x7k	W
Armleder..HW-C	2½	....	4½x5¼	36x4k	36x7k	W
Armleder..KW-B	3½	....	4½x6	36x5k	36x5dk	W
Armleder..KW-C	3½	....	4½x5½	36x5k	36x5dk	W
*Atlas.....22	1	1195	3¾x5⅛	34x4½n	34x4½n	W
*Atlas.....44	1½–2	1950	3¾x5⅛	36x6n	36x6n	W
Atterbury....20R	1½	2475	3¾x5	34x3½	34x5	W
Atterbury....22C	2½	3375	4⅛x5¼	36x4	36x4d	W
Atterbury....22C	2½	3475	4½x5¼	36x4	36x4d	W
Atterbury....22D	3½	4275	4½x5½	36x5	40x5d	W
Atterbury....22D	3½	4375	4½x5½	36x5	40x5d	W
Atterbury.....8E	5	4975	4¾x6	36x5	40x6d	W
Atterbury.....8E	5	5125	4¾x6	36x5	40x6	W
Autocar....21UF	1½–2	1950	4¾x4½t	34x4k	34x6	D
Autocar....21UG	1½–2	2050	4¾x4½t	34x4k	34x6	D
Autocar....27H	2–3	2950	4 x5½	34x5	36x7	D
Autocar....27K	2–3	3075	4 x5½	34x5	36x7k	D
Autocar.....26Y	4–6	3950	4¼x5½	34x6	36x12	D
Autocar....26-B	4–6	4100	4¼x5½	34x6	36x12	D
Available...H1½	1½	2475	4 x5	36x3½k	36x5k	W
Available.....H2	2	2775	4 x5	36x3½k	36x6k	W
Available...H2½	2½	3160	4 x5	36x4k	36x8k	W
Available...H3½	3½	4175	4½x5½	36x5	40x5d	W
Available.....H5	5	5375	5 x6	36x6	40x12	W
*Avery.....	1	....	3 x4s	34x5n	34x5n	I
Beck.....A Jr.	1¼	1285a	3½x5	34x4½n	34x4½n	I
Beck.....B-30	1½	1350	3¾x5	34x5	36x6	
Beck.....C-40	2	1550	3¾x5	36x6	36x6	
Beck.....D-50	2½	1950	4⅛x5¼	38x7	40x8	
Bell.....M (Iowa)	1	1495	3⅝x5⅛	35x5	35x5n	W
Bell.....E (Iowa)	1½	2100	3¾x5¼	34x3½	34x5	I
Bell.....O (Iowa)	2½	2550	4½x5½	34x4	34x6	I
Bessemer.....G	1	1450	3½x5	35x5n	35x5n	I
Bessemer....H-2	1½	1990	3¾x5	36x3½	36x5	D
Bessemer....J-2	2½	2895	4⅛x5¼	36x4	36x4d	D
Bessemer....K-2	4	3695	4½x5½	36x5	36x10	I
Bethlehem....KN	1	1195	3½x5	35x5n	35x5n	B
Bethlehem....GN	2	1795	4 x5¼	34x4	34x6k	D
Bethlehem....GN	3	2495	4 x6¼	36x4k	36x8k	D
Bridgeport.....A	1½	....	3¾x5⅛	34x3½	34x6	W
Bridgeport.....B	2½	....	4½x5½	36x4	36x4d	W
Bridgeport.....C	3½	....	4½x6	36x5	36x10	W
Brinton.....C	2	2500	3¾x5	34x4	34x5	W
Brinton.....D	3	2975	4⅛x5¼	36x4	36x7	W
Brockway.....E	1	....	4 x5	33x5n	33x5n	B
Brockway....S-5	1½	....	4 x5	36x4	36x6	W
Brockway....SK	1½	....	4⅛x5¼	36x4	36x6	W
Brockway....KR	2½	....	4½x5½	36x4	36x8	W
Brockway....K-5	2½	....	4⅛x5¼	36x4	36x8	W
Brockway....RT	3½	....	4¾x6	36x5	36x10	W
Brockway....R-4	3½	....	4½x5½	36x5	36x5d	W
Brockway....T-4	5	....	4¾x6	36x6	40x6d	W
*Buick.....	½	945b	3⅜x4¾	31x4n	31x4n	B
Case.....	2	....	4¼x5¾	36x6	38x7	I
*Chevrolet.....	¼	510b	3¼x4	30x3½n	30x3½n	B
*Chevrolet.....G	¾	650	3¼x4	31x4n	34x4½n	B
*Chevrolet.....T	1	1095	3¼x5¼	33x4n	35x5n	W
Chicago.....C1½	1½	....	4 x5	36x3½k	36x5k	W
Chicago.....C2½	2½	....	4 x5	36x4k	36x7k	W
Chicago.....C3½	3½	....	4½x5½	36x5	36x10	W
Chicago.....D5	5	....	4½x5½	36x6	40x12	W
Clydesdale.....10	¾–1¼	1485	3¾x5	34x5n	34x5n	B
Clydesdale....10A	¾–1¼	1535	3¾x5	34x5n	34x5n	B
Clydesdale.....18	¾–1¼	1890	3¾x5	34x5	34x5	W
Clydesdale.....20	1–1½	2385	3¾x5	34x5	34x5k	W
Clydesdale.....42	1½–2	2475	3¾x5	36x3½	36x6	W
Clydesdale....65X	2½–3	3250	4⅛x5¼	36x4	36x8	W
Clydesdale....65EX	2½–3	3450	4½x5½	36x4	36x8	W
Clydesdale.....90	3½–4½	4100	4½x5½	36x5	36x10	W
Clydesdale....120	5–6	4500	4¾x6	36x6	40x12	W
Commerce.....9	¾–1½	1150	3¾x5	32x4½n	32x4½n	B
Commerce.....T	¾–1½	1450	3¾x5	34x4½n	34x4½n	B
Commerce.....10	¾–1½	2500	3¾x5	33x5n	33x5n	B
Commerce.....12	1½	1695	3¾x5	34x3½	34x4	I
Commerce.....12	1½	1800	3¾x5	35x5n	35x5n	I
Commerce.....16	2	1995	3¾x5	34x4	34x6	I
Commerce.....16	2	2150	3¾x5	35x5n	36x6n	I
Commerce.....18	2½	2150	4½x5¼	36x4	36x7	I
Commerce.....18	2½	2495	4¼x5¼	36x6n	40x8n	I
Commerce.....25	2½	2425	4¼x5¼	36x4	36x7	W
Commerce.....25	2½	2770	4¼x5¼	36x6	40x8n	W
Cook.....51	2½	3600	4 x5⅛	36x6n	40x8n	W
*Corbitt.....	¾–1	1250	3½x5	33x5n	33x5n	
Corbitt.....E-22	1	$1480	3¾x5	34x3½	34x4	W
Corbitt.....D-22	1½	2200	3¾x5	34x3½	34x5	W
Corbitt.....C-22	2	2600	4¼x5¼	36x3½	36x7	W
Corbitt.....B-22	2½	3000	4½x5¼	36x4	36x7	W
Corbitt.....R-22	3	3200	4½x5½	36x4	36x8	W
Corbitt.....A-22	3½–4	3800	4½x5½	36x5	36x10	W
Corbitt.....AA-22	5	4500	4¾x6	36x6	40x6d	W
Day-Elder.....AS	1	1600	3¾x5	35x5n	35x5n	W
Day-Elder.....B	1½	2000	3¾x5	34x3½	34x5	W
Day-Elder.....D	2	2400	4¼x5¼	36x4	36x7	W
Day-Elder.....C	2½	2750	4¼x5½	36x4	36x7	W
Day-Elder.....F	3½	3150	4½x5½	36x5	36x5d	W
Day-Elder.....E	5	4250	4½x6	36x5k	40x6dk	W
Dearborn.....E	1	1600	3⅝x5⅛	35x5n	35x5n	W
Dearborn.....FX	1½	2300	3¾x5⅛	34x4	34x5	W
Dearborn.....F	1½	2180	3¾x5⅛	34x4	34x5	W
Dearborn.....48	2	2590	3¾x5⅛	34x4½n	34x7	W
Defiance.....G	1	1525	3¾x5	35x5n	35x5n	B
Defiance.....D	1½	1845	3¾x5	35x5n	36x6n	I
Defiance.....E	2	2075	3¾x5	35x5n	38x7n	I
Denby.....31	1¼	1485	3¾x5	35x5n	35x5n	B
Denby.....33	1½	2145	3¾x5	35x5n	38x7n	I
Denby.....35	2½–3	2795	4½x5¼	36x4	36x7	I
Denby.....27	4	3895	4½x5½	36x5	36x5d	I
Denby.....210	5	4295	4½x5½	36x6	40x6d	I
Dependable.....A	¾–1	1650	3⅝x5⅛	34x5n	36x6n	W
Dependable.....C	2	2350	3¾x5¼	34x3½	34x5	W
Dependable.....D	2½	2650	4 x5½	34x5	36x6	W
Dependable.....E	3	2950	4½x5½	36x4	36x7	W
Diamond T...O-3	1–1¼	1975	3¾x5¼	36x3½n	36x4n	W
Diamond T.....T	1½	2250	3¾x5¼	36x3½	36x5	W
Diamond T.....U	2–2½	2650	4 x5¼	36x4	36x7	W
Diamond T.....K	3½	3750	4¼x5½	36x5	36x5d	W
Diamond T...EL	5	4325	4½x5½	36x6	40x6d	W
Diamond T.....S	5	4500	4¾x6	36x6	40x6d	W
Doane.....	2½	4100b	4¼x5¾	36x5	36x7	C
Doane.....	3½	5100b	4⅜x5¾	36x5	36x5d	C
Doane.....	6	6000b	5 x6¼	36x6	40x6d	C
*Dodge Brothers	¾	730	3⅞x4½	32x4n	32x4n	B
Dorris.....K-2	1	2490	4 x5½	33x5n	33x5n	B
Dorris.....K-4	2–2½	3100	4¼x5½	36x4	36x7	W
Dorris.....K-7	3½	4400	4¼x5½	36x5	36x10	W
*Dort.....	½	685a	3½x5	31x4n	34x4n	B
Double Drive...B	3	4000	4¼x5½	36x6	36x6	W
Duplex.....A	2	2775	4 x5¼	35x5n	38x7n	W
Duplex.....E	3½	3500	4¼x5½	36x8	36x8	I
Duty.....22	2	1590	3½x5	34x3½	34x5	I
Eagle.....101	1½	1875	3⅝x5⅛	34x5	34x5	I
Eagle.....100-2	2	2275	3¾x5¼	34x4k	34x7k	I
F. W. D.....B	3	4200	4¾x5½	36x6	36x6	B
Fageol.....1½	1½	3000	3¾x5¼	34x3½k	34x6k	W
Fageol.....2½	2½	3900	4⅜x5¾	34x4	36x7	W
Fageol.....3½	3½	5000	4½x6¼	36x5k	40x5dk	W
Fageol.....5	5	5700	4½x6¼	36x6	40x6d	W
Fargo.....R	2	1700	3¾x5	36x4	36x6	I
*Federal.....	1½	1375	3¾x5	—x5n	—5n	
Federal.....SD	1½	1800	3¾x5	35x5n	36x6n	W
Federal.....TE	1½	2175	4½x5¼	36x3½	36x5	W
Federal.....UE	2–2½	2425	4½x5¼	36x4	36x7	W
Federal.....WE	3½–4	3150	4½x5½	36x5	36x5d	W
Federal.....X2	5–6	4500	4¾x6	36x6	40x6d	W
*Ford.....TT	1	380	3¾x4	30x3½n	32x4½n	W
Front Drive.....C	1½	2800	3¾x5½	36x6	36x6	W
G.M.C.....K15	1	1295	3½x5½	34x5n	34x5n	B
G.M.C.....K-41A	2	2375	4 x5½	36x4k	36x7k	W
G.M.C.....K-41B	2	2375	4 x5½	36x4k	36x7k	W
G.M.C.....K-41T	5†	2450	4 x5½	36x4	36x8	W
G.M.C.....K-71A	3½	3600	4½x6	36x5	40x5d	W
G.M.C.....K-71B	3½	3700	4½x6	36x5	40x5d	W
G.M.C.....K-71T	10†	3700	4½x6	36x5	40x12	W
G.M.C. K-101A	5	3950	4½x6	36x5	40x6d	W
G.M.C.....K-101T	15†	4050	4½x6	36x5	40x14	W
G.M.C.....K-101B	5	4050	4½x6	36x5	40x6d	W
G.W.W.....	1½	1850	3¾x5½	35x5	35x5	I
*Garford.....15	1	1590	3⅝x5⅛	34x5n	34x5n	W
Garford.....25-B	1½	1990	3¾x5¼	36x3½	36x5	W
Garford.....70-H	2½	2750	4¼x5½	36x4	36x8	W
Garford.....77-D	4	3750	4½x6	36x5	36x5d	W
Garford.....68-D	5	4500	5 x6½	36x6	40x5d	W
Garford.....150-A	7½	5200	5 x6½	36x6	40x7d	C
Gary.....F	1–1½	1775	3¾x5	36x3½	36x5	W
Gary.....I	2	2450	4 x5½	36x3½	36x6	W
Gary.....J	2½	2850	4¼x5½	36x4	36x8	W
Gary.....K	3½	$3790	4½x6	36x5	40x5d	W
Gary.....M	5	4450	5 x6½	36x6	40x6d	W
Gersix.....M	1½	3100	4 x5½	36x3½	36x7	W
Gersix.....K	2½	3500	4½x5½	36x4	36x8	W
Gersix.....	3½	4500	4½x6	36x5	40x12	W
Gotfredson....20	1	2075	3¾x5½	34x5	34x5	W
Gotfredson....31	1½–2	3000	4 x5¼	36x6	38x7n	W
Gotfredson.....A	2½	3375	4 x5¼	36x4	36x7	W
Gotfredson.....B	3½–4	4475	4½x5½	36x5	36x10	W
Gotfredson....100	5–6	5500	5 x6½	36x6	40x14	W
Graham Bros.....	1	1265	3⅞x4½	33x4½n	34x5n	B
Graham Bros.....	1½	1325	3⅞x4½	33x4½n	36x6n	B
[1]Gramm-Pion..10	1	1245	3½x5	33x5n	33x5n	B
[1]Gramm-Pion..15	1½–2	1750a	3¾x5	36x3½k	36x5k	I
[1]Gramm-Pion..65	1½–2	2250a	3¾x5	36x3½k	36x5	W
[1]Gramm-Pion..20	2–2½	2475a	4½x5¼	36x4k	36x7k	W
[1]Gramm-Pion..30	3	3300a	4½x5½	36x5k	36x5dk	W
[1]Gramm-Pion.75P	3½	4225a	4½x5½	36x6n	42x9n	W
[1]Gramm-Pion..40	4	3850a	4½x5½	36x5	36x5dk	W
[1]Gramm-Pion..50	5–6	4450a	4¾x6	36x6	40x6dk	W
Hall.....1½	1½	3100	3¾x5	34x5n	38x7n	W
Hall.....2½	2½	3275	4⅛x5¼	36x4	36x6	W
Hall.....3½	3½	4100	4½x5½	36x5	36x5d	W
Hall.....5	5	5100	4½x5½	36x5	40x6d	W
Hall.....7 chain	7	5100	4½x5½	36x5	40x6d	C
Harvey....W OA	2	2650	4¼x5½	34x4	34x7	W
Harvey.....WFA	2½	2950	4¼x5½	36x4	36x7	W
Harvey.....WHA	3½	3950	4½x6	36x5	36x5d	W
Hawkeye.....O	1	1375	3⅝x5⅛	34x5n	34x5n	
Hawkeye.....K	1½	1645	3¾x5½	34x3½k	34x5k	I
Hawkeye.....M	2	2145	4¼x5	36x4k	36x6k	I
Hawkeye.....N	3½	3700	4½x6¼	36x5k	36x10k	I
Hendrickson...O	1½	2200	3⅝x5⅛	36x4n	36x5n	W
Hendrickson...N	2½	2690	4¼x5¼	36x4k	36x7k	W
Hendrickson...M	3½	3000	4¼x5½	36x5k	36x5dk	W
Hendrickson...K	5	4000	5 x6¼	36x6	40x6	W
Huffman.....B	1½–2	1795	3¾x5	34x3½	34x6	W
Huffman.....C	1½–2	1695	3¾x5½	36x3½	36x6	I
Huffman.....D	2–3	2895	4¼x5½	36x4	36x7	
Hurlburt.....A-A	1–1½	1950	3¾x5	34x5n	34x5n	W
Hurlburt.....B-B	2–2½	2800	4¼x5½	36x4	36x4d	W
Hurlburt.....C-C	3–3½	3475	4¼x5½	36x5	36x5d	W
Hurlburt.....D-D	4–4½	4150	4½x6	36x5	36x6d	W
Hurlburt.....E-E	6–6½	4850	4¾x6½	36x6	40x6d	W
Indep'd't(Iowa).B	1	1665	3½x5	34x3½	34x4	I
Indep'd't(Iowa).G	1½	2010	3¾x5¼	34x3½	34x5	I
Indep'd't(Ia.)..HI	2½	2940	4½x5¼	36x4	36x7	I
*Indiana.....10	1	....	3¾x5¼	34x5n	34x5n	B
Indiana.....12	1½–2	....	3¾x5¼	34x3½k	34x5k	W
Indiana.....20	2	....	4⅛x5½	36x4k	36x7k	W
Indiana.....25	2½–3	....	4½x5½	36x4k	36x8k	W
Indiana.....35	3½–4	....	4⅝x5½	36x5k	36x5dk	W
Indiana.....51	5–7	....	5 x6¼	36x5k	40x6dk	W
*International...S	1	1250	3½x5	32x4½n	32x4½n	I
International...21	1	1550	3½x5¼	36x3½k	36x3½	I
International...31	1½	1650	3½x5¼	36x3½k	36x5k	I
International...41	2	2100	3½x5¼	36x3½k	36x6k	I
International...52	2½	3500	4¼x5	36x6n	36x6dn	I
International...61	3	2400	4¼x5	36x4k	36x7k	I
International...62	3	2600	4¼x5	36x4	36x7	I
International..101	5	3600	4¼x5	36x5	40x12k	I
International..102	5	3800	4¼x5	36x5	36x12	I
Jackson.....4WD	3½	3850	4½x5½	36x7	36x7	B
K-Z.....1	1	1750	3½x5	34x3½	34x5	W
K-Z.....1½	1½	2075	3¾x5	36x4	36x6	W
K-Z.....2½	2½	2550	4½x5¼	36x4	36x8	W
K-Z.....3½	3½	3350	4½x5½	36x5	40x10	W
K-Z.....5	5	3850	4½x5½	36x6	40x6d	W
Kalamazoo.....T	1	1295	4 x5	34x5	34x5n	B
Kalamazoo....G-1	1½	2100	3¾x5	34x4	34x5	W
Kalamazoo.....LG	2	2645	4 x5	36x4	36x7	W
Kalamazoo.....NH	3	3350	4 x6	36x5	36x10	W
Kalamazoo.....HD	3	3350	4½x6	36x5	36x10	W
Kalamazoo.....SK	4	4000	4½x6	36x5	36x12	W
Kalamazoo.....OK	5	4500	4½x6	36x6	40x6d	W
[2]Kelly-S.....K-31	1½	2700	3¾x5¼	36x3½	36x6	C
[2]Kelly-S.....K-34	1½	2700	3¾x5¼	36x3½	36x6	W
[2]Kelly-S.....K-38	2½	2900	3¾x5¼	36x4	36x4d	W
[2]Kelly-S.....K-35	2½	2900	3⅝x5¼	36x4	36x4d	C
[2]Kelly-S.....K-40	3½	3900	4½x6½	36x5	40x5d	C
[2]Kelly-S.....K-41	3½	3900	4½x6½	36x5	36x10	I
[2]Kelly-S.....K-42	3½	3900	4½x6½	36x5	40x5d	W
[2]Kelly-S.....K-50	5	4400	4½x6½	36x6	40x6d	C
[2]Kelly-S.....K-60	6	4600	4½x6½	36x6	40x7d	C
[2]Kelly-S.....K-61	5–7	4800	4½x6½	36x6	36x7d	I
Kimball.....AB	2	3675	4 x6	36x4	36x7	W
Kimball.....AC	2½	3975	4¼x6	36x4	36x8	W
Kimball.....AK	3	4500	4½x6	36x4	36x10	W
Kimball.....AE	4	5000	4¾x6	36x5	40x12	W
Kimball.....AF	5	5500	5 x6	36x6	40x7d	W
*Kissel...Express	1	1585	3⅞x5½	34x5n	34x5n	W
Kissel.....Utility	1½	1975	3⅞x5½	36x3½	36x6	W
Kissel...Freighter	2½	2875	4¼x5½	36x4	36x8	W
Kissel.....H.D.	4	3675	4¼x5½	36x5	36x12	W
Kleiber.....AA	1	2200	4½x5½	34x3½k	34x5k	W
Kleiber.....A	1½	3100	4½x5¼	36x3½k	36x6k	W

FINAL DRIVE: —B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor. †Capacity with semi-trailer.

[1]—Gramm Pioneer. [2]—Kelly-Springfield.

Passenger car specifications on pages 89 and 90

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Kleiber.....BB	2	$3600	4½x5¼	36x4k	36x7k	W
Kleiber.....B	2½	3950	4½x5½	36x5k	36x8	W
Kleiber.....C	3½	4600	4½x5½	36x5	36x5d	W
Kleiber.....D	5	5300	5 x6½	36x6	40x12	W
Koehler.....D	1½	2150	3½x5	34x3½	34x5	W
Koehler.....M	2½	3175	4 x5½	36x4	36x7	W
Koehler.....MCS	2½	3275	4 x5½	36x4	36x7	W
Koehler.....F	3½	4470	4½x5½	36x5	36x10	W
Koehler,MT. Trac	5	3275	4 x5½	36x4	36x7	W
Krebs.....23	¾	1360	3¾x5	34x4½	34x4½	B
Krebs.....24	1	1675	3¾x5	34x5	34x5	W
Krebs.....45	1½	2275	4½x5½	36x4	36x7	W
Krebs.....75	2½	2550	4½x5½	36x4	36x8	W
Krebs.....110	3½	3175	4½x5½	36x5	40x10	W
Krebs.....140	5	....	4¾x6	36x6	40x6d	W
Larrabee.....X-2	1	1925	3¼x4½	34x5n	34x5n	B
Larrabee.....U	1½	2400	3¾x5	34x3½	34x5	W
Larrabee.....J	1½–2½	2400	3¾x5	34x3½k	34x5k	W
Larrabee.....K	2½–3	3100	4½x5¼	36x4	36x7	W
Larrabee.....K-5	2½–3½	3450	4½x5½	36x4	36x8	W
Larrabee.....L-4	3½–5	4000	4½x5½	36x5	36x5d	W
Larrabee.....W	5–7	4800	4¾x6	36x6	40x6d	W
Maccar.....L	1½	....	4½x5¼	36x4	36x6	W
Maccar.....H-A	2	....	4½x5¼	36x4	36x4d	W
Maccar.....H-2	3	....	4½x5½	36x4	36x5d	W
Maccar.....M-3	4	....	4½x5½	36x5	36x6d	W
Maccar.....G	5–6	....	4¾x6	36x5	40x6d	W
MacDonald.....A	7½	5750	4½x6	40x7	40x14	I
Mack....AB D.R.	1½	3450	4 x5	36x4k	36x3½dk	D
Mack....AB Chain	1½	3000	4 x5	36x4k	36x3½dk	D
Mack....AB Chain	2	3300	4¼x5	36x4k	36x4dk	C
Mack....AB D.R.	2	3750	4¼x5	36x4k	36x4dk	D
Mack....AB D.R.	2½	3850	4¼x5	36x4k	36x4dk	D
Mack...AB Chain	2½	3400	4¼x5	36x4k	36x4dk	C
Mack...AC Chain	3½	4950	5 x6	36x5k	40x5dk	C
Mack...AC Chain	5	5500	5 x6	36x6	40x6d	C
Mack...AC Chain	6½	5750	5 x6	36x6	40x12	C
Mack...AC Chain	7½	6000	5 x6	36x7	40x7d	C
Mack Trac....AB	5	3100	4¼x5	36x4	36x4d	C
Mack Trac....AC	7	4950	5 x6	36x5	40x5d	C
Mack Trac....AC	10	5500	5 x6	36x6	40x6d	C
Mack Trac....AC	13	5750	5 x6	36x6	40x12	C
Mack Trac....AC	15	6000	5 x6	36x7	40x7d	C
*Mapleleaf.....**	1½	3000	3¾x5¼	34x5n	36x6n	W
Mapleleaf...AA**	2	3600	4 x5¼	36x4	36x7	W
Mapleleaf...BB**	3	4050	4¼x5½	36x4	33x4d	W
Mapleleaf...CC**	4	4800	4½x5½	36x5	33x5d	W
Mapleleaf...DD**	5	5325	4½x5½	36x6	40x6d	W
Mason.....	1	1200	4 x5	34x5n	34x5n	B
Master.....JW	1½	2290	4⅜x5½	34x3½	34x5	W
Master.....JD	1½	2590	4⅜x5½	34x3½	34x6	D
Master.....Z	2	2290	4⅜x5½	34x3½	34x5	W
Master.....W	2½	2890	4¼x5½	34x4	36x8	W
Master.....DD	2½	3190	4¼x5½	34x4	36x7	D
Master.....A	3½	3990	4½x6	36x5	40x8	W
Master.....E	3½	4290	4½x6	36x5	40x5d	D
Master.....Y	4	4490	4½x6	36x5	40x6d	D
Master.....B	5	4990	4¾x6½	36x6	40x6d	W
Master.....F	5	5090	4¾x6½	36x6	40x6d	D
MasterTrac.,DDT	6	3390	4¼x5½	34x4	36x7	D
*Maxwell.....1½	1½	932	3⅝x4½	32x3n	32x4n	W
*Menominee.....	1	1650	4 x5	34x5n	34x5n	W
Menominee...HT	1–1¼	2000	3¾x5	34x3½	36x5	W
Menominee....H	1½	2475	4 x5	36x3½	36x5	W
Menominee....D	2–2½	2875	4 x6	36x4	36x8	W
Menominee....G	3½	3800	4½x6	36x5	36x10	W
Menominee...J-3	5	4250	4¾x6	36x6	40x12	W
Moline.....10	1½	1985	3½x5	34x5n	36x6n	I
3Moreland..R. R.	1	1595	4 x5	34x5n	34x5n	B
Moreland.....BX	1½	1980	4 x5	36x3½	36x6k	W
Moreland.....EX	2	2800	4½x5¼	36x4	36x7k	W
Moreland.....AX	3	3500	4½x5½	36x5	36x10k	W
Moreland.....RX	4½–5	4600	4¾x6	36x6	40x6	W
Nash.....2018	1–1½	1595	3¾x5¼	34x4	34x5	I
Nash.....3018	2–2½	2150	3¾x5¼	34x4k	34x7k	I
Nash.....Quad.	2–2½	2750	4¼x5½	36x6	36x5k	I
Nash..3018, LWB	2–2½	2200	3¾x5¾	34x4k	34x7k	I
Nash Quad. LWB	2–2½	2800	4¼x5½	36x6	36x6	I
Nash.....5018	2½	2250	3¾x5¼	34x4k	34x7k	I
4Nelson.....G2	1½	....	4½x5¼	36x3½	36x6	W
4Nelson.....G	2½	....	4½x5¼	36x4	36x7	W
4Nelson.....G4	3½	....	4½x5½	36x5	36x5d	W
4Nelson.....G5	5	....	4¾x6	36x6	40x6d	W
Netco.....DK	2	3100	4½x5¼	36x4k	36x7k	W
Netco.....HL	2½	3500	4½x5½	36x4k	36x8k	W
Niles.....E	2	3000	4½x5¼	36x4k	36x7k	W
Noble.....A21	1¼	1750	3⅝x5¼	34x5	34x5	W
Noble.....B31	1½–2	2395	3¾x5¼	36x4	36x7	W
Noble.....D51	2½–3	2795	4¼x5½	36x4	36x8	W
Noble.....E71	3½–5	3495	4½x6	36x5	36x10	W
Noble.....B30	1½	....	3¾x5¼	36x3½	36x5	W
Noble.....C40	2	....	4 x5½	36x4	36x7	W
Noble.....D50	2½	....	4¼x5½	36x4	36x8	W
Noble.....E70	3½	....	4½x6	36x5	36x10	W
Northwestern..W	1½	2700	4½x5¼	34x4	36x6	W
Northwestern.WS	2½	3500	4½x5½	36x4	36x8	W
Ogden.....A2	1	....	3½x5	34x5n	34x5n	W
Ogden.....D	1½	....	3¾x5	36x3½	36x5	W
Ogden.....E	2½	....	4⅛x5¼	36x4	36x8	W
Old Hickory...W	1	$1775	3¾x5	36x3½k	36x4k	W
Old Reliable....A	1½	2350	4 x5	34x4	36x6	W
Old Reliable....B	2½	3500	4¼x6	34x4	36x4d	W
Old Reliable....C	3½	4250	4½x6	36x5	36x5d	W
Old Reliable....D	5	5000	4¾x6	36x6	40x6d	W
Old ReliableKLM	7	6000	4¾x6¼	36x6	40x7d	C
*Oldsmobile Econ	1	1095	3¼x5¼	35x5n	35x5n	1
Olympic.....A	2½	3200	4¼x5½	36x4	36x8	W
Oneida.....B3	1½	2825	4 x5¼	36x3½	36x7	
Oneida.....C3	2½	3200	4 x5¼	36x4	36x8	
Oneida.....D3	3½	4050	4½x5½	36x5	36x10	
Oneida.....E3	5	4725	4½x5½	36x6	40x12	
Oshkosh.....A	2	2485	3½x5	36x6n	36x6n	B
Oshkosh.....AA	2	2585	3½x5	36x6n	36x6n	B
Oshkosh.....B	2½	3485	4 x5⅛	38x7n	38x7n	B
Oshkosh.....BB	2½	3585	4 x5⅛	38x7n	38x7n	B
*Overland.....4	½	425	3⅜x4	30x3½n	30x3½n	B
Packard.....EC	2–3	3100	4⅛x5½	33x4	36x7	W
Packard.....EX	2–2½	3100	4⅛x5½	35x6n	40x8n	W
Packard.....ED	3½–4½	4100	4½x5½	36x5	36x5d	W
Packard.....EF	5–7½	4500	5 x5½	36x6	40x6d	W
Paige.....52-19	1½	1950	4 x5½	34x3½	34x5	W
Paige.....54-20	2½	2420	4¼x5½	34x4	34x8	W
Paige.....51-18	3½	3145	4½x5½	36x5	36x5d	W
Parker.....C-22	1	1875	3¾x5¼	34x5n	34x5n	W
Parker.....G-22	2½	3200	4¼x6	34x4	33x4d	W
Parker.....J-20	3½	3950	4½x6	36x5	40x5d	W
Parker.....M-20	5	4850	5 x6	36x6	40x5d	W
Patriot....Revere	1	1380	3¾x5	35x5n	35x5n	W
Patriot....Lincoln	2	2050	4 x5¼	34x4	34x5	W
Patriot....LS-800	2	2175	4 x5¼			
Patriot..Washgt'n	3	2900	4½x5½	36x5	33x7	W
Pierce-Arrow.....	2	3200	4 x5½	36x4	33x4d	W
Pierce-Arrow.....	3½	4350	4½x6¾	36x5	33x5d	W
Pierce-Arrow.....	5	4850	4½x6¾	36x5	40x5d	W
Pittsburgher.....	1½–2	3000	3⅝x5	36x4	33x5	
Pittsburgher.....	3	3800	4½x5¼	36x5k	33x7	W
Power.....F	2	3150	4 x5¼	36x5	33x7	W
Power.....C	3½	....	4½x5½	36x5	40x10	W
Premocar...B-143	1½	2475	3½x5	36x6n	36x3n	W
*Rainier....R-21	¾	....	3½x5	35x5n	35x5n	W
Rainier.....R-29	1	....	3¾x5	34x3½	34x4	W
Rainier.....R-26	1½	....	3¾x5	34x3½	34x5	W
Rainier.....R-28	2	....	4⅛x5¼	34x4	34x6	W
Rainier.....R-20	2½–3	....	4⅛x5¼	34x4	34x7	W
Rainier.....R-15	3½–5	....	4½x5½	36x5	33x5d	W
Rainier.....R-25	3½–5	....	4½x5¼	36x5	33x5d	W
Rainier.....R-17	5–6	....	4¾x6	36x6	40x5d	W
Rainier.....R-27	6	....	4¾x6	36x6	40x6d	W
Ranger..TK-20-2	1½	1450	3¾x5	36x6n	38x7n	W
*Reo.....F	¾–1¼	1185	4⅛x4½	34x4½n	34x4½n	B
Reliance.....10A	1½	2400	4 x5⅛	36x3½	36x5	I
Reliance.....20B	2½	3100	4¼x5½	36x4	36x4d	I
Republic.....75	¾	1395b	3½x5	32x4½n	32x4½n	I
Republic.....10	1	1395	3¾x5	34x3	34x4	I
Republic...10 Exp	1	1695	3¾x5	34x5n	34x5n	I
Republic.....11X	1½	1795	3¾x5	34x4	34x6	I
Republic.....19	2½	2195	4½x5¼	36x4	33x7	I
Republic.....20	3½	3095	4½x5½	36x5	33x10	I
Rowe.....CW	1½	3000	3¾x5	36x6n	33x6n	W
Rowe.....C.D.W.	2	3300	4 x5	34x4	33x3..2d	W
Rowe.....G.S.W.	3	4150	4 x6	34x5	33x5d	W
Rowe.....G.P.W.	3	5250	3¼x5r	38x7n	42x9n	W
Rowe.....HW	4	4500	4¼x6	36x5	33x6d	W
Rowe.....F.W.	5	4850	4½x6	36x6	40x6d	W
Ruggles.....20	1	1195	3¾x5	34x5n	34x5n	B
Ruggles.....40	2	1795	4 x5	34x5n	34x7	D
Sanford....W-15	1½–2	2150b	3¾x5	36x3½k	36x5k	
Sanford.....25	2½–3½	....	4⅛x5¼	36x4	36x4d	W
Sanford.....35	3½–5	....	4½x5½	36x5	36x5d	W
Sanford.....50	5–7	....	4¾x6	36x5	40x6d	W
Schacht....2-Ton	2	3200	4¼x5½	36x4	36x7	W
Schacht....3-Ton	3	3800	4¼x5½	36x5	36x5d	W
Schacht....4-Ton	4	4200	4½x6	36x5	40x5d	W
Schacht....5-Ton	5	4400	4½x6	36x5	40x6d	W
Schacht....7-Ton	7	5050	4½x6	36x6	40x7d	W
Schwartz.....A	1	1685	3½x5	34x4½n	34x4½n	B
Schwartz.....K	2	3000	3¾x5¼	34x3½	34x7	W
Schwartz.....L	3	3600	4¼x5½	36x4	36x8	W
Schwartz.....M	5	4900	4½x6	36x6	40x12	W
Selden.....20	1½–2½	2250	3¾x5	34x3½	34x5	W
Selden.....31	1½–2½	3350	4⅛x5¼	34x5n	38x7n	W
Selden.....51	2½–3½	3250	4⅛x5¼	36x4	36x7	W
Selden.....51	2½–3½	4350	4½x5½	36x6n	40x8n	W
Selden.....70	3½–5	$3750	4½x5½	36x5	36x10	W
Selden.....90	5–7	4950	4¾x6	36x6	40x12	W
Seneca.....M	½	820	3½x4½	30x3½n	30x3½n	B
*Service.....12	¾	....	3¼x4½	32x4½n	32x4½n	B
*Service.....25	1¼	....	3¾x5⅛	34x5n	34x5n	B
Service.....21	1½	....	4½x5⅛	34x4	34x5	W
Service.....32	2	....	4 x5½	36x3½	36x7	W
Service.....37	2	....	4¼x5½	35x5n	38x7n	W
Service.....52	3	....	4¼x5½	36x4	36x8	W
Service.....72	3½	....	4¼x5½	36x5	36x5d	W
Service.....77	4	....	4½x6	36x5	36x5d	W
Service.....102	6	....	4½x6	36x6	40x6d	W
Signal.....NF	1	....	3¾x5	34x5n	36x6n	W
Signal.....H	1½	....	4⅛x5¼	34x4	36x6	W
Signal.....J	2½	....	4⅛x5¼	34x4	36x8	W
Signal.....M	3½	....	4½x5½	36x5	40x5d	W
Signal.....R	5	....	4¾x6	36x6	40x6d	W
*Standard.....75	1¼	1330	3¾x5	33x5n	33x5n	W
Standard.....1-K	1½	1600	3¾x5	34x3½k	34x5k	W
Standard.....76	2½–3	2100	4½x5¼	36x4k	36x8	W
Standard.....66	3½–5	3150	4½x5½	36x5	36x12	W
Standard.....5-K	5–7	4400	4¾x6	36x6	40x14	W
*Star.....	½	610b	3⅛x4¼	30x3½n	30x3½n	
Sterling.....1½	1½	2885	4 x5¾	36x3½k	36x5k	W
Sterling.....Z	2	3085	4 x5¾	36x4k	36x6k	W
Sterling.....2½	2½	3290	4⅜x5¾	36x4k	36x4dk	W
Sterling.....3½	3½	4325	4½x6¼	36x5k	40x5dk	W
Sterling.....5-W	5	4950	5 x6¼	36x6	40x6d	W
Sterling.....5-C	5	5500	5 x6¼	33x6	40x6d	C
Sterling.....7½	7½	6000	5 x6¼	33x6	40x7d	C
*Stewart...Utility	¼–1¼	1245	3⅝x5⅛	34x4½n	34x4½n	I
Stewart.....15	1¼–1½	1445	3⅝x5⅛	35x5n	35x5n	I
Stewart.....9	1½–2	1790	3¾x5	34x3½	34x6	I
Stewart.....7-X	2½–3	2390	4¼x5½	34x4	34x8	I
Stewart.....10-X	3½–4	3190	4½x6	36x5	36x10	I
*Stewart.....	1¼	1245	4–3⅜x5½	34x4½	34x4½	
*Stoughton.....C	¾	1095	3½x5	34x4½n	34x4½n	B
Stoughton.....A	1	1790	3¾x5¼	34x5n	34x5n	W
Stoughton.....B	1½	2150	3¾x5¼	36x3½	36x5	W
Stoughton.....D	2	2490	4 x5⅛	36x4	36x7	W
Stoughton.....F	3	3150	4¼x5½	36x5d	36x5d	W
Sullivan.....E	2	2800	4¼x5½	36x4k	36x7k	W
Sullivan.....H	3½	3750	4½x6	35x5	36x5d	W
*Thomart.....	1¼	1795	4 x5¼	34x5	34x5	C
Tiffin.....GW	1½	2100	4⅛x5¼	36x3½	36x5	W
Tiffin.....MW	2½	2700	4⅛x5¼	36x4	36x3½d	W
Tiffin.....PW	3½	3600a	4½x5½	36x5	40x5d	W
Tiffin.....PW	5	4300	4¾x6	36x6	40x6d	W
Tiffin.....UW	6	4500	4¾x6	36x6	40x12	W
Titan.....	2	2750	4 x5	36x4k	36x7k	D
Titan.....	2½	2950	4¼x5½	36x4k	36x8k	D
Titan.....	3½	3950	4½x6	35x5k	40x10k	D
Titan.....	5	4550	4½x6	36x5	40x12	D
Tower.....J	1½	2000	4⅛x5¼	35x5n	38x7n	W
Tower.....H	2½	2475	4⅛x5¼	36x4	36x7	W
Tower.....G	3½	3475	4½x5½	36x5	36x5d	W
Traffic.....	1½	1595a	3¾x5	35x5n	35x5n	I
Traffic.....C	2	1595a	3¾x5	34x3½k	34x5k	I
Traffic.....	3	1895a	3¾x5	35x4	36x7	I
*Transport.....15	1	1295	3¾x5	32x4½n	32x4½n	B
Transport.....25	1½	1495	3¾x5⅛	34x3½k	34x5k	I
Transport.....35	2	1885a	3¾x5	36x3½k	36x6k	I
Transport.....55	3	2385	4¼x5¼	36x4k	36x8k	I
Transport.....60	3½	2585	4¼x5½	36x4k	36x8k	I
Transport.....75	5	3485	4½x6	36x5k	36x12k	I
Traylor.....B	1½	2390	3¾x5½	34x3½	34x5	W
Traylor.....C	2–2½	2850	4 x5½	36x4	36x7	W
Traylor.....D	3–3½	3300	4¼x5½	36x4	36x8k	W
Traylor.....F	5–6	4700	4½x6	36x6	40x6d	W
*Triangle.....AA	1	1285	3¼x5	34x4½n	34x4½n	I
Triangle.....A	1½–2	1985	3¾x5¼	34x3½k	34x6k	I
Triangle.....C	2–2½	2285	3¾x5¼	36x4k	36x7k	I
Triangle.....B	2½–3	2585	4 x5¾	36x4k	36x7k	I
Twin City...B.W.	2	2400	4 x5½	36x6	40x8	I
Twin City...A.W	3½	3500	4¼x6	36x5	40x5d	W
5Twin City.....B	3½	....	5½x6	36x6	36x6	I
5Twin City.....A	5	....	5½x6	36x7	36x7	I
Ultimate.....A	2	3150	4 x5¼	36x3½	36x6	W
Ultimate.....AJ	2	3200	4¼x5½	36x3½	36x6	W
Ultimate.....AJL	2	3250	4¼x5½	36x3½	36x6	W
Ultimate.....B	3	3700	4¼x5½	36x4	33x4d	W
Ultimate.....BL	3	3800	4¼x5½	36x4	33x4d	W
Ultimate.....D	5	5500	5 x6½	36x6	40x12	W
United.....A	1½	2445	3¾x5¼	36x3½k	34x5k	W
United.....B	2½	3150	4¼x5½	36x4k	33x7k	W
United.....C	3½	3975	4¼x5½	36x5	36x5d	W
United.....V	5	4500	4½x6	36x6	40x6d	W
*United States..U	1¼	1800	3⅝x5⅛	34x5n	34x5n	B
UnitedStates.NW	1½–2	2375	3¾x5	35x5	35x3½	W
United States..N	1½–2	2175	3¾x5	35x3½k	36x5k	I
United States..R	3	3300	4 x5¼	33x4	36x4d	W
United States..S	4	4075	4½x5½	36x5	36x5d	W
United States...T	5–7	4975	4¾x6½	36x6	40x6d	W
Velie.....46	1½	1585	3¾x5	36x3½k	36x5k	I
Velie.....53	2½	2185	4 x5⅛	36x4k	36x7k	I
Veteran.....M**	1½	2699	3¾x5¼	35x5n	35x5n	W

FINAL DRIVE:—B—Bevel, C—Chain, D—Double Reduction, I—Internal Gear, W—Worm.
r—8 cyl. s—6 cyl. t—2 cyl.—all others are 4 cyl. d—dual tires. k—pneumatic tires optional at extra cost. n—pneumatic tires. a—price includes several items of equipment. b—price includes body. *—express truck or delivery wagon. **—Canadian Make. trac.—tractor.

3—Moreland Road Runner. 4—Nelson Le Moon. 5—Twin City Four Wheel Drive.

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Specifications of Current Motor Truck Models—Continued

NAME AND MODEL	Tons Capacity	Chassis Price	Bore and Stroke	TIRES Front	TIRES Rear	Final Drive
Veteran.....P**	2	$3699	4½x5½	36x4	36x7	W
Veteran.....R**	3	4200	4¼x5½	36x4	36x7	W
Veteran.....S**	4	5395	4½x6	36x5	36x10	W
*Vim.....50	½-¾	995	4 x5	32x4n	32x4n	B
Walker-JohnsonA	2	2500	3¾x5	34x3½	34x6	W
Walker-JohnsonB	3	3000	4¼x5½	36x4	36x8	W
Walter.....M	2½	3850	4½x5¾	36x4	36x8	D
Walter.....S	5	4850	4½x6¼	36x6	40x6d	W
*Watson.....C	1	1465a	3⅝x5½	35x5n	35x5n	W
Watson.....N	3½	4250	4½x5½	36x5	36x10	W
Western....W1½	1½	2450	4⅛x5¼	36x3½k	36x5k	W
Western....L1½	1½	2450	3¾x5	36x3½k	36x5k	W
Western....W2½	2½	3250	4⅛x5¼	36x4	36x7	W
Western....L2½	2½	2450	4¼x6	36x4	36x7	W
Western....W3½	3½	4000	4½x6	36x5	40x5d	W
*White.....15	3¼	2400	3¾x5¼	34x5n	34x5n	B
White.....20	2	3250	3¾x5⅛	36x4k	36x7k	D
White.....40	3¼	$4200	3¾x5¾	36x5	40x5d	D
White.....45	5	4500	4¼x5¾	36x6	40x6d	D
White Hick....E	1	1225	3¾x5	34x5n	34x5n	W
White Hick....H	1½	1375	3¾x5	36x3½	36x5	W
White Hick....K	2½	1675	4⅛x5¼	36x4	36x5	W
Wichita.....K	1	1875	3¾x5¼	36x3½	36x4k	W
Wichita.....M	2	2400	3¾x5¼	36x3½k	36x6k	W
Wichita.....RX	3	3200	4⅜x5¾	36x4k	36x8k	W
Wicox.....AA	1	1900	3¾x5½	36x4k	36x4k	W
Wilcox.....BB	1½	2550	4¼x5	36x4	36x5	W
Wilcox.....D	2½	3000	4¼x5	36x4k	36x3½dk	W
Wilcox.....E	3½	3950	4½x6	36x5k	36x5dk	W
Wilcox.....F	5	4350	4¾x6½	36x5	40x6d	W
Wilson.....F	1½	2270	3¾x5	36x3½	36x5	W
Wilson.....EA	2½	2825	4½x5¼	36x4	36x7	W
Wilson.....G	3½	3685	4½x5½	36x5	36x5	W
Wilson.....H	5	4520	4¾x6	36x6	40x6	W
*Wisconsin.....A	1	1750	3¾x5	31x5n	34x5n	W,B
Wisconsin.....B	1½	2100	3¾x5	35x5	36x6	W
Wisconsin.....C	2½	2700	4 x5¾	36x6n	36x7	W
Wisconsin.....D	3½	3000	4⅜x5¾	36x6n	40x8	W
Wisconsin.....E	5	3500	4½x6¼	36x6	36x10	W
Wisconsin.....F	7	4000	5 x6¼	36x6	36x12	W
Witt-Will.....N	1½	2450	3¾x5	36x3½k	36x6k	W
Witt-Will.....P	2½	2900	4½x5¼	36x4k	36x8k	W

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Specifications of Current Farm Tractor Models

TRADE NAME	Rating	Price	Wheels or Crawlers	Engine	Cylinders; Bore, Stroke	Fuel	Plow Capacity
Allis-Chal.G.P.	6-12	$250	2	LeR.	4-3½x4½	Gas.	1
Allis-Chalm...	15-25	1185	4	Midw.	4-4⅜x5¼	Gas.	3
Allis-Chalm...	20-35	1885	4	Own	4-4¾x6½	GorK	3-4
‡Allis-Chalm..	20-35	2085	4	Own	4-4¾x6½	G	4
Allwork...2-G	14-28	1595	4	Own	4-4¾x6	GorK	3
Allwork.....C	14-28	1395	4	Own	4-5 x6	GorK	3
¶ARO.1921-22	3-6	385	4	Own	1-4½x5	Gas.	1
Aultman-T,...	15-30	1900	4	Clim.	4-5 x6½	G,K,D	4
Aultman-T,...	22-45	2800	4	Own	4-5½x8	G,K,D	6
Aultman-T,...	30-60	4000	4	Own	4-7 x9	G,K,D	8-10
Automot...B-3	12-24	1250	4	Herc.	4-4 x5½	Gas.	2-3
Avery,SR.Cul.	5-10	....	4	Own	4-3 x4	G,K	..
Avery Cult-C	....	....	3	Own	6-3 x4	G,K	..
Avery.....B	5-10	....	4	Own	4-3 x4	G,K	2
Avery.....C	....	....	4	Own	6-3 x4	G,K	..
Avery.....	8-16	....	4	Own	2-5½x6	G,K,D	2-3
Avery.....	12-20	....	4	Own	4-4⅜x6	G,K,D	2-3
§Avery.....	....	....	*	Own	4-4x5½	G,K,D	3-4
Avery.....	12-25	....	4	Own	2-6½x7	G,K,D	2-3
Avery.....	14-28	....	4	Own	4-4⅞x7.	G,K,D	3-4
Avery.....	18-36	....	4	Own	4-5½x6	G,K,D	4-5
Avery.....	25-50	....	4	Own	4-6½x7	G,K,D	5-6
Avery.....	45-65	....	4	Own	4-7¾x8	G,K,D	8-10
Bates Mule.H	15-25	....	4	Midw.	4-4¼x5¼	Gas.	3
Bates Mule..F	18-25	....	*2	Midw.	4-4½x5¼	Gas.	3
‡BatesMule.G	25-35	....	*2	Midw.	4-4½x6	Gas.	..
Bear.....	25-35	4250	*2	Ste.	4-4¾x6½	Gas.	4
¶Beeman Jr..	¾-1½	180	2	B&S	1-2½x2½	Gas.	..
¶Beeman...G	2-4	240	4	Own	1-3½x4½	Gas.	..
Best.....	30	....	*2	Own	4-4¾x6½	G,K,D	4
Best.....	60	....	*2	Own	4-6½x8½	G,K,D	8-9
¶Bolens.....	....	....	4	B&S	1-2½x2½	G.	..
Boring.....	5-10	395	4	LeR.	4-3½x4½	G.	..
Boring...1921	..	1850	3	Wauk	4-4⅜x5¾	GorK	2
**Bryan.....	15-30	....	4	Own	2-4 x5	K.	3
Case.....	12-20	1050	4	Own	4-4½x5	G,K,D	2-3
Case.....	15-27	1320	4	Own	4-4½x6	G,K,D	3-4
Case.....	22-40	2550	4	Own	4-5½x6¾	G,K,D	4-5
Case.....	40-72	5200	4	Own	7 x8	G,K,D	8-10
Caterpillar T35	15	....	*2	Own	4-4 x5½	Gas.	3
Caterpillar..5T	25	....	*2	Own	4-4¾x6	Gas.	4
Caterpillar 10T	40	....	*2	Own	4-6½x7	Gas.	6
Centaur.....	5-2½	345	2	N Way	2-4½x4½	GorK	1
Cletrac.....F	9-16	595	*2	Own	4-3¼x4½	G,K,D	2
Cletrac.....W	12-20	1345	*2	Own	4-4 x5½	G,K,D	2-3
Dakota.....4	15-27	1500	3	Dom.	4-4¾x6	Gas.	3
Do-It-All,Baby	1	237	..	Own	1-2¾x2¾	Gas.	1
Do-It-All....A	3-6	495	..	Own	1-4½x5	Gas.	1
Do-It-All, Jack	6	395	..	Own	1-3⅜x3⅜	Gas.	1
Do-It-All....6	12	495	2	Own	2-3⅜x3⅜	Gas.	1
Eagle.....F	12-22	....	4	Own	2-7 x8	GorK	3-4
Eagle.....H	16-30	....	4	Own	2-8 x8	GorK	4-5
E-B.....AA	12-20	1095	4	Own	4-4¾x5	G,K,D	3
Fageol.....D	9-18	1175	4	Lyc.	4-3½x5	Gas.	2
Farm Horse.B	18-30	1885	4	Clim.	4-5 x6½	G,K	4
Fitch...4 Drive	20-35	1850	4	Clim.	4-5 x6½	GorK	3-4
Fordson.....	-18	395	4	Own	4-4 x5	G,K	2
Frick.....A	12-20	....	4	Erd.	4-4 x6	G,K	2-3
Frick.....C	15-28	....	4	Beav.	4-4¾x6	G,K	3-4
Grain Belt...A	18-36	$2150	4	Wauk.	4-4¾x6¾	GorK	4
Gray.....	20-36	1975	3	Wauk.	4-4½x6¼	Gas.	4
Gray.....	22-44	2165	3	Wauk.	4-5 x6¼	Gas.	4-5
Gt. WesternSt	20-30	1950	4	Beav.	4-4¾x6	K	4
Hart-Parr..20	20	865	4	Own	2-5¼x6½	K,D.	2
Hart-Parr..30	30	1045	4	Own	2-6½x7	K,D.	3
‡Hart-Parr....	....	1395	4	Own	6½x7	K,D.	..
Heider.....D	9-16	628	4	Wauk.	4-4¼x5¾	G,K.	2
Heider.....C	12-20	725	4	Wauk.	4-4½x6¾	G,K.	3
Heider...Cul	5-10	800	4	LeR.	4-3½x4½	Gas.	1
Huber Light.4	12-25	985	4	Wauk.	4-4½x5¾	GorK	3
Huber Super 4	15-30	1885	4	Midw.	4-4½x6	Gas.	3
Indiana.....F	5-10	665	2	LeR.	4-3½x4½	Gas.	1-2
International..	8-16	†670	4	Own	4-4¼x5	G,K,D	2
Internatl.Titan	10-20	†700	4	Own	2-6½x8	G,K,D	3
International..	15-30	1750	4	Own	4-5¼x8	G,K,D	4
¶Kinkade....	1½-3	190	1	Own	1-3 x3	Gas.	..
La Crosse....	12-21	985	2	Own	2-6 x7	G,K	3
Lauson.....5	12-25	1295	4	Midw.	4-4½x5¼	Gas.	3
Lauson.....21	15-30	1675	4	Beav.	4-4¾x6	GorK	3-4
‡Lauson Road	15-30	2000	4	Beav.	4-4¾x6	K	..
Leader.....B	12-18	685	4	Own	2-6 x6¼	G,K,D	2-3
Leader.....N	16-32	1725	4	Clim.	4-5 x6½	G,K.	3-4
‡Leader...GU	18-35	2150	*2	Clim.	4-5 x6½	G,K	3-4
Little Giant..B	16-22	2200	4	Own	4-4½x5	K	4
Little Giant..A	26-35	3300	4	Own	4-5½x6	K	6
Lombard.1922	85-150	8950	*2	Wisc.	6-5½x6¾	Gas.	16
Lombard.1922	50	5300	*2	Wisc.	4-4¾x6½	Gas.	6-10
MerryGar1922	2	210	2	Evin	1-2⅝x2½	Gas.	..
Minne...All-P	12-25	800	4	Own	4-4½x7	GorK	3
Minne..Gen.P	17-30	1600	4	Own	4-4¾x7	GorK	3-4
Minne.Med.D	22-44	2650	4	Own	4-6 x7	GorK	5-6
MinneHeavyD	35-70	3850	4	Own	4-7¼x9	GorK	8-9
Mohawk.1922	8-16	650	2	Light	4-3¼x4½	KorG	1-2
Moline Univ D	9-18	650	2	Own	4-3½x5	Gas.	2-3
Moline Orch...	9-18	....	2	Own	4-3½x5	Gas.	2-3
‡Monarch....	20-30	3500	*2	Beav.	4-4¾x6	G,K,D	4
Motor Macult.	1½	195	2	Own	1-2¾x3½	Gas.	..
NB.....1	3-6	375	4	Own	2-3⅜x4	Gas.	1
Nichols-Shep.	20-42	2650	4	Own	2-8 x10	GorK	3-6
Nichols-Shep.	25-50	3000	4	Own	2-9 x12	GorK	4-8
Nichols-Shep.	35-70	3650	4	Own	2-10½x14	GorK	8-12
Nilson Senior	20-40	1975	5	Wauk.	4-5 x6¼	G,K	4
OilPull.....K	12-20	....	4	Own	2-6 x8	K,D	3
OilPull.....H	16-30	....	4	Own	2-7 x8½	K,D	4
OilPull.....G	20-40	....	4	Own	2-8 x10	K,D	5-6
OilPull.....E	30-60	....	4	Own	2-10x12	K,D	8-10
¶Oldsmar...K	2½-5	$225	4	Own	1-5½x5½	Gas.	1
Pioneer.....G	18-36	....	4	Own	4-5½x6	G,K,D	4
Pioneer.....C	40-75	....	4	Own	4-7 x8	Gas.	10
Russell.....	12-24	1500	4	Own	4-4¼x5¾	GorK	2-3
Russell.....	15-30	2200	4	Own	4-5x6½	GorK	3-4
Russell.....	20-35	3000	4	Own	4-5½x7	GorK	4-5
Russell.....	30-60	5000	4	Own	4-8 x10	GorK	8-10
Samson....M	....	445	4	Own	4-4 x5½	G,K	2
Toro Cultivator	6	750	3	LeR.	4-3½x4½	Gas.	2
ToroTractor'22	6-10	495	3	LeR.	4-3½x4½	Gas.	2
Townsend....	10-20	800	2	Own	4-6½x7	Ker.	2-3
Townsend....	15-30	1350	2	Own	4-7 x8	Ker.	3-4
Townsend....	25-50	2500	2	Own	4-8½x10	Ker.	4-8
TractionMotor	40-50	....	4	..	8-3¼x5	Gas.	4-5
Traylor....TB	6-12	500	4	LeR.	4-3½x4½	Gas.	1-2
Trundaar...10	25-40	3750	*2	Wauk.	4-5 x6¼	GorK	4
TwinCity.....	12-20	1200	4	Own	4-4¼x6	H,K	3
Twin City....	20-35	2750	4	Own	4-5½x6¾	G,K	5-6
Twin City....	40-65	4750	4	Own	4-7¾x9	G,K	8-10
Uncle SamC20	12-20	1295	4	Weid.	4-4 x5½	G	2-3
Uncle SamB19	20-30	1985	4	Beav.	4-4¾x6	GorK	3-4
Uncle SamD21	20-30	1895	4	Beav.	4-4¾x6	GorK	3-4
Utilitor....501	2¼-4	295	4	Own	1-3½x4½	G	1
Utilitor...501A	2½-4	340	4	Own	1-3½x4½	G	1
Wallis.....*K	15-25	....	4	Own	4-4¼x5¾	G,K	3
Waterloo....N	12-25	675	4	Own	2-6½x7	Ker.	3
Wetmore21-22	12-25	1185	4	Wauk.	4-4 x5¾	G,K	3
Whitney....D	9-18	595	4	Own	2-5½x6½	Gas.	2
Wichita.....T	15-30	2000	4	Beav.	4-4½x6	G,K,D	3-4
Wisconsin..E	16-30	1850	4	Clim.	4-5 x6½	GorK	3
Wisconsin...F	20-40	2050	4	Wauk.	4-5 x6¼	GorK	4
Wisconsin...H	22-40	2550	4	Clim.	4-5½x7	GorK	4-6
Yuba....12-20	12-20	2400	*2	Wauk.	4-4½x6¾	G,K,D	3
Yuba....15-25	15-25	2750	*2	Wisc.	4-4¼x6	G,K,D	..
Yuba....20-35	20-35	3900	*2	Wisc.	4-5¾x7	G,K,D	4
Yuba....25-40	25-40	4250	*2	Wisc.	4-5¾x7	G,K,D	..
‡Yuba.....	25-40	4750	*2	Yuba	4-5¼x7	D	..

ABBREVIATIONS: G—Gasoline. K—Kerosene. D—Distillate. Plow capacity varies in relation to operating conditions. Figures are based on 14 in. plows. Engine Make: Beav.—Beaver. B & S—Briggs & Stratton. Clim.—Climax. Cont.—Continental. Dom.—Domas. Evin.—Evinrude. Herc.—Hercules. LeR.—LeRoy. Midw.—Midwest. Nway.—New Way. Nor.—Northway. Ste.—Stearns. Wauk.—Waukesha. Weid.—Weidely. Wis.—Wisconsin. *—Crawler type. All others are wheel type. †Price includes plows. §Track Runner. ‡Industrial Tractor. ¶Garden Tractor. **Steam Tractor.

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (N.A.C.C.)	NAME AND MODEL	Carbureter	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle Type and Make	†Gear Ratios
$1995c	$1785	$1850	$1885c	.....	$2485	127	33x4½	H-S...	6-3½x5	29.40	American.....D-66	Strom...	G-D.....	A-K.....	s-p B&B....	B & B ..	m Hartford..	F Salis..	4.50
.....	1650	.....	.....	.....	.....	127	33x4	Own..	2–	.....	American.....Steamer	None...	L-N.....	L-N.....	None.....	None.....	.....	Own..	1.75
.....	1195	.....	.....	.....	1450d	114	32x4	Cont..	6-3⅛x4¼	23.44	Andersen.....41	Zenith..	West.....	West.....	s-p B&B....	Durston.	f Universal.	½F Salis..	4.62
{1495 {1735p	1495	1595	{1595c {1945c	$1995c	1995d	120	33x4	Cont..	6-3⅜x4½	27.34	Andersen.....Series 50	Rayfield.	Remy.....	Remy.....	s-p B&B....	Durston.	f Universal.	¾F Salis.	4.62
.....	2620	2645	.....	3625	3695	130	34x4½	Own..	8-3¼x5	33.80	Appersen.....8-21-S	Johnson.	Bijur.....	Remy.....	m-d Own....	Own.....	m Sterling..	½F Own..	4.25
1575	1475	1545n	{1895n {1995n	2275	2345	121	32x4	Cont..	6-3½x4½	27.34	Auburn.....6-51	Strom...	Remy.....	Remy.....	s-p B&B....	G-L.....	m Universal..	F Salis..	4.75
.....	1395	.....	1495d	....	1850d	118	32x4	Cont..	6-3⅛x4¼	23.44	Barley.....	Strom...	Delco .	Delco.....	s-p B&B	Fuller...	f M&E.....	½F Col....	4.58
5000c	.....	.....	.....	.....	7000c	125	32x4½	Own..	4–4 x5½	25.60	Brewster.....91	Zenith...	USL.....	Bosch.....	c Own....	Own.....	F Own.....	F Own.....	4.25
865	885	725g	.....	1175	{1395 {1325	109	31x4	Own..	4-3⅜x4¾	18 23	Buick..1923-34-5-6-7-38	Marvel..	Delco.....	Delco.....	m-d Own....	Own.....	m Own.....	¾F Own..	4 66
1175	1195	975x	.....	1935	1985	118	32x4½	Own..	6-3⅜x4½	27.34	Buick.....1923-41-4-5-47	Marvel..	Delco.....	Delco.....	m-d Own....	Own.....	m Own.....	F Own..	4.40
.....	.....	1435	{1625n {1675c	1895	2195	124	34x4½	Own..	6-3⅜x4½	27.34	Buick. 1923 48-9-50-4-55	Marvel..	Delco.....	Delco.....	m-d Own....	Own.....	m Own.....	F Own..	4.40
2885	2885	2885	.....	{3675 {3750d	{3950 {4300	132	33x5	Own..	8-3½x5⅛	31.25	Cadillac.....61	Own....	Delco.....	Delco.....	m-d Own....	Own.....	m Spicer....	F Tim...	Opt.
1750b	1790	.....	.....	2480	2575	122	32x4½	Cont..	6-3⅜x4½	27.34	Case.....X	Rayfield.	Delco.....	Delco.....	m-d Own....	Own.....	f Snead....	½F Col....	4.66
.....	.....	1990	1950c	2486c	2975b	129	34x4½	Cont..	6-3⅝x5¼	31.54	Case.....W	Rayfield.	Delco.....	Delco.....	m-d Own....	Own.....	f Arvac.....	¾F Col....	4.45
1185	1185	.....	.....	1595	{2295	117	32x4	Own..	6-3½x4½	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own.....	m Hardy.....	½F Adams.	5.13
.....	.....	1315	.....	.....	{1585	122	32x4	Own..	6-3½x4½	25.35	Chalmers.....1922	Strom...	A-L.....	Remy.....	m-d Own....	Own.....	m Hardy.....	½F Adams.	5.13
1495	1495c	1645	1595a	1995c	{2295d {2375f	123	33x4	Own..	6-3½x5	29.40	Chandler.....Six	Rayfield.	Bosch.....	Bosch.....	s-p B&B....	Own.....	f Own.....	F Own..	4.45
510	525	425g	.....	{ 840c { 680k	860	103	30x3½	Own..	4-3¼x4	21.76	Chevrolet.....Superior	Zenith . Holley .	Remy.... A-L.....	Remy.....	c Own....	Own.....	m Own.....	½F Own..	3.77
1085b	995	1059d	1260d	.....	1485d	112½	31x4	Own..	6-3 1/16x4½	22.50	Cleveland.....42	Strom...	Bosch.....	Bosch.....	s-p B&B....	Own.....	m Mech.....	½F Own..	4.90
2085	.....	2085	2085c	3285b	{3285c {3685f	127¼	33x5	Nort..	8-3½x4½	39.20	Cole.....890	Johnson	Delco.....	Delco.....	m-d North...	Own.....	m Spicer....	¾F Col....	4.70
.....	1475	.....	.....	1995c	1995d	115	32x4	Cont..	6-3⅜x4½	27.34	Columbia.....Big Six	Strom...	A-L.....	A-K.....	s-p B&B....	Durston	m Spicer....	½F Tim...	4.75
995	985	1095d	1395c	1235a	1395d	115	31x4	Cont..	6-3½x4¼	23.44	Columbia.....Light Six	Strom...	A-L.....	A-L.....	s-p B&B....	Durston	m Spicer....	½F Tim...	4.80
1395	1395	.....	{1195b {1495c	2065b	2165d	116	32x4	Falls.	6-3½x4¼	23.44	Courier.....	Till.....	Bijur.....	A-K.....	s-p B&B....	Muncie..	f Norwalk.	¾F Col....	5.00
3000	3000	3000	.....	.....	4500	122½	32x4	Cont..	6-3⅝x5¼	31.54	Crawford.....22-6-60	Strom...	West.....	Bosch....	m-d B-L....	B-L.....	Spicer....	½F Tim...	....
.....	.....	.....	3500	.....	.....	135	33x5	Cont..	6-3⅝x5¼	31.54	Crawford-Dagmar...6-60	Zenith...	West.....	Bosch....	m-d B-L....	B-L.....	Spicer....	½F Tim...	....
.....	.....	.....	.....	.....	.....	142	33x5	Own..	8-3¼x5	45.00	Cunningham.....V	Strom...	Deleo.....	Deleo.....	m-d Own....	Own.....	f Snead....	F Tim...	4.23
4350b	4350c	4350	.....	5250	6000	132	33x5	Own..	8-3½x5¼	39.20	Daniels.....D-19	Zenith...	Delco.....	Delco.....	m-d Own....	Own.....	m Spicer....	F Tim...	4.50
.....	1195	.....	1495	1795	1795	114	31x4	Cont..	6-3½x4¼	23.44	Davis.....71	Strom...	Delco.....	Delco.....	s-p B&B....	Warner.	m Peters....	½F Tim...	5 10
1595	1595	.....	1695	2095	.....	120	32x4	Cont..	6-3⅝x4½	27.34	Davis.....61-67	Strom...	Delco.....	Delco.....	s-p B&B....	Warner.	m Peters....	¾F Tim...	5 15
1175	1175	1295c	1215	1515	1595	112	32x4	H-S...	4-3½x5	19.60	Dixie Flyer.....H-S-70	Strom...	Dyneto...	Eisemann..	s-p B&B....	G-L.....	f Hardy.....	F Peru..	4.75
850	880	.....	.....	980b	1195d	111	32x4	Own..	4-3⅞x4½	24.03	Dodge Brothers.....	Stewart..	N.E.....	N.E.....	m-d Own....	Own.....	m Own.....	½F Own..	4 16
3359½	3950c	3950	.....	4985c	5750f	132	33x5	Own..	6-4 x5	38.40	Dorris.....6-80	Strom...	West.....	Bosch.....	m-d Own....	Warner.	m Spicer....	F Tim...	4.23
865	865	.....	{1015a {1015d	{1240 {1020k	{1370 {1070k	108	31x4	D-Ly.	4-3½x5	19.60	Dort.....19-14	Carter..	Bosch.....	Conn.....	m-d Detlaff..	Own.....	m Mech.....	¾F Flint..	4.66
990	990	.....	.....	{1145 {1365	{1195 {1495	115	31x4	Falls..	6-3½x4¼	23.44	Dort.....25-20	Carter..	Bosch.....	Bosch.....	m-d Detlaff..	Own.....	Mech.....	¾F Flint..	4.66
1275	1275	.....	.....	1650	1975	101	30x3½	Own..	4-2⅝x4½	11.03	Driggs.....	Zenith...	Bosch.....	Bosch.....	s-p Hoos....	Mech...	m Spicer....	¾F Own..	4.75
6500	6500	6750	.....	7800	7800	134	33x5	Own..	8-2⅞x5	26.45	Duesenberg...Straight 8	Strom...	Deleo.....	Deleo.....	s-p Own....	Own.....	f Own.....	½F Own..	4.81
3000	3200	.....	.....	3800	4000	124	32x4½	Own..	4-3 1/16x5½	24.81	Du Pont.....A	Y&T....	West.....	Eisemann..	m-d B-L....	B-L.....	m Spicer.....	Col....	4.50
890	890	.....	.....	1365	1365	109	31x4	Cont..	4-3⅞x4¼	24.03	Durant.....A-22	Till.....	A-L.....	A-L.....	s-p Own....	Own.....	m,f Spicer..	¾F Adams	4 30
1600	1650	.....	.....	2250	2400	123½	32x4½	Anst..	6-3¼x4½	25.35	Durant.....B-22	Rayfield.	A-L.....	A-L.....	s-p Ansted..	Warner.	m,f Spicer..	½F Tim...	5.15
1485	1095	950g	.....	1395c	1795	112	32x4	Own..	4-3 1/16x5¼	18.91	Earl.....40	Scoe....	A-L.....	Conn.....	s-p B&B....	Own.....	f Own.....	½F Own..	4 66
1095	1095	.....	1095	1315	.....	118	33x4	Lyc...	4-3½x5	19.60	Elcar.....K-4	Strom...	Deleo.....	Delco.....	s-p B&B....	Muncie.	m Peters....	¾F Salis..	4.50
1395	1395	.....	1395	1975	2065	118	33x4	Cont..	6-3⅜x4½	27.34	Elcar.....8-R	Strom...	Deleo.....	Delco.....	m-d Warner	Warner..	m Spicer....	¾F Salis..	4.50
1125c	1125	.....	1165	1695	1615	118	33x4	Falls.	6-3½x4¼	23.44	Elgin.....K-1	Strom...	West.....	Wagner..	s-p B&B....	Mech...	m Mech.....	¾F Col....	4.66
.....	1045	.....	.....	.....	{1895 {1145k	108½	32x4	Own..	4-3⅜x5	18.23	Essex.....	Own....	Bosch.....	Bosch.....	m-d Own....	Own.....	m Spicer....	½F Own..	4.66
269r	298s	235g	.....	530	{595 {725	100	30x3½	Own..	4-3⅛x4	22.50	Ford.....T	Own....	Own.....	Own.....	m-d Own....	Own.....	m Own.....	½F Own..	3.63
3900	3900	.....	.....	4900	4900	132	32x4½	Own..	6-3⅜x5	27.34	Fox.....7F	Zenith...	West.....	Bosch.....	m-d B-L....	B-L.....	Spicer....	½F Tim...	4.45
1900	1950	1750g	.....	2750	2850	115	32x4	Own..	6-3¼x4	25.35	Franklin.....10	Own....	N.E.....	A-K.....	s-p B&B....	Own.....	m Spicer....	½F Own..	4.73
965	965	.....	.....	1115k	1365d	112	32x4	Lyc...	4-3 1/16x5	21.76	Gardner.....T-R & G	Carter...	West.....	West.....	s-p B&B....	Mech...	m Mech.....	¾F Flint..	4.80
490	490	.....	.....	.....	760	100	30x3½	Own..	4-3⅝x4	21.03	Gray.....	Scoe....	West.....	West.....	m-d Own....	Detroit..	m Mech.....	½F Tim...	3.90
2475	2475c	.....	3250	.....	3475	120	32x4½	Weid..	4-3¾x5¼	22.50	H.C.S.....Series 4	Strom...	Delco.....	Delco.....	m-d B-L.....	B-L.....	m Spicer....	¾F Own..	.....
.....	.....	2650	.....	3450	3450	125	32x4½	Own..	4-4½x4½	27.23	Handley-Knight.....	Till.....	A-L.....	A-L.....	m-d Warner	Warner..	m Spicer....	½F Tim...	4.90
.....	995	.....	.....	.....	.....	114	31x4	Cont..	6-3½x4¼	25.35	Hanson.....30	Marvel..	Delco.....	Delco.....	s-p B&B....	Detroit..	.....	¾F Tim...	....
1595	1595	1795	.....	2475c	2585	121	32x4	Cont..	6-3⅝x4½	27.34	Hanson.....60	Marvel..	Delco.....	Delco.....	s-p B&B....	Detroit..	.....	¾F Tim...	....
.....	1315	1345c	.....	1950	1950	115	32x4	H-S...	4-3½x5	19.60	Hatfield.....A-42	Zenith...	Dyneto....	Conn.....	s-p B&B....	G-L.....	m Spicer....	¾F Col....	4.66
2395	p2550c	{2395 {2550p	.....	{3095 {3250p	3395f	132	33x5	Own..	6-3½x5-1/16	29.40	Haynes.....75	Strom...	L-N.....	King.....	s-p Warner	Own.....	m Universal..	¾F Own..	4.60
1895p	{1595 {1850p	.....	.....	.....	2395p	{2595 {2695p	121	32x4½	Own..	6-3½x5	29.40	Haynes.....55	Rayfield.	L-N.....	King.....	s-p Warner	Own.....	m Universal..	½F Own..	4.11
.....	2500c	2500	.....	3300c	3600f	126	34x4½	Own..	6-3½x4¼	29.40	Holmes.....Series 4	Strom...	Dyneto...	Eisemann..	m-d B-L....	B-L.....	m Spicer....	½F Tim...	4.90
.....	1425c	1475	.....	2570c	{1525k {2095	126	34x4½	Own..	6-3½x5	29.40	Hudson.....Super 6	Own....	Bosch.....	Bosch.....	m-d Own....	Own.....	m Spicer....	½F Own..	4.45
1395	1395	.....	.....	.....	2295	120	32x4	Cont..	6-3⅜x4½	27 34	Huffman.....	Strom...	Dyneto...	Conn.....	s-p B&B...	Covert...	.....	F Salis..	....
{1150 {1025g	1150	.....	1250a	{1635 {1335k	1785	112	32x4	Own..	4-3¼x5½	16.90	Hupmobile.....Series R	Strom...	West.....	A-K.....	m-d Own....	Own.....	m Universal..	¾F Own..	1.87
.....	1485	1685c	.....	2985	2985	121	32x4½	Cont..	6-3¼x4½	25.35	Jackson.....638	Strom...	A-L.....	Remy.....	s-p B&B....	Covert...	f Snead....	¾F Salis..	1 75
935b	995	.....	1095a	1445c	1465d	112	31x4	Own..	6-3½x5	25.35	Jewett.....Six	Strom...	Remy.....	A-K.....	m-d Long...	Warner..	m Mech.....	½F Tim...	4.45
1895	1795	.....	.....	2785	2485	120	32x4	Own..	6-3 1/16x4¾	26.38	Jordan.....MX	Strom...	Deleo.....	Deleo.....	s-p Detroit..	Detroit..	m Spicer....	½F Tim...	4.42
.....	.....	.....	2150c	.....	.....	124	32x4	Own..	6-3 1/16x4¾	26.38	Jordan.....H	Strom...	Deleo.....	Deleo.....	s-p Detroit..	Detroit..	m Universal..	½F Tim...	4.42
.....	985	.....	.....	.....	1450	111	32x3½	Gray..	4-3½x5	19.60	Kelsey.....4	Scoe....	Bosch.....	Bosch.....	f-d Own....	f-d Own..	.....	Own..	4.50
.....	985	.....	.....	.....	1450	111	32x3½	Gray..	4-3½x5	19.60	Kelsey.....4	Scoe ..	Bosch.....	Bosch.....	s-p B&B....	Detroit..	Snead.....	½F Std...	4.75
.....	1525	.....	.....	.....	2175	118	32x4	Walk'r	6-3⅛x4½	23.44	Kelsey.....6	Strom...	Bijur.....	Bosch.....	f-d Own....	f-d Own..	.....	Own..	....
5000	5000	5250	.....	5000	6000	130	32x4½	Own..	8-3 x5¼	28.80	Kenworthy.....8-90	.....	.....	.....	.....	.....	.....	.....	.....
1495	1495	.....	1495c	2200	2400	120	32x4½	Own..	8-3 x5	28.80	King.....K	Ball&B	West.....	A-K.....	s-p Detroit..	Own.....	f Hardy.....	F Col....	4.08
.....	.....	.....	.....	1995	2550f	124	32x4½	Own..	8-3 x5	28.80	King.....K	Ball&B..	West.....	A-K.....	s-p Detroit..	Own.....	f Hardy.....	F Col....	4.08
.....	1885	2385	2385c	2975c	3075	124	32x4½	Own..	6-3 1/16x5½	26.38	Kissel.....45	Strom...	Remy.....	Remy.....	m-d Warner	Warner..	m Spicer....	F Own..	3.92

MISCELLANEOUS
a—2 Passenger, d—5 Passenger,
b—3 Passenger, e—6 Passenger,
c—4 Passenger, f—7 Passenger,
g—Chassis Price,
h—All Metal Type,
k—Soft Top Type,
n—Tire Size 32x4½.
p—Sport.
r—Price without starter and demountable rims. Price, complete, $364.
s—Price without starter and demountable rims. Price, complete, $393.
†Standard Phaetons.

ENGINE
Anst—Ansted
Cont—Continental
D.-Ly—Dort Lycoming
H-S—Herschell-Spillman
Lyc—Lycoming
Nort—Northway
Walk'r—Walker
Weid—Weidely

CARBURETOR
Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg
Y & T—Yale & Towne

CLUTCH
f-d—Friction drive
c—Cone
m-d—Multiple disc
s-p—Single plate
B & B—Borg & Beck
B-L—Brown-Lipe
North—Northway

STARTING, LIGHTING IGNITION
A-L—Auto Lite
G-D—Gray & Davis
L-N—Leece Neville
N. E.—North East
West—Westinghouse

GEARSET
f-d—Friction Drive
B-L—Brown-Lipe
G-L—Grant-Lees
Mech—Mechanics
North—Northway

UNIVERSAL
f—fabric
m—metal
M &E—Merchant & Evans
Mech—Mechanics

REAR AXLE
F—Floating
½F—Semi-Floating
¾F—Three-Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
Tim—Timken

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Specifications of Current Passenger Car Models

PRICES 2-Pass.	5-Pass.	7-Pass.	Sport	Coupe	Sedan	Wheel Base	Tires	Engine Make	Cylinders: Bore and Stroke	Rated Horse Power (N.A.C.C.)	NAME AND MODEL	Carburetor	Starting and Lighting	Ignition	Clutch: Type and Make	Gearset	Universal: Type and Make	Rear Axle: Type and Make	†Gear Ratios
$3985	$4090e	$4090	.....	$5500	$5500	132	33x5	Own..	8-3½x5¼	33.80	LaFayette	Johnson	Delco	Delco	m-d Own	Own	m Own	F Own	4.58
1695	1695	1795	$2045d	2345c	2545d	123	32x4½	Anst..	6-3½x4½	25.35	Lexington—23	Rayfield	G-D	Conn	m-d Ansted	Warner	f Snead	¾F Own	5.10
	1995	2095			2145d														
1575	1395	.....	1575	2085	2245	117	32x4	Own..	6-3½x5	23.44	Liberty—10-D	Strom	Wagner	Wagner	s-p B&B	Detroit	m Spicer	½F Tim	4.80
				1695k															
3800	3800e	3800	.....	4400d	4700d	136	33x5	Own..	8-3⅝x5	36.45	Lincoln	Strom	Delco	Delco	m-d Own	Own	m Spicer	F Tim	4.55
6800g	7600e	7600	.....	10500	11000	142	35x5	Own..	6-4½x5½	48.60	Locomobile—Series 8	Ball&B	West	Delco	m-d Own	Own	m Own	F Own	3.50
3385	3185e	3185	.....	3985	4385	136	32x4½	Own..	6-3¾x5⅛	33.75	Marmon—34	Strom	Delco	Delco	m-d Own	Own	m Spicer	¾F Own	3.75
885	885	.....	.....	985	1335	109	31x4	Own..	4-3½x4½	21.03	Maxwell	Stewart	A-L	Simms	c Own	Own	.....	¾F Own	4.56
				1235															
6300	6300e	6300	.....	7500	7500	140	33x5	Own..	6-4½x6	48.60	McFarlan—1922	Rayfield	West	Splitdorf	s-p B&B	B-L	m Peters	F Tim	3.50
3950	3950e	3950e	.....	4850	5250	132	32x4½	Own..	4-3¾x6¾	22.50	Mercer—Series 5	Ball&B	West	Eisemann	m-d Own	Own	m Spicer	F Own	3.57
.....	3750	3750	.....	5000	5000	132	32x4½	Own..	6-3⅜x5	33.75	Mercer—6	Strom	.....	Eisemann	.....	.....	.....	¾F	3.77
1895	1895	.....	.....	.....	.....	119	32x4	Cont..	6-3½x4½	25.35	Merit	Strom	Delco	Delco	s-p B&B	Muncie	f Snead	F Col	4.09
1490b	1590	.....	1850e	2050e	2275d	120	32x4	Own..	6-3½x5	29.40	Mitchell—F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4.42
.....	.....	1690	.....	.....	.....	127	32x4½	Own..	6-3½x5	29.40	Mitchell—F-50	Strom	Remy	Remy	s-p B&B	Own	m Own	F Own	4.42
950	950	.....	.....	.....	.....	115	32x4½	Own..	4-3½x4½	16.90	Monroe—1922-S-9	Zenith	A-L	Conn	m-d Own	Mech	m Universal	¾F Own	5.50
1295	1195	p1445d	1885e	1585e	1695	115	31x4	Cont..	6-3½x4¼	23.44	Moon—6-40	Strom	Delco	Delco	s-p B&B	Warner	m Spicer	½F Tim	4.80
1785	1785	1785	1885	2785	2785f	128	33x4½	Cont..	6-3¾x4½	27.34	Moon—6-58	Strom	Delco	Delco	B&B	B-L	m Spicer	½F Tim	5.09
					2485e														
1210	1240	.....	1395e	.....	2040d	121	33x4	Own..	6-3½x5	25.35	Nash—691-96-97	Marvel	Delco	Delco	s-p B&B	Own	m Own	½F Own	4.50
.....	.....	1390	1645	1890e	2190f	127	34x4½	Own..	6-3½x5	25.35	Nash—692-94-95	Marvel	Delco	Delco	s-p B&B	Own	m Own	½F Own	4.50
915	935	.....	.....	1385b	1545d	112	33x4	Own..	4-3¾x5	18.23	Nash Four—41-4	Schebler	Delco	Delco	s-p B&B	Own	m Own	½F Own	4.88
				1195k	1275k														
2475b	2475e	2375	.....	3250c	3825f	130	32x4½	Own..	6-3½x5¼	29.40	National—BB	Rayfield	West	Delco	s-p B&B	B-L	m Arvac	F Col	4.08
		3150		3725e															
2500	2500c	2600e	.....	.....	3500d	128	32x4½	Cont..	6-3½x4½	25.35	Noma—3C	Claudel	Delco	Delco	s-p B&B	Detroit	m Spicer	½F Tim	4.45
2500	2500	.....	.....	.....	5500	128	33x5	Bea...	6-3½x5¼	29.40	Noma—1D	Zenith	Delco	Delco	s-p B&B	Detroit	f Spicer	½F Tim	4.45
975	995	795g	1165c	1415d	1515	115	32x4	Own..	6-2½x4¾	18.99	Oakland—6-44	Marvel	Remy	Remy	c Own	Muncie	m Mech	F Own	4.33
				1185a															
3750c	3750	3850	3750c	4500c	4800f	134	33x5	Cont..	6-3⅝x5½	31.84	Ogren—6 T D Luxe	Rayfield	Bosch	Bosch	m-d B-L	B-L	m	F Col	4.00
955	975	1350l	1075	1475	1595	115	32x4	Own..	4-3½x5¼	21.86	Oldsmobile—43 A	Zenith	A-L	Remy	s-p B&B	Warner	m Own	¾F Own	4.33
1735c	1850c	1735	.....	.....	.....	122	33x4½	Own..	8-2⅞x4¾	26.45	Oldsmobile—46	Ball&B	Delco	Delco	c Own	Warner	m Own	¾F Own	4.63
1625p	1375	.....	1675	1875	2025	115	32x4	Own..	8-2⅞x4½	26.45	Oldsmobile—47	Johnson	Delco	Delco	s-p B&B	Warner	m Spicer	¾F Own	5.10
525	525	.....	425g	795	875	100	30x3½	Own..	4-3⅜x4	18.23	Overland—4	Till	A-L	Conn	s-p B&B	Own	m Own	½F Own	4.50
2485	2485	2250g	.....	3175	3275	126	33x4½	Own..	6-3⅜x5	27.34	Packard—Single-Six	Own	A-K	Delco	m-d Own	Own	f Spicer	½F Own	4.30
.....	2350g	2685	.....	.....	3525	133	33x4½	Own..	6-3⅜x5	27.34	Packard—Single-Six	Own	A-K	Delco	m-d Own	Own	f Spicer	½F Own	4.66
3850	3850	3850	.....	5240	5100	136	35x5	Own..	12-3x 5	43.20	Packard—Twin-Six	Own	Bijur	Delco	m-d Own	Own	m Spicer	½F Own	4.36
1165	1465	1290g	.....	1995	2245	119	32x4	Own..	6-3½x5	25.35	Paige—6-44	Strom	Remy	A-K	s-p Long	Own	m Universal	¾F Salis	4.75
2195b	.....	2195	2245	3100	3155	131	33x4½	Cont..	6-3½x5	33.75	Paige—6-66	Rayfield	Remy	A-K	s-p Long	Warner	m Mech	¾F Tim	4.60
.....	1390	1425	.....	2295	2395	120	32x4½	Cont..	6-3⅜x4½	27.34	Petersen—22-6-52	Strom	Delco	Delco	s-p B&B	Durston	m Hartford	½F Std	4.50
3300	2990e	2990	.....	3300a	3990f	128	33x5	Own..	8-3½x5	33.80	Peerless—23	Ball&B	Delco	Delco	m-d Own	Own	M Spicer	¾F Tim	4.90
				3400c	4090f														
5250	5250c	5250	.....	6800	6900	138	33x5	Own..	6-4 x5½	38.40	Pierce-Arrow	Own	Delco	Delco	m-d Own	Own	m Spicer	½F Own	3.93
					7700														
2050	2000	2050	.....	2950	3000	126	32x4½	H-S...	6-3½x5	25.35	Pilot—6-50	Till	Bijur	Conn	s-p B&B	Muncie	m Hartford	¾F Col	4.33
3150	3100e	3250	.....	4300	5100	126¾	32x4½	Own..	6-3⅜x5½	27.34	Premier—6-D	Johnson	Delco	Delco	s-p B&B	Own	m Spicer	¾F	4.58
1095	1095	.....	.....	1750	1825	117	32x4	Falls..	6-3½x4¼	23.44	Premocar—6-40-A	Strom	Wagner	Wagner	s-p B&B	Mech	m Spicer	¾F	4.66
.....	1665	.....	.....	2385	2475	116	32x4	Own..	4-3¾x5	22.50	R & V Knight—R	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	F Salis	4.75
2475	2475e	2475	.....	3015	3105	127	32x4½	Own..	6-3½x4½	29.40	R & V Knight—J	Strom	Wagner	Wagner	s-p B&B	B-L	m Spicer	½F Tim	4.90
.....	1645	1485	1745	2355c	2435l	120	33x4	Own..	6-3⅜x5	24.34	Roo—T6 & U6	Rayfield	N.E	N.E	m-d Own	Own	m,f Own	½F Own	4.70
				1835	1885														
3200	3200	3200	.....	.....	4000	131	32x4½	Dues..	4-4¼x6	28.90	ReVere—C	Strom	West	Bosch	m-d B-L	B-L	m Spicer	¾F Std	4.00
.....	1485	.....	.....	1885	1985	117	32x4	Own..	6-3½x4¾	23.44	Rickenbacker—A	Strom	Simms	A-K	c Own	Own	m Universal	¾F Own	
2685	2485c	2685	.....	3585	3585	128	32x4½	Cont..	6-3½x5¼	29.40	Roamer—6-54-E	Strom	Bijur	Bosch	s-p G-L	G-L	f Snead	½F Tim	4.88
3785	3485	3650c	3650c	.....	4650c	128	32x4½	Dues..	4-4¼x6	28.90	Roamer—4-75-E	Strom	Bijur	Splitdorf	m-d B-L	B-L	f Snead	½F Tim	3.77
10900	10900	10950	.....	.....	13150	143½	35x5	Own..	6-4½x4¾	48.60	Rolls-Royce	Own	Bijur	Bijur	c Own	Own	m Own	F Own	3.25
					12900														
1615	1615	.....	.....	2645	2645	118	33x4	Cont..	6-3½x4½	25.35	Sayers Six—DP	Strom	Delco	Delco	s-p B&B	G-L	m Arvac	½F Std	4.75
875	875	.....	.....	.....	.....	108	30x3½	Lyc...	4-3½x5	19.60	Seneca—L-2 & O-2	Zenith	A-L	A-L	s-p B&B	G-L	m Universal	F	4.75
985	985	.....	.....	.....	.....	112	31x4	Lyc...	4-3½x5	19.60	Seneca—50 & 51	Zenith	A-L	A-L	s-p B&B	G-L	Detroit	F	4.50
2150	.....	2395	2395	2750	3200	127	34x4½	Own..	8-3¼x5	33.80	Standard—98	Zenith	West	Splitdorf	s-p B&B	G-L	m Arvac	½F Tim	4.45
2750	2750	2750	2425g	3950c	3985f	130	32x4½	Own..	2-4 x5	.....	Stanley—740	None	Bijur	None	None	None	None	½F Own	4.50
319r	348s	285g	.....	580	615	102	30x3½	Cont..	4-3½x4¼	15.63	Star	Till	A-L	A-L	s-p	.....	Spicer	Tim	4.87
2250	2250	2150	.....	3150	3150	125	34x4½	Own..	4-3¾x5⅝	22.50	Stearns-Knight—SKL4	Rayfield	West	A-K	m-d Own	Own	f Climax	½F Own	4.50
2700	2700	2850	.....	3500	3700	130	34x4½	Own..	6-3⅜x5	27.34	Stearns-Knight—6	Rayfield	West	A-K	m-d Own	Own	f Climax	½F Own	4.50
1575	1575c	1625c	.....	2450	2550	122	33x4½	Own..	6-3½x4½	25.35	Stephens—90	Till	A-L	A-L	s-p B&B	Mech	m Mech	½F Tim	4.90
7250	6900c	6800	6900c	8600	8900c	138	35x5	Own..	6-4⅞x5½	47.27	Stevens-Duryea—E	Strom	West	Berling	m-d Own	Own	m Own	F Own	4.94
			5600g																
975	975	785g	.....	1225	1550	112	32x4	Own..	6-3½x4½	23.44	Studebaker—Light Six	Strom	Wagner	Wagner	s-p Own	Own	f Thermoid	½F Own	4.55
1250	1275	1275c	1000g	1875	2050	119	32x4	Own..	6-3½x5	29.40	Studebaker—Special Six	Strom	Wagner	Wagner	s-p Own	Own	m Spicer	½F Own	4.00
1275c				2375															
1300	1650	.....	1785	2275	2475	126	33x4½	Own..	6-3⅞x5	36.04	Studebaker—Big Six	Ball&B	Wagner	Wagner	s-p Own	Own	m Spicer	½F Own	3.70
2450	2790c	2640c	2670a	3490	4150	130	32x4½	Own..	4-4¾x6	30.63	Stutz—KLDH	Strom	Remy	Delco	m-d Warner	Own	m Hartford	½F Own	5.50
	3165c	3015																	
1175	1175	.....	.....	.....	.....	117	33x4	H-S...	4-3½x5	19.60	Tulsa—E-1-2-3	Zenith	Dyneto	Conn	s-p B&B	Muncie	m	F Salis	4.50
1275	1275	.....	1305	1795	1795	115	32x4	Own	6-3½x4½	23.44	Velie—58	Strom	West	A-K	s-p Dooley	Durston	m Thiemer	¾F Own	4.66
.....	1960	1890	.....	.....	2890	125	32x4½	Cont..	6-3½x5¼	29.40	Westcott—D-48	Rayfield	Delco	Delco	s-p B&B	B-L	m Peters	½F Tim	4.45
.....	1890	.....	1890	.....	2690	120	32x4	Cont..	6-3½x4½	35.35	Westcott—B-44	Rayfield	Delco	Delco	s-p B&B	Warner	m Peters	½F Col	4.27
2475	2475	.....	.....	3275	3475	121	32x4½	Own..	8-3¼x4	33.80	Wills Sainte Claire—A-68	Zenith	Delco	Delco	m-d Own	Own	m Mech	¾F Own	4.45
1235	1235	1375	.....	1795	1950	118	32x4	Own..	4-3⅝x4¼	21.03	Willys-Knight—20	Till	A-L	A-L	m-d Own	Own	f Own	¾F Own	4.44
		1435	.....		2195f	124	32x4½	Own..	4-3⅝x4½	21.03	Willys-Knight—27	Till	A-L	A-L	m-d Own	Own	f Own	¾F Own	5.12
3400	.....	3400	3600	4000	4550	132	33x5	Own	6-3¾x5¼	33.75	Winton—40	Rayfield	Delco	Delco	m-d Warner	Warner	f Climax	¾F Tim	4.66

MISCELLANEOUS
a—2 Passenger, d—5 Passenger
b—3 Passenger, e—6 Passenger,
c—4 Passenger, f—7 Passenger
g—Chassis Price.
h—All Metal Type.
k—Soft Top Type.
n—Tire Size 32x4½.
p—Sport.
r—Price without starter and demountable rims. Price, complete, $414.
s—Price without starter and demountable rims. Price, complete, $443.
†Standard Phaetons.

ENGINE
Anst—Ansted
Bea—Beaver
Cont—Continental
Dues—Duesenberg
H-S—Herschell-Spillman
Lyc—Lycoming
Supr—Supreme

CARBURETOR
Ball & B—Ball & Ball
Till—Tillotson
Strom—Stromberg

STARTING, LIGHTING IGNITION
A-L—Auto Lite
G-D—Gray & Davis
L-N—Leece Neville
N. E.—North East
West—Westinghouse

CLUTCH
c—Cone
f-d—Friction drive
m-d—Multiple disc
s-p—Single plate
B & B—Borg & Beck
B-L—Brown-Lipe

GEARSET
f-d—Friction Drive
B-L—Brown-Lipe
G-L—Grant-Lees
Mech—Mechanics

UNIVERSAL
f—fabric
m—metal
M&E—Merchant & Evans
Mech—Mechanics

REAR AXLE
F—Floating
½ Floating—Semi-Floating
¾ F—Three-Quarter Floating
Col—Columbia
Salis—Salisbury
Std—Standard
Tim—Timken

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DEALERS—SEE THE NEW

Lexington

MINUTE MAN SIX

At the Shows

Series 23 Models

2-PASSENGER ROADSTER	$1695
5-PASSENGER TOURING CAR	1695
7-PASSENGER TOURING CAR	1795
5-PASSENGER LARK	2045
5-PASSENGER CALIFORNIA TOP	1995
7-PASSENGER CALIFORNIA TOP	2095
5-PASSENGER ROYAL COACH	2145
4-PASSENGER COUPE	2345
5-PASSENGER SEDAN (with 2 taxi seats)	2545
4-PASSENGER BROUGHAM	2645

(WIRE OR DISC WHEELS $100 EXTRA—EXCEPT ON LARK)

(plus War Tax—f. o. b. Factory)

A Complete Line Means Complete Success!

LEXINGTON MOTOR COMPANY
CONNERSVILLE ~ ~ INDIANA USA
Subsidiary United States Automotive Corporation

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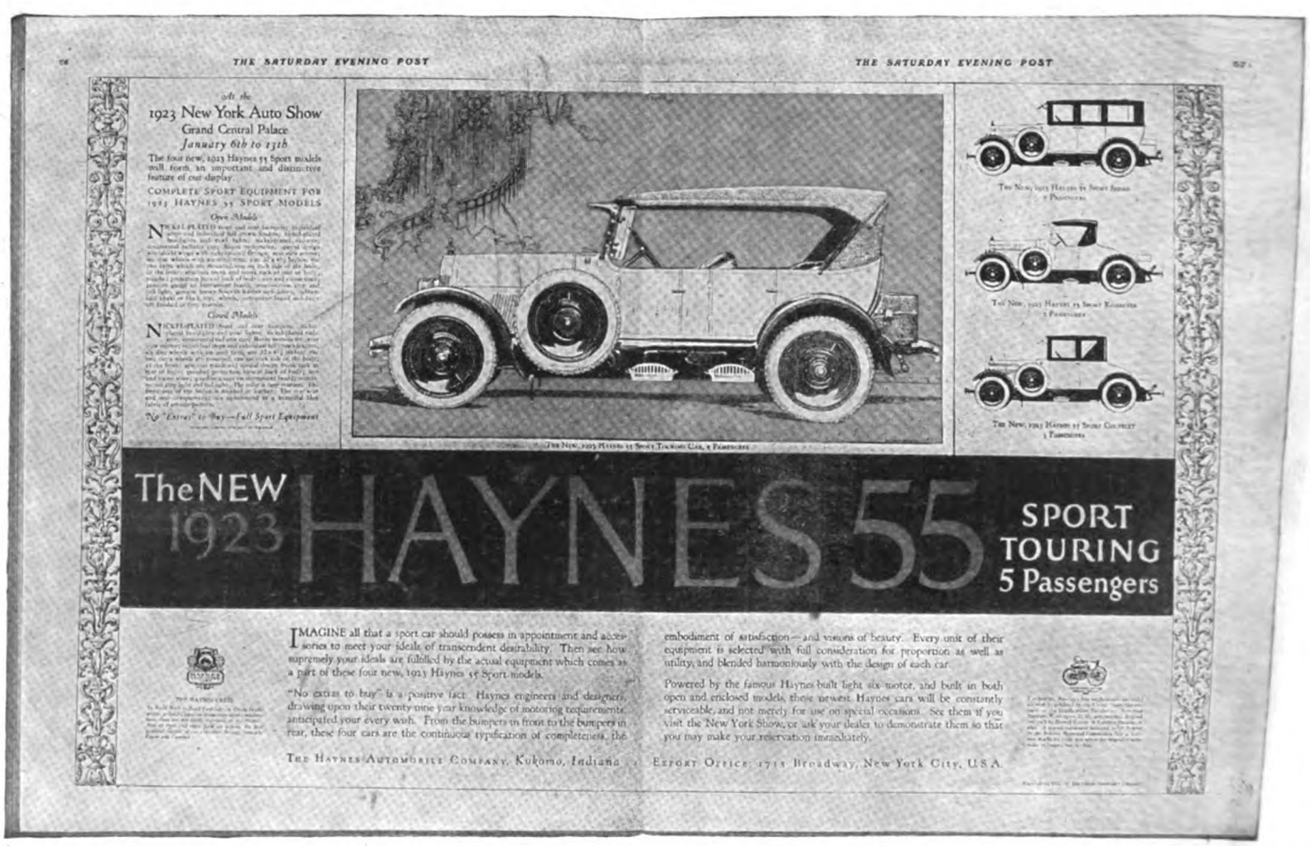
fifteenth year of Lexington success

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The Haynes Automobile Company buys greatest advertisement in

The Saturday Evening Post

to assist dealers sell Haynes cars



This sales-compelling center spread color advertisement

will be the largest and most impressive presentation of its kind appearing in THE SATURDAY EVENING POST—and will undoubtedly create a tremendous interest and buying desire for the

New 1923 Haynes 55 Sport Series

—already famous for the "No Extras to Buy" plan equipment, sent from the factories with every accessory which the heart can desire.

These Haynes cars are bringing still greater success for Haynes dealers in a year which has proved the greatest in Haynes history.

Are you ready to sign a Haynes franchise? There are still some rich territories open.

Write, telephone or telegraph for an appointment. It will be confidential if you desire. Address Department 1252.

THE HAYNES AUTOMOBILE COMPANY, *Kokomo, Indiana*, Export Office: 1715 Broadway, New York City, U.S.A.

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